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Contents

II *Non-legislative acts*

ACTS ADOPTED BY BODIES CREATED BY INTERNATIONAL AGREEMENTS

- ★ **Regulation No 55 of the Economic Commission for Europe of the United Nations (UN/ECE) — Uniform provisions concerning the approval of mechanical coupling components of combinations of vehicles** 1

IV *Acts adopted before 1 December 2009 under the EC Treaty, the EU Treaty and the Euratom Treaty*

2010/460/EC:

- ★ **Commission Decision of 19 November 2009 on State aid measures C 38/A/04 (ex NN 58/04) and C 36/B/06 (ex NN 38/06) implemented by Italy for Alcoa Trasformazioni** (notified under document C(2009) 8112) ⁽¹⁾ 62

Price: EUR 4

⁽¹⁾ Text with EEA relevance

EN

Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

The titles of all other acts are printed in bold type and preceded by an asterisk.

II

*(Non-legislative acts)***ACTS ADOPTED BY BODIES CREATED BY
INTERNATIONAL AGREEMENTS**

Only the original UN/ECE texts have legal effect under international public law. The status and date of entry into force of this Regulation should be checked in the latest version of the UN/ECE status document TRANS/WP.29/343/Rev.X, available at:
<http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29docstts.html>

**Regulation No 55 of the Economic Commission for Europe of the United Nations (UN/ECE) —
Uniform provisions concerning the approval of mechanical coupling components of combinations
of vehicles**

Incorporating all valid text up to:

Supplement 1 to the 01 series of amendments — Date of entry into force: 17 March 2010

CONTENTS

REGULATION

1. Scope
2. Definitions
3. Application for approval of a mechanical coupling device or component
4. General requirements for mechanical coupling devices or components
5. Application for approval of a vehicle fitted with a mechanical coupling device or component
6. General requirements for vehicles fitted with a mechanical coupling device or component
7. Markings
8. Approval
9. Modifications of the mechanical coupling device or component, or of the vehicle and extension of approval
10. Conformity of production procedures
11. Penalties for non-conformity of production
12. Production definitely discontinued
13. Transitional provisions
14. Names and addresses of technical services responsible for approval tests and of administrative departments

ANNEXES

- Annex 1 — Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a type of mechanical coupling device or component pursuant to Regulation No 55
- Annex 2 — Communication concerning the approval or extension or refusal or withdrawal of approval or production definitely discontinued of a vehicle type with regard to the fitting of a mechanical coupling device or component pursuant to Regulation No 55

Annex 3 — Example of an arrangement of the approval mark

Annex 4 — Examples of arrangements of marking of the characteristic values

Annex 5 — Requirements for mechanical coupling devices or components

Annex 6 — Testing of mechanical coupling devices or components

Annex 7 — Installation and special requirements

1. SCOPE

1.1. This Regulation lays down the requirements which the mechanical coupling devices and components shall meet in order to be regarded internationally as being mutually compatible.

1.2. This Regulation applies to devices and components intended for:

1.2.1. motor vehicles and trailers intended to form a combination of vehicles ⁽¹⁾

1.2.2. motor vehicles and trailers intended to form articulated vehicles ⁽¹⁾, where the vertical load imposed on the motor vehicle by the trailer does not exceed 200 kN.

1.3. This Regulation applies to:

1.3.1. standard devices and components as defined in paragraph 2.3;

1.3.2. non-standard devices and components as defined in paragraph 2.4;

1.3.3. non-standard miscellaneous devices and components as defined in paragraph 2.5.

2. DEFINITIONS

For the purposes of this Regulation:

2.1. 'mechanical coupling devices and components means' all those items on the frame, load-bearing parts of the bodywork and the chassis of the motor vehicle and trailer by means of which they are connected together to form the combination of vehicles or the articulated vehicles. Fixed or detachable parts for the attachment or operation of the mechanical coupling device or component are included.

2.2. automatic coupling requirement is achieved if reversing the towing vehicle against the trailer is sufficient to engage the coupling completely, to lock it automatically and to indicate proper engagement of the locking devices without any external intervention.

In the case of hook type couplings automatic coupling requirement is achieved if opening and closing of the coupling locking device takes place without any external intervention when the drawbar eye is inserted into the hook.

2.3. standard mechanical coupling devices and components conform to standard dimensions and characteristic values as given in this Regulation. They are interchangeable within their class, independent of manufacturer.

2.4. non-standard mechanical coupling devices and components do not conform in all respects to the standard dimensions and characteristic values given in this Regulation but can be connected to standard coupling devices and components in the relevant class.

2.5. non-standard miscellaneous mechanical coupling devices and components do not conform to standard dimensions and characteristic values as given in this Regulation and cannot be connected to standard coupling devices and components. They include, for example, devices which do not correspond with any of the Classes A to L and T listed in paragraph 2.6 such as those intended for special, heavy transport use and miscellaneous devices conforming to existing national standards.

⁽¹⁾ Within the meaning of the Convention on Road Traffic (Vienna, 1968) article 1, subparagraphs (t) and (u).

- 2.6. mechanical coupling devices and components are classified according to type as follows:
- 2.6.1. Class A Coupling balls and towing brackets employing a 50 mm diameter spherical device and brackets on the towing vehicle for connecting to the trailer by means of a coupling head — see annex 5, paragraph 1.
- 2.6.1.1. Class A50-1 to 50-5 Standard 50 mm diameter coupling balls with flange type bolted fixing.
- 2.6.1.2. Class A50-X Non-standard 50 mm diameter coupling balls and brackets.
- 2.6.2. Class B Coupling heads fitted to the drawbar of trailers for connecting to the 50 mm diameter coupling ball on the towing vehicle — see annex 5, paragraph 2.
- 2.6.2.1. Class B50-X Non-standard 50 mm diameter coupling heads.
- 2.6.3. Class C Drawbar couplings with a 50 mm diameter pin and with a jaw and an automatic closing and locking pin on the towing vehicle for connecting to the trailer by means of a drawbar eye — see annex 5, paragraph 3:
- 2.6.3.1. Class C50-1 to 50-7 Standard 50 mm pin diameter drawbar couplings.
- 2.6.3.2. Class C50-X Non-standard 50 mm pin diameter drawbar couplings.
- 2.6.4. Class D Drawbar eyes having a parallel hole suitable for a 50 mm diameter pin and fitted to the drawbar of trailers for connecting to automatic drawbar couplings — see annex 5, paragraph 4:
- 2.6.4.1. Class D50-A Standard 50 mm pin diameter drawbar eyes for welded attachment.
- 2.6.4.2. Class D50-B Standard 50 mm pin diameter drawbar eyes for threaded attachment.
- 2.6.4.3. Class D50-C and 50-D Standard 50 mm pin diameter drawbar eyes for bolted attachment.
- 2.6.4.4. Class D50-X Non-standard 50 mm pin diameter drawbar eyes.
- 2.6.5. Class E Non-standard drawbars comprising overrun devices and similar items of equipment mounted on the front of the towed vehicle, or to the vehicle chassis, which are suitable for coupling to the towing vehicle by means of drawbar eyes, coupling heads or similar coupling devices — see annex 5, paragraph 5.

Drawbars may be hinged to move freely in a vertical plane and not support any vertical load or be fixed in a vertical plane so as to support a vertical load (Rigid drawbars). Rigid drawbars can be entirely rigid or be flexibly mounted.

Drawbars may comprise more than one component and may be adjustable or cranked.

This Regulation applies to drawbars which are separate units, not an integral part of the chassis of the towed vehicle.

- 2.6.6. Class F Non-standard drawbeams comprising all components and devices between the coupling devices, such as coupling balls and drawbar couplings, and the frame (for example the rear cross member), the load-bearing bodywork or the chassis of the towing vehicle — see annex 5, paragraph 6.
- 2.6.7. Class G Fifth wheel couplings are plate type couplings having an automatic coupling lock and are fitted to the towing vehicle for connecting with a 50 mm diameter fifth wheel coupling pin fitted to a semitrailer — see annex 5, paragraph 7.

- 2.6.7.1. Class G50 Standard 50 mm pin diameter fifth wheel couplings.
- 2.6.7.2. Class G50-X Non-standard 50 mm pin diameter fifth wheel couplings.
- 2.6.8. Class H Fifth wheel coupling pins, 50 mm diameter, are devices fitted to a semitrailer to connect with the fifth wheel coupling of the towing vehicle — see annex 5, paragraph 8:
 - 2.6.8.1. Class H50-X Non-standard 50 mm pin diameter fifth wheel coupling pins.
- 2.6.9. Class J Non-standard mounting plates comprising all components and devices for attaching fifth wheel couplings to the frame or chassis of the towing vehicle. The mounting plate may have provision for moving horizontally, that is to form a sliding fifth wheel — see annex 5, paragraph 9.
- 2.6.10. Class K Standard, hook type couplings intended for use with appropriate Class L type toroidal drawbar eyes — see annex 5, paragraph 10.
- 2.6.11. Class L Standard toroidal drawbar eyes for use with appropriate Class K hook type couplings — see annex 5, paragraph 4.
- 2.6.12. Class S Devices and components which do not conform to any of the Classes A to L or T above and which are used, for example, for special heavy transport or are devices unique to some countries and covered by existing national standards.
- 2.6.13. Class T Non-standard, non-automatic dedicated drawbar type couplings which are able to be separated only by the use of tools and are typically used for trailers of car transporters. They shall be approved as a matched pair.
- 2.7. Steering wedges are devices or components mounted on semitrailers which control positive steering of the trailer in conjunction with the fifth wheel coupling.
- 2.8. Remote control systems are devices and components which enable the coupling device to be operated from the side of the vehicle or from the driving cab of the vehicle.
- 2.9. Remote indicators are devices and components which give an indication in the vehicle cab that coupling has been effected and that the locking devices have engaged.
- 2.10. 'type of coupling device or component' means a device or component which does not differ in such essential respects as:
 - 2.10.1. the manufacturer's or supplier's trade name or mark;
 - 2.10.2. the class of coupling as defined in paragraph 2.6;
 - 2.10.3. the external shape, principal dimensions or fundamental difference in design including materials used; and
 - 2.10.4. the characteristic values D, D_c, S, V and U as defined in paragraph 2.11.

2.11. The characteristic values D , D_c , S , V and U are defined or determined as:

2.11.1. The D or D_c value is the theoretical reference value for the horizontal forces in the towing vehicle and the trailer and is used as the basis for horizontal loads in the dynamic tests.

For mechanical coupling devices and components not designed to support imposed vertical loads, the value is:

$$D = g \frac{T \times R}{T + R} \text{ KN}$$

For mechanical coupling devices and components for centre axle trailers as defined in 2.13, the value is:

$$D_c = g \frac{T \times C}{T + R} \text{ KN}$$

For fifth wheel couplings of Class G, fifth wheel coupling pins of Class H and mounting plates of Class J, as defined in paragraph 2.6, the value is:

$$D = g \frac{0,6 \times T \times R}{T + R - U} \text{ KN}$$

where:

T is the technically permissible maximum mass of the towing vehicle, in tonnes. Where relevant, this includes the vertical load imposed by a centre axle trailer.

R is the technically permissible maximum mass, in tonnes, of a trailer with drawbar free to move in a vertical plane, or of a semitrailer⁽¹⁾.

C is the mass, in tonnes, transmitted to the ground by the axle or axles of the centre axle trailer, as defined in paragraph 2.13, when coupled to the towing vehicle and loaded to the technically permissible maximum mass⁽¹⁾. For Category O1 and O2 centre axle trailers⁽²⁾ the technically permissible maximum mass will be that declared by the manufacturer of the towing vehicle.

g is the acceleration due to gravity (assumed to be 9,81 m/s²)

U is as defined in paragraph 2.11.2.

S is as defined in paragraph 2.11.3.

2.11.2. The U value is the vertical mass, in tonnes, imposed on the fifth wheel coupling by the semitrailer of technically permissible maximum mass⁽¹⁾.

2.11.3. The S value is the vertical mass, in kilograms, imposed on the coupling, under static conditions, by the centre axle trailer, as defined in paragraph 2.13, of technically permissible maximum mass⁽¹⁾.

⁽¹⁾ The mass T and R and the technically permissible maximum mass, may be greater than the permissible maximum mass prescribed by national legislation.

⁽²⁾ See definitions in Regulation No 13 annexed to the 1958 Agreement concerning the Adoption of Uniform Technical Prescriptions for wheeled vehicles, Equipment and Parts which can be Fitted and/ or be Used on Vehicles and Conditions for Reciprocal Recognition of Approvals granted on the Basis of these Prescriptions. The definition is also contained in annex 7 of Consolidated Resolution on the Construction vehicles (R. E. 3) (document TRANS/WP.29/78/Rev.1/Amend.2).

- 2.11.4. The V value is the theoretical reference value of the amplitude of the vertical force imposed on the coupling by the centre axle trailer of technically permissible maximum mass greater than 3,5 tonnes. The V value is used as the basis for vertical forces in the dynamic tests.

$$V = \frac{a \times C \times X^2}{L^2} \text{ (see the note below)}$$

where:

a is an equivalent vertical acceleration at the coupling depending on the type of suspension system of the rear axle of the towing vehicle.

For air suspension (or suspension systems with equivalent damping characteristics)

$$a = 1,8 \text{ m/s}^2$$

For other types of suspension:

$$a = 2,4 \text{ m/s}^2$$

X is the length of the loading area of the trailer, in metres (see Figure 1)

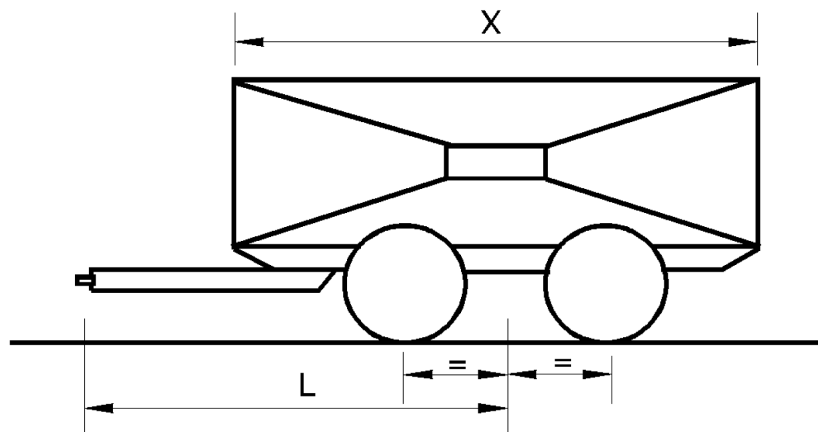
L is the distance from the centre of the drawbar eye to the centre of the axle assembly, in metres (see Figure 1)

Note: (If less than 1,0, the value of 1,0 shall be used)

$$\frac{X^2}{L^2} \geq 1,0$$

Figure 1

Dimensions of the centre axle trailer



- 2.12. Symbols and definitions used in annex 6 of this Regulation.

A_v = maximum permitted axle mass of the steered axle in tonnes.

C = mass of centre axle trailer in tonnes — see paragraph 2.11.1 of this Regulation.

D = D value in kN — see paragraph 2.11.1 of this Regulation.

D_c = D_c value in kN for centre axle trailers — see paragraph 2.11.1 of this Regulation.

R = mass of towed vehicle in tonnes — see paragraph 2.11.1 of this Regulation.

T = mass of towing vehicle in tonnes — see paragraph 2.11.1 of this Regulation.

F_a = static lifting force in kN.

F_h = horizontal component of test force in longitudinal axis of vehicle in kN.

F_s = vertical component of test force in kN.

S = static vertical mass in kg.

U = fifth wheel imposed vertical mass in tonnes.

V = V-value in kN — see paragraph 2.11.4 of this Regulation.

a = equivalent vertical acceleration factor at the coupling point of centre axle trailers depending on the type of suspension of the rear axle(s) of the towing vehicle — see paragraph 2.11.4 of this Regulation.

e = longitudinal distance between the coupling point of coupling balls which can be dismantled and the vertical plane of the fixing points (see Figures 20c to 20f) in mm.

f = vertical distance between the coupling point of coupling balls which can be dismantled and the horizontal plane of the fixing points (see Figures 20c to 20f) in mm.

g = acceleration due to gravity, assumed as $9,81 \text{ m/s}^2$.

L = theoretical drawbar length between the centre of the drawbar eye and the centre of the axle assembly in meters.

X = length of the loading area of a centre axle trailer in meters.

Subscripts:

O = maximum test force

U = minimum test force

a = static force

h = horizontal

p = pulsating

res = resultant

s = vertical

w = alternating force

- 2.13. 'Centre axle trailer' means a trailer having a drawbar which cannot move in a vertical plane independent of the trailer and having an axle or axles positioned close to the centre of gravity of the trailer, when uniformly loaded. The vertical load imposed on the coupling of the towing vehicle shall not exceed 10 per cent of the maximum mass of the trailer, or 1 000 kg, whichever is the lesser.

The maximum mass of the centre axle trailer means the total mass transmitted to the ground by the axle or axles of the trailer when coupled to a towing vehicle and when loaded to the technically permissible maximum mass ⁽¹⁾.

⁽¹⁾ The technically permissible mass, may be greater than the maximum permissible mass prescribed by national legislation.

2.14. 'Positive mechanical engagement' means that the design and geometry of a device and its component parts shall be such that it will not open or disengage under the action of any forces or components of forces to which it is subject during normal use or testing.

2.15. 'Vehicle type' means vehicles which do not differ in such essential respects as the structure, dimensions, shape and materials in areas to which the mechanical coupling device or component is affixed. This applies to both the towing vehicle and trailer.

3. APPLICATION FOR APPROVAL OF A MECHANICAL COUPLING DEVICE OR COMPONENT

3.1. The application for approval shall be submitted by the holder of the trade-name or mark, or by his duly accredited representative.

3.2. or each type of mechanical coupling device or component the application shall be accompanied by the following information, for example, by means of the Communication form given in annex 1:

3.2.1. details of all manufacturer's or supplier's trade names or marks to be applied to the coupling device or component;

3.2.2. three sets of drawings which are sufficiently detailed to define the device or component and which specify how it is to be fitted to the vehicle; the drawings shall show the position and space provided for the approval number and other marking as given in paragraph 7;

3.2.3. a statement of the values of D, D_c, S, V and U as applicable and as defined in paragraph 2.11.

For Class A towing brackets a statement of the maximum permissible towing vehicle and trailer masses and the maximum permissible static vertical imposed load on the tow ball as advised by the manufacturer of the towing vehicle;

3.2.3.1. The characteristic values shall be at least equal to those applicable to the maximum permissible towing vehicle, trailer and combination masses.

3.2.4. a detailed technical description of the device or component, specifying, in particular, the type and the materials used;

3.2.5. restrictions on the vehicles to which the coupling may be fitted — see annex 1, paragraph 12 and annex 5, paragraph 3.4;

3.2.6. one sample, plus additional samples as requested by the type approval authority or technical service;

3.2.7. all samples shall be fully finished with the final surface treatment applied. However, if the final treatment is by painting or epoxy powder coating, this should be omitted;

3.2.8. in the case of a mechanical coupling device or component designed for a specific vehicle type, the manufacturer of the device or component shall also submit the installation data given by the vehicle manufacturer. The approval authority or technical service may also request that a vehicle representative of the type be submitted.

4. GENERAL REQUIREMENTS FOR MECHANICAL COUPLING DEVICES OR COMPONENTS

4.1. Each sample shall conform to the dimensional and strength specifications set out in annexes 5 and 6. Following the tests specified in annex 6 there shall not be any cracks, fractures or any excessive permanent distortion which would be detrimental to the satisfactory operation of the device or component.

- 4.2. All parts of the mechanical coupling device or component whose failure could result in separation of the vehicle and trailer shall be made of steel. Other materials may be used provided that equivalence has been demonstrated by the manufacturer to the satisfaction of the type approval authority or technical service of the Contracting Party applying this Regulation.
- 4.3. The mechanical coupling devices or components shall be safe to operate and coupling and uncoupling shall be possible by one person without the use of tools. With the exception of Class T couplings only devices which allow automatic coupling shall be allowed for the coupling of trailers having a maximum technically permissible mass greater than 3,5 tonnes.
- 4.4. The mechanical coupling devices or components shall be designed and manufactured such that in normal use and with correct maintenance and replacement of wearing parts they will continue to function satisfactorily and retain the characteristics prescribed by this Regulation.
- 4.5. All mechanical coupling devices or components shall be designed to have positive mechanical engagement and the closed position shall be locked at least once by further positive mechanical engagement unless further requirements are stated in annex 5. Alternatively there may be two or more separate arrangements to ensure the integrity of the device but each arrangement shall be designed to have positive mechanical engagement and shall be tested individually to any requirements given in annex 6. Positive mechanical engagement shall be as defined in paragraph 2.14.

Spring forces may be used only to close the device and to prevent the effects of vibration from causing component parts of the device to move to positions where it may open or disengage.

The failure or omission of any one single spring shall not allow the complete device to open or disengage.

- 4.6. Every device or component shall be accompanied by installation and operating instructions giving sufficient information for any competent person to install it correctly on the vehicle and operate it properly — see also annex 7. The instructions shall be in at least the language of the country in which it will be offered for sale. In the case of devices and components supplied for original equipment fitting by a vehicle manufacturer or bodybuilder, installation instructions may be dispensed with but the vehicle manufacturer or bodybuilder will be responsible for ensuring that the vehicle operator is supplied with the necessary instructions for correct operation of the coupling device or component.
- 4.7. For devices and components of Class A, or Class S, if applicable, for use with trailers of maximum permissible mass not exceeding 3,5 tonnes, and which are produced by manufacturers not having any association with the vehicle manufacturer and where the devices and components are intended for fitting in the after-market, the height and other installation features of the coupling shall, in all cases, be verified by the type approval authority or technical service in accordance with annex 7, paragraph 1.
- 4.8. For heavy duty and other non-standard miscellaneous coupling devices or components, Class S and Class T, the relevant requirements in annexes 5, 6 and 7 for the closest standard or non-standard device or component shall be used.
- 5. APPLICATION FOR APPROVAL OF A VEHICLE FITTED WITH A MECHANICAL COUPLING DEVICE OR COMPONENT
 - 5.1. Where a vehicle manufacturer applies for approval of a vehicle fitted with a mechanical coupling device or component or authorizes the use of a vehicle for towing any form of trailer, then, at the request of a bona fide applicant for possible type approval for a mechanical coupling device or component, or of the type approval authority or technical service of a Contracting Party, the vehicle manufacturer shall readily make available to that inquirer or authority or technical service, such information as required in paragraph 5.3 below, to enable a manufacturer of a coupling device or component to properly design and manufacture a mechanical coupling device or component for that vehicle. At the request of a bona fide applicant for possible type approval for a mechanical coupling device or component, any information given in paragraph 5.3 below which is held by the type approval authority shall be released to that applicant.

- 5.2. The application for approval of a vehicle type with regard to the fitting of a mechanical coupling device or component shall be submitted by the vehicle manufacturer or by his duly accredited representative.
- 5.3. It shall be accompanied by the following information to enable the type approval authority to complete the communication form given in annex 2.
 - 5.3.1. a detailed description of the vehicle type and of the mechanical coupling device or component and, at the request of the type approval authority or technical service, a copy of the approval form for the device or component;
 - 5.3.2. The information shall also include the maximum permissible masses of the towing and towed vehicles, the distribution of the maximum permissible mass of the towing vehicle between the axles, the maximum permissible axle masses, the maximum permissible vertical loading to be imposed on the rear of the towing vehicle and details and/or drawings of the installation mounting points for the device or component and of any additional reinforcing plates, support brackets and so on, necessary for safe attachment of the mechanical coupling device or component to the towing vehicle;
 - 5.3.2.1. the loading condition at which the height of the tow ball of M1 category vehicles is to be measured — see paragraph 2 of annex 7, appendix 1.
 - 5.3.3. three sets of drawings which are sufficiently detailed to identify the device or component and which specify how it is to be fitted to the vehicle; the drawings shall show the position and space provided for the approval number and other marking as given in paragraph 7;
 - 5.3.4. a detailed technical description of the device or component, specifying, in particular, the type and the materials used;
 - 5.3.5. a statement of the values of D, D_c, S, V and U as applicable and as defined in paragraph 2.11;
 - 5.3.5.1. The characteristic values shall be at least equal to those applicable to the maximum permissible towing vehicle, trailer and combination masses.
 - 5.3.6. a vehicle, representative of the type to be approved and fitted with a mechanical coupling device, shall be submitted to the type approval authority or technical service which may also request additional samples of the device or component;
 - 5.3.7. a vehicle not having all of the components appropriate to the type may be accepted provided that the applicant can show, to the satisfaction of the type approval authority or technical service, that the absence of the components does not have any effect on the results of the inspection as far as the requirements of this Regulation are concerned.
- 6. GENERAL REQUIREMENTS FOR VEHICLES FITTED WITH A MECHANICAL COUPLING DEVICE OR COMPONENT
 - 6.1. The mechanical coupling device or component fitted to the vehicle shall be approved in accordance with the requirements of paragraphs 3 and 4 and annexes 5 and 6 of this Regulation.
 - 6.2. The installation of the mechanical coupling device or component shall meet the requirements of annex 7 to this Regulation.

- 6.3. Operating instructions shall be provided for use of the coupling device or component which shall contain any special instructions for operations which are different from those normally associated with the type of coupling device or component and instructions for coupling and uncoupling with different modes of operation, for example, at various angles between the towing and towed vehicles. Each vehicle shall be accompanied by these operating instructions which shall be at least in the language of the country in which it will be offered for sale.

7. MARKINGS

- 7.1. Types of mechanical coupling devices and components submitted for approval shall bear the trade name or mark of the manufacturer, supplier or applicant.
- 7.2. There shall be a sufficiently large space for application of the approval mark referred to in paragraph 8.5 and shown in annex 3. This space shall be shown on the drawings referred to in paragraph 3.2.2.
- 7.3. Adjacent to the approval mark referred to in paragraphs 7.2 and 8.5, the mechanical coupling device or component shall be marked with the class of coupling, as defined in paragraph 2.6 and the relevant characteristic values as defined in paragraph 2.11 and shown in annex 4. The position for these markings shall be shown on the drawings referred to in paragraph 3.2.2.

The characteristic values need not be marked in cases where those values are defined in the classification given in this Regulation, for example, Classes A50-1 to A50-5.

- 7.4. Where the mechanical coupling device or component is approved for alternative characteristic values within the same class of coupling or device, a maximum of two alternatives shall be marked on the device or component.
- 7.5. If the application of the mechanical coupling device or component is restricted in any way, for example, if it is not to be used with steering wedges, then that restriction shall be marked on the device or component.
- 7.6. All markings shall be permanent and legible when the device or component is installed on the vehicle.

8. APPROVAL

- 8.1. If the sample(s) of a type of mechanical coupling device or component meets (meet) the requirements of this Regulation, approval shall be granted subject to the requirements of paragraph 10 being satisfactorily met.
- 8.2. An approval number shall be assigned to each type approved. Its first two digits shall indicate the series of amendments incorporating the most recent major technical amendments made to the Regulation at the time of issue of the approval. The same Contracting Party may not assign the same number to another type of device or component referred to in this Regulation.
- 8.3. Notice of approval or of extension, refusal or withdrawal of approval or of production definitely discontinued, relating to a type of mechanical coupling device or component approved pursuant to this Regulation, shall be communicated to the Parties to the 1958 Agreement applying this Regulation, by means of a communication form conforming to the model in either annex 1 or annex 2 to this Regulation.
- 8.4. In addition to the mark prescribed in paragraph 7.1, there shall be affixed to every mechanical coupling device or component approved under this Regulation, in the space referred to in paragraph 7.2, an approval mark as described in paragraph 8.5.
- 8.5. The approval mark shall be an international mark comprising:

- 8.5.1. a circle surrounding the letter 'E' followed by the distinguishing number of the country which has granted approval ⁽¹⁾;
- 8.5.2. the approval number prescribed in paragraph 8.2;
- 8.5.3. the approval mark and number shall be arranged as shown in the example in annex 3.
9. MODIFICATIONS OF THE MECHANICAL COUPLING DEVICE OR COMPONENT, OR OF THE VEHICLE AND EXTENSION OF APPROVAL
- 9.1. Any modification to the type of mechanical coupling device or component, or of the vehicle as defined in paragraph 2.10 shall be notified to the type approval authority or technical service which granted the approval. The type approval authority or technical service may then either:
- 9.1.1. consider that the modifications are unlikely to have any appreciable adverse effect and that in any case the device, component or vehicle still conforms to requirements; or
- 9.1.2. require a further test report.
- 9.2. Confirmation of, or refusal of approval, specifying the modification, shall be communicated by the procedure prescribed in paragraph 8.3 to the Contracting Parties applying this Regulation.
- 9.3. The type approval authority or technical service issuing an extension of approval shall assign a series number for such an extension and shall inform the other Contracting Parties applying this Regulation by the procedure prescribed in paragraph 8.3.
10. CONFORMITY OF PRODUCTION PROCEDURES
- The conformity of production procedures shall comply with those set out in the Agreement, Appendix 2 (E/ECE/324 E/ECE/TRANS/505/Rev.2), with the following requirements:
- 10.1. The holder of the approval must ensure that results of the conformity of production tests are recorded and that the annexed documents remain available for a period determined in agreement with the approval authority or technical service. This period must not exceed 10 years counted from the time when production is definitely discontinued.
- 10.2. The type approval authority or technical service which has granted type approval may at any time verify the conformity control methods applied in each production facility. The normal frequency of these verifications shall be once every two years.
11. PENALTIES FOR NON-CONFORMITY OF PRODUCTION
- 11.1. The approval granted in respect of a type of mechanical coupling device or component pursuant to this Regulation may be withdrawn if the requirements are not complied with or if a device or component bearing the approval mark does not conform to the type approved.

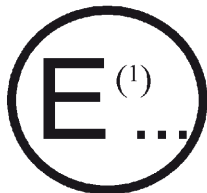
⁽¹⁾ 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 7 for Hungary, 8 for the Czech Republic, 9 for Spain, 10 for Serbia, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 14 for Switzerland, 15 (vacant), 16 for Norway, 17 for Finland, 18 for Denmark, 19 for Romania, 20 for Poland, 21 for Portugal, 22 for the Russian Federation, 23 for Greece, 24 for Ireland, 25 for Croatia, 26 for Slovenia, 27 for Slovakia, 28 for Belarus, 29 for Estonia, 30 (vacant), 31 for Bosnia and Herzegovina, 32 for Latvia, 33 (vacant), 34 for Bulgaria, 35-36 (vacant), 37 for Turkey, 38-39 (vacant), 40 for The former Yugoslav Republic of Macedonia, 41 (vacant), 42 for The European Community (Approvals are granted by its Member States using their respective ECE symbol), 43 for Japan, 44 (vacant), 45 for Australia and 46 for Ukraine. Subsequent numbers shall be assigned to other countries in the chronological order in which they ratify or accede to the Agreement concerning the Adoption of Uniform Technical Prescriptions for Wheeled Vehicles, Equipment and parts which can be Fitted and/ or be Used on Wheeled Vehicles and the Conditions for Reciprocal Recognition of Approvals Granted on the basis of these Prescriptions, and the numbers thus assigned shall be communicated by the Secretary-General of the United Nations to the Contracting Parties to the Agreement.

- 11.2. If a Contracting Party to the Agreement applying this Regulation withdraws an approval it has previously granted, it shall forthwith so notify the other Contracting Parties applying this Regulation by means of a communication form conforming to the model in either annex 1 or annex 2 to this Regulation.
12. PRODUCTION DEFINITELY DISCONTINUED
- If the holder of the approval completely ceases to manufacture a type of mechanical coupling device or component approved in accordance with this Regulation, he shall so inform the type approval authority or technical service which granted the approval. Upon receiving the relevant communication, that type approval authority or technical service shall inform thereof the other Contracting Parties to the 1958 Agreement applying this Regulation by means of a communication form conforming to the model in either annex 1 or annex 2 to this Regulation.
13. TRANSITIONAL PROVISIONS
- Until the United Nations Secretary-General is notified otherwise, Contracting Parties applying this Regulation that are Member States of the European Community (at the time of adoption of the 01 series of amendments, Italy, Netherlands, Belgium, United Kingdom, Luxembourg, Finland and Greece) declare that, in relation to mechanical coupling devices and components, they will only be bound by the obligations of the Agreement to which this Regulation is annexed with respect to such devices and components intended for vehicles of categories other than M1.
14. NAMES AND ADDRESSES OF TECHNICAL SERVICES RESPONSIBLE FOR APPROVAL TESTS AND OF ADMINISTRATIVE DEPARTMENTS
- 14.1. The Contracting Parties to the 1958 Agreement applying this Regulation shall communicate to the United Nations Secretariat the names and addresses of the technical services responsible for conducting approval tests and of the administrative departments which grant approval and to which forms certifying approval or extension or refusal or withdrawal of approval, or production definitely discontinued, issued in other countries, are to be sent.
-

ANNEX I

COMMUNICATION

(maximum format: A4 (210 × 297 mm))



issued by: Name of administration:

.....

.....

.....

concerning ⁽²⁾: APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a type of mechanical coupling device or component pursuant to Regulation No 55

Approval No Extension No

1. Trade name or mark of the device or component:
2. Manufacturer's name for the type of device or component:
3. Manufacturer's name and address:
4. If applicable, name and address of the manufacturer's representative:
5. Alternative supplier's names or trade marks applied to the device or component:
6. Name and address of company or body taking responsibility for the conformity of production:
7. Submitted for approval on:
8. Technical service responsible for conducting approval tests:
9. Brief description:
- 9.1. Type and class of device or component:
- 9.2. Characteristic values:
 - 9.2.1. Primary values:

D	kN D _c	kN S	kg
U	tonnes V		kN

Alternative values:

D	kN D _c	kN S	kg
U	tonnes V		kN
 - 9.3. For Class A mechanical coupling devices or components, including towing brackets:

Vehicle manufacturer's maximum permissible vehicle mass:	kg
Distribution of maximum permissible vehicle mass between the axles:	
Vehicle manufacturer's maximum permissible towable trailer mass:	kg
Vehicle manufacturer's maximum permissible static mass on coupling ball:	kg
Maximum mass of the vehicle, with bodywork, in running order, including coolant, oils, fuel, tools and spare wheel (if supplied) but not including driver:	kg
Loading condition under which the tow ball height of a mechanical coupling device fitted to category M1 vehicles is to be measured — see paragraph 2 of annex 7, appendix 1:	

10. Instructions for the attachment of the coupling device or component type to the vehicle and photographs or drawings of the mounting points given by the vehicle manufacturer:
11. Information on the fitting of any special reinforcing brackets or plates or spacing components necessary for the attachment of the coupling device or component:
12. Additional information where the use of the coupling device or component is restricted to special types of vehicles – see annex 5, paragraph 3.4
13. For Class K hook type couplings, details of the drawbar eyes suitable for use with the particular hook type.
14. Date of test report:
15. Number of test report:
16. Approval mark position:
17. Reason(s) for extension of approval:
18. Approval granted/extended/refused/withdrawn ⁽²⁾:
19. Place:
20. Date:
21. Signature:
22. The list of documents deposited with the Administration Service which has granted approval is annexed to this communication and may be obtained on request.

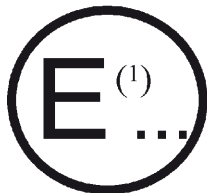
⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

ANNEX 2

COMMUNICATION

(maximum format: A4 (210 × 297 mm))



issued by: Name of administration:

.....

.....

.....

concerning ⁽²⁾: APPROVAL GRANTED
 APPROVAL EXTENDED
 APPROVAL REFUSED
 APPROVAL WITHDRAWN
 PRODUCTION DEFINITELY DISCONTINUED

of a vehicle type with regard to the fitting of a mechanical coupling device or component pursuant to Regulation No 55.

Approval No Extension No

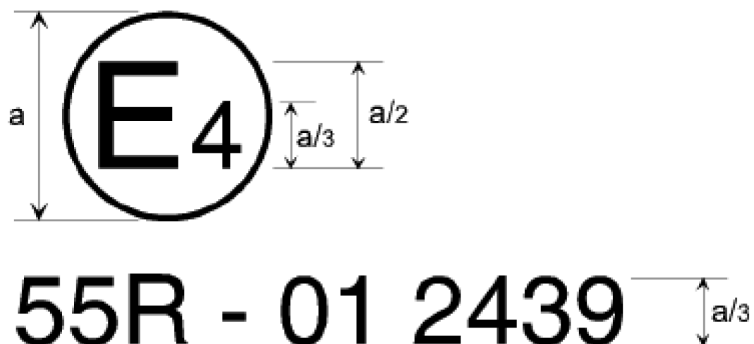
1. Trade name or mark of vehicle:
2. Vehicle type:
3. Manufacturer's name and address:
4. If applicable, name and address of the manufacturer's representative:
5. Vehicle category, for example, M1, N1:
6. Maximum permissible vehicle mass: kg
 Distribution of maximum permissible vehicle mass between the axles:
 Maximum permissible towable trailer mass: kg
 Maximum permissible static mass on coupling ball: kg
 Maximum mass of vehicle, with bodywork, in running order, including coolant, oils, fuel, tools and spare wheel (if supplied) but not including driver: kg
7. D kN D_c kN S kg
 U tonnes V kN
8. Instructions for the attachment of the coupling device or component type to the vehicle and photographs or drawings of the mounting points:
9. Information on the fitting of any special reinforcing brackets or plates or spacing components necessary for the attachment of the coupling device or component:
10. Trade name or mark of the mechanical coupling device or component and the approval number:
11. Class of coupling device or component:
12. Submitted for approval on:
13. Technical service responsible for conducting approval tests:
14. Date of test report:
15. Number of test report:
16. Approval mark position:
17. Reason(s) for extension of approval:
18. Approval granted/extended/refused/withdrawn ⁽²⁾:
19. Place:
20. Date:
21. Signature:
22. The list of documents deposited with the Administration Service which has granted approval is annexed to this communication and may be obtained on request.

⁽¹⁾ Distinguishing number of the country which has granted/extended/refused/withdrawn approval (see approval provisions in the Regulation).

⁽²⁾ Strike out what does not apply.

ANNEX 3

EXAMPLE OF AN ARRANGEMENT OF THE APPROVAL MARK



$a = 8 \text{ mm}$ minimum

The mechanical coupling device or component or vehicle bearing the approval mark shown above is a device or component approved in the Netherlands (E4), under approval number 2439, meeting the requirements of the 01 series of amendments to this Regulation.

Note: The approval number and additional symbols shall be placed close to the circle and either above or below the letter 'E', or to the right or left of that letter. The digits of the approval number shall be on the same side of the letter 'E' and face in the same direction. The use of Roman numerals as approval numbers should be avoided so as to prevent any confusion with other symbols.

ANNEX 4

Examples of arrangements of marking of the characteristic values

1. All mechanical coupling devices or components shall be marked with the class of the device or component. In addition there shall be marking to indicate the capacity in terms of characteristic values as defined in paragraph 2.11 of this Regulation.
- 1.1. The height of all letters and numbers shall be not less than those of the approval number, that is $a/3$ where a is 8 mm.
- 1.2. The characteristic values applicable to each device or component which are to be marked are as shown in the table below — see also paragraph 7.3 of this Regulation:

Table 1

Relevant characteristics values to be marked on coupling devices or components

Description of mechanical coupling device or component	Relevant characteristic values to be marked					
	Class	D	D _c	S	U	V
Coupling balls and towing brackets — see annex 5, para. 1 of this Regulation	*	*		*		
Coupling heads	*	*		*		
Drawbar couplings	*	*	*	*		*
Drawbar eyes	*	*	*	*		*
Drawbars	*	*	*	*		*
Drawbeams	*	*	*	*		*
Fifth wheel couplings	*	*			*	
Fifth wheel pins	*	*				
Fifth wheel mounting plates	*	*			*	
Hook type couplings	*	*	*	*		*

Examples: C50-X D130 D_c90 S1000 V35 would identify a non-standard drawbar coupling of Class C50-X with a maximum D value of 130 kN, a maximum permitted D_c value of 90 kN, a maximum permitted static vertical imposed mass of 1 000 kg and a maximum permitted V value of 35 kN.

A50-X D20 S120 would identify a standard towing bracket with ball coupling of Class A50-X with a maximum D value of 20 kN and a maximum permitted static vertical imposed mass of 120 kg.

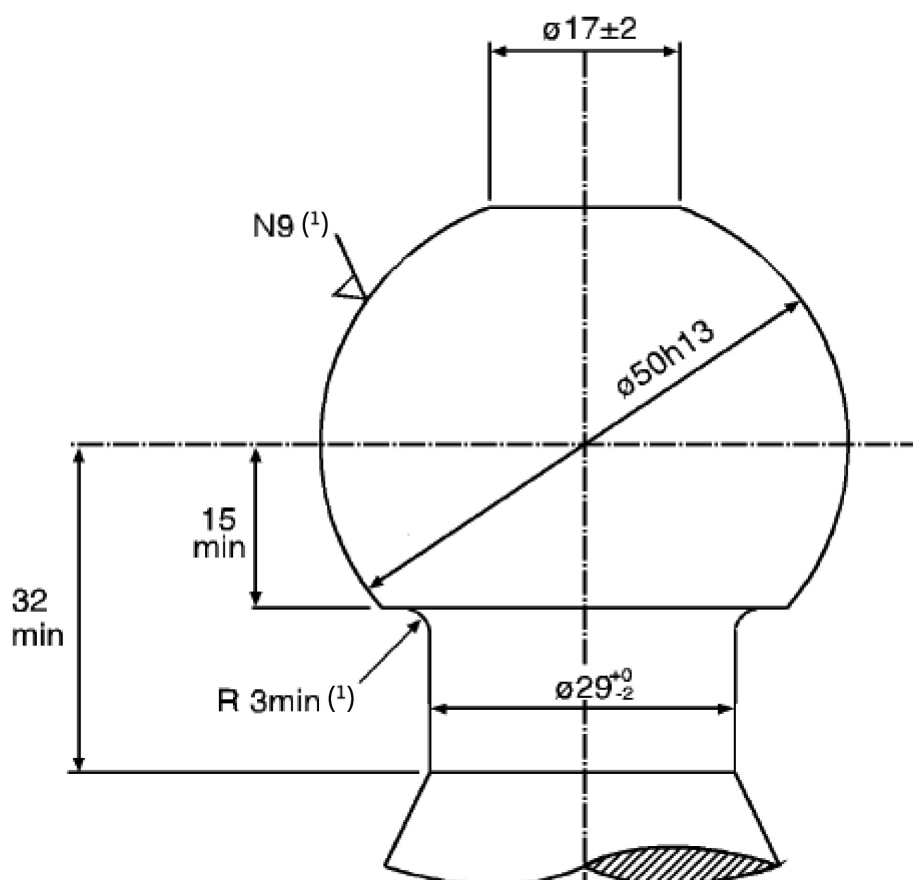
ANNEX 5

Requirements for mechanical coupling devices or components**1. COUPLING BALLS AND TOWING BRACKETS**

The requirements stated in paragraphs 1.1 to 1.5 of this annex are applicable to all coupling balls and towing brackets of Class A. Paragraph 1.6 details additional requirements which must be fulfilled by standard 50 mm diameter coupling balls with flange type bolted fixings.

- 1.1. Coupling balls of Class A shall conform to Figure 2 in external shape and external dimensions.

Figure 2
Coupling ball of Class A



See ISO/R 468 and ISO 1302, the roughness number N9 refers to an R_a value of $6,3 \mu\text{m}$.

- 1.2. The shape and dimensions of towing brackets shall meet the requirements of the vehicle manufacturer concerning the attachment points and additional mounting devices or components if necessary.
- 1.3. Removable coupling balls:
- 1.3.1. In the case of removable coupling balls or components which are not fixed by bolts, for example Class A50-X, the point of connection and the locking arrangement shall be designed for positive mechanical engagement.
- 1.3.2. In the case of a removable coupling ball or component which may be separately approved for use with a variety of towing brackets for different vehicle applications, for example Class A50-X, the clearance space when such a coupling ball is fitted to the towing bracket shall be that prescribed in annex 7, Figure 25.

⁽¹⁾ The connecting radius between the ball and the neck should be tangential both to the neck and to the lower horizontal surface of the coupling ball.

- 1.4. Coupling balls and towing devices shall be able to satisfy the tests given in Annex 6, paragraph 3.1 or paragraph 3.10 according to the choice of the manufacturer. However, the requirements given in paragraphs 3.1.7 and 3.1.8 are always applicable.
- 1.5. Manufacturers of towing brackets shall incorporate attachment points to which either secondary couplings or devices necessary to enable the trailer to be stopped automatically in the event of separation of the main coupling, may be attached. This requirement is necessary to enable the vehicle to comply with the requirements of paragraph 5.2.2.9 of UN/ECE Regulation No 13 — Uniform Provisions concerning the approval of vehicles of categories M, N and O with regard to braking.
- 1.5.1. The attachment points for a secondary coupling and/or breakaway cable shall be positioned such that when in use, the secondary coupling or breakaway cable does not restrict the normal articulation of the coupling or interfere with the normal inertia braking system operation.

A single attachment point shall be positioned within 100 mm of a vertical plane passing through the centre of articulation of the coupling. If this is not practicable, two attachment points shall be provided, one on each side of the vertical centre line and equidistant from the centre line by a maximum of 250 mm. The attachment point(s) shall be as rearward and as high as practicable.

- 1.6. Special requirements for standard coupling balls and flange type towing brackets of Classes A50-1 to A50-5 inclusive:
- 1.6.1. Dimensions of Class A50-1 coupling balls and flange type towing brackets shall be as given in Figure 3 and Table 2.
- 1.6.2. Dimensions of Class A50-2, A50-3, A50-4 and A50-5 coupling balls and flange type towing brackets shall be as given in Figure 4 and Table 2.
- 1.6.3. Coupling balls and flange type towing brackets of the classes A50-1 to A50-5 inclusive, shall be suitable and tested for the characteristic values given in Table 3.

Figure 3

Dimensions of standard flange type ball couplings of Class A50-1 (see Table 2)

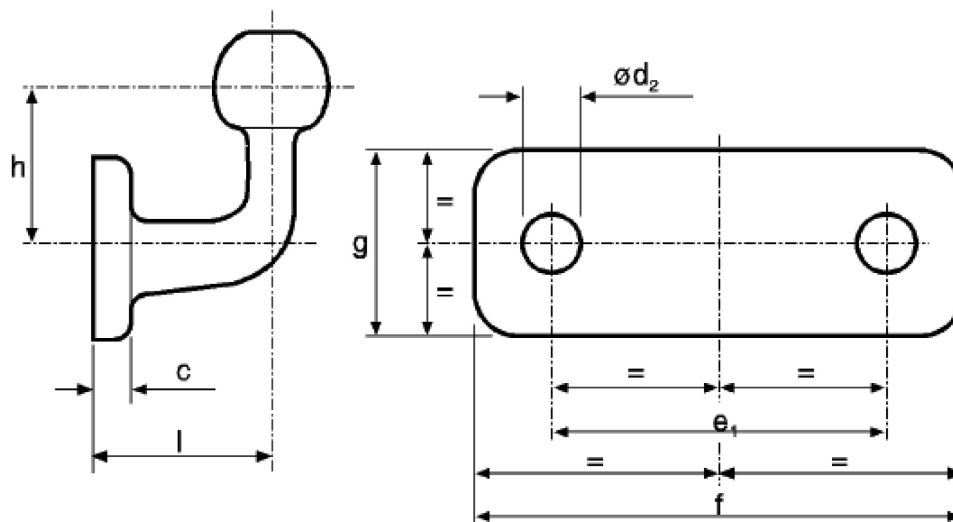


Figure 4

Dimensions of standard flange type ball couplings of Class A50-2 to A50-5 (see Table 2)

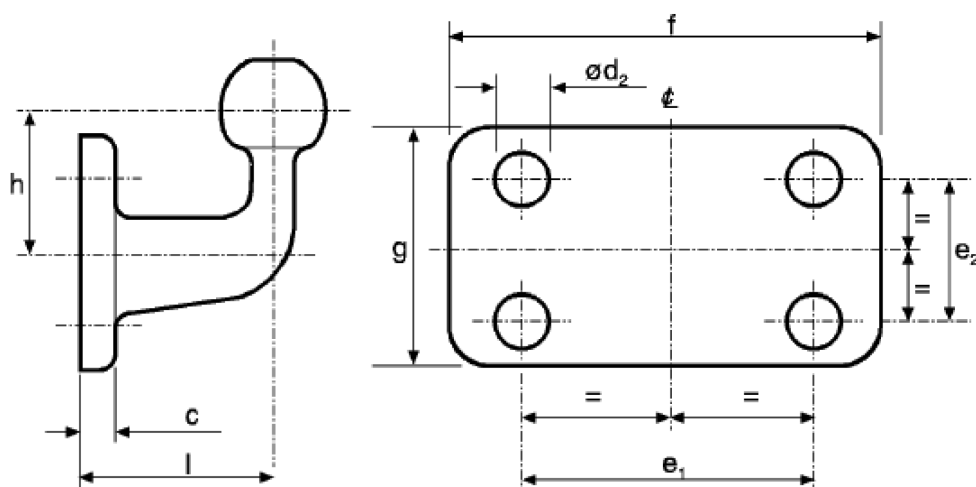


Table 2

Dimensions of standard flange type ball couplings (mm), see Figures 3 and 4

Class	A50-1	A50-2, A50-4	A50-3, A50-5	Comments
e_1	90	83	120	$\pm 0,5$
e_2	—	56	55	$\pm 0,5$
d_2	17	10,5	15	H13
f	130	110	155	$\pm 6,0 - 0$
g	50	85	90	$\pm 6,0 - 0$
c	15	15	15	maximum
l	55	110	120	$\pm 5,0$
h	70	80	80	$\pm 5,0$

Table 3

Characteristic values for standard flange type ball couplings

Class	A50-1	A50-2	A50-3	A50-4	A50-5
D	17	20	30	20	30
S	120	120	120	150	150

D = Maximum D value (kN)

S = Maximum static vertical load (kg)

- 1.7. Manufacturers of coupling balls and towing brackets intended for fitment in the after-market and which do not have any association with the relevant vehicle manufacturer shall be aware of the requirements for articulation of the coupling given in paragraph 2 of this annex and shall comply with the appropriate requirements in annex 7 to this Regulation.

2. COUPLING HEADS

- 2.1. Coupling heads of Class B50 shall be designed so that they can be used safely with the coupling balls described in paragraph 1 of this annex and thereby retain the prescribed characteristics.

Coupling heads shall be designed in such a way that safe coupling is ensured, also taking into account the wear of the coupling devices.

- 2.2. Coupling heads shall be able to satisfy the tests laid down in annex 6, paragraph 3.2.
- 2.3. Any additional device (e.g. braking, stabilizer, etc.) shall not have any adverse effect on the mechanical connection.
- 2.4. When not attached to the vehicle, horizontal rotation of the coupling head shall be at least 90° to each side of the centre line of the coupling ball and mounting described in paragraph 1 of this annex. Simultaneously, there shall be an angle of free vertical movement 20° above and below the horizontal. Also, in conjunction with the horizontal angle of rotation of 90° it shall be possible for there to be 25° of roll in both directions about the horizontal axis. The following articulation shall be possible at all angles of horizontal rotation:

(i) vertical pitch $\pm 15^\circ$ with axial roll $\pm 25^\circ$

(ii) axial roll $\pm 10^\circ$ with vertical pitch $\pm 20^\circ$

3. DRAWBAR COUPLINGS

The requirements of paragraphs 3.1 to 3.6 of this annex are applicable to all drawbar couplings of Class C50. Additional requirements which must be fulfilled by standard drawbar couplings of Classes C50-1 to C50-6 are given in paragraph 3.7.

- 3.1. Performance requirements — All drawbar couplings shall be able to satisfy the tests stated in annex 6, paragraph 3.3.
- 3.2. Suitable drawbar eyes — Class C50 drawbar couplings shall be compatible with all Class D50 drawbar eyes and couplings with the specified characteristics.
- 3.3. Jaw

Class C50 drawbar couplings shall have a jaw which is designed such that the appropriate drawbar eye is guided into the coupling.

If the jaw, or a part supporting the jaw, can pivot about the vertical axis, it shall establish itself automatically in the normal position and with the coupling pin open, be effectively restrained in this position to give satisfactory guidance for the drawbar eye during the coupling procedure.

If the jaw, or a part supporting the jaw, can pivot about the horizontal transverse axis, the joint providing the rotation capability shall be restrained in its normal position by a locking torque. The torque shall be sufficient to prevent a force of 200 N acting vertically upwards on the top of the jaw producing any deflection of the joint from its normal position. The locking torque shall be greater than that created by operation of the hand lever described in paragraph 3.6 of this annex. It shall be possible to bring the jaw to its normal position manually. A jaw that pivots about the horizontal transverse axis is only approved for vertical bearing loads, S_v , of up to 50 kg and a V-value of up to 5 kN.

If the jaw, or a part supporting the jaw, is pivoted about the longitudinal axis, the rotation shall be restrained by a locking torque of at least 100 Nm.

The minimum required size of the jaw depends on the D value of the coupling:

D value ≤ 18 kN — width 150 mm, height 100 mm

D value > 18 kN ≤ 25 kN — width 280 mm, height 170 mm

D value > 25 kN — width 360 mm, height 200 mm

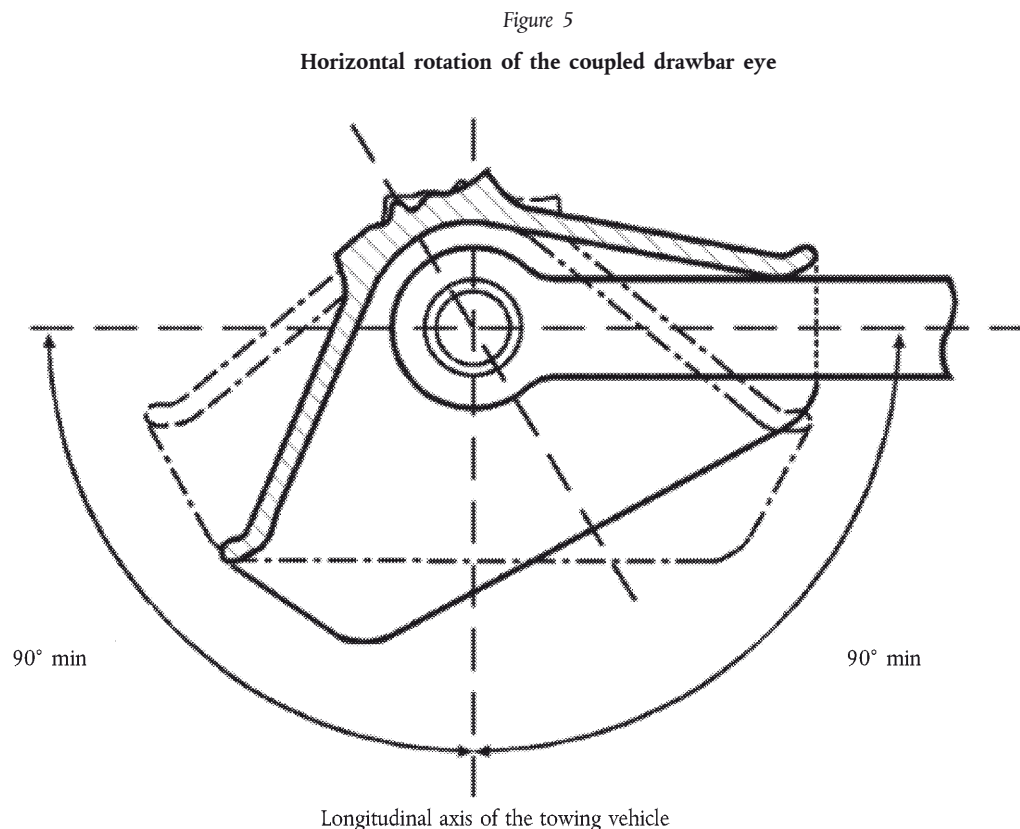
The external corners of the jaw may be radiused.

Smaller jaws are permitted for Class C50-X drawbar couplings if their use is restricted to centre axle trailers up to 3,5 tonnes maximum permissible mass or if the use of a jaw from the above table is impossible due to technical reasons and if, furthermore, there are special circumstances such as visual aids for ensuring safe execution of the automatic coupling procedure and if the field of application is restricted in the approval according to information given by the coupling manufacturer in the Communication form shown in annex 1.

3.4. Minimum articulation of the coupled drawbar eye

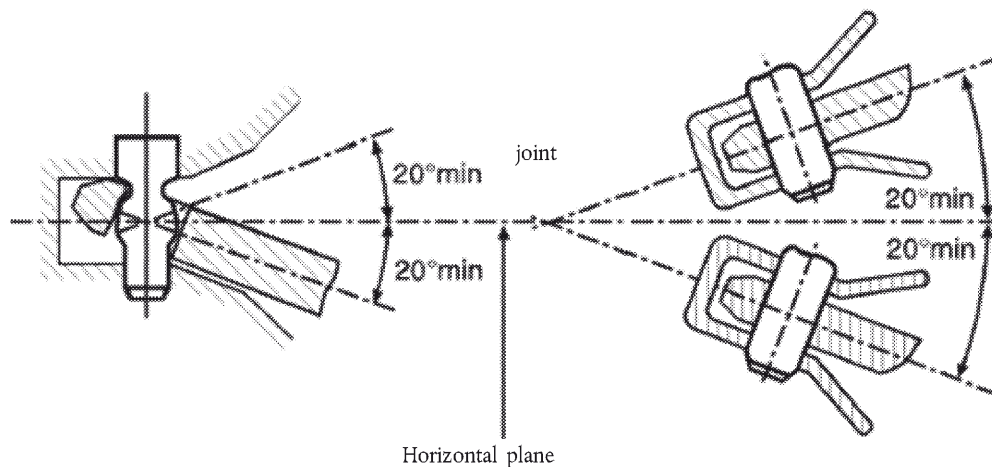
The drawbar eye, when coupled to a drawbar coupling but not fitted to a vehicle, shall have the degrees of articulation given below. If part of the articulation is provided by a special joint (Class C50-X drawbar couplings only), the field of application, given in the communication form shown in annex 1, shall be restricted to the cases stated in annex 7, paragraph 1.3.8.

3.4.1. $\pm 90^\circ$ horizontally about the vertical axis from the longitudinal axis of the vehicle — see Figure 5.



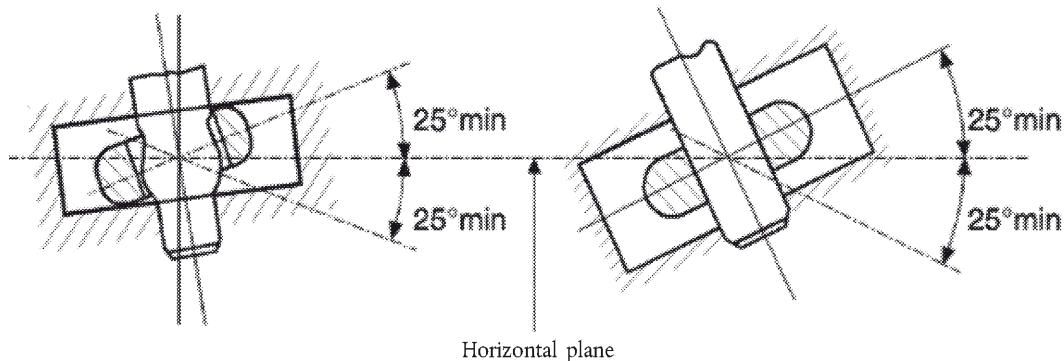
3.4.2. $\pm 20^\circ$ vertically about the transverse axis from the horizontal plane of the vehicle — see Figure 6.

Figure 6

Vertical rotation of the coupled drawbar eye

3.4.3. $\pm 25^\circ$ axial rotation about the longitudinal axis from the horizontal plane of the vehicle — see Figure 7.

Figure 7

Axial rotation of the coupled drawbar eye

3.5. Locking to prevent inadvertent uncoupling:

In the closed position the coupling pin shall be locked by two positive mechanical engagement locking devices each of which shall remain effective should the other fail.

The closed and locked position of the coupling shall be clearly indicated externally by a mechanical device. It shall be possible to verify the position of the indicator by feel, for example, in the dark.

The mechanical indication device shall indicate the engagement of both locking devices (an AND condition).

However, it is sufficient for the engagement of only one locking device to be indicated if, in this situation, engagement of the second locking device is an inherent feature of the design.

3.6. Hand levers

Hand levers shall be of a design suitable for easy use with the end rounded off. The coupling shall not have any sharp edges or points of possible pinching near the hand lever which could result in injury during operation of the coupling. The force needed to release the coupling, measured without the drawbar eye, shall not exceed 250 N perpendicular to the hand lever along the line of operation.

3.7. Special requirements for standard drawbar couplings of Class C50-1 to C50-6:

3.7.1. The swivel motion of the drawbar eye about the transverse axis must be achieved through the spherical shape of the coupling pin (and not by means of a joint);

3.7.2. Tensile and compressive shock loads along the longitudinal axis due to the clearance between the coupling pin and the drawbar eye shall be attenuated by spring and/or damping devices (except C50-1).

3.7.3. The dimensions shall be as given in Figure 8 and Table 4.

3.7.4. The couplings shall be suitable and tested for the characteristic values given in Table 5.

3.7.5. The coupling shall be opened by means of a hand lever at the coupling (no remote control).

Figure 8

Dimensions of standard drawbar couplings (mm) (see Table 4)

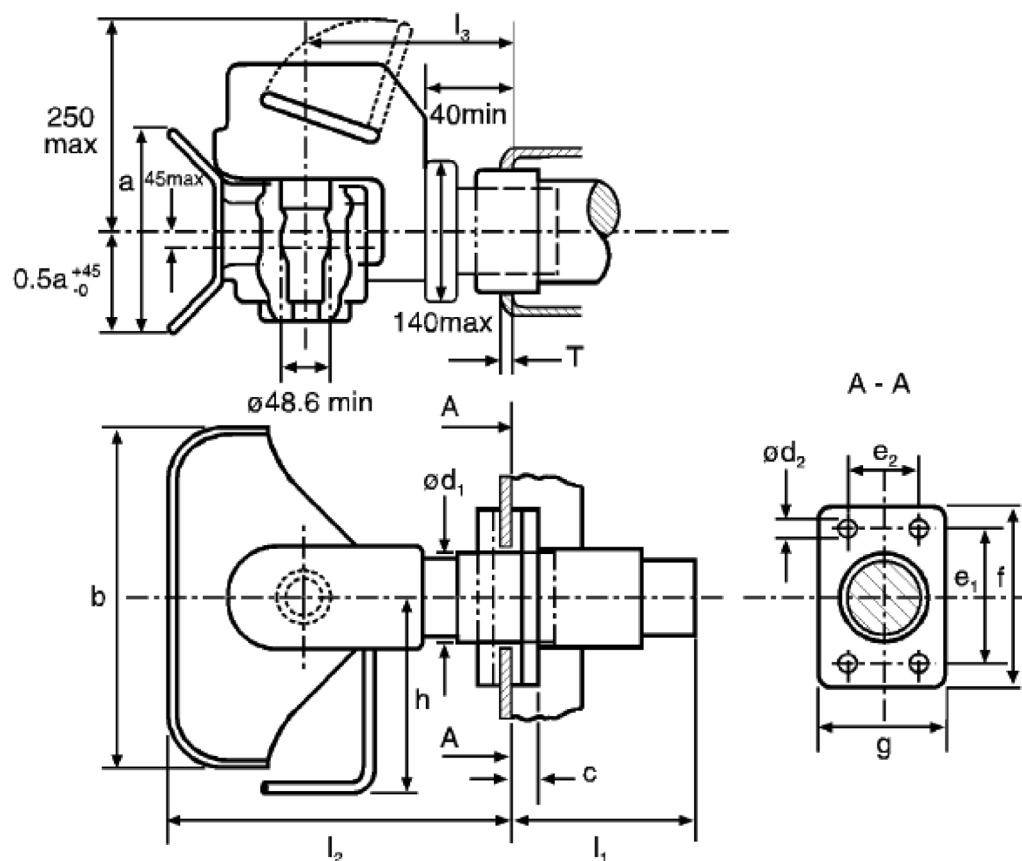


Table 4

Dimensions of standard drawbar couplings (mm) (see Figure 8)

Class	C50-1	C50-2	C50-3	C50-4	C50-5	C50-6 C50-7	Remarks
e ₁	83	83	120	140	160	160	± 0,5
e ₂	56	56	55	80	100	100	± 0,5
d ₁	—	54	74	84	94	94	maximum
d ₂	10,5	10,5	15	17	21	21	H13
f	110	110	155	180	200	200	+ 6,0 – 0
g	85	85	90	120	140	140	± 3,0
a	100	170	200	200	200	200	+ 20,0 – 0
b	150	280	360	360	360	360	+ 20,0 – 0
c	20	20	24	30	30	30	maximum
h	150	190	265	265	265	265	maximum
l ₁	—	150	250	300	300	300	maximum
l ₂	150	300	330	330	330	330	maximum
l ₃	100	160	180	180	180	180	± 20,0
T	—	15	20	35	35	35	maximum

Table 5

Characteristic values for standard drawbar couplings

Class	C50-1	C50-2	C50-3	C50-4	C50-5	C50-6	C50-7
D	18	25	70	100	130	190	190
D _c	18	25	50	70	90	120	130
S	200	250	650	900	1 000	1 000	1 000
V	12	10	18	25	35	50	75

D = maximum D value (kN)

D_c = maximum D value (kN) for centre axle trailer applications

S = maximum static vertical load on coupling (kg)

V = maximum V value (kN)

4. DRAWBAR EYES

4.1. General requirements for drawbar eyes of Class D50:

All drawbar eyes of Class D50 shall be able to satisfy the test stated in annex 6, paragraph 3.4.

Class D50 drawbar eyes are intended for use with C50 drawbar couplings. Drawbar eyes shall not be able to rotate axially (because the respective couplings can rotate).

If Class D50 drawbar eyes are fitted with sleeves, they shall comply with the dimensions shown in Figure 9 (not permitted for Class D50-C) or Figure 10.

The sleeves must not be welded into the drawbar eyes.

Class D50 drawbar eyes shall have the dimensions given in paragraph 4.2. The form of shank for drawbar eyes of Class D50-X is not specified, but for a distance of 210 mm from the centre of the eye the height 'h' and the width 'b' shall be within the limits given in Table 6.

Figure 9

Slotted sleeve for Class D50 drawbar eyes

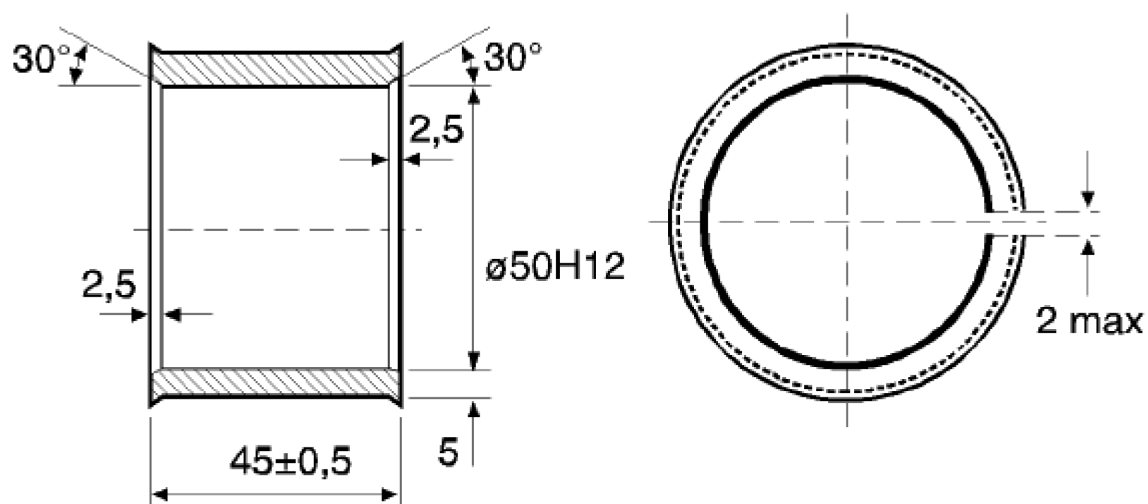


Figure 10

Non-slotted sleeve for Class D50-C drawbar eyes

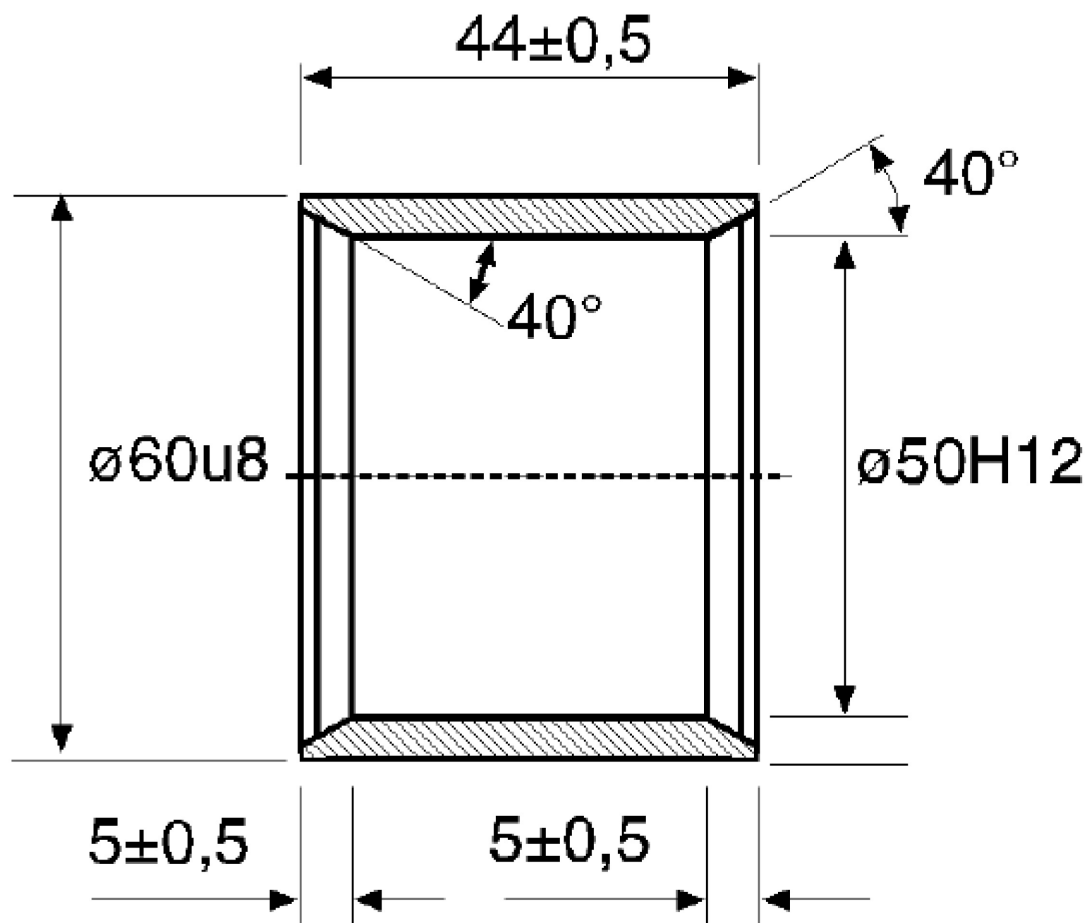
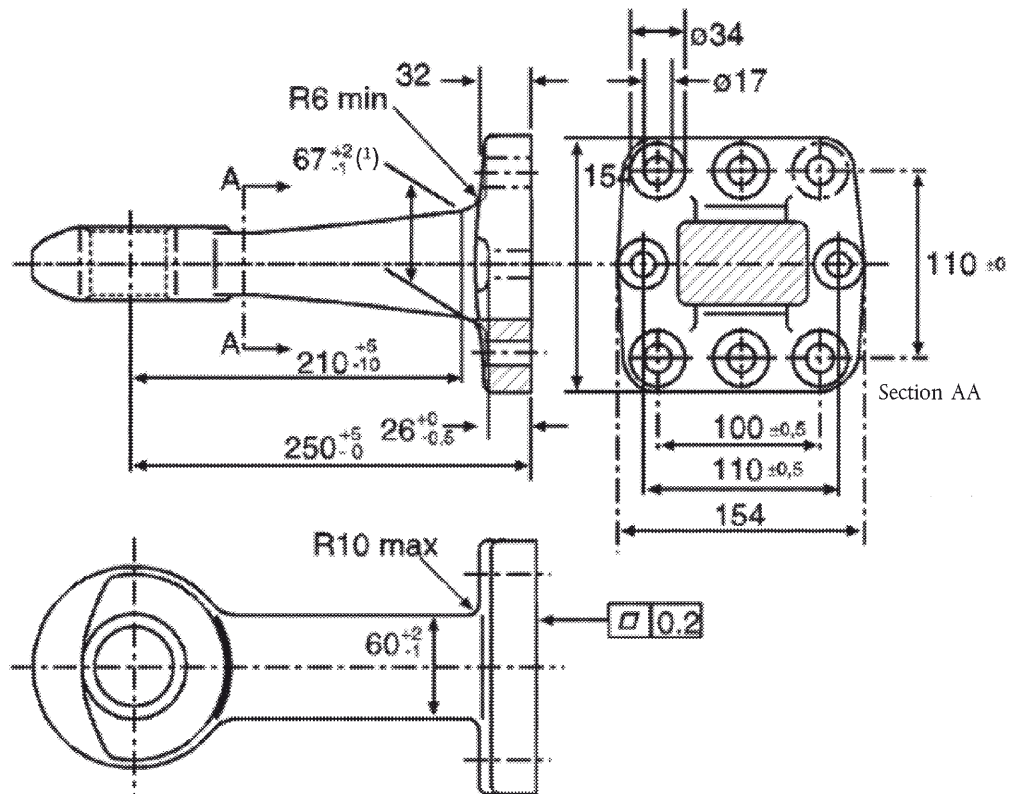


Figure 13

Dimensions of Classes D50-C and D50-D drawbar eyes (see other dimensions in Figure 11)



4.2.4. Classes D50-C and D50-D drawbar eyes shall be fitted with non slotted sleeves shown in Figure 10.

4.3. Load values for standard drawbar eyes

Standard drawbar eyes and the means of attachment shall be suitable for, and tested for, the load values stated in Table 7.

4.4. General requirements for Class L toroidal drawbar eyes:

4.4.1. Class L toroidal drawbar eyes are intended for use with Class K hook type couplings

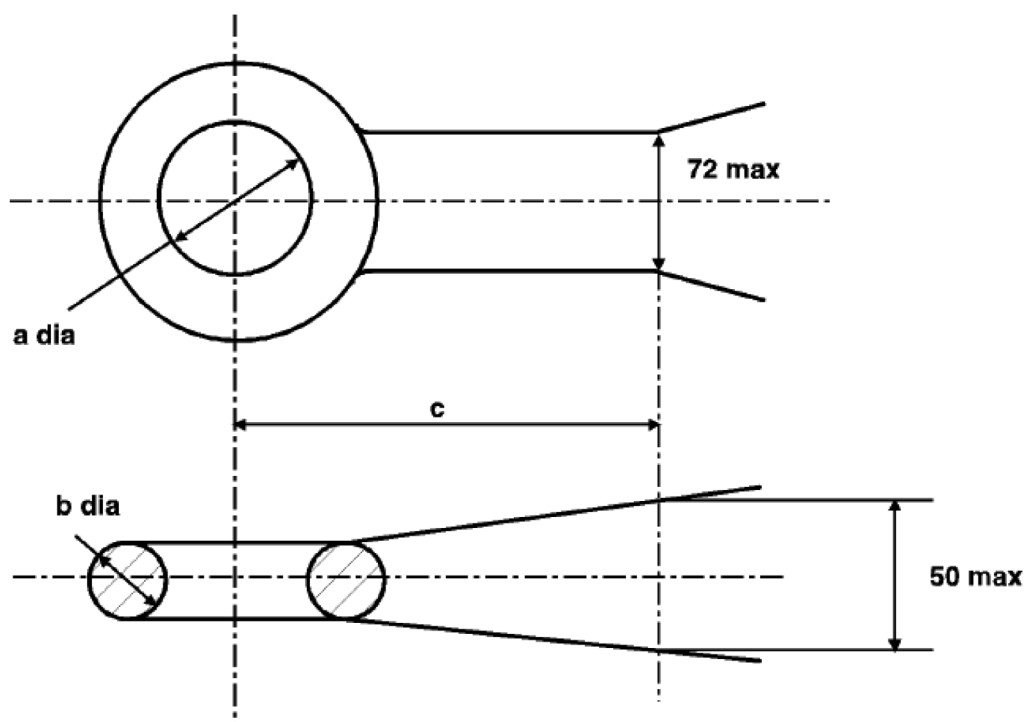
4.4.2. When used with a Class K hook type coupling they shall meet the requirements for articulation given in paragraph 10.2 of this annex.

4.4.3. Class L toroidal drawbar eyes shall have the dimensions given in Figure 14 and Table 8.

(¹) For Class D50-D drawbar eyes this dimension shall be '80 max.'.

Figure 14

Dimensions of Class L toroidal drawbar eyes (see Table 8)



- 4.4.4. Class L toroidal drawbar eyes shall satisfy the tests given in annex 6, paragraph 3.4 and shall be suitable for the characteristic values given in Table 9.

Table 8

Dimensions of Class L toroidal drawbar eyes (see Figure 14)

(in mm)						
Class	L1	L2	L3	L4	L5	Remarks
a	$68 + 1,6/- 0,0$	$76,2 \pm 0,8$	$76,2 \pm 0,8$	$76,2 \pm 0,8$	$68 + 1,6/- 0,0$	
b	$41,2 \pm 0,8$	$41,2 \pm 0,8$	$41,2 \pm 0,8$	$41,2 \pm 0,8$	$41,2 \pm 0,8$	
c	70	65	65	65	70	Min

Table 9

Characteristic values for Class L toroidal drawbar eyes

Class	L1	L2	L3	L4	L5
D kN	30	70	100	130	180
D _c kN	27	54	70	90	120

Class	L1	L2	L3	L4	L5
S kg	200	700	950	1 000	1 000
V kN	12	18	25	35	50

5. DRAWBARS

5.1. Drawbars of class E shall satisfy the tests prescribed in annex 6, paragraph 3.3.

5.2. In order to provide a connection to the towing vehicle, the drawbars can be fitted either with coupling heads as in paragraph 2 or drawbar eyes as in paragraph 4 of this annex. The coupling heads and drawbar eyes can be attached by screwing, bolting or welding.

5.3. Height adjusting devices for hinged drawbars

5.3.1. Hinged drawbars shall be fitted with devices for adjusting the drawbar to the height of the coupling device or jaw. These devices shall be designed so that the drawbar can be adjusted by one person without tools or any other aids.

5.3.2. Height adjusting devices shall be able to adjust the drawbar eyes or ball couplings from the horizontal above the ground at least 300 mm upwards and downwards. Within this range the drawbar shall be adjustable steplessly, or in maximum steps of 50 mm measured at the drawbar eye or ball coupling.

5.3.3. Height adjusting devices shall not interfere with the easy movement of the drawbar after coupling.

5.3.4. The height adjusting devices shall not interfere with the action of any inertia, overrun type, brake.

5.4. In the case of drawbars combined with inertia, overrun, brakes, the distance between the centre of the drawbar eye and the end of the free shank of the drawbar eye shall not be less than 200 mm in the brake application position. With the shank of the drawbar eye fully inserted the distance shall not be less than 150 mm.

5.5. Drawbars for use on centre axle trailers shall possess at least half the moment of resistance against lateral forces as against vertical forces.

6. DRAWBEAMS

6.1. Drawbeams of Class F shall satisfy the tests prescribed in annex 6, paragraph 3.3.

6.2. The drilling pattern for mounting of Class C standard drawbar couplings shall be in accordance with Figure 15 and Table 10 below.

6.3. Drawbeams shall not be welded to the chassis, bodywork or other part of the vehicle.

Figure 15

Mounting dimensions for standard drawbar couplings (see Table 10)

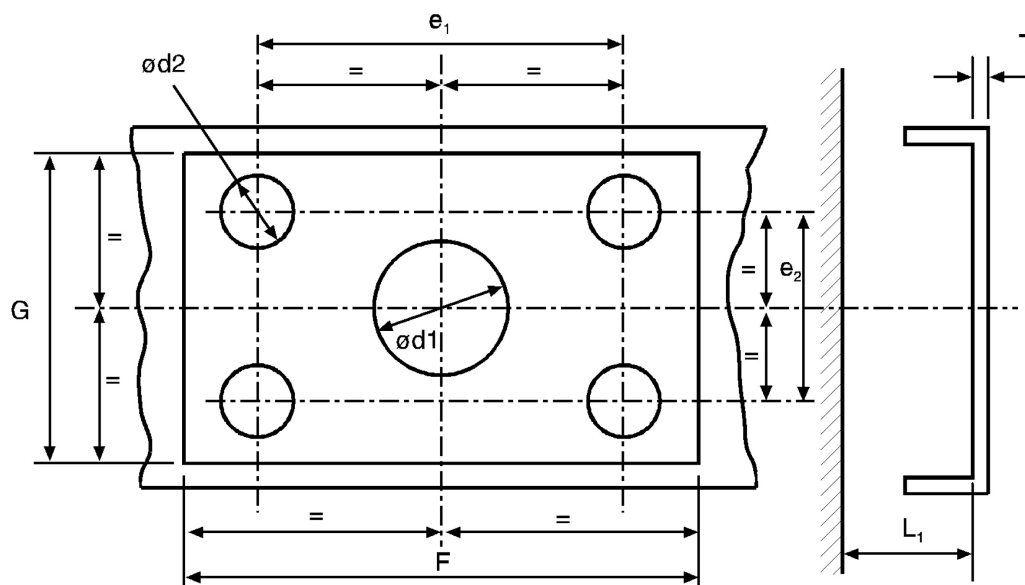


Table 10

Mounting dimensions for standard drawbar couplings (see Figure 15)

(in mm)							
Class	C50-1	C50-2	C50-3	C50-4	C50-5	C50-6 C50-7	Remarks
e_1	83	83	120	140	160	160	$\pm 0,5$
e_2	56	56	55	80	100	100	$\pm 0,5$
d_1	—	55	75	85	95	95	$+ 1,0/- 0,5$
d_2	10,5	10,5	15	17	21	21	H13
T	—	15	20	35	35	35	maximum
F	120	120	165	190	210	210	minimum
G	95	95	100	130	150	150	minimum
L_1	—	200	300	400	400	400	minimum

7. FIFTH WHEEL COUPLINGS AND STEERING WEDGES

The requirements of paragraphs 7.1 to 7.7 are applicable to all fifth wheel couplings of Class G50.

Additional requirements which shall be fulfilled by standard coupling devices are given in paragraph 7.9.

Steering wedges shall satisfy the requirements listed in paragraph 7.8.

7.1. Suitable fifth wheel coupling pins

Class G50 fifth wheel couplings shall be designed so that they can be used with Class H50 coupling pins and, together, provide the specified characteristics.

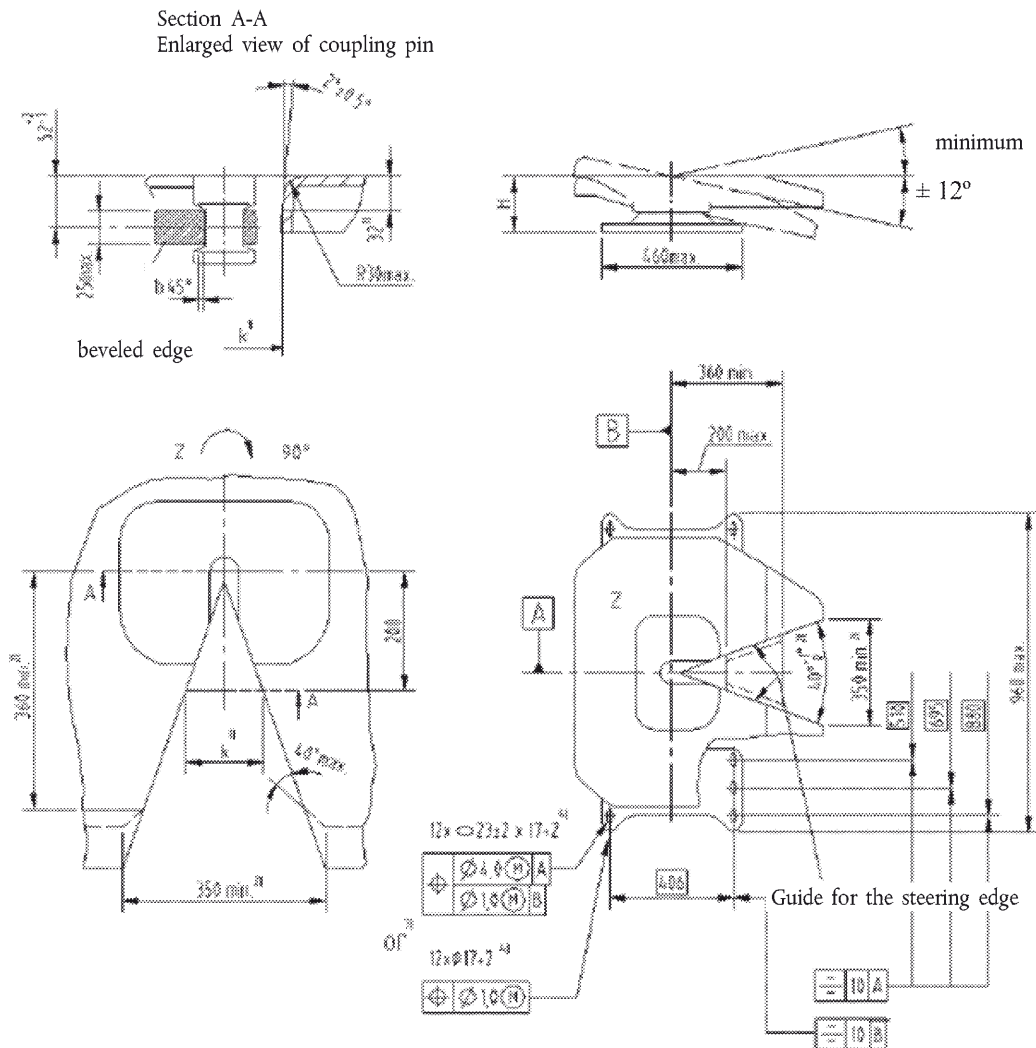
7.2. Guides

Fifth wheel couplings shall be equipped with a guide which ensures safe and correct engagement of the coupling pin. The entry width of the guide for standard 50 mm diameter fifth wheel couplings shall be at least 350 mm (see Figure 16).

For small, non-standard, fifth wheel couplings of Class G50-X and having a maximum 'D' value of 25 kN, the entry width shall be at least 250 mm.

Figure 16

Dimensions of standard fifth wheel couplings (see Table 11)



Notes:

1. To provide for the use of steering wedges, measure the reference dimension $k = 137 \pm 3$ mm at 32 mm below the top surface and at a distance of 200 mm from the transverse centre line of the coupling.
2. The $40^\circ + 1^\circ/-0^\circ$ throat angle must be maintained over a distance of 360 mm minimum from the transverse centre line of the coupling. The entry width of 350 mm minimum may be obtained outside this distance by increasing the entry angle up to an included angle of 120° maximum as shown in dotted line.
3. Elongated mounting holes 23 ± 2 mm $\times$ $17 \pm 2/-0$ mm or round mounting holes Dia. $17 \pm 2/-0$ mm could be used.
4. When using elongated holes or holes > 18 mm diameter, washers 40 mm diameter, 6 mm thick, or means of equal strength, e.g. flat steel plate, are to be used.

It shall not be possible for the locking devices to be released inadvertently. Release shall require intentional action by the driver or operator of the vehicle.

The closed and locked position of the coupling shall be indicated visually by a mechanical device and it shall be possible to verify the position of the indicator by feel, for example, to allow the position to be checked during darkness. The indication device shall indicate the engagement of both primary and secondary locking devices, however, it is sufficient for the engagement of only one device to be indicated if, in this case, the engagement of the other device is a simultaneous and inherent feature of the design.

7.5. Operating devices or release mechanisms

In the closed position the operating devices or release mechanisms shall be prevented from being operated inadvertently or accidentally. The locking system shall be such as to require positive, conscious action to release the locking device in order to operate coupling release mechanism.

7.6. Surface finish

The surfaces of the coupling plate and coupling lock shall be functionally satisfactory and be carefully machined, forged, cast or pressed.

7.7. Load requirements

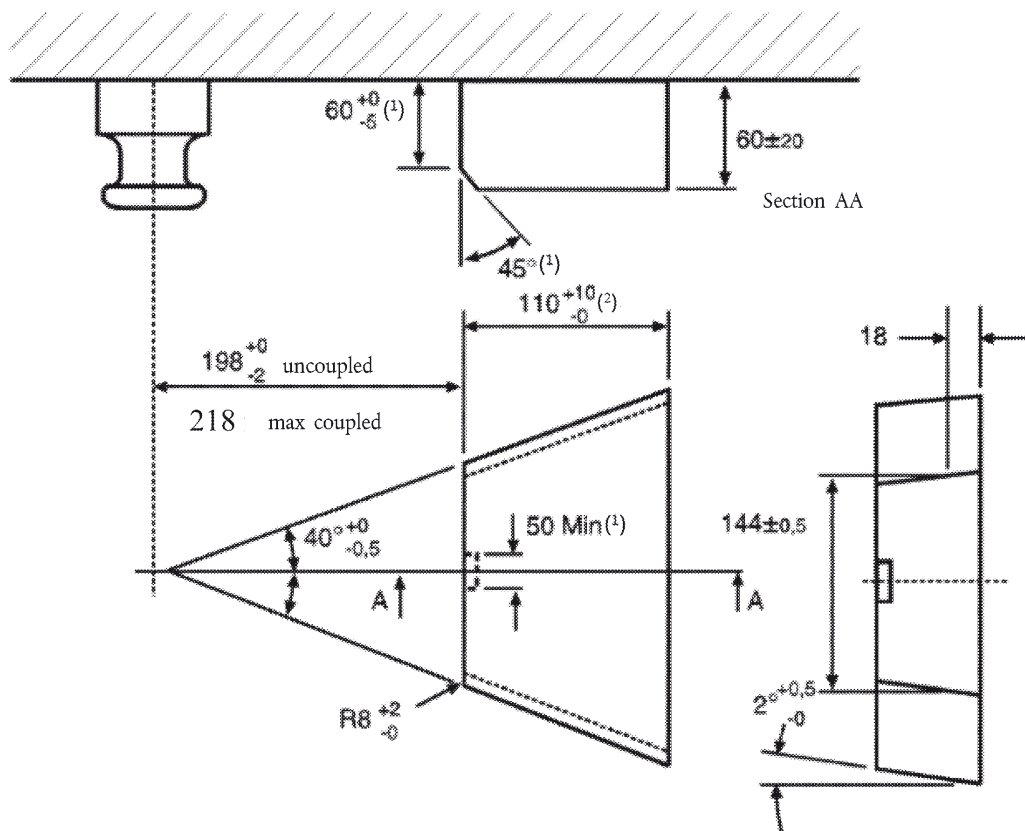
All fifth wheel couplings shall be able to satisfy the tests described in annex 6, paragraph 3.7.

7.8. Steering wedges

7.8.1. The dimensions of steering wedges for the positive steering of semitrailers shall be as in Figure 17.

Figure 17

Dimensions of spring-mounted steering wedges



⁽¹⁾ Only applicable to steering wedges over 60 mm thick.

⁽²⁾ This dimension only refers to the functional surface: the steering wedge itself can be longer.

7.8.2. The steering wedge shall allow safe and correct coupling and shall be spring-mounted. The strength of the spring shall be selected so that it is possible to couple an unloaded semitrailer and so that, with the semitrailer fully loaded the steering wedge is firmly in contact with the flanks of the coupling during use. Uncoupling of the fifth wheel shall be possible with the semitrailer both loaded and unloaded.

7.9. Special requirements for standard fifth wheel couplings:

7.9.1. the dimensions shall be as shown in Figure 16 and Table 11.

7.9.2. they shall be suitable for, and tested for, a D value of 150 kN and a U value of 20 tonnes.

7.9.3. release shall be possible by a hand lever mounted directly on the coupling.

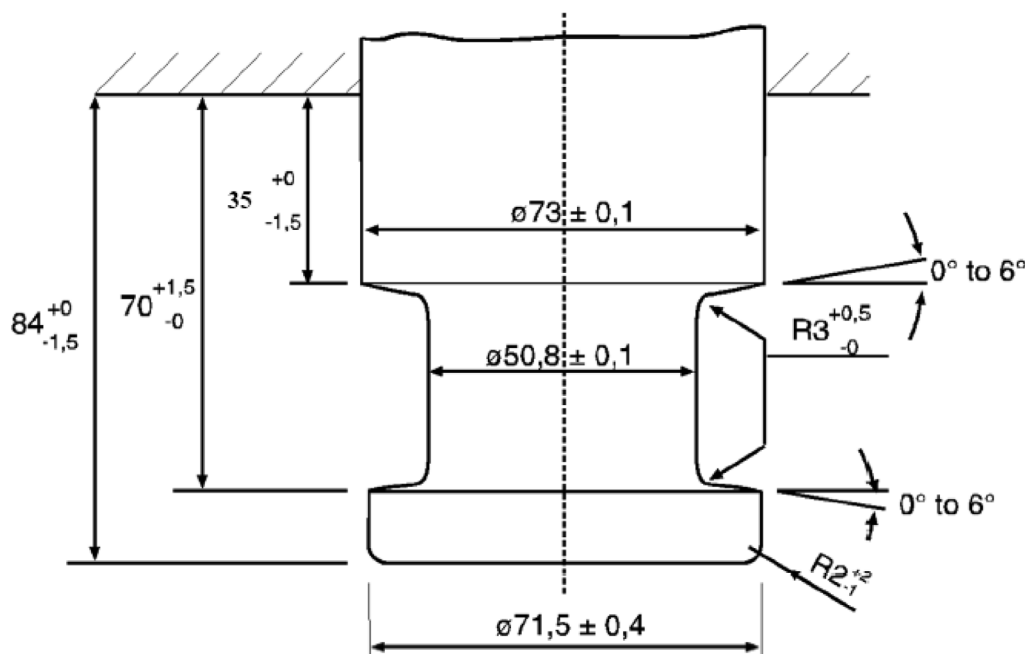
7.9.4. they shall be suitable for the positive steering of semitrailers by means of steering wedges — see paragraph 7.8.

8. FIFTH WHEEL COUPLING PINS

8.1. Fifth wheel coupling pins of Class H50 (ISO 337) shall have the dimensions shown in Figure 18.

Figure 18

Dimensions of Class H50 fifth wheel coupling pins



8.2. The coupling pins shall be able to satisfy the tests described in annex 6, paragraph 3.9.

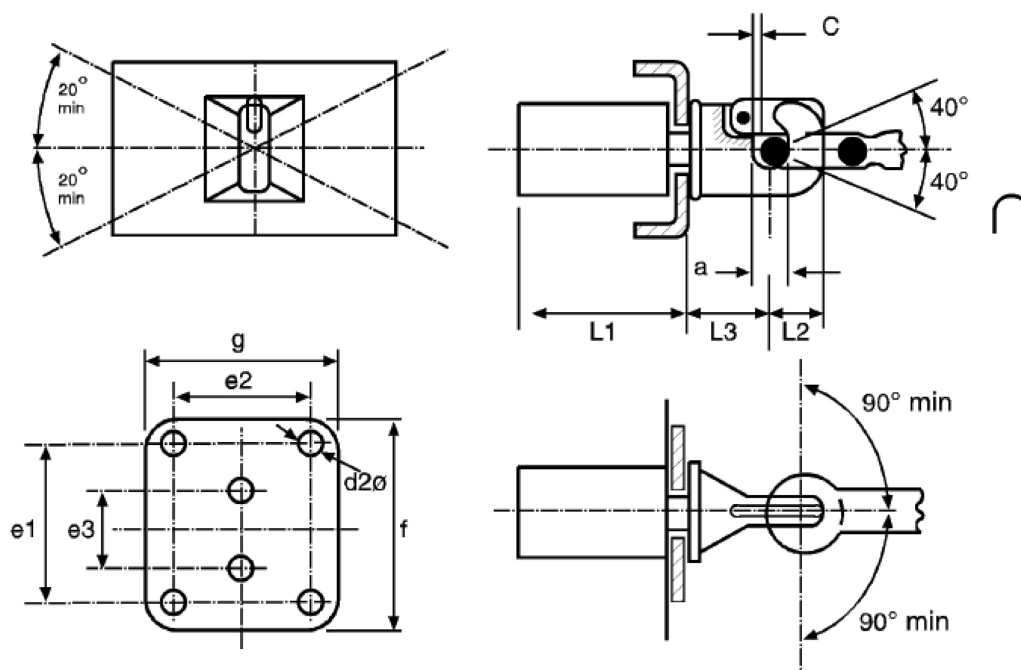
9. MOUNTING PLATES

9.1. Class J mounting plates for fifth wheel couplings shall have circular mounting holes positioned as shown in Figure 16a if they are intended for standard fifth wheel couplings. However, the mounting holes shall be 17 mm + 2,0 mm/- 0,0 mm diameter. The holes shall be circular, NOT slotted (see Figure 16a).

- 9.2. Mounting plates for standard fifth wheel couplings shall be suitable for the positive steering of semitrailers (with steering wedges). Mounting plates for non-standard fifth wheel couplings which are unsuitable for positive steering shall be marked appropriately.
- 9.3. Mounting plates for fifth wheel couplings shall be able to satisfy the tests described in annex 6, paragraph 3.8.
10. HOOK TYPE COUPLINGS
- 10.1. General requirements for Class K hook type couplings:
- 10.1.1. All Class K hook type couplings shall satisfy the tests given in annex 6, paragraph 3.5 and shall be suitable for the characteristic values given in Table 13
- 10.1.2. Class K hook type couplings shall have the dimensions given in Figure 19 and Table 12. Class K1 to K4 are non-automatic couplings for use only on trailers not exceeding 3,5 tonnes maximum permissible mass and Class KA1 to KA3 are automatic couplings.

Figure 19

Dimensions and articulation of Class K hook type couplings



- 10.1.3. A hook type coupling shall only be used with a toroidal drawbar eye and when used with a Class L toroidal drawbar eye the Class K coupling shall have the degrees of articulation given in paragraph 10.2 of this annex.
- 10.1.4. A Class K hook type coupling shall be used with a toroidal eye giving a minimum clearance, or free movement, of 3 mm and a maximum clearance of 5 mm when new. Suitable drawbar eyes shall be declared by the coupling manufacturer on the Communication form shown in annex 1.

10.2. A Class K coupling when used with a Class L toroidal eye, but not fitted to a vehicle, shall have the following non-simultaneous angles of articulation — see also Figure 19:

10.2.1. $\pm 90^\circ$ horizontally about the vertical axis of the coupling;

10.2.2. $\pm 40^\circ$ vertically about the horizontal transverse axis of the coupling;

10.2.3. $\pm 20^\circ$ axial rotation about the horizontal longitudinal center line of the coupling.

10.3. Automatic Class K hook type couplings shall have a jaw designed such that the drawbar eye is guided into the coupling.

10.4. Locking to prevent inadvertent uncoupling:

In the closed position the coupling shall be locked by two positive mechanical engagement locking devices each of which shall remain effective should the other fail.

The closed and locked position of the coupling shall be clearly indicated externally by a mechanical device. It shall be possible to verify the position of the indicator by feel, for example, in the dark.

The mechanical indication device shall indicate the engagement of both locking devices (an AND condition).

However, it is sufficient for the engagement of only one locking device to be indicated if, in this situation, engagement of the second locking device is an inherent feature of the design.

10.5. Hand levers

Hand levers shall be of a design suitable for easy use with the end rounded off. The coupling shall not have any sharp edges or points of possible pinching near the hand lever which could result in injury during operation of the coupling. The force needed to release the coupling, measured without the drawbar eye, shall not exceed 250 N perpendicular to the hand lever along the line of operation.

Table 12

Dimensions for Class K hook type couplings (see Figure 19)

Class	K1	K2	K3	K4	KA1	KA2	KA3	Remarks
e ₁	—	83	83	120	120	140	160	$\pm 0,5$
e ₂	—	56	56	55	55	80	100	$\pm 0,5$
e ₃	90	—	—	—	—	—	—	$\pm 0,5$
d ₂	17	10,5	10,5	15	15	17	21	H13
c	3	3	3	3	3	3	3	Min
f	130	175	175	180	180	200	200	Max
g	100	100	100	120	120	140	200	Max
a	45	45	45	45	45	45	45	+ 1,6/– 0,0
L ₁	120	120	120	120	250	300	300	Max
L ₂	74	74	63	74	90	90	90	Max
L ₃	110	130	130	150	150	200	200	Max

Table 13

Characteristic values for Class K hook type couplings

Class	K1	K2	K3	K4	KA1	KA2	KA3
D kN	17	20	20	25	70	100	130
D _c kN	—	—	17	20	54	70	90
S kg	120	120	200	250	700	900	1 000
V kN	—	—	10	10	18	25	35

11. DEDICATED DRAWBAR TYPE COUPLINGS — CLASS T

- 11.1. Class T dedicated drawbar type couplings are intended for use on specific vehicle combinations, for example, car transporters. These vehicles have special structures and may need particular and unusual location of the coupling.
- 11.2. Class T couplings shall be restricted to use with centre axle trailers and this restriction shall be notified on the Communication form shown in annex 1.
- 11.3. Class T couplings shall be approved as a matched pair and it shall not be possible to separate the coupling other than in a workshop using tools which are not normally carried on the vehicle.
- 11.4. Class T couplings shall not be automatic in operation.
- 11.5. Class T couplings shall satisfy the relevant test requirements given in annex 6, paragraph 3.3, except paragraph 3.3.4.
- 11.6. The following minimum and simultaneous angles of articulation shall be possible with the coupling not fitted to a vehicle but assembled, and in the same normal position as when fitted to a vehicle;
- 11.6.1. $\pm 90^\circ$ horizontally about the vertical axis;
- 11.6.2. $\pm 8^\circ$ vertically about the horizontal transverse axis;
- 11.6.3. $\pm 3^\circ$ axial rotation about the horizontal longitudinal axis.

12. DEVICES FOR REMOTE INDICATION AND REMOTE CONTROL**12.1. General requirements**

Devices for remote indication and remote control are permitted only on automatic coupling devices of Classes C50-X and G50-X.

Devices for remote indication and remote control shall not interfere with the minimum free movement of the coupled drawbar eye or coupled semitrailer. They shall be permanently fitted to the vehicle.

All the devices for remote indication or remote control fall within the scope of testing and approval of the coupling device together with all parts of the operating devices and transmission devices.

12.2. Remote indication

- 12.2.1. For an automatic coupling procedure, remote indication devices shall indicate the closed and doubly locked position of the coupling in an optical manner according to paragraph 12.2.2. Additionally the open position may be indicated as in paragraph 12.2.3.

The remote indication device shall be automatically activated and reset during every opening and closing of the coupling.

- 12.2.2. The change from the open to the closed and doubly locked position shall be indicated by a green optical signal.
- 12.2.3. If the open and/or unlocked position is indicated, a red optical signal shall be used.
- 12.2.4. In the case of indicating the completion of the automatic coupling procedure, the remote indicator shall ensure that the coupling pin has reached the doubly locked end position.
- 12.2.5. The appearance of any fault in the remote indication system shall not indicate a closed and locked position during the coupling procedure if the end position has not been reached.
- 12.2.6. The disengagement of one of the two locking devices shall cause the green optical signal to extinguish and the red optical signal (if fitted) to show.
- 12.2.7. The mechanical indicators fitted directly to the coupling device shall be retained.
- 12.2.8. In order to avoid distracting the driver during normal driving, there shall be a provision for switching off the remote indication device but this shall be automatically reactivated when the coupling is next opened and closed — see paragraph 12.2.1.
- 12.2.9. The operating controls and indicators of the remote indication devices shall be mounted within the driver's field of vision and be permanently and clearly identified.

12.3. Remote control

- 12.3.1. If a remote control device, as defined in paragraph 2.8 of this Regulation, is employed, there shall also be a remote indication device as described in paragraph 12.2 which shall at least indicate the open condition of the coupling.
- 12.3.2. There shall be a dedicated switch (i. e. master switch, lever or valve) to enable the coupling to be opened or closed by means of the remote control device. If this master switch is not located in the driving cab it shall not be in a position where it is freely accessible to unauthorized persons or it shall be lockable. The actual operation of the coupling from the driving cab may only be possible when inadvertent operation has been precluded, for example by an operation requiring the use of two hands.
- It shall be possible to ascertain whether opening of the coupling under remote control has been completed or not.
- 12.3.3. If remote control involves the coupling being opened by external force, the condition under which the external force acts on the coupling shall be indicated appropriately to the driver. This is not necessary if the external force is only operative while the remote control is operating.
- 12.3.4. If the actuating device for opening the coupling under remote control is mounted externally on the vehicle it shall be possible to oversee the area between the coupled vehicles, but it shall not be necessary, however, to enter this area in order to operate it.
- 12.3.5. Any single error in operation or the occurrence of any single fault in the system shall not result in accidental opening of the coupling during normal road use. Any faults in the system shall be indicated directly or be immediately obvious at the next operation e.g. by a malfunction.
- 12.3.6. In the event of a failure of the remote control it shall be possible, in an emergency, to open the coupling in at least one other way. If this requires the use of a tool then this shall be included in vehicle's tool kit. The requirements of paragraph 3.6 of this annex are not applicable to hand levers used exclusively for opening the coupling in an emergency.
- 12.3.7. The operating controls and indicators for the remote control devices shall be permanently and clearly identified.
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ANNEX 6

Testing of mechanical coupling devices or components**1. GENERAL TESTING REQUIREMENTS**

- 1.1. Samples of coupling devices shall be tested for both strength and function. Physical testing shall be carried out wherever possible but unless stated otherwise the type approval authority or technical service may waive a physical strength test if the simple design of a component makes a theoretical check possible. Theoretical checks may be carried out to determine worst case conditions. In all cases, theoretical checks shall ensure the same quality of results as with dynamic or static testing. In cases of doubt it is the results of physical testing that are overriding.

See also paragraph 4.8 of this Regulation.

- 1.2. With coupling devices the strength shall be verified by a dynamic test (endurance test). In certain cases additional static tests may be necessary (see paragraph 3 of this annex).
- 1.3. The dynamic test (except the test according to paragraph 3.10 of this annex) shall be performed with approximately sinusoidal load (alternating and/or pulsating) with a number of stress cycles appropriate to the material. No cracks or fractures shall occur.
- 1.4. Only slight permanent deformation is permitted with the static tests prescribed. Unless stated otherwise the permanent, plastic, deformation after releasing shall not be more than 10 per cent of the maximum deformation measured during the test. In the case where measurement of deformation during the test puts the tester at risk then, provided that the same parameter is checked during other tests, such as the dynamic test, then this part of the static test may be omitted.
- 1.5. The loading assumptions in the dynamic tests are based on the horizontal force component in the longitudinal axis of the vehicle and the vertical force component. Horizontal force components transverse to the longitudinal axis of the vehicle, and moments, are not taken into account provided they are of only minor significance. This simplification is not valid for the test procedure according to paragraph 3.10 of this annex.

If the design of the coupling device or its attachment to the vehicle or the attachment of additional systems (such as stabilizers, close coupling devices, etc.) generate additional forces or moments, additional tests may be required by the type approval authority or technical service.

The horizontal force component in the longitudinal axis of the vehicle is represented by a theoretically determined reference force, the D or D_c value. The vertical force component, where applicable, is represented by the static vertical bearing load, S , at the point of coupling and the assumed vertical load, V , or by the static vertical bearing load, U , in the case of fifth wheel couplings.

- 1.6. The characteristic values D , D_c , S , V and U , on which the tests are based and which are defined in paragraph 2.11 of this Regulation, shall be taken from the manufacturer's information given in the application for type approval — see communication form shown in annexes 1 and 2.
- 1.7. Any positive locking device, which is retained in position by spring force, shall remain in its secured position when subjected to a force applied in the least favourable direction and equivalent to three times the mass of the locking mechanism.

2. TEST PROCEDURES

In case the test procedure according to paragraph 3.10 of this annex is used, paragraphs 2.1, 2.2, 2.3 and 2.5 are not applicable.

- 2.1. For the dynamic tests and static tests, the sample shall be placed in a suitable rig with a means of force application, such that it is not subjected to any additional forces or moments apart from the specified test force. In the case of alternating tests, the direction of force application shall not deviate by more than $\pm 1^\circ$ from the specified direction. In the case of pulsating and static tests, the angle shall be set for the maximum test force. This will normally require a joint at the point of force application (i.e. the point of coupling) and a second joint an adequate distance away.
- 2.2. The test frequency shall not exceed 35 Hz. The selected frequency shall be well separated from resonance frequencies of the test set up including the tested device. With asynchronous testing the frequencies of the two force components shall be between approximately 1 per cent and a maximum of 3 per cent apart. For coupling devices made from steel the number of stress cycles is 2×10^6 . For devices made from materials other than steel a higher number of cycles may be necessary. The dye-penetration method of crack testing or an equivalent method shall be used to determine any cracking during test.
- 2.3. With pulsating tests, the test force varies between the maximum test force and a lower, minimum, test force, which may not be greater than 5 per cent of the maximum test force unless otherwise stated in the specific testing procedure.
- 2.4. With static tests, other than the special tests required by paragraph 3.2.3 of this annex, the test force shall be applied smoothly and quickly and be maintained for at least 60 seconds.
- 2.5. The coupling devices or component on test should normally be mounted as rigidly as possible on a test rig in the actual position in which they will be used on the vehicle. The fixing devices should be those specified by the manufacturer or applicant and should be those intended for the attachment of the coupling device or component to the vehicle and/or shall have identical mechanical characteristics.
- 2.6. Coupling devices or components shall be tested in the form used on the road. However, at the discretion of the manufacturer, and in agreement with the technical service, flexible components may be neutralized if this is necessary for the test procedure and if this will not have any unrealistic influence on the test result.

Flexible components which are overheated during these accelerated test procedures may be replaced during the test. The test loads may be applied by means of special slack-free devices.

3. SPECIFIC TESTING REQUIREMENTS

In case the test procedure according to paragraph 3.10 of this annex is used, the requirements of paragraphs 3.1.1 to 3.1.6 are not applicable.

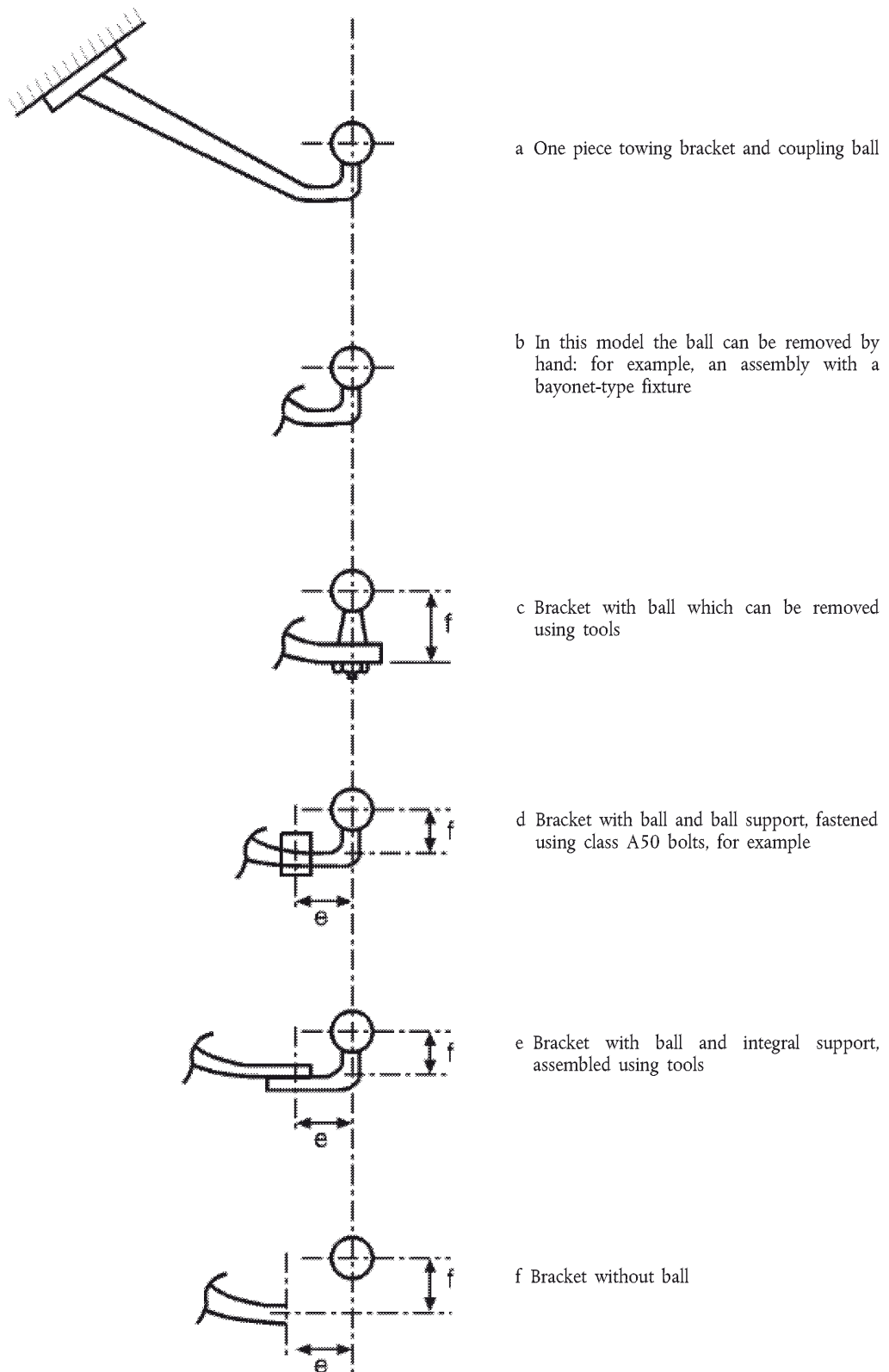
3.1. Coupling balls and towing brackets

3.1.1. Mechanical coupling devices with coupling balls may be of the following types:

- (i) one-piece coupling balls including devices with non-interchangeable detachable balls (see Figures 20a and 20b);
- (ii) coupling balls, comprising a number of parts which can be dismantled (see Figures 20c, 20d and 20e);
- (iii) towing brackets without ball fitted (see Figure 20f).

Figure 20

Arrangements of ball type towing brackets



- 3.1.2. The basic test is a dynamic endurance test. The test sample comprises the coupling ball, the ball neck and the mountings necessary for attaching the assembly to the vehicle. The coupling ball and towing bracket shall be rigidly mounted to a test rig, capable of producing an alternating force, in the actual position in which it is intended for use.
- 3.1.3. The positions of the fixing points for attaching the coupling ball and towing bracket are specified by the vehicle manufacturer (see paragraph 5.3.2 of this Regulation).
- 3.1.4. The devices submitted for test shall be provided with all parts and design details which may have an influence on the strength criteria (for example electrical socket plate, any marking, etc.). The test sample shall include all parts up to the anchorage points or fitting points to the vehicle. The geometric location of the coupling ball and the fixing points of the coupling device related to the reference line shall be provided by the vehicle manufacturer and shall be shown in the test report. All relative positions of the anchorage points with respect to the reference line, for which the towing vehicle manufacturer shall provide all the necessary information to the towing device manufacturer, shall be repeated on the test bed.
- 3.1.5. The sample mounted on the test rig shall be subjected to an alternating stress test applied at an angle to the ball as shown in Figure 21 or 22.

The direction of the angle of test shall be determined by the vertical relationship between a horizontal reference line passing through the centre of the ball and a horizontal line passing through the fixing point of the coupling device which is the highest of the nearest, when measured in a horizontal plane, to a transverse vertical plane passing through the centre of the ball. If the fixing point line is above the horizontal reference line, the test shall be carried out at an angle of $\alpha = +15^\circ \pm 1^\circ$ and if it is below then the test shall be carried out at an angle of $\alpha = -15^\circ \pm 1^\circ$ (see Figure 21). The fixing points to be considered in determining the angle of test shall be those declared by the vehicle manufacturer and which transmit the major towing forces to the structure of the towing vehicle.

This angle is chosen in order to take account of the vertical static and dynamic load and is only applicable for a permitted static vertical load not exceeding:

$$S = 120 \times D \text{ [N]}$$

Where the static vertical load exceeds that calculated above, the angle shall, in both conditions, be increased to 20° .

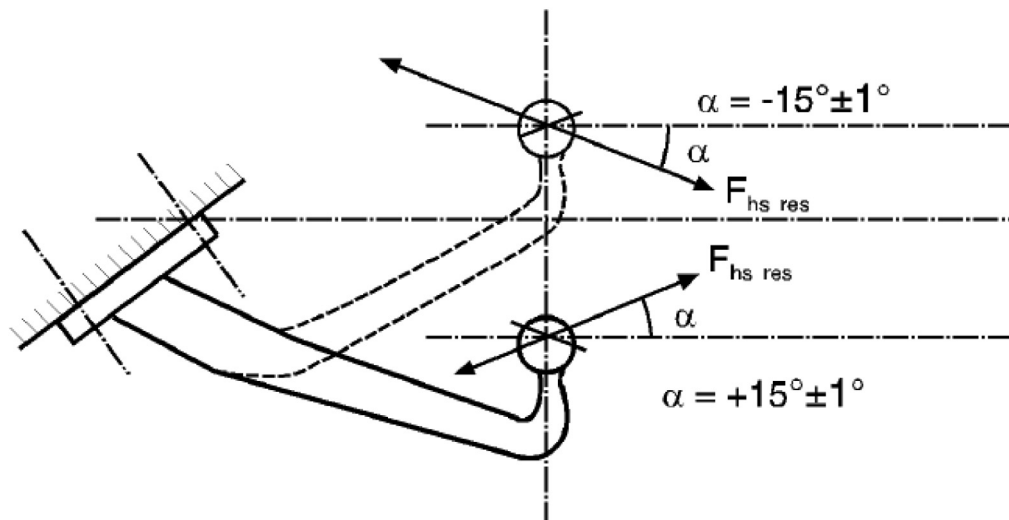
The dynamic test shall be performed with the following test force:

$$F_{hs \text{ res}} = \pm 0,6 D$$

- 3.1.6. The test procedure is applicable to the different types of coupling devices (see paragraph 3.1.1 of this annex) as follows:
- 3.1.6.1. one piece coupling balls including devices with non-interchangeable detachable balls (see Figures 20a and 20b).
- 3.1.6.1.1. the strength test for the devices shown in Figures 20a and 20b shall be carried out according to the requirements of paragraph 3.1.5;

Figure 21

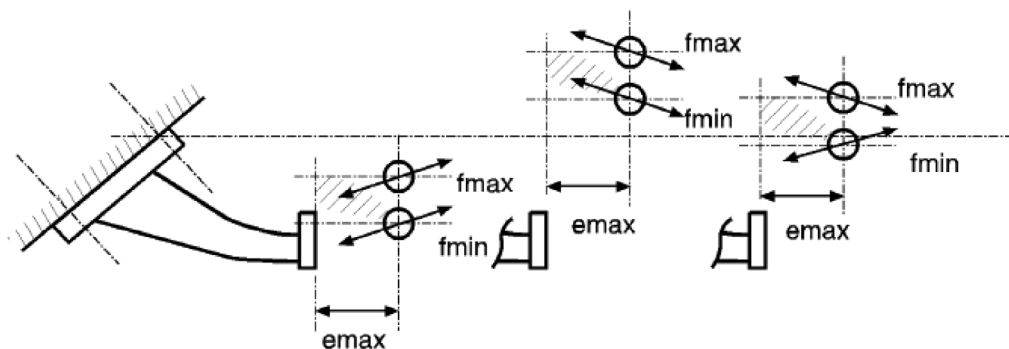
Angles of application of test force



Note: The line parallel to the reference line passes through the centre of the highest and nearest point for mounting the towing bracket to the vehicle — see annex 6, paragraph 3.1.5.

Figure 22

Angles of application of test force



Note: Direction of alternating test force, $F_{hs\ res}$, depending on the location of the ball centre horizontal reference line in relation to the line parallel to this reference line — see Figure 21.

3.1.6.2. coupling balls, comprising parts which can be dismantled.

The following categories are defined:

- (a) towing bracket and ball (see Figure 20c);
- (b) towing bracket and ball on integral support (see Figure 20d);
- (c) towing bracket with detachable ball (see Figure 20e);
- (d) towing bracket without ball (see Figure 20f).

3.1.6.2.1. The strength test for the devices shown in Figures 20c to 20f shall be carried out according to the requirements of paragraph 3.1.5. Dimensions e and f, shall have a manufacturing tolerance of ± 5 mm, and shall be stated in the test report.

The test of the towing bracket (see Figure 20f) shall be carried out with a mounted ball (on support). Account will be taken only of the result of the test on the towing bracket between the fixing points and the mounting surface of the ball support.

The dimensions e and f shall have a manufacturing tolerance of ± 5 mm and shall be specified by the coupling device manufacturer.

3.1.6.3. Coupling devices with variable dimensions e and f for demountable and interchangeable coupling balls — see Figure 22.

3.1.6.3.1. The strength tests for such towing brackets shall be carried out to the requirements of paragraph 3.1.5.

3.1.6.3.2. If a worst case configuration can be defined by agreement between the manufacturer and the type approval authority or technical service, then testing of this one configuration alone shall be sufficient.

Otherwise, several ball positions shall be tested in a simplified test programme according to paragraph 3.1.6.3.3.

3.1.6.3.3. In a simplified test programme, the value for f shall be between a defined value of $f_{\min}$ and a value of $f_{\max}$ which does not exceed 100 mm. The ball shall be at a distance, $e_{\max}$, of 130 mm from the support. To cover all possible positions of the ball, in the field given by the horizontal distance from the mounting surface and the vertical range of f ($f_{\min}$ to $f_{\max}$), two devices are to be tested:

(i) one with a ball in the upper ($f_{\max}$) position, and

(ii) one with a ball in the lower ($f_{\min}$) position.

The angle of application of the test force will vary, positive or negative, depending on the relationship of the ball centre horizontal reference line to the parallel line passing through the highest and nearest coupling device fixing point. The angles to be used are shown in Figure 22.

3.1.7. In the case where detachable ball units are retained using fixing arrangements other than screwed fittings, for example, spring clips, and where the positive mechanical engagement aspect of the arrangement is not tested during the dynamic test, then the arrangement shall be subject to a static test applied to the ball or to the positive mechanical engagement arrangement in an appropriate direction. Where the positive mechanical engagement arrangement retains the ball unit vertically, the static test shall be to apply an upwards vertical force to the ball equivalent to the 'D' value. Where the positive mechanical engagement arrangement retains the ball unit by means of a transverse horizontal design, the static test shall be to apply a force in this direction equivalent to 0,25 D. There shall not be any failure of the positive mechanical engagement device or any distortion likely to have an adverse effect on its function.

3.1.8. The attachment points for the secondary coupling referred to in annex 5, paragraph 1.5 shall withstand a horizontal static force equivalent to 2D with a maximum of 15 kN. Where there is a separate attachment point for a breakaway cable this shall withstand a horizontal static force equivalent to D.

3.2. Coupling heads

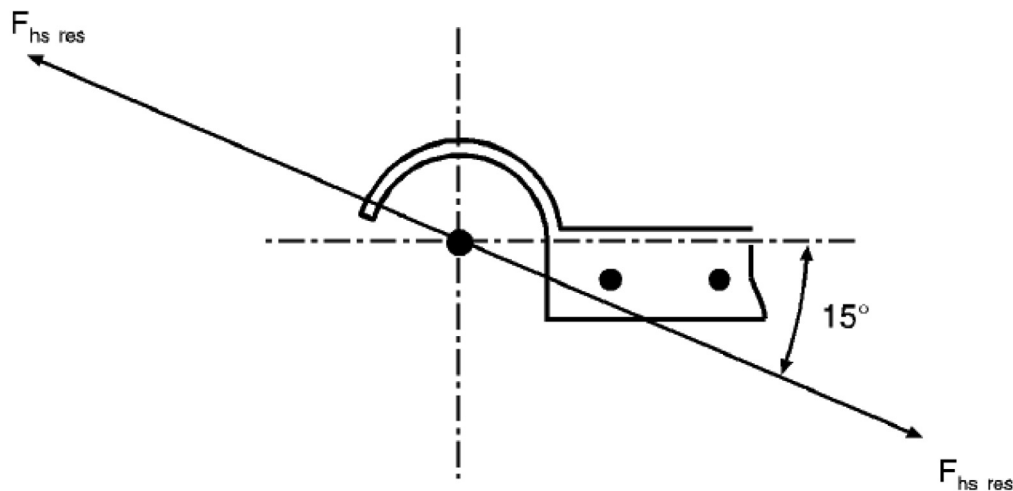
3.2.1. The basic test is an endurance test using an alternating test force followed by a static test (lifting test) on the same test sample.

3.2.2. The dynamic test shall be performed with a Class A coupling ball of appropriate strength. On the test rig the coupling ball and coupling head shall be arranged as instructed by the manufacturer and orientated in a way corresponding to the relative positions in normal use. There should be no possibility of extra forces in addition to the test force acting on the specimen. The test force shall be applied along a line passing through the centre of the ball and inclined downwards to the rear at 15° (see Figure 23). An endurance test must be performed on a test specimen with the following test force:

$$F_{\text{hs res w}} = \pm 0,6 D$$

Where the maximum permissible static vertical mass, S , exceeds 120 D, then the angle of test shall be increased to 20° .

Figure 23

Dynamic test

- 3.2.3. A static separation test shall also be performed. The coupling ball used for the test shall have a diameter of 49,00 to 49,13 mm in order to represent a worn coupling ball. The separation force, F_a , shall be applied perpendicular to both the transverse and longitudinal centre line axes of the coupling head and shall be increased smoothly and quickly to a value of:

$$F_a = g (C + S/1\,000) \text{ kN}$$

and be held for 10 seconds.

The coupling head shall not separate from the ball nor shall any component of the coupling head exhibit any permanent distortion which could have an adverse effect on its functional capability.

3.3. Drawbar couplings and drawbeams

- 3.3.1. An endurance test shall be performed on a test sample. The coupling device shall be equipped with all the fixings needed to attach it to the vehicle. Any intermediate devices fitted between the drawbar couplings and the vehicle frame (i. e. drawbeams) shall be tested with the same forces as the coupling. When testing drawbeams intended for standard drawbar couplings, the vertical load shall be applied at a longitudinal distance from the vertical plane of the fixing points that is equal to the position of the corresponding standard coupling.

3.3.2. Drawbar couplings for hinged drawbars ($S = 0$)

The dynamic test shall be performed with a horizontal alternating force of $F_{hw} = \pm 0,6 D$ acting in a line parallel to the ground and in the longitudinal median plane of the towing vehicle passing through the centre of the coupling pin.

3.3.3. Drawbar couplings for use with centre-axle trailers ($S > 0$).

3.3.3.1. Centre axle trailer masses up to and including 3,5 tonnes:

Drawbar couplings for use with centre axle trailers up to and including a mass of 3,5 tonnes shall be tested in the same way as coupling balls and towing brackets described in 3.1 of this annex.

3.3.3.2. Centre axle trailer masses exceeding 3,5 tonnes:

The test forces are applied to the specimen in both horizontal and vertical directions in an asynchronous endurance test. The horizontal line of action shall be equivalent to being parallel to the ground and along the longitudinal median plane of the towing vehicle and pass through the centre of the coupling pin. The vertical line of action shall be perpendicular to the horizontal line of action and shall act along the longitudinal centre line of the coupling pin.

The fixing arrangements for the drawbar coupling and the drawbar eye on the test rig shall be those intended for its attachment to the vehicle in accordance with the manufacturer's fitting instructions.

The following test forces shall be applied:

Table 14

Test forces

Test force	Mean Value (kN)	Amplitude (kN)
Horizontal force	0	$\pm 0,6 D_c$ (See Note)
Vertical force	$S \times g/1\,000$	$\pm 0,6 V$ (See Note)

Note: In the case of Class T dedicated drawbar couplings these values shall be reduced to $\pm 0,5D_c$ and $\pm 0,5V$.

The vertical and the horizontal components shall be sinusoidal in shape and shall be applied asynchronously, where the difference of their frequencies shall be between 1 per cent and 3 per cent.

3.3.4. Static test on coupling pin locking device

With drawbar couplings it is also necessary to test the closure and any locking devices by means of a static force of $0,25 D$ acting in the direction of opening. The test shall not cause the closure to open and it shall not cause any damage. A test force of $0,1 D$ is sufficient in the case of cylindrical coupling pins.

3.4. Drawbar eyes

3.4.1. Drawbar eyes shall be subjected to the same dynamic testing as drawbar couplings. Drawbar eyes used solely for trailers having hinged drawbars allowing free vertical movement shall be subjected to an alternating force as described in paragraph 3.3.2. Drawbar eyes also intended for use on centre axle trailers shall be tested in the same way as ball coupling heads (paragraph 3.2) for trailer masses C up to and including 3,5 tonnes and in the same way as drawbar couplings (paragraph 3.3.3.2) for centre axle trailers with a mass, C , exceeding 3,5 tonnes.

3.4.2. Toroidal eyes of Class L shall be tested in the same manner as standard drawbar eyes.

3.4.3. The testing of drawbar eyes shall be conducted in such a manner that the alternating force also acts on the parts used for attaching the drawbar eye to the drawbar. All flexible intermediate components shall be clamped.

3.5. Hook type couplings

3.5.1. Class K hook type couplings shall satisfy the dynamic test given in paragraph 3.5.2 of this annex.

3.5.2. Dynamic test:

3.5.2.1. The dynamic test shall be a pulsating test using a Class L toroidal eye and with the coupling mounted as it would be on a vehicle and with all of the necessary parts for vehicle installation. However, any flexible components may be neutralized with the agreement of the type approval authority or technical service;

3.5.2.2. For hook type couplings intended for use with hinged drawbar trailers, where the imposed vertical load on the coupling, S , is zero, the test force shall be applied in a horizontal direction simulating a tensile force on the hook and varying between $0,05 D$ and $1,00 D$;

3.5.2.3. For hook type couplings intended for use with centre axle trailers the test force shall represent the resultant of the horizontal and vertical forces on the coupling and shall be applied along an angle, $-\alpha$, that is, from top front to bottom rear (see Figure 21), and equivalent to the calculated angle of the resultant between the horizontal and vertical forces on the coupling. The force, $F_{hs\ res}$ shall be calculated as:

$$F_{hs\ res} = \sqrt{F_h^2 + F_s^2} \text{ where } F_h = D_c \text{ and } F_s = \frac{9,81S}{1\,000} + 0,8 V$$

3.5.2.4. The applied force shall vary between $0,05 F_{hs\ res}$ and $1,00 F_{hs\ res}$.

3.5.3. Static test on coupling locking device

With hook type couplings it is also necessary to test the closure and any locking devices by means of a static force of $0,25 D$ acting in the direction of opening. The test shall not cause the closure to open and it shall not cause any damage.

3.6. Drawbars

- 3.6.1. Drawbars shall be tested in the same way as drawbar eyes (see paragraph 3.4). The type approval authority or technical service may waive an endurance test if the simple design of a component makes a theoretical check of its strength possible. The design forces for the theoretical verification of the drawbar of centre axle trailers with a mass, C , of up to and including 3,5 tonnes shall be taken from ISO 7641/1:1983. The design forces for the theoretical verification of drawbars for centre axle trailers having a mass, C , over 3,5 tonnes shall be calculated as follows:

$$F_{sp} = (g \times S/1\,000) + V$$

where the force amplitude V is that given in paragraph 2.11.4 of this Regulation.

The permissible stresses based on the design masses for trailers having a total mass, C , over 3,5 tonnes shall be in accordance with paragraph 5.3 of ISO 7641/1:1983. For bent drawbars (e.g. swan neck) and for the drawbars of full trailers, the horizontal force component $F_{hp} = 1,0 \times D$ shall be taken into consideration.

- 3.6.2. For drawbars for full trailers with free movement in the vertical plane, in addition to the endurance test or theoretical verification of strength, the resistance to buckling shall be verified either by a theoretical calculation with a design force of $3,0 \times D$ or by a buckling test with a force of $3,0 \times D$. The permissible stresses in the case of calculation shall be in accordance with paragraph 5.3 of ISO 7641/1:1983.

- 3.6.3. In the case of steered axles, the resistance to bending shall be verified by theoretical calculations or by a bending test. A horizontal, lateral static force shall be applied in the centre of the coupling point. The magnitude of this force shall be chosen so that a moment of $0,6 \times A_v \times g$ (kNm) is exerted about the front axle centre. The permissible stresses shall be in accordance with paragraph 5.3 of ISO 7641/1:1983.

However, in the case where the steered axles form a twin, tandem, axle front carriage (steered bogie) the moment shall be increased to $0,95 \times A_v \times g$ (kNm)

3.7. Fifth wheel couplings

- 3.7.1. The basic strength tests are a dynamic test and a static test (lifting test). Fifth wheel couplings intended for the positive steering of semitrailers shall be subject to an additional static test (bending test). For the purpose of the tests the fifth wheel coupling shall be equipped with all the fixings needed to attach it to the vehicle. The method of mounting shall be identical to that employed on the vehicle itself. It is not permissible to use a calculation method as an alternative to physical testing.

3.7.2. Static tests

- 3.7.2.1. Standard fifth wheel couplings designed for a steering wedge or similar device for the positive steering of semitrailers (see paragraph 2.7 of this Regulation) shall be tested for adequate strength by means of a static bending test within the working range of the steering device with the simultaneous application of fifth wheel load. The maximum permitted imposed vertical load, U , for the fifth wheel shall be applied vertically to the coupling in its operating position by means of a rigid plate of sufficient size to cover the coupling completely.

The resultant of the applied load shall pass through the center of the horizontal joint of the fifth wheel coupling.

Simultaneously, a horizontal lateral force, representing the force needed for positive steering of the semitrailer, shall be applied to the flanks of the guide for the coupling pin. The magnitude of this force and the direction in which it acts shall be chosen so that a moment of $0,75 m \times D$ is exerted about the center of the coupling pin by means of a force acting on a lever arm $0,5 m \pm 0,1 m$ long. Permanent, plastic deformation up to 0,5 per cent of all nominal dimensions is permitted. There shall not be any cracking.

- 3.7.2.2. A static lifting test shall be performed on all fifth wheel couplings. Up to a lifting force of $F_a = g.U$ there shall not be any major permanent bending of the coupling plate over more than 0,2 per cent of its width.

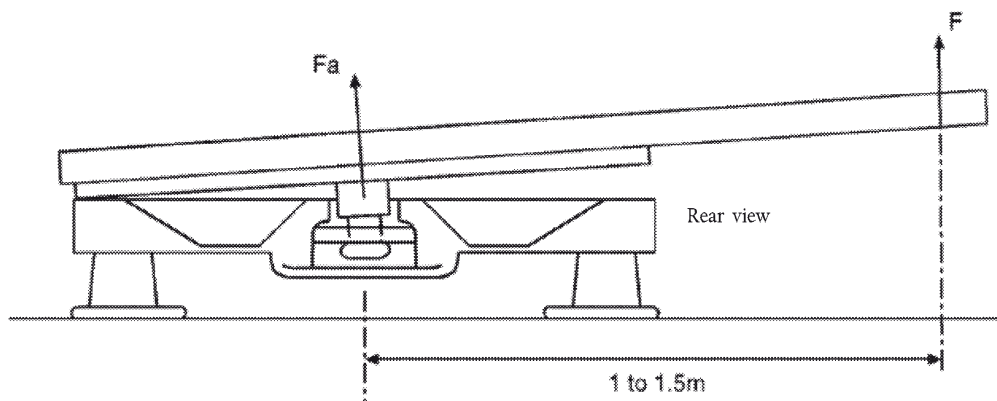
In the case of Class G50 standard fifth wheel couplings and comparable couplings for the same coupling pin diameter, there shall not be any separation of the coupling pin from the coupling with a lifting force of $F_a = g \times 2,5 U$. In the case of non-standard couplings using a pin diameter greater than 50 mm, for example 90 mm pin diameter couplings, the lifting force shall be: $F_a = g \times 1,6 U$ with a minimum value of 500 kN.

The force shall be applied by means of a lever bearing on the coupling plate at one end and being raised at the other end at a distance of 1,0 to 1,5 m from the center of the coupling pin — see Figure 24.

The lever arm shall be at 90° to the direction of entry of the coupling pin into the coupling. If the worst case is obvious, this worst case has to be tested. If the worst case is not easy to determine, the type approval authority or technical service shall decide which side to test. Only one test is necessary.

Figure 24

Lifting test on fifth wheel couplings



3.7.3. Dynamic test

The fifth wheel coupling shall be subjected to alternating stress on a test rig (asynchronous dynamic test) with horizontal alternating and vertical pulsating forces acting simultaneously.

3.7.3.1. In the case of fifth wheel couplings not intended for the positive steering of semitrailers, the following forces shall be used:

Horizontal: $F_{hw} = \pm 0,6 \times D$

Vertical: $F_{so} = g \times 1,2 U$

$F_{su} = g \times 0,4 U$

These two forces shall be applied in the longitudinal median plane of the vehicle with the lines of action of both forces F_{so} and F_{su} passing through the centre of the joint of the coupling.

The vertical force F_s alternates between the limits $+g \times 1,2 U$ and $+g \times 0,4 U$ and the horizontal force between $\pm 0,6 D$.

3.7.3.2. In the case of fifth wheel couplings intended for the positive steering of semitrailers the following forces shall be used:

Horizontal: $F_{hw} = \pm 0,675 D$

Vertical: F_{so} and F_{su} as in paragraph 3.7.3.1.

The lines of action of the forces are as given in paragraph 3.7.3.1.

3.7.3.3. For the dynamic test of fifth wheel couplings, a suitable lubricating material shall be placed between the coupling plate and the trailer plate so that the maximum coefficient of friction, F , is 0,15.

3.8. Mounting plates for fifth wheel couplings

The dynamic test for fifth wheel couplings described in paragraph 3.7.3 and the static tests described in paragraph 3.7.2 shall also be applied to mounting plates. With mounting plates, it is sufficient to perform the lifting test on one side only. The test shall be based on the maximum designated installation height for the coupling, the maximum designated width and the minimum designated length of the mounting plate design. It is not necessary to carry out this test if the mounting plate in question is identical to one which has already undergone this test except that it is narrower and/or longer and the total height is lower. It is not permissible to use a calculation method as an alternative to physical testing.

3.9. Fifth wheel coupling pins of semitrailers

3.9.1. A dynamic test with alternating stress shall be performed on a sample mounted on a test rig. The testing of the coupling pin shall not be combined with the testing of the fifth wheel coupling. The test shall be conducted so that the force is also applied to the fixings needed for attaching the coupling pin to the semitrailer. It is not permissible to use a calculation method as an alternative to physical testing.

3.9.2. A dynamic test with an alternating horizontal force of $F_{hw} = \pm 0,6 D$ shall be applied to the coupling pin in the operating position.

The line of action of the force shall pass through the centre of the smallest diameter of the cylindrical part of the coupling pin having a diameter of 50,8 mm for Class H50 (see annex 5, Figure 18).

3.10. Alternative endurance test for coupling balls and towing brackets with a D-value ≤ 14 kN.

Alternatively to the test procedure described in paragraph 3.1, coupling balls and towing brackets with a D-value ≤ 14 kN can be tested under the following conditions.

3.10.1. Introduction

The endurance test described below consists of a multi-axial test with 3 load directions, with simultaneously introduced forces, defined maximum amplitudes and fatigue equivalences (load intensity values, according to the definition given below).

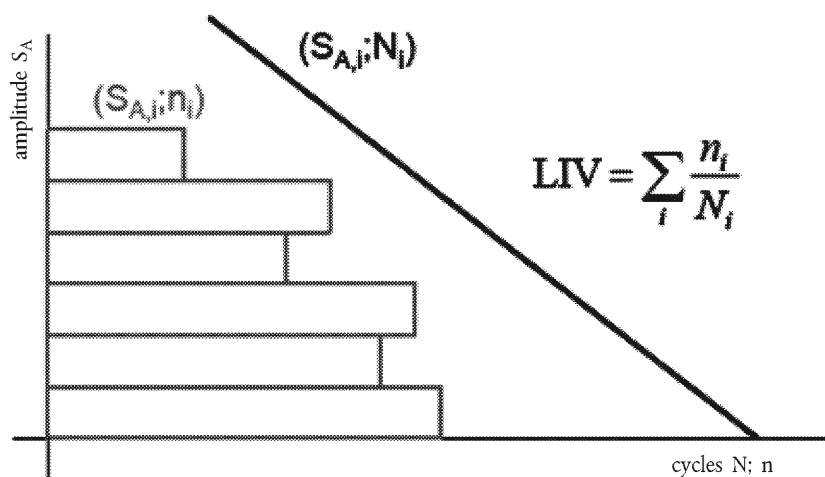
3.10.2. Test requirements

3.10.2.1. Definition of the load intensity value (LIV):

The LIV is a scalar value which represents the severity of one load time history considering durability aspects (identical to damage sum). For the damage accumulation the miner elementary rule is used. For its determination, the load amplitudes and the number of repetitions of each amplitude are considered (effects of mean loads are not taken into account).

The S-N curve (Basquin curve) represents the load amplitudes versus the number of repetitions ($S_{A,i}$ vs. N_i). It has a constant slope k in a double logarithmic diagram (i.e. every amplitude/applied test force $S_{A,i}$ relates to a limited number of cycles N_i). The curve represents the theoretical fatigue limit for the analyzed structure.

The load time history is counted in a range-pair diagram of load amplitude versus number of repetitions ($S_{A,i}$ vs. n_i). The sum of the ratio n_i/N_i for all available amplitude levels $S_{A,i}$ is equal to the LIV.



3.10.2.2. Required LIVs and maximum amplitudes

The following coordinate system has to be considered:

x direction: longitudinal direction/opposite of driving direction

y direction: to the right considering the driving direction

z direction: vertical upwards

The load time history can then be expressed following the intermediate directions based on the main directions (x, y, z) considering the following equations ($\alpha = 45^\circ$; $\alpha' = 35,2^\circ$):

$$F_{xy}(t) = F_x(t) \times \cos(\alpha) + F_y(t) \times \sin(\alpha)$$

$$F_{xz}(t) = F_x(t) \times \cos(\alpha) + F_z(t) \times \sin(\alpha)$$

$$F_{yz}(t) = F_y(t) \times \cos(\alpha) + F_z(t) \times \sin(\alpha)$$

$$F_{xyz}(t) = F_{xy}(t) \times \cos(\alpha') + F_z(t) \times \sin(\alpha')$$

$$F_{xzy}(t) = F_{xz}(t) \times \cos(\alpha') - F_y(t) \times \sin(\alpha')$$

$$F_{yzx}(t) = F_{yz}(t) \times \cos(\alpha') - F_x(t) \times \sin(\alpha')$$

The LIVs expressed in each direction (also combined directions) are calculated respectively as the sum of the ratio n_i/N_i for all available amplitude levels defined in the adequate direction.

In order to demonstrate the minimum fatigue life of the device to be type-approved, the endurance test has to achieve at least the following LIVs:

	LIV (1 kN $\leq$ D $\leq$ 7 kN)	LIV (7 kN < D $\leq$ 14 kN)
LIVx	0,0212	0,0212
LIVy	linear regression between: D = 1 kN: 7,026 e-4; D = 7 kN: 1,4052 e-4	1,4052 e-4
LIVz	1,1519 e-3	1,1519 e-3
LIVxy	linear regression between: D = 1 kN: 6,2617 e-3; D = 7 kN: 4,9884 e-3	4,9884 e-3
LIVxz	9,1802 e-3	9,1802 e-3
LIVyz	linear regression between: D = 1 kN: 7,4988 e-4; D = 7 kN: 4,2919 e-4	4,2919 e-4
LIVxyz	linear regression between: D = 1 kN: 4,5456 e-3; D = 7 kN: 3,9478 e-3	3,9478 e-3
LIVxzy	linear regression between: D = 1 kN: 5,1977 e-3; D = 7 kN: 4,3325 e-3	4,3325 e-3
LIVyzx	linear regression between: D = 1 kN: 4,5204 e-3; D = 7 kN: 2,9687 e-3	2,9687 e-3

To derive a load time history based on above-mentioned LIVs, the slope shall be $k = 5$ (see definition in paragraph 3.10.2.1). The Basquin curve shall pass through the point of an amplitude $S_A = 0,6 \times D$ with the number of cycles $N = 2 \times 10^6$.

The static vertical load S (as defined in paragraph 2.11.3 of this Regulation) on the coupling device as declared by the manufacturer shall be added to the vertical loads.

During the test, the maximum amplitudes should not exceed the following values:

	longitudinal Fx [-]	lateral Fy [-]	vertical Fz [-]
Maximum	+ 1,3 $\times$ D	+ 0,45 $\times$ D	+ 0,6 $\times$ D + S
Minimum	- 1,75 $\times$ D	- 0,45 $\times$ D	- 0,6 $\times$ D + S

An example of a load time history which fulfils these requirements is given at:

<http://www.unece.org/trans/main/wp29/wp29wgs/wp29grrf/grrf-reg55.html>

3.10.3. Test conditions

The coupling device shall be mounted on a rigid test bench or on a vehicle. In the case of a 3 dimensional time history signal, it shall be applied by three actuators for simultaneous introduction and control of the force components F_x (longitudinal), F_y (lateral) and F_z (vertical). In other cases, the number and the position of the actuators may be chosen in agreement between the manufacturer and the technical services. In any case, the test installation shall be able to introduce simultaneously the necessary forces in order to fulfil the LIVs required in paragraph 3.10.2.2.

All bolts have to be tightened with the torque as specified by the manufacturer.

3.10.3.1. Coupling device mounted on stiff support:

The compliance of the fixing points of the coupling device shall not exceed 1,5 mm from the reference point of '0-Load' during the application of the maximum and minimum forces F_x , F_y , F_z and each separately applied to the coupling point.

3.10.3.2. Coupling device mounted on vehicle body or body part:

In this case the coupling device shall be mounted on the vehicle body or a body part of the vehicle type, for which the coupling device is designed. The vehicle or body part shall be fitted on a suitable rig or test bench in such a manner, that any effect of the vehicles suspension is eliminated.

The exact conditions during the test shall be declared in the relating test report. Possible resonance effects have to be compensated by a suitable test facility control system and may be reduced by additional fixing between vehicle body and test rig or modified frequency.

3.10.4. Failure criteria

In addition to the criteria given in paragraph 4.1 verified by liquid penetration verification of this Regulation, the coupling device shall be deemed to have failed the test, if:

- (a) any visible plastic deformation is detected;
 - (b) any functionality and safety of the coupling is effected (e.g. safe connection of the trailer, maximum play);
 - (c) any torque loss of the bolts exceeding 30 per cent of the nominal torque measured in the closing direction;
 - (d) a coupling device with detachable part cannot be detached and attached for at least 3 times. For the first detachment, one impact is permitted.
-

ANNEX 7

INSTALLATION AND SPECIAL REQUIREMENTS

1. INSTALLATION AND SPECIAL REQUIREMENTS

1.1. Attachment of coupling balls and towing brackets

- 1.1.1. Coupling balls and towing brackets shall be attached to vehicles of categories M1, M2 (below 3,5 t maximum permissible mass) and N1 ⁽¹⁾ in a manner which conforms to the clearance and height dimensions given in Figure 25. The height shall be measured at the vehicle loading conditions given in appendix 1 to this annex.

The height requirement shall not apply in the case of category G off-road vehicles as defined in annex 7 of the Consolidated Resolution on the Construction of Vehicles (R.E.3)(document TRANS/WP.29/78/Rev.1/Amend.2).

- 1.1.1.1. The clearance space shown in Figures 25a and 25b may be occupied by non-demountable equipment, such as a spare wheel, provided that the distance from the centre of the ball to a vertical plane at the extreme rearmost point of the equipment does not exceed 300 mm. The equipment shall be mounted to allow adequate access for coupling and uncoupling without risk of injury to the user and without affecting articulation of the coupling.
- 1.1.2. For coupling balls and towing brackets the vehicle manufacturer shall supply mounting instructions and state whether any reinforcement of the fixing area is necessary.
- 1.1.3. It shall be possible to couple and uncouple ball couplings when the longitudinal axis of the ball coupling in relation to the centre line of the coupling ball and mounting:

is rotated horizontally 60° to right or left, ($\beta = 60^\circ$, see Figure 25);

is rotated vertically 10° up or down ($\alpha = 10^\circ$, see Figure 25);

is rotated axially 10° to right or left.

⁽¹⁾ See definitions in Regulation No 13 annexed to the 1958 Agreement concerning the Adoption of Uniform Technical Prescriptions for wheeled vehicles, Equipment and Parts which can be Fitted and/or be Used on Vehicles and Conditions for Reciprocal Recognition of Approvals granted on the Basis of these Prescriptions. The definition is also contained in annex 7 of Consolidated Resolution on the Construction vehicles (R. E. 3) (document TRANS/ WP. 29/ 78/ Rev. 1/ Amend. 2).

Figure 25a

Clearance space for, and height of, coupling ball — side view

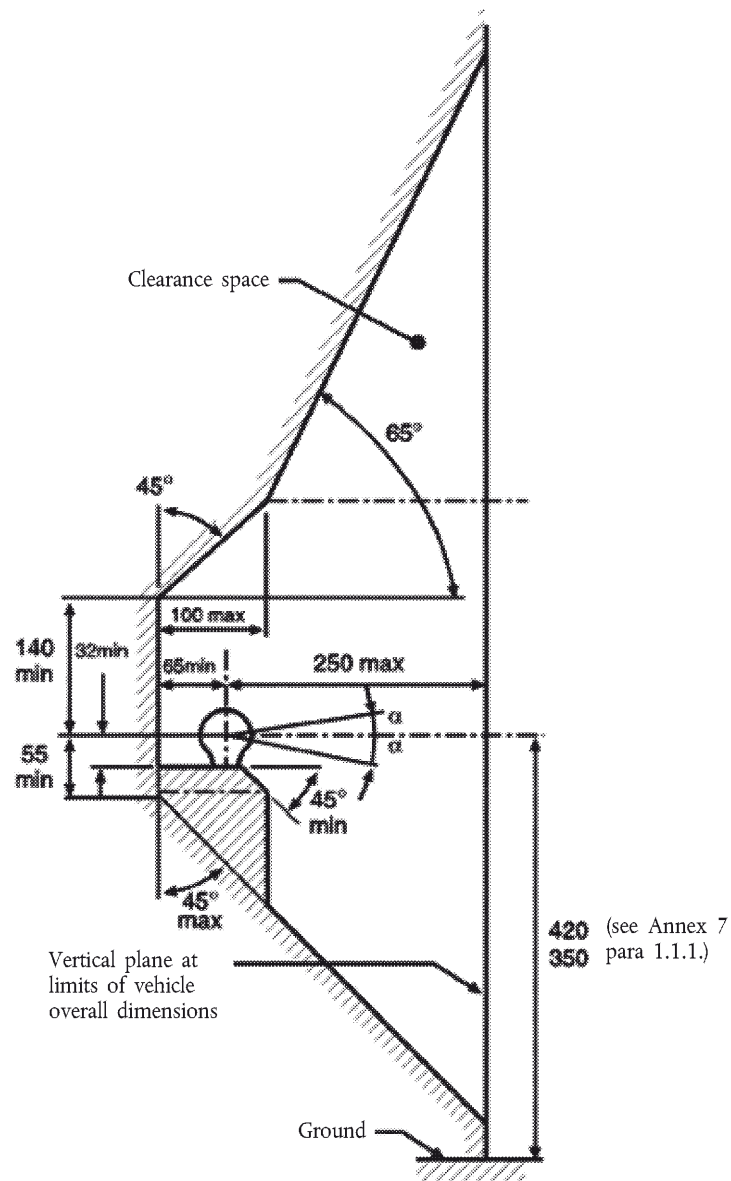
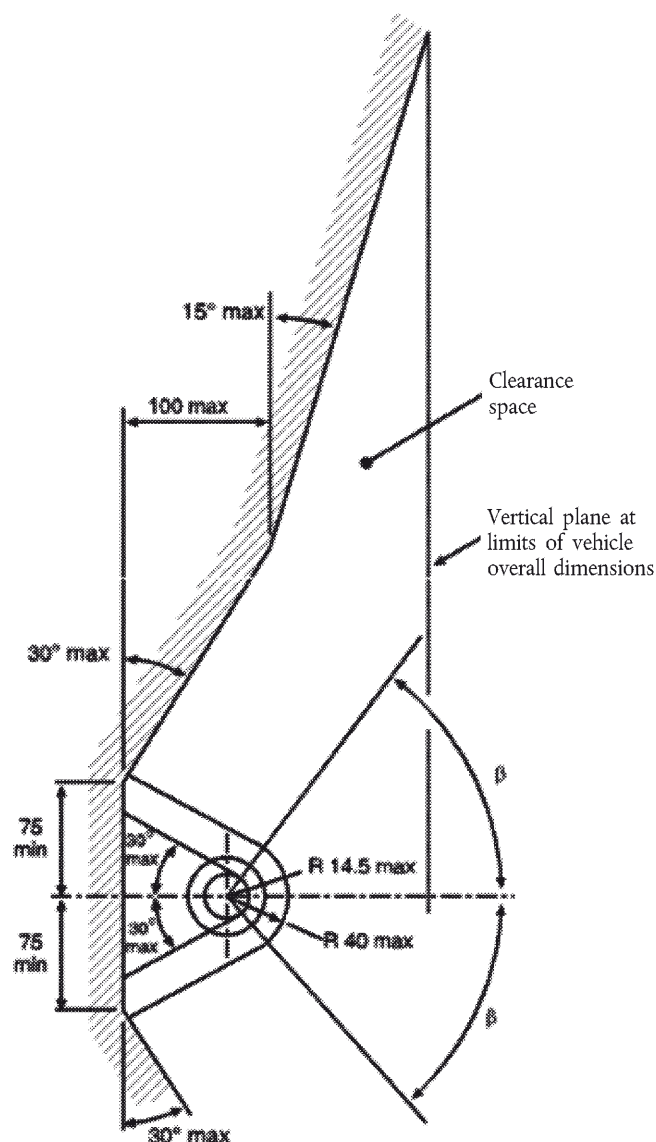


Figure 25b

Clearance space for coupling ball — plan view



- 1.1.4. When the trailer is not coupled to the towing vehicle, the mounted towing bracket and coupling ball shall not obscure the mounting space provided for the rear registration plate or affect the visibility of the rear registration/licence plate of the towing vehicle. If the coupling ball or other items do obscure the rear registration plate they shall be removable or repositionable without the use of tools except, for example, an easily operated (i.e. an effort not exceeding 20 Nm) release key which is carried in the vehicle.

1.2. Attachment of coupling heads

- 1.2.1. Class B coupling heads are permitted for trailers of maximum mass up to and including 3,5 tonnes. With the trailer horizontal and carrying the maximum permitted axle load, coupling heads shall be fitted so that the centre line of the spherical area into which the ball fits is 430 ± 35 mm above the horizontal plane on which the wheels of the trailer rest.

In the case of caravans and goods trailers, the horizontal position is regarded as when the floor or loading surface is horizontal. In the case of trailers without such a reference surface (e.g. boat trailers or similar) the trailer manufacturer shall give an appropriate reference line defining the horizontal position. The height requirement shall apply only to trailers intended to be attached to vehicles mentioned in paragraph 1.1.1 of this annex.

In all cases the horizontal position shall be determined to within $\pm 1^\circ$.

- 1.2.2. It shall be possible to operate the coupling heads safely within the free space of the coupling ball given in Figures 25a and 25b, up to angles of $\alpha = 25^\circ$ and $\beta = 60^\circ$.

1.3. Attachment of drawbar couplings and mounting blocks

1.3.1. Mounting dimensions for standard drawbar couplings:

In the case of types of standard drawbar couplings the mounting dimensions on the vehicle given in Figure 15 and Table 10 must be met.

1.3.2. Need for remote controlled couplings

If one or more of the following requirements regarding easy and safe operation (paragraph 1.3.3), accessibility (paragraph 1.3.5) or clearance for the hand lever (paragraph 1.3.6) cannot be met, a coupling with a remote control device as described in annex 5, paragraph 12.3 shall be used.

1.3.3. Easy and safe coupling operation

Drawbar couplings shall be mounted on the vehicle in such a manner that they are easy and safe to operate.

In addition to the functions of opening (and closing, if applicable) this also includes checking the position of the indicator for the closed and locked positions of the coupling pin (by sight and touch).

In the area in which the person operating the coupling has to stand, there shall not be any points of possible danger such as sharp edges, corners, etc. inherent in the design unless these are protected so that injury is unlikely.

The way of escape from this area shall not be restricted or barred on either side by any objects attached to either the coupling or the vehicles.

Any underrun protection device shall not prevent the person adopting a suitable position to operate the coupling.

1.3.4. Minimum angle for coupling up and uncoupling

Coupling and uncoupling of the drawbar eye shall be possible when the longitudinal axis of the drawbar eye in relation to the centre line of the jaw is simultaneously rotated:

50° horizontally to right or left;

6° vertically up or down;

6° axially to right or left.

This requirement shall also apply to Class K hook type couplings.

1.3.5. Accessibility

The distance between the center of the coupling pin and the edge of the bodywork of the vehicle shall not exceed 550 mm. Where the distance exceeds 420 mm, the coupling shall be fitted with an actuation mechanism which will allow safe operation at a maximum distance of 420 mm from the outer board of the bodywork.

The distance of 550 mm may be exceeded as follows, provided that technical necessity can be demonstrated and that easy and safe actuation of the drawbar coupling is not adversely affected:

(i) to a distance of up to 650 mm for vehicles with tipping bodies or rear-mounted equipment;

(ii) to a distance of up to 1 320 mm if the unobstructed height is at least 1 150 mm;

(iii) in the case of car transporters with at least two loading levels when the trailer vehicle is not separated from the towing vehicle in normal transport operation.

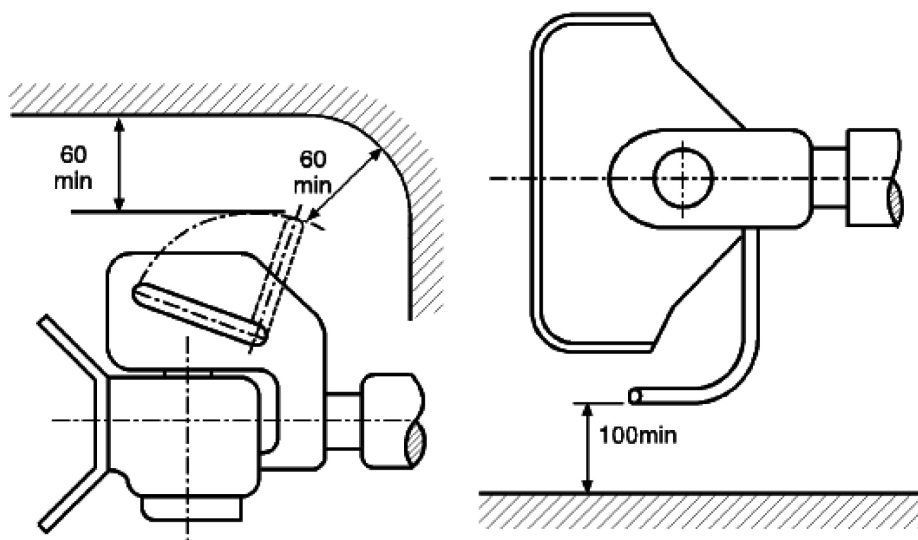
1.3.6. Clearance for the hand lever

In order to permit safe operation of drawbar couplings there shall be adequate free space around the hand lever.

The clearance illustrated in Figure 26 is regarded as sufficient. If different types of standard drawbar couplings are intended to be fitted to the vehicle, the clearance shall be such that the conditions are also satisfied for the largest size of coupling of the appropriate class given in annex 5, paragraph 3.

Figure 26

Hand lever clearance



The clearance dimensions are also applicable as appropriate for drawbar couplings having hand levers pointing downwards or of a different design.

The clearance shall also be maintained within the specified minimum angle for coupling up and uncoupling given in paragraph 1.3.4 of this annex.

1.3.7. Clearance for free movement of drawbar coupling

The drawbar coupling attached to the vehicle shall have a minimum clear gap of 10 mm from every other part of the vehicle taking into account all possible geometrical positions given in annex 5, paragraph 3.

If different types of standard drawbar couplings are intended to be fitted to the vehicle type, the clearance shall be such that the conditions are also satisfied for the largest possible coupling of the appropriate class stated in annex 5, paragraph 3.

1.3.8. Acceptability of drawbar couplings with a special joint for vertical rotation — see annex 5, paragraph 3.4.

Couplings having a cylindrical pin and which achieve vertical rotation for the coupled drawbar eye by means of a special joint will only be permitted when technical necessity can be demonstrated. This may be the case, for example, on rear tippers when the coupling head shall be hinged, or with the couplings of heavy transporters when for strength reasons the use of a cylindrical coupling pin is necessary.

1.4. Attachment of drawbar eyes and drawbars on trailers.

1.4.1. Drawbars for centre axle trailers shall have a support device which is adjustable in height if the bearing mass at the drawbar eye on the trailer exceeds 50 kg, when the trailer is uniformly loaded to its technically permissible maximum mass.

- 1.4.2. When attaching drawbar eyes and drawbar to centre-axle trailers with a maximum mass, C, of more than 3,5 tonnes and more than one axle, the trailers shall be equipped with device for axle load sharing.
- 1.4.3. Hinged drawbars shall be clear of the ground. They shall not fall below a height of 200 mm from the ground when released from the horizontal position. See also annex 5, paragraphs 5.3 and 5.4.
- 1.5. Attachment of fifth wheel couplings, mounting plates and coupling pins on vehicles.
- 1.5.1. Class G50 fifth wheel couplings shall not be mounted directly on the vehicle frame unless permitted by the vehicle manufacturer. They shall be fixed to the frame by means of a mounting plate and the installation instructions provided by the vehicle manufacturer and coupling manufacturer shall be followed.
- 1.5.2. Semitrailers shall be equipped with landing gear or any other equipment which allows uncoupling and parking of the semitrailer. If semitrailers are equipped so that the connection of the coupling devices, the electrical systems and braking systems can be effected automatically, the trailer shall have landing gear which retracts from the ground automatically after the semitrailer has been coupled up.

These requirements shall not apply in the case of semitrailers designed for special operations where they are normally only separated in a workshop or when loading and unloading in specifically designed operating areas.

- 1.5.3. The fixing of the fifth wheel coupling pin to the mounting plate on the semitrailer shall be as instructed by the vehicle manufacturer or the manufacturer of the fifth wheel coupling pin.
 - 1.5.4. If a semitrailer is equipped with a steering wedge it shall meet the requirements as described in annex 5, paragraph 7.8.
 - 2. REMOTE INDICATION AND CONTROL
 - 2.1. When installing remote indication and control devices any relevant requirements given in annex 5, paragraph 12 shall be taken into account.
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*Appendix 1***Loading conditions for measurement of coupling ball height**

1. The height shall be as specified in annex 7, paragraph 1.1.1.
 2. In the case of M1 category vehicles the vehicle mass at which this height shall be measured shall be declared by the vehicle manufacturer and shall be given in the Communication form (annex 2). The mass shall be either the maximum permissible mass, distributed between the axles as declared by the vehicle manufacturer or the mass given by loading the vehicle in accordance with paragraph 2.1 of this appendix.
 - 2.1. The maximum figure for the mass in running order as declared by the towing vehicle manufacturer (see paragraph 6 of the Communication form, annex 2); plus
 - 2.1.1. two masses, each of 68 kg, positioned in the outer seating position of each row of seats, with the seats in the rearmost adjustable position for normal driving and travel, and with the masses located:
 - 2.1.1.1. for original equipment coupling devices and components submitted for approval by the vehicle manufacturer, approximately at a point located at 100 mm in front of the 'R' point for adjustable seats and 50 mm in front of the 'R' point for other seats, the 'R' point being determined according to Regulation No 14 paragraph 5.1.1.2; or
 - 2.1.1.2. for coupling devices and components submitted for approval by an independent manufacturer and intended for replacement market fitting, approximately at the position of a seated person;
 - 2.1.2. In addition, for each mass of 68 kg, an additional mass of 7 kg allowance for personal luggage shall be distributed evenly in the luggage area of the vehicle;
 3. In the case of N1 category vehicles, the vehicle mass at which this height shall be measured shall be:
 - 3.1. The maximum permissible mass, distributed between the axles as declared by the towing vehicle manufacturer (see paragraph 6 of the Communication form, annex 2).
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IV

(Acts adopted before 1 December 2009 under the EC Treaty, the EU Treaty and the Euratom Treaty)

COMMISSION DECISION

of 19 November 2009

on State aid measures C 38/A/04 (ex NN 58/04) and C 36/B/06 (ex NN 38/06) implemented by Italy for Alcoa Trasformazioni

(notified under document C(2009) 8112)

(Only the Italian text is authentic)

(Text with EEA relevance)

(2010/460/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community, and in particular the first subparagraph of Article 88(2) thereof,

Having regard to the Agreement on the European Economic Area, and in particular Article 62(1)(a) thereof,

Having called on interested parties to submit their comments pursuant to the provisions cited above ⁽¹⁾ and having regard to their comments,

Whereas:

1. PROCEDURE

1.1. Case C 38/A/04

- (1) By letter dated 4 December 2003, a series of articles published in the Italian press on the Italian government's intention to introduce preferential electricity tariffs for selected undertakings in Sardinia was brought to the Commission's attention.
- (2) The tariffs were introduced by Article 1 of the Prime Ministerial Decree of 6 February 2004. The Decree had two distinct effects: (a) it introduced preferential electricity tariffs for the companies Portovesme Srl ⁽²⁾, ILA ⁽³⁾ and Euroallumina ⁽⁴⁾; and (b) it prolonged the existing preferential tariff for Alcoa Trasformazioni (a producer of primary aluminium, hereinafter 'Alcoa').
- (3) By letters dated 22 January 2004 and 19 March 2004, the Commission requested further information on these measures. The Italian authorities replied by letters dated

6 February 2004 and 9 June 2004. Further clarifications were submitted by Italy by letter dated 20 September 2004.

- (4) By letter dated 16 November 2004, the Commission informed Italy that it had decided to initiate proceedings under Article 88(2) of the EC Treaty in respect of the aid measure.
- (5) The Commission's decision to initiate the proceedings was published in the *Official Journal of the European Union* ⁽⁵⁾. The Commission invited interested parties to submit their comments on the measures.
- (6) Italy submitted observations by letters dated 4 February 2005 and 11 February 2005.
- (7) The Commission also received comments from other interested parties. By letter dated 22 March 2005, it forwarded those comments to Italy, which was given the opportunity to respond. Italy's comments were received by letter dated 20 September 2005.
- (8) By letter dated 23 December 2005, the Commission asked for additional information, which was provided by the Italian authorities by letter dated 3 March 2006. Further clarifications were requested by letter dated 22 August 2006. Italy replied by letter dated 28 September 2006.
- (9) On 29 October 2008, the case was split into part A, which covers the measure with regard to Alcoa, and part B, which deals with Portovesme, ILA and Euroallumina. The present Decision concerns Alcoa alone (part A).

⁽¹⁾ OJ C 30, 5.2.2005, p. 7 and OJ C 214, 6.9.2006, p. 5.

⁽²⁾ A zinc producer.

⁽³⁾ A manufacturer of aluminium products.

⁽⁴⁾ A producer of alumina (the intermediate material resulting from the processing of bauxite and from which primary aluminium is obtained).

⁽⁵⁾ OJ C 30, 5.2.2005, p. 7.

1.2. Case C 36/B/06

- (10) In the course of a related State aid case⁽⁶⁾, the Commission became aware of a second extension of the preferential electricity tariff scheme applying to Alcoa. The extension was granted by virtue of Article 11(11) of Decree-Law No 35 of 14 March 2005, converted into Law No 80/2005 of 14 May 2005 'Urgent Provisions under the Action Plan for Economic, Social and Territorial Development'. The beneficiaries were Alcoa and the three successor companies to Terni⁽⁷⁾.
- (11) By letter dated 23 December 2005, the Commission requested information from Italy, which replied by letter dated 24 February 2006. By letters dated 2 March 2006 and 27 April 2006, Italy provided additional information.
- (12) By letter dated 19 July 2006, the Commission informed Italy that it had decided to initiate proceedings under Article 88(2) of the EC Treaty with regard to both schemes (C 36/06).
- (13) The Commission's decision to initiate proceedings was published in the *Official Journal of the European Union*⁽⁸⁾. The Commission invited interested parties to submit their comments on the measures concerned.
- (14) Italy submitted observations by letter dated 25 October 2006. Further information was submitted by letters dated 9 November 2006 and 7 December 2006.
- (15) The Commission also received comments from other interested parties, which were forwarded to Italy, thus giving it the opportunity to respond to them. Italy's comments were received by letter dated 22 December 2006.
- (16) By letter dated 20 February 2007, the Commission requested further information on the tariff scheme. That information was provided by Italy by letters dated 10 and 14 May 2007 respectively.
- (17) On 18 September 2007, the case was split into part A, concerning the three Terni companies, and part B, with concerning Alcoa. On 20 November 2007, the

Commission adopted a negative final decision concerning the Terni companies, ordering recovery of the aid⁽⁹⁾.

- (18) In the meantime, by letter dated 19 January 2007, the Commission started exploring the idea of transitional measures for the Alcoa tariff scheme in Sardinia, linked to the introduction of a virtual capacity release programme (Virtual Power Plant, hereinafter 'VPP'). The Italian authorities replied by letters dated 16 April 2007 and 5 November 2007. A meeting between the Italian authorities and Commission staff was held on 13 March 2008 and Italy was asked to take a final position by 12 May 2008. After asking for an extension to the deadline for taking such a position by letter dated 29 May 2008, Italy submitted further information by letters dated 12 June 2008 and 7 July 2008.
- (19) Italy asked for a meeting with the Commission to review possible options for a VPP. The meeting was held on 9 December 2008. By letters dated 19 December 2008 and 19 May 2009, Italy provided additional information.
- (20) A further meeting was held on 26 May 2009. By letters dated 10 July 2009 and 18 August 2009, Italy provided additional information.

2. DETAILED DESCRIPTION OF THE MEASURE

2.1. The main facts of the case

- (21) The aluminium producer Alcoa has, since 1996, benefited from a preferential electricity tariff for its two primary aluminium smelters located in Sardinia (Portovesme) and Veneto (Fusina). The tariff was originally introduced for a period of 10 years (ending on 31 December 2005) in the context of a privatisation operation. That tariff was cleared under the State aid rules in a Commission decision which held that it did not constitute State aid. However, the nature of the tariff was modified over time, and twice prolonged by Italy, in 2004 and again in 2005.
- (22) The disputed tariff is subsidised by means of a cash payment by the Equalisation Fund (*Cassa Conguaglio per il Settore Elettrico*, a public body)⁽¹⁰⁾, reducing the price established contractually between Alcoa and its electricity supplier ENEL. The required resources are raised via a parafiscal charge imposed on all electricity consumers by way of component A4 of the electricity bill.

⁽⁶⁾ State aid measure N 587/05, Preferential electricity tariffs in Sardinia (later to become C 13/06).

⁽⁷⁾ ThyssenKrupp (steel), Cementir (cement) and Nuova Terni Industrie Chimiche (chemicals).

⁽⁸⁾ OJ C 214, 6.9.2006, p. 5.

⁽⁹⁾ Decision 2008/408/EC (OJ L 144, 4.6.2008, p. 37).

⁽¹⁰⁾ See item 2.2.2.2 below.

2.2. The disputed legislative provisions and the regulatory context

- (23) The preferential tariff scheme from which Alcoa benefits is provided for by the respective legislative provisions (2.2.1) and the detailed regulations laid down by the Authority for Electric Energy and Gas (*Autorità per l'Energia Elettrica et il Gas* — 'AEEG') (2.2.2.1). The Equalisation Fund is the implementing agency of the scheme (2.2.2.2). The Commission's analysis of the Alcoa tariff scheme must therefore take account of both the legislative provisions and the Italian regulatory context.

2.2.1. The legislative provisions

- (24) The legislative provisions concerned are Article 1 of the Prime Ministerial Decree of 6 February 2004⁽¹¹⁾ (hereinafter 'the 2004 Decree'), as implemented by the relevant regulatory provisions and Article 11(11) of Decree-Law No 35 of 14 March 2005, converted into Law No 80/2005 'Urgent Provisions under the Action Plan for Economic, Social and Territorial Development' (hereinafter 'Law No 80/2005') as implemented by the relevant regulatory provisions⁽¹²⁾.

2.2.2. The regulatory context in Italy

2.2.2.1. The AEEG

- (25) Italy established the AEEG in 1995⁽¹³⁾. The AEEG is entrusted with a wide range of regulatory tasks and has far-reaching powers. In particular, it sets and updates the electricity tariffs as well as the modalities for the collection of resources required to cover general system charges⁽¹⁴⁾. In discharging these functions, the AEEG takes into account the policy indications given by the government as regards the provision of services in the general interest of the country⁽¹⁵⁾.

⁽¹¹⁾ Article 1 of the 2004 Decree reads as follows: '1. Supplementing the criteria laid down in Article 1(1)(c) of the Prime Ministerial Decree of 31 October 2002, the Authority for Electrical Power and Gas shall extend the treatment referred to in point 2 of the Decree of the Ministry for Industry, Trade and Craft Industries of 19 December 1995 to supplies of energy for the production and processing of aluminium, lead, silver and zinc, limited to plants already in existence at the time of the entry into force of the present Decree and located in insular areas having insufficient or no connections to the national electricity and gas networks. 2. The tariff treatment referred to in point 1 is temporary; it shall be terminated upon the establishment or the improvement of connections to the national electricity and gas grids, and shall in any event come to an end on 30 June 2007'.

⁽¹²⁾ Article 11(11) of Law No 80/2005 reads as follows: 'In order to allow the development and the restructuring of production of the companies concerned, the application of favourable tariff conditions for the supply of electricity, provided by Article 1(1)(c) of Decree Law No 25 of 18 February 2003, as converted, with amendments, into Law No 83 of 17 April 2003, is prolonged until the end of 2010, based on the tariff conditions applicable as of 31 December 2004'. The provision of Decree Law No 25/03 referred to the characterisation of the Alcoa tariff as a general system charge.

⁽¹³⁾ Law No 481/1995.

⁽¹⁴⁾ Article 2(12)(e) of Law No 481/1995.

⁽¹⁵⁾ Article 2(21) of Law No 481/1995.

- (26) Acting within the powers attributed to it, the AEEG has, over the years, issued a large number of decisions (*delibere*) laying down precise modalities for the management of preferential tariff schemes in Italy.

2.2.2.2. The Equalisation Fund

- (27) The management of surcharges and other contributions in the electricity sector is entrusted to the Equalisation Fund, a public body established by Legislative Decree No 98 of 26 January 1948. The Equalisation Fund acts on instructions from the AEEG. In particular, it handles the financial flows related to the preferential electricity tariffs (collection of levies and payment to final beneficiaries).

2.3. The context in which the preferential tariff was introduced and its changes over time

- (28) In order to assess the Alcoa tariff which is the subject of this Decision it is necessary to revisit the context in which it was introduced and its changes over time.

2.3.1. Introduction of the tariff: the 1996 Alumix decision

- (29) In the early 1990s, as part of the liquidation of the State-owned conglomerate EFIM⁽¹⁶⁾, the Italian aluminium producer Alumix was restructured, privatised and sold to Alcoa. Alumix operated two primary aluminium smelters, one in Portovesme, Sardinia, and the other in Fusina, Veneto.
- (30) The acquisition of Alumix by Alcoa was made conditional upon the provision by ENEL, the State-owned electricity supplier, of a preferential tariff for the supply of electricity to the two smelters.
- (31) The preferential tariff for Alcoa was established by the Ministerial Decree of 19 December 1995 (hereinafter 'the 1995 Decree'). This Decree laid down that Alcoa would benefit from the preferential treatment set out in Decision CIP 13/1992 until the end of 2005⁽¹⁷⁾. After that date, the way that Alcoa was treated would be brought into line with that of other electricity customers.

⁽¹⁶⁾ EFIM (*Ente Partecipazioni e Finanziamento Industrie Manifatturiere* or Manufacturing Industry Investment and Financing Office) was a State-owned holding company with controlling stakes in a large number of industrial sectors. EFIM was privatised between 1992 and 1996.

⁽¹⁷⁾ Article 2 of the 1995 Decree reads: 'The treatment of surcharges laid down in CIP [Commissione Interministeriale Prezzi or Interministerial Price Committee] resolution No 13 of 24 July 1992 and subsequent amendments, applying to all [electricity] supplies for the production of primary aluminium, but limited to the plants existing at the time of the entry into force of the present Decree, shall be abolished from 31 December 2005. After this date, the tariff treatment shall be brought into line with that for all customers'.

- (32) The reduced tariff was examined under the State aid rules in the case C 38/92. In its decision of 4 December 1996⁽¹⁸⁾ (hereinafter 'the *Alumix* decision'), the Commission ruled that it did not constitute State aid on the basis of the considerations summarised below.
- (33) Under the arrangement under consideration, the State set the tariff to be charged to Alcoa, and ENEL, the only supplier of electricity at the time in Italy, provided Alcoa with electricity at the prescribed tariff. The prices for both smelters were established for 10 years. For Sardinia, the tariff was set at ITL 36,3/kWh in 1996, to be gradually increased to reach ITL 39,6/kWh in 2005. For Veneto, the tariff was to reach ITL 39,9/kWh in 2005. Converted into euro, these prices range between EUR 18 and EUR 20/MWh.
- (34) ENEL was at the time a State-owned body⁽¹⁹⁾ with a monopoly on the supply of electricity. The Commission, therefore, examined whether ENEL was acting like a rational market operator in applying the price set to Alcoa.
- (35) The Commission assessed the electricity supply situation in the two regions concerned over the ten-year period covered by the preferential tariff. It noted that in Sardinia and Veneto the electricity market was characterised by an overcapacity in electricity generation which was unlikely to disappear in the following ten years. It also noted that it was impossible for generators to export electricity from these regions because of insufficient interconnection with mainland Italy in the case of Sardinia and due to lack of demand from neighbouring regions in the case of Veneto⁽²⁰⁾.
- (36) In these circumstances, the Commission held that a large industrial client like Alcoa had substantial bargaining power with respect to ENEL, since the closure of the two smelters, which were among ENEL's best customers in Italy, would entail even greater overcapacity and a worsening cost structure for ENEL. Therefore it was in ENEL's economic interest to supply the smelters in Portovesme and Fusina with electricity at a particularly low price.
- (37) The Commission considered that a rational electricity supplier would be prepared to sell at a price that

covered its average marginal cost of production, calculated on the basis of the actual fuel mix used by power plants in the regions concerned, plus a small contribution towards fixed costs. The price set for Alcoa was shown to comply with these criteria. As for the modest annual increases in the Alcoa price set for the following ten years, the Commission considered them justified by the prediction that ENEL's marginal cost of production would decrease over the years, thanks to improvements in the fuel mix and generation technologies.

- (38) The Commission thus concluded that ENEL was behaving like a rational market operator in granting the tariff and the measure was accordingly declared not to constitute State aid within the meaning of Article 87(1) of the EC Treaty.

2.4. Transformation of the Alcoa tariff into a 'general system charge' and relevant changes in the financing mechanism

- (39) In the years immediately following the *Alumix* decision, the Italian electricity system was restructured with a view to the gradual liberalisation of the EU electricity market⁽²¹⁾.
- (40) In 1997 the standard electricity tariff⁽²²⁾ was restructured and divided into tariff components⁽²³⁾. The Alcoa tariff underwent a first change. The *Alumix* price, which had been a global figure before the reform, was unbundled into tariff components, so that it would fit within the new standard tariff structure. The tariff components applicable to Alcoa were reduced in such a way that the end-price corresponded exactly to that of the *Alumix* decision. At this stage, ENEL, as Italy's sole electricity supplier, was still granting the tariff directly: it charged Alcoa the *Alumix* price, and did not receive any separate compensation in respect of its supplies to the undertaking.

⁽²¹⁾ Introduced by Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity (OJ L 27, 30.1.1997, p. 20), which was transposed in Italy by Legislative Decree No 79 of 16 March 1999.

⁽²²⁾ The standard tariff reflects the way in which electricity system costs are unbundled and imputed to the various categories of users.

⁽²³⁾ The standard tariff was divided into two parts, A and B, each consisting of several tariff components. Part A reflected fixed system costs, including general system charges, while Part B reflected variable generation costs (notably fuel costs). Initially generating system charges included only the following costs: extraordinary costs sustained in 1994, 1995 and 1996 (component A1); costs of dismantling nuclear power plants (component A2) and cost of constructing renewable energy installations under Decision CIP 6/92 (component A3). Subsequently, other categories of costs were included: preferential electricity tariffs (component A4), certain research costs (component A5) and the stranded costs of electricity producers (component A6).

⁽¹⁸⁾ OJ C 288, 1.10.1996, p. 4.

⁽¹⁹⁾ See Decision in case No IV.JV.2 – ENEL/FT/DT (OJ C 178, 23.6.1999, p. 15).

⁽²⁰⁾ The Lombardy, Emilia Romagna and Piedmont regions already covered their total electricity demand in part from their own output and in part by long-term import contracts established until 2003.

(41) In 1999, when Italy transposed the first EU liberalisation directive ⁽²⁴⁾, ENEL ceased to have a monopoly over electricity supplies in Italy and was split into several entities.

(42) In 2000 Italy decided to include the *Alumix* tariff among the 'general charges of the electricity system' ⁽²⁵⁾. This new status led to the first significant change in the financing mechanism of the *Alumix* tariff. While ENEL had previously sold electricity directly to Alcoa at the preferential rate, under the new mechanism ⁽²⁶⁾ ENEL received the full ordinary price charged to large industrial clients, and other electricity customers provided the funds necessary to ensure that Alcoa continued to pay the *Alumix* price. In practice, Alcoa was nominally charged the full price, but benefited from a direct discount on its bill. ENEL financed this discount by retaining the proceeds of a newly introduced parafiscal charge by way of component A4 of the electricity tariff which was paid by all users ⁽²⁷⁾. In 2002, Alcoa concluded a bilateral contract with ENEL at a nominal price corresponding approximately to the standard tariff charged by the utility for the supply of high-voltage electricity.

(43) A further significant change occurred in 2004 with the adoption by the AEEG of Decision No 148/04, which entrusted the full administrative management of the tariffs to the Equalisation Fund. Under this system, ENEL no longer retained the proceeds of the A4 component, but transferred them entirely to the Equalisation Fund, which carried out the calculations and reimbursed Alcoa. In practice, by this mechanism Alcoa paid the price contractually agreed with ENEL and received *ex post* from the Equalisation Fund a compensatory contribution enabling it in reality to continue paying the *Alumix* price. For Alcoa, this new administrative

arrangement came into effect in September 2004 and still applies to date ⁽²⁸⁾.

2.5. The first disputed extension of the Alcoa tariff

(44) By the 2004 Decree the Italian government extended to 30 June 2007 the preferential electricity tariff established by the Decree of 19 December 1995 for 'supplies of electricity for the production of aluminium, lead, silver and zinc, limited to plants already in existence at the time of entry into force of the present Decree, located in insular areas having insufficient or no connections to the national electricity and gas networks' ⁽²⁹⁾.

(45) In practice, the 2004 Decree was designed to (a) prolong the existing tariff applicable to Alcoa until June 2007 and (b) extend the same treatment to three other companies located in Sardinia: Portovesme, ILA and Euroallumina.

(46) The extension of the Alcoa tariff set out by the 2004 Decree was implemented, at the regulatory level, by AEEG Decision No 148/04/EC which also introduced the changes to the financing mechanism mentioned in recital 43 above.

(47) This first prolongation was the subject of the formal investigation proceedings concerning the 2004 Decree opened in Case C 38/04 ⁽³⁰⁾. According to Italy ⁽³¹⁾, the 2004 Decree was not implemented with respect to Alcoa, which continued to benefit from the tariff based on its original legal basis, the 1995 Decree.

2.6. The second disputed extension of the Alcoa tariff

(48) By Article 11(11) of Law No 80/2005, the Italian authorities extended until 2010 the preferential tariff for Alcoa at the tariff conditions in force on 31 December 2004 ⁽³²⁾. Pursuant to Law No 80/2005, the extension of the tariff was to take effect as of 1 January 2005. However, the date was subsequently changed to 1 January 2006 by AEEG Decision No 286/05/EC on instructions from the national authorities.

⁽²⁴⁾ See footnote 21.

⁽²⁵⁾ Article 2 of the Decree of the Ministry of Industry, Trade and Craft Industries of 26 January 2000 classified the existing preferential tariffs, including Alcoa's, as a new category of general system charges. This classification was confirmed in later legislation, most recently by Article 1(1)(c) of Law No 83 of 17 April 2003.

⁽²⁶⁾ Introduced by AEEG Decision No 204/99/EC.

⁽²⁷⁾ More precisely, under the system introduced by AEEG Decision No 204/99, the administration of the preferential tariffs was entrusted to the local distributors and to the Equalisation Fund. Local distributors collected the proceeds of the A4 component and transferred them to the Equalisation Fund, which administered a dedicated account (*Conto per la perequazione dei contributi sostitutivi del regime tariffari speciali* or Equalisation Account for contributions replacing Special Tariff Schemes). However, if a distributor had to grant a preferential tariff to one of its customers, it could retain the proceeds of the A4 component paid by its other customers in order to recover the direct deduction from the preferential customer's bill. If the distributor's proceeds were insufficient, the balance was to be covered by the Equalisation Fund using the funds in the dedicated account. See also AEEG Decision No 228/01/EC, in particular Articles 43 and 56 of the annexed *Testo Integrato* (the compendium of rules governing the provision of electricity in Italy).

⁽²⁸⁾ It should, however, be noted that part of AEEG Decision No 148/04 has ceased to be applied to Alcoa. The Decision introduced a new calculation method for the complementary contribution paid to the beneficiaries of preferential tariffs. For Alcoa, this method would have entailed a reduction of the subsidy, i.e. a net increase in the preferential price. Alcoa challenged this provision before the Lombardy Administrative Court. In its ruling of 10 May 2005, the court partially annulled the Decision insofar as it applied to Alcoa. Therefore, Alcoa's compensatory contribution continued to be calculated with the method which pre-dated Decision No 148/04, and which ensured that Alcoa paid the *Alumix* price.

⁽²⁹⁾ This is the wording of Article 1 of the 2004 Decree. It also covered Alcoa's Fusina smelter, even though that smelter was not located in an insular area devoid of connections to the energy networks.

⁽³⁰⁾ Commission Decision C(2004) 4329 of 16 November 2004 (OJ C 30, 5.2.2005, p. 7).

⁽³¹⁾ Letter of 3 March 2006.

⁽³²⁾ See footnote 12 for the full text of Article 11(11) of Law No 80/2005.

- (49) In order to determine the price which Alcoa should pay beyond 2005, Law No 80/2005 introduced an indexation mechanism whereby, from 1 January 2006, the preferential price (that is the price set in the *Alumix* decision for the year 2005) was to increase by 4 % yearly, or, alternatively, by the average percentage increase in the Amsterdam and Frankfurt electricity exchanges ⁽³³⁾.
- (50) However, after consultations with the beneficiaries, the AEEG gave a different interpretation to the updated mechanism. AEEG Decision No 217/05 stipulated that the annual tariff increase would follow average wholesale prices, but could not increase by more than 4 %. This updated mechanism resulted de facto in lower annual increases in the preferential tariff compared to what was originally provided for in the legislation.
- (51) The second extension was the subject of the formal investigation proceedings opened in Case C 36/06. When the Commission opened formal investigation proceedings in respect of Article 11(12) of Law No 80/2005, the AEEG, by Decision No 190/06, made payments under Law No 80/2005 conditional upon the provision by Alcoa of a bank or parent company guarantee to cover the risk of recovery of the aid.
- (52) The payments made by the Equalisation Fund to Alcoa over the period from January 2006 to January 2009 are indicated in the table below. The figures for 2009 are incomplete, inasmuch as they reflect only the payments made in January 2009, whereas Alcoa continued to receive payments over the following months.

(in EUR)

	2006	2007	2008	2009
Fusina, Veneto	38 984 539,22	36 978 386,83	449 534 611,10	3 776 733,70
Portovesme, Sardinia	133 556 933,73	121 087 555,95	160 529 510,20	12 365 849,45
Total	172 541 472,95	158 065 942,78	210 064 121,30	16 142 583,15

3. DECISION TO INITIATE PROCEEDINGS UNDER ARTICLE 88(2) OF THE EC TREATY

- (53) The Commission's decision to initiate formal investigation proceedings was based on the following grounds:

3.1. Case C 38/A/04

- (54) The Commission classified the tariffs introduced by the 2004 Decree as operating aid and assessed whether such aid could be authorised on the basis of the regional aid guidelines ⁽³⁴⁾, since in 2004 Sardinia was an assisted region pursuant to Article 87(3)(a) of the EC Treaty. The Commission expressed doubts on the possibility of authorising the aid on that basis, since such *ad hoc* aid, granted to a limited number of undertakings, did not seem to promote regional development.
- (55) As for the specific case of Alcoa, the Commission pointed out that the new tariff appeared to differ from the *Alumix* tariff in that the *Alumix* tariff had been granted by ENEL, Italy's electricity supply monopoly, whereas the new tariff involved the selective intervention of the State to compensate for the difference between a market price agreed with an electricity producer and the preferential price fixed in 1996.
- (56) In addition, the Commission wondered whether the measure might have the effect of reducing the level of taxation applicable to the company. Such a reduction would have to derive its legal basis from Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity ⁽³⁵⁾.

⁽³³⁾ Article 11(13) of Law No 80/2005.

⁽³⁴⁾ OJ C 74, 10.3.1998, p. 9, points 4.15–4.17.

⁽³⁵⁾ OJ L 283, 31.10.2003, p. 51.

3.2. Case C 36/B/06

- (57) The 2006 Decision to open formal investigation proceedings focused on the Alcoa tariff ⁽³⁶⁾. The Commission noted that the regulatory framework and market conditions that had prevailed at the time of the *Alumix* decision were very different from those prevailing in the period covered by the opening decision. In particular, the electricity market had now been liberalised and the administration of the scheme had been handed over to the Equalisation Fund. Therefore, the Commission considered it necessary to re-examine the presence of State aid in the Alcoa tariff.
- (58) The Commission took the view that the tariff constituted State aid, on the grounds that (a) the reduction of the electricity tariff constituted an economic advantage; (b) the decision to grant the tariff was taken by the Italian authorities and was financed by a transfer of State resources in the form of a parafiscal levy; (c) the measure threatened competition; and (d) the measure had an impact on intracommunity trade, given that aluminium was extensively traded on world markets. The Commission regarded the measure as operating aid.
- (59) The Commission also stated that the previous finding that the *Alumix* tariff did not constitute State aid did not mean that the new measure constituted existing aid. The Commission approval of the *Alumix* tariff, based on the economic assessment of the circumstance prevailing at that moment, was limited in time and could not cover the extension of the tariff provided for by Law No 80/2005.
- (60) As regards compatibility, the Commission assessed whether the preferential tariff could be authorised on the basis of the guidelines on national regional aid.
- (61) As far as the Veneto plant was concerned, the Commission noted that it was not located in a region eligible for aid under Article 87(3)(a) of the EC Treaty, and as such did not qualify for regional aid.
- (62) Sardinia was an assisted region pursuant to Article 87(3)(a) until the end of 2006. However, the Commission expressed doubts as to the possibility of authorising the measure on the basis of the guidelines on national regional aid ⁽³⁷⁾ covering that period.
- (63) Despite Italy's insistence that high electricity prices in Sardinia constituted a handicap for the development of the island, the Commission found that Italy had not

demonstrated the existence of significantly higher prices in Sardinia, either on average or, specifically, for energy-intensive undertakings (Italy did not provide data on the bilateral contracts established between energy-intensive companies and their suppliers, arguing that such data were not publicly available). In addition, Italy did not explain why higher prices constituted a regional handicap, or how the tariff contributed to regional development. The Commission recalled that in case C 34/02 ⁽³⁸⁾, it had not accepted that the lack of energy connections in Sardinia should be considered a handicap for the development of SMEs in the region (and had reached a negative decision). The Commission therefore expressed doubts as to the necessity of the aid.

- (64) The Commission further doubted that such *ad hoc* aid was proportional to the regional handicaps, bearing in mind in addition the method used to calculate the preferential price, which bore no relation to prices practised in the rest of Italy.
- (65) The Commission noted that the aid was not degressive in real terms, in view of the 4 % cap imposed on the tariff increases.
- (66) Turning to the period covered by the guidelines on national regional aid for 2007-2013 ⁽³⁹⁾, the Commission noted that Sardinia would cease to qualify for regional aid under Article 87(3)(a) of the EC Treaty, and in particular for operating aid. It considered that, while a two-year transitional period could be authorised, under the guidelines for the linear phasing-out of existing operating aid schemes, it did not seem appropriate to allow new operating aid to be introduced for a few months with a programmed phasing-out, bearing in mind in addition the doubts expressed and the distortive nature of the aid.
- (67) In conclusion, the Commission expressed doubts as to the possibility of authorising the preferential tariff for Alcoa, either as regional aid, or on any other grounds, which Italy had in any event failed to identify.

3.3. Alcoa's challenge to the 2006 decision to initiate proceedings

- (68) The 2006 Decision to initiate proceedings was challenged by Alcoa before the Court of First Instance. On 25 March 2009, the Court handed down its judgment (hereinafter 'the Court's judgment') upholding the Decision and rejecting Alcoa's arguments in their entirety ⁽⁴⁰⁾.

⁽³⁶⁾ The 2006 Decision to open formal investigation proceedings also concerned Terni. However, the Terni and Alcoa tariffs were assessed separately.

⁽³⁷⁾ OJ C 74, 10.3.1998, p. 9, point 4.

⁽³⁸⁾ Commission Decision C(2002) 3715 of 16 October 2002, Aid towards the energy costs of SMEs (OJ L 91, 8.4.2003, p. 38).

⁽³⁹⁾ OJ C 54, 4.3.2006, p. 13.

⁽⁴⁰⁾ Case T-332/06 *Alcoa Trasformazioni*, not yet reported (appeal pending).

4. OBSERVATIONS SUBMITTED BY INTERESTED PARTIES

- (69) The Commission's invitation to submit comments on the two decisions to open in-depth investigations prompted reactions from Alcoa and from third parties concerned. Only the observations relevant to the Alcoa tariff are summarised here.

4.1. Observations submitted by Alcoa

4.1.1. Case C 38/A/04

- (70) According to Alcoa, the tariff is meant to address a market failure, namely the failure of the recently liberalised electricity market to deliver competitive prices due to the significant market power of incumbent operators. This market failure is said to be particularly evident in Sardinia. In such circumstances, there is alleged to be a need for regulatory action, including action in the form of tariff arrangements, to accompany the transition from a monopoly to full competition.
- (71) Alcoa's legal analysis insists on the fact that the tariff does not constitute aid within the meaning of Article 87(1) of the EC Treaty, since the circumstances which justified the 1996 *Alumix* decision that no aid was involved are still valid. In particular, the tariff does not confer an advantage, its financing method does not involve a transfer of State resources and, considering the peculiarities of trade in primary aluminium, the tariff does not affect intra-community trade or distort competition.
- (72) Alcoa further claims that, even if the measure were to be classified as State aid, the Sardinian tariff would be compatible under regional aid rules.

4.1.2. Case C 36/B/06

- (73) Alcoa submits that the tariff addresses a market failure, that it does not constitute State aid, that in any event it would constitute existing rather than new aid and that its recovery is precluded by the principle of legitimate expectations.
- (74) Alcoa provides ample background information on aluminium production and trade. Aluminium smelting is the most energy intensive of all industrial processes (with consumption of 15 kWh/kg of aluminium produced). Total primary aluminium production worldwide in 2006 was approximately 33,7 million tonnes, of which only 4,5 million were produced within the EEA. The EU-25 and the EEA are significant net importers of primary aluminium. In 2006 the EU-25 imported 4,7 million tonnes and imports are expected to

rise to 5,5 million tonnes in 2010. In 2006 the aluminium industry in the EU employed 106 000 ⁽⁴¹⁾ directly and provided employment to about another 300 000 indirectly. At the time when Alcoa submitted its comments a total of 22 primary aluminium smelters were operating within the EU-25 (31 in the EEA), all at full capacity.

- (75) Primary aluminium is a commodity, and its world reference price is established in the London Metal exchange. The two Italian smelters in Fusina and Portovesme produce approximately 200 000 tonnes. According to Alcoa, this limited output is incapable of affecting primary aluminium prices.

4.1.2.1. Power supply arrangements are indispensable

- (76) Electricity is the principal cost item in the production of primary aluminium. According to Alcoa, smelters can operate only if long-term supply arrangements can be entered into with electricity producers. Cost-based long-term agreements can still be offered by willing sellers in the present day, as illustrated by the agreement concluded by Alcoa in Iceland ⁽⁴²⁾. However, according to Alcoa, in the absence of cost-based contractual arrangements, smelters are forced to shut down. Since 2003, three smelters within the EU-25 have been closed for this reason and more closure plans have been announced. Alcoa concludes that, without the tariff extension, it would be forced to shut down the two Italian plants in Fusina, Veneto, and Portovesme, Sardinia, immediately.
- (77) Alcoa points out that the governments of several Member States are encouraging the establishment of cost-based long-term supply contracts between energy-intensive industrial consumers and power generators, in view of the fact that electricity markets are not functioning properly. These solutions are considered necessary as interim measures to ensure fair pricing and prevent industry closures. Alcoa provides a brief description of measures adopted by: Finland (consortia investing in a new nuclear reactor, with off-take rights at a price pegged to production costs), Germany (discount of 35-50 % on transmission costs, plus a reduction in charges related to renewable energies for large industrial users), Spain (regulated tariffs), France (consortia of large users investing in new nuclear power plants, regulated 'return' tariffs), Sweden (consortia for investments in new power plants) and Belgium (purchasing consortium).

⁽⁴¹⁾ This figure provided by Alcoa includes not only the smelting of primary aluminium, but also its further processing, which is more labour-intensive.

⁽⁴²⁾ Under this agreement, the Icelandic power utility undertook to build a new hydropower plant and supply electricity to the Alcoa smelter at a price ensuring a rate of return to the power utility of 5,5 % per year. The project was approved by the EFTA Surveillance Authority by Decision No 40/03/COL of 14 March 2003.

- (78) Alcoa underlines that the Commission itself has recognised, in the energy sector inquiry ⁽⁴³⁾, that electricity markets in Europe are not functioning properly. Alcoa also lists a number of initiatives taken or announced by the Commission in the energy sector, such as the work of the High Level Group on Competitiveness, Energy and the Environment ⁽⁴⁴⁾.

4.1.2.2. The tariff is not State aid

- (79) Alcoa submits that the tariff is not State aid because: (a) there has been no significant change in the circumstances that led the Commission to conclude that the *Alumix* tariff did not confer an advantage; in particular, the price paid by Alcoa continues to be consistent with the parameters specified by the Commission in the *Alumix* decision; (b) the measure neither distorts competition nor affects intra-Community trade; and (c) according to the relevant case-law of the Community courts, the measure does not involve the transfer of State resources.

4.1.2.3. No advantage

- (80) Alcoa claims that, in assessing the existence of an advantage, the crucial issue is whether the price paid by Alcoa is lower than a *normal* market price. Alcoa contends that the special price is equivalent to what the company would have paid under normal market conditions, that is in a fully competitive market. In the *Alumix* case, the Commission had come to the conclusion that, in a fully competitive market, a private electricity supplier would sell power to its best customers at the marginal cost plus some small contribution to fixed costs, and that the State could set tariffs based on the same criteria. According to Alcoa, the test to be applied in the present case is whether the prices paid by Alcoa have been higher or lower than its power supplier's marginal costs (plus some contribution to fixed costs). Alcoa submits calculations to support its case.

	(in EUR/MWh)	
	2005	2006
Sardinia		
Special tariff applied to Alcoa at Portovesme	24,94	25,90
Minimum Sardinia region pool price (IPEX)	20,02	21,0
Veneto		
Special tariff applied to Alcoa at Fusina	25,7	27,1
Minimum Northern Italy region pool price	20,02	21,0

- (81) For both Sardinia and Veneto, Alcoa uses the minimum IPEX pool prices (EUR 20,2 and EUR 21,0 MWh in 2005 and 2006) as a proxy for the marginal costs of generators, since no supplier would sell energy on spot markets at prices lower than their marginal costs and thus minimum spot prices are higher than marginal generation costs. Confirmation of the reliability of the minimum prices indicated above can be provided, according to the company, by comparing them with the standard marginal costs for coal-fired power plants, which Alcoa estimates at EUR 20/MWh.
- (82) To summarise, according to Alcoa, in Veneto as well as in Sardinia the methodologies set out in recitals 80 and 81 confirm that the prices paid by Alcoa are consistent with the criteria laid down in the *Alumix* decision.
- (83) Alcoa disputes what it sees as the use by the Commission of average IPEX prices as the benchmark for assessing the existence of an advantage. Alcoa asserts that the average IPEX price is not representative of the price paid by a large industrial consumer like Alcoa, which consumes electricity 24 hours a day and which instead of purchasing it on the spot market concludes long-term bilateral supply contracts.

⁽⁴³⁾ See Energy Sector Inquiry – Communication from the Commission – Inquiry pursuant to Article 17 of Regulation (EC) No 1/2003 into the European gas and electricity sectors (Final Report) SEC(2006) 1724, COM(2006) 851 final.

⁽⁴⁴⁾ First Report of the High Level Group, 'Contributing to an integrated approach on competitiveness, energy and environment policies' (http://ec.europa.eu/enterprise/environment/hlg_en.htm). The High Level Group is a forum in which representatives of the Commission and business leaders take part.

- (84) In addition, Alcoa submits that ENEL enjoys a dominant position in the supply of electricity almost everywhere in Italy. In Sardinia, in particular, ENEL is shielded from competition by non-Sardinian suppliers as a result of the limited capacity of the interconnector between Sardinia and the Italian mainland. Therefore, in Italy neither the spot market nor the market for long-term supply agreements is for the time being characterised by a truly competitive structure. The prices charged by ENEL to Alcoa do not, therefore, reflect the prices that would normally prevail in a fully competitive market, either in Sardinia or in Veneto.
- (85) In conclusion, Alcoa contends that the prices it has been paying in Italy still fully comply with the criteria laid down by the Commission in the *Alumix* decision, and accurately reflect what would happen if the market functioned properly. Alcoa is not, therefore, the beneficiary of an advantage which it could not obtain in a fully competitive market.

4.1.2.4. No impact on trade

- (86) Alcoa submits that the tariff does not have an impact on intra-Community trade and cannot distort competition. The price of primary aluminium is set in the London Metal Exchange, and variations in local production costs do not translate into differences in prices. Italy's primary aluminium output is so low, according to Alcoa, that it has no potential for affecting world prices.
- (87) Demand for primary aluminium in the EU-25 has grown steadily (with a 42 % increase in the level of demand between 1996 and 2005). European output, however, has not kept pace. In 2004 only 41 % of EU-25 demand was covered by EU-25 production, down from 50 % in 1996. Therefore there is a growing production deficit in the EU, and demand is increasingly being met by imports from non-EU countries.
- (88) Alcoa contends that, if the aluminium industry in Italy disappeared, no new Italian or EU entrant could replace the capacity shut down in Italy, as EU plants are already working at full capacity, and no existing producer or new entrant would have an incentive to increase its capacity, given that the long-term prospects as regards future availability of affordable power are uncertain.
- (89) Moreover, Alcoa claims that the interests of other European producers are not threatened by the continuation of the Italian tariff schemes, since they ensure an electricity price which is only marginally lower than the weighted average paid by primary aluminium producers in the EU-25.
- (90) Comparison of average smelter tariffs

	(in EUR/MWh)			
	2002	2003	2004	2005
Italian weighted average smelter tariff	22,0	23,4	24,2	25,1
EU-25 weighted average smelter tariff	24,9	24,0	25,1	26,4
EEA weighted average smelter tariff	21,4	21,2	22,0	23,3
World weighted average smelter tariff	21,1	19,3	19,4	21,2

4.1.2.5. No State resources

- (91) Alcoa relies on the *PreussenElektra* ⁽⁴⁵⁾ and *Pearle* ⁽⁴⁶⁾ case-law to substantiate its thesis that the measure at hand is not financed through State resources. Alcoa claims that the funds required to finance the tariff are transferred by private entities (electricity consumers) to a private entity (Alcoa): the role of the State is confined to the adoption of a law mandating payment of the required sums, with no discretion to dispose of the funds otherwise than in the implementation of the statutory scheme. In particular, according to Alcoa, the Equalisation Fund cannot exercise any control over the funds and is a mere accounting intermediary.

⁽⁴⁵⁾ Judgment of the Court of Justice in Case C-379/98 *PreussenElektra* [2001] ECR I-2099.

⁽⁴⁶⁾ Judgment of the Court of Justice in Case C-345/02 *Pearle* [2004] ECR I-7139.

4.1.2.6. Existing rather than new aid

- (92) Alcoa further submits that, even if one were to consider that the tariff constituted State aid, it would constitute 'existing aid' rather than 'new aid'.
- (93) Alcoa maintains that the *Alumix* decision was not limited in time and did not cease to be effective on 31 December 2005. In Alcoa's view, the Commission's argument that a 'change of circumstances' put an end to the effect of the *Alumix* decision is without merit, since neither the liberalisation of the market, nor the role entrusted to the Equalisation Fund involved any substantial change with respect to the advantage (or, rather, the absence thereof) resulting from the *Alumix* regime. Alcoa continued to pay the same net price after the reforms and that price did not confer an advantage on the buyer of such energy, as recognised in the *Alumix* decision. Therefore, the reforms did not constitute a 'change in circumstances' such as would strip the *Alumix* decision of its validity. As for the role entrusted to the Equalisation Fund, according to Alcoa the change was of a purely administrative nature and did not affect the substance of the mechanism.
- (94) Alcoa further argues that, even if a change in circumstances had occurred, the company would still be entitled to 'existing aid' treatment, on the basis of Article 1(b)(v), first sentence, of Council Regulation (EC) No 659/1999⁽⁴⁷⁾ (measures which have become aid owing to the evolution of the common market). It says this is confirmed by the *Belgian Coordination Centres* case-law⁽⁴⁸⁾. In that case, the Court ruled that, once it had been determined that a particular aid scheme did not constitute State aid, the only way for the Commission to reassess its position was to follow the rules on existing aid, and the effect of reassessment could thus be valid only in the future.
- (95) In Alcoa's view, it is irrelevant that the liberalisation of the energy markets occurred after the Commission adopted the *Alumix* decision, since liberalisation did not affect the reasoning for the finding that no aid was involved (the fact that prices covered marginal costs), and could not lead to a change in the nature of the measure. Therefore, the Commission cannot rely on Article 1(b)(v), second sentence, of Regulation (EC) No 659/1999⁽⁴⁹⁾ to declare the measure to be 'new aid'. Moreover, even if it were to be assumed that liberali-

sation did play a role, Alcoa submits, on the basis of the judgment in *Alzetta*⁽⁵⁰⁾, that the Commission would be precluded from relying on Article 1(b)(v), second sentence, of Regulation (EC) No 659/1999.

- (96) In addition, the liberalisation of the electricity market occurred prior to the adoption of Regulation (EC) No 659/1999. Therefore, the Regulation cannot apply to measures in the electricity sector even if they have become aid measures as a result of the liberalisation, and such measures are governed instead by Article 1(b)(v), first sentence, of Regulation (EC) No 659/1999 (existing aid) and by the Court's case-law in *Alzetta*.

4.1.2.7. Legitimate expectations

- (97) Alcoa further submits that, even if the current scheme were not considered to be existing aid, the company would, in any event, be entitled to rely on legitimate expectations, in view of the substantial investments carried out by Alcoa in both plants on the assumption that the tariff did not constitute aid and the existence of precedents in the Commission's decision-making practice which show a certain margin of discretion in treating aid as existing aid, in particular the Commission's decision on tax-free provisions for setting up establishments abroad⁽⁵¹⁾.

4.1.2.8. Compatibility of the Sardinian tariff as regional aid

- (98) Alcoa maintains that, in any event, as far as the Sardinian plant is concerned, the challenged measure complies with the requirements for benefiting from regional aid.
- (99) Alcoa describes the regional handicaps of Sardinia and the problems of energy-intensive industries, arising from Sardinia's lack of interconnection in terms of energy supply and the existence of an ENEL/ENDESA duopoly which distorts the normal competitive process and keeps prices high even for large users. The tariff is said to seek to remedy this handicap.
- (100) Alcoa points out that the shutdown of the smelters would have the direct effect of destroying 2 500 jobs. However, there would be an indirect effect on thousands more, because of Alcoa's position as one of the key employers in the region. The impact would be even more dramatic in the case of a sudden shutdown, as opposed to a gradual phasing-out of activities.

⁽⁴⁷⁾ OJ L 83, 27.3.1999, p. 1.

⁽⁴⁸⁾ Judgment of the Court of Justice in Joined Cases C-182/03 and C-217/03 *Belgium v Commission* [2006] ECR I-5479, paragraph 77.

⁽⁴⁹⁾ Article 1(b)(v), second sentence, of Regulation (EC) No 659/1999 reads: 'Where certain measures become aid following the liberalisation of an activity by Community law, such measures shall not be considered as existing aid after the date fixed for liberalisation'.

⁽⁵⁰⁾ Judgment of the Court of First Instance in Joined Cases T-298/97, T-312/97, T-313/97, T-315/97, T-600/97, T-1/98, T-3/98, T-6/98 and T-23/98 *Alzetta and others v Commission* [2000] ECR II2319, upheld by the Court of Justice in Case C-298/00 [2004] ECR I-4087, paragraphs 142-143.

⁽⁵¹⁾ Commission Decision 2002/347/ECSC (OJ L 126, 13.5.2002, p. 27) paragraph 33.

- (101) Alcoa contends that the tariff meets the criteria of proportionality in that it is limited to what is necessary to address the market failure (the absence of a competitive market in Sardinia) and the price is in line with the weighted average of the electricity prices paid by other smelters in the EU-25.
- (102) In Alcoa's view, the lack of degressivity is not proven. Degressivity should be assessed by reference to the suppliers' marginal costs, and the Commission would have to show an increase in such costs in order to demonstrate that the tariff is not degressive. As regards the 4 % cap on the increase of the tariff, contested by the Commission on the ground that it does not ensure degressivity, Alcoa contends that it is normal that the price should be fixed for a certain period. Further, a cap should reflect a normal trend, and should not take into account abnormal events, such as an the exceptional rise in oil prices. Alcoa also notes that degressivity has been accepted by the Commission in cases where a benefit was maintained for four to five years, and then decreased progressively ⁽⁵²⁾.
- (103) In Alcoa's view, the tariff is transitory, since it is set to last until the interconnection problem with the mainland is eliminated (presumably in 2010). In addition, the Commission's argument that the measure has been in force for more than five years is without merit, since until now the tariff has not constituted aid.
- (104) Finally, Alcoa contends that the 2007 guidelines on national regional aid for 2007-2013 ⁽⁵³⁾ are not applicable in substance, since the tariff was granted before 2007 and must therefore be assessed in accordance with the 1998 guidelines on national regional aid ⁽⁵⁴⁾, as specified in the transitional provisions of the 2007 guidelines.

4.2. Observations submitted by third parties

4.2.1. Case C 38/A/04

- (105) A competitor of Portovesme Srl ⁽⁵⁵⁾ submitted an analysis of the *Alumix* tariff, concluding that all the preferential tariffs introduced by Italy in Sardinia on the basis of the 2004 Decree constitute unlawful State aid which cannot be approved as regional operating aid and should be declared incompatible.

4.2.2. Case C 36/B/06

- (106) Two associations of aluminium producers submit that the tariffs are necessary to prevent the relocation of the

industry outside the EU until long-term solutions can be found.

- (107) The competitor of Portovesme Srl referred to in recital 105 asked the Commission to take account of its contribution on case C 13/06 ⁽⁵⁶⁾ in the assessment of this case as well. Again, the company concludes that the tariffs should be declared incompatible.
- (108) Italy asked the Commission to disregard the submission as irrelevant, since Case C 13/06 does not deal with the same subject matter: the measures investigated under case C 13/06 constitute new aid, whereas the Alcoa tariff is the prolongation of an existing measure. Moreover, the third party in question is not an aluminium producer and is not concerned by the measure in favour of Alcoa.
- (109) The Commission cannot accept Italy's request. The fact that the Alcoa tariff has a historical background different from those of the other tariffs does not make the observations at issue irrelevant, insofar as they address relevant questions such as the State aid character of the Sardinian electricity tariffs, their contribution to regional development and their impact on competition. In addition, in the framework of an investigation pursuant to Article 88(2) of the EC Treaty a third party does not have to be affected directly and individually by the measure on which observations are submitted.

5. OBSERVATIONS SUBMITTED BY ITALY

5.1. Case C 38/A/04

5.1.1. The tariff addresses a market failure

- (110) Italy points out that the electricity market in the EU is not yet fully competitive, as recognised by the Commission itself. Undertakings, in particular energy-intensive ones, are unable to procure electricity on comparable terms in the various Member States.
- (111) In Italy, despite the liberalisation of the sector, there are structural deficiencies (such as insufficient interconnection) which translate into high energy prices and a concentrated market structure which makes it difficult for eligible customers to select their electricity supplier. The problems are particularly acute in Sardinia, where only two suppliers exist. Therefore, Italy submits that a special tariff system reflecting demand profiles should be considered justified as a regulatory measure simulating the mechanisms that would be at play in a fully competitive market. This intervention allegedly restores the level playing field between energy-intensive undertakings operating in different Member States.

⁽⁵²⁾ Case E 24/95 Direct Guarantee Scheme in the New Länder, Commission Decisions SG(96) D/5500 of 18 June 1996 and SG(98) D/54570 of 11 November 1998.

⁽⁵³⁾ OJ C 54, 4.3.2006, p. 13.

⁽⁵⁴⁾ See footnote 34.

⁽⁵⁵⁾ Before it was split, case C 38/04 also concerned other beneficiaries: Portovesme (zinc), ILA (aluminium products) and Euroallumina (alumina).

⁽⁵⁶⁾ Case C 13/06 relates to the extension of the Alcoa tariff to Portovesme, ILA and Euroallumina pursuant to Article 11(12) of Law No 80/2005.

5.1.2. *The tariff is not State aid*

- (112) As regards Alcoa, Italy submits that the original *Alumix* tariff laid down in the 1995 Decree was declared by the Commission not to constitute State aid on the ground that it was objectively related to the smelter's consumption patterns and reflected the specificities of energy supply and demand in the regions concerned.
- (113) According to Italy, the 2004 Decree is based on the same factual elements which led the Commission to conclude that there was no State aid, while also taking into account the current crisis in the metal sector in Sardinia. The difference between the old and the new system, in its view, only concerns the tariff structure. Italy maintains that these changes became necessary following the launch of the internal energy market and in order to guarantee tariff neutrality.
- (114) More particularly, Italy submits that the Alcoa tariff does not fall under the prohibition of Article 87(1) of the EC Treaty because it does not involve the transfer of State resources and is unable to distort competition and affect intra-community trade. The fact that the tariff arrangement did not constitute aid was the reason why Italy did not deem it necessary to notify the 2004 Decree. Italy argues that, at any rate, following the opening of the in-depth investigation, Italy ceased to apply the 2004 Decree in respect of Alcoa.

5.1.3. *No State resources*

- (115) As regards the involvement of State resources, Italy maintains that the tariff system is entirely comparable with the arrangement which was declared by the Court not to involve State resources in the *PreussenElektra* case. The Equalisation Fund, as the technical accounting body for the system, cannot freely dispose of the financial resources it handles. The fact that the AEEG and the Ministry of Finance exercise a measure of control over the Equalisation Fund's activities does not mean that the State is in a position to dispose freely of those resources.

5.1.4. *No impact on trade*

- (116) As for the impact on intra-community trade, Italy's line of reasoning is identical to Alcoa's (see recitals 86 to 90).

5.1.5. *The Sardinian tariff is compatible with regional aid rules*

- (117) According to Italy, the tariff applicable in Sardinia can in any event be considered compatible with the common market as regional aid, in view of the following. The imperfections of the market for electricity in Sardinia constitute a regional handicap, which the tariff seeks to alleviate. The tariff has positive repercussions on employment and the maintenance of the social and economic fabric of the island. It is proportionate to the

disadvantages faced by the beneficiary, and is short-term and transitional.

5.2. **Case C 36/B/06**

5.2.1. *No State aid*

- (118) Italy did not deem it necessary under the State aid rules to notify the extension of the tariff provided for by Article 11(11) of Law No 80/2005 on the ground that the measure still does not constitute State aid. Indeed Italy considers that the prolongation of a measure that is not State aid is different from the prolongation of an aid measure, in that only the latter can be viewed as new aid.
- (119) Like Alcoa, Italy also maintains that the *Alumix* decision was not limited in time. It says this was intentional and shows that the Commission itself acknowledged that the tariff would need to be a long-term measure. Italy substantiates this claim by referring to the paragraph in the *Alumix* decision in which the Commission declares that 'the restructuring and the restoration of *Alumix*'s operations to viability ensures that the development of those areas is not short-lived but rather a long-term one'.

5.2.2. *No advantage, no State resources and no impact on trade*

- (120) Italy maintains that the tariff does not entail an advantage, based on the same considerations developed by Alcoa and outlined in recitals 80 to 85, does not have an impact on trade (see recitals 86 to 90) or involve the transfer of State resources (see recital 115).
- (121) Italy refers to the overcapacity in electricity generation prevailing in Sardinia and underlines that, in such a situation, Alcoa would normally have significant bargaining power and would obtain a competitive price only slightly higher than the marginal production cost of the generator. The fact that this is not possible in Sardinia is due, according to Italy, to the behaviour of the dominant operator which can set the price in Sardinia and has no commercial interest in selling at a lower price, knowing that Alcoa cannot purchase the electricity it needs anywhere else. Moreover, in a duopoly situation (ENEL and ENDESA, now E.ON⁽⁵⁷⁾), both operators may have an interest in charging a price which is higher than the economically optimal price, in order to avoid setting 'a bad precedent' in the rest of Italy. Given the substantial market power retained by the former monopoly, ENEL⁽⁵⁸⁾, Italy comes to the conclusion that there is no substantial difference between

⁽⁵⁷⁾ Following ENEL's acquisition of ENDESA, ENDESA's assets in Italy were sold to E.ON (see Merger Decision M 5171 of 13 June 2008), http://ec.europa.eu/competition/mergers/cases/decisions/m5171_20080613_20310_en.pdf

⁽⁵⁸⁾ ENEL's ability to influence prices in various Italian regions was recognised in the 'Indagine conoscitiva sullo stato della liberalizzazione dei settori dell'energia elettrica e del gas' conducted jointly by the AEEG and the Italian competition authority in 2004.

the price granted to Alcoa in a monopoly situation (approved by the Commission in *Alumix*) and the tariff applicable in the current, highly imperfect, market conditions.

- (122) Italy also disputes the reference to average IPEX prices on the same grounds as those described above in recital 83.

5.2.3. *The measure is not unlawful*

- (123) Italy, moreover, submits that the economic underpinnings of the *Alumix* decision have remained unchanged over the years. Therefore, there was nothing new in the extension of the tariff and it cannot be taken to constitute new aid. It is also, in its view, incorrect to classify the measure as unlawful aid.

5.2.4. *The tariff is justified*

- (124) Italy contends that, in its assessment, the Commission should also take into account the conclusions of the first report of the High Level Group on Competitiveness, Energy and the Environment, which singled out two new factors which have constrained aluminium production in recent years, namely the globalisation of the reference market for aluminium and the launch of the internal market for energy.

- (125) In particular, the issue of the high cost of electricity for aluminium production in Sardinia and Veneto, acknowledged in the *Alumix* decision, has not been solved since 1996. The permanence of these issues justifies the prolongation of the tariff, which was, in any event, meant to be a long-term measure to favour industrial development. Italy points out that the other circumstances which the Commission took into account in the *Alumix* decision have also remained unchanged, notably the specific consumption patterns of aluminium smelters and the insufficient degree of liberalisation of the electricity market.

- (126) Italy contends that, pending the full liberalisation of the market, it is necessary to prolong the preferential electricity tariffs and any similar instruments introduced by other Member States in order to safeguard and enhance the competitiveness of European industry.

- (127) The only long-term solution to reduce the cost of electricity is, according to Italy, the construction of adequate infrastructure in electricity generation and intercon-

nection, which will effectively open the market to new entrants. Italy points to the GALSI gas pipeline which will bring Algerian natural gas to Europe via Sardinia and the SAPEI marine cable system which will enhance interconnection with the Italian mainland. This infrastructure is currently in the construction phase. Therefore, Italy submits that the tariffs must remain in place until it has been completed.

- (128) Italy also emphasises that the present case cannot be compared to case C 34/02, which was cited in the opening decision in 2006 to suggest that the Commission had already found that a lack of electrical interconnection capacity did not constitute a regional handicap for Sardinia. According to Italy, the case cited concerned aid for SMEs, which are not large energy users and therefore are less liable to suffer from the lack of adequate energy infrastructure and the imperfection of the electricity market in Sardinia than undertakings like Alcoa.

- (129) Italy also points out that the High Level Group is aware of the need to retain on the territory of the EU energy-intensive industries, such as the ferrous and non-ferrous metal industry⁽⁵⁹⁾, by improving their competitiveness and in particular by favouring their access to electricity at competitive prices.

- (130) Italy provides a detailed description of the measures adopted by other Member States, notably Germany, Spain, France, Finland and Greece, to reduce the electricity costs of energy-intensive industries and stave off their relocation outside the EU. Italy points out that, while such measures may take different forms, they produce the same economic effects as the Italian preferential tariff, and emphasises that it would be desirable for the EU to harmonise such measures, so as to create a level playing field between European industries and their competitors in third countries. However, in the short term, the measures adopted by Italy should not be viewed as aid and should be assessed by the same yardstick as those introduced by other Member States.

6. ASSESSMENT OF THE MEASURE

6.1. Temporal and material scope of the investigation

- (131) As a preliminary step, the Commission considers it necessary to clarify the temporal and material scope of the investigation as defined in the opening decisions.

⁽⁵⁹⁾ Public consultation on the competitiveness of the European metal industry following the impact of raw material and energy supplies: http://ec.europa.eu/enterprise/non_ferrous_metals/consultation.htm

6.1.1. *The 2004 proceedings (case C 38/A/04)*

- (132) The need for such clarification arises from the fact that, when the 2004 Decree entered into force in April 2004, Alcoa's preferential tariff was covered by a State aid approval (the *Alumix* decision) until December 2005 ⁽⁶⁰⁾.
- (133) Given the temporal overlap between the *Alumix* scheme and the provisions attacked in 2004, it is necessary to clarify whether the 2004 opening decision challenged the extension in time of the Alcoa tariff beyond the original duration of the *Alumix* scheme (from 1 January 2006 onwards) or whether it also called into question the *Alumix* scheme itself over the period April 2004–December 2005 due to the changes in its financing mechanism.
- (134) A careful reading of the decision itself shows that it challenges, generically, the new tariff scheme introduced by the 2004 Decree in favour of the beneficiaries concerned (Portovesme Srl, ILA Spa, Euroallumina Spa and Alcoa), and cannot be interpreted as challenging the *Alumix* scheme itself. This conclusion is substantiated by the following observations.
- (135) Firstly, the assessment of the measure under challenge is global and does not distinguish between beneficiaries. In particular, Alcoa's distinct legal position as beneficiary of the authorised *Alumix* tariff is neither described nor assessed in detail.
- (136) Secondly, the Commission's observations on the substantial difference between the *Alumix* system and the new tariff scheme ⁽⁶¹⁾ set out to demonstrate only that the *Alumix* findings cannot be extrapolated to the new tariff scheme, given the different financing mechanism.
- (137) Thirdly, if the 2004 opening decision had intended to challenge the original *Alumix* scheme, it would have mentioned the legal basis under which the original

tariff had been granted (the 1995 Decree) and would have provided some explanation as to why the tariff arrangement as modified by the new regulatory framework curtailed the validity of the Commission's findings in *Alumix* before the date of expiry of the scheme.

- (138) Therefore, the Commission considers that, as far as Alcoa is concerned, the 2004 opening decision challenged the prolongation of the *Alumix* scheme after its expiry on 31 December 2005. The temporal scope of the 2004 investigation is therefore limited to the period starting on 1 January 2006.
- (139) However, at that date the 2004 Decree had been superseded de facto by Law No 80/2005, which took effect on 1 January 2006 (see recitals 48 and 142). Therefore, the 2004 Decree is, in substance, not relevant to the present investigation.

6.1.2. *The 2006 proceedings (case C 36/B/06)*

- (140) The wording of the 2006 opening decision does not require any interpretation: it unambiguously calls into question the prolongation of the tariff until 2010 laid down in Law No 80/2005 ⁽⁶²⁾, not the *Alumix* scheme as such.
- (141) As regards the temporal scope of the 2006 investigation, the Commission notes that, in this case, there is no overlap between the *Alumix* scheme, which expired in December 2005, and the challenged prolongation of the tariff, which took effect on 1 January 2006 (see recital 48). This is borne out by paragraph 132 of the Court's judgment.

6.1.3. *Conclusions on the scope of the decision*

- (142) Since, at 1 January 2006, the 2004 Decree had been superseded by Law No 80/2005, the 2004 Decree is not directly relevant to the investigation. The investigation therefore focuses on one substantive measure: the prolongation of the Alcoa tariff from 1 January 2006 to 31 December 2010 under Law No 80/2005 read in conjunction with the relevant regulatory provisions adopted by the AEEG. However, given that there has been only one Alcoa tariff, regardless of the legal basis relied upon to grant it, if Italy were to consider that the 2004 Decree could be relied upon for the period January 2006–June 2007, the findings of the present decision should be considered applicable to the measure introduced by the 2004 Decree ⁽⁶³⁾ as well.

⁽⁶⁰⁾ In fact, according to Italy, the 2004 Decree was never applied to Alcoa, since the company could continue to benefit from the tariff until 1 December 2005 on the basis of the 1995 Decree. It is not for the Commission to interpret Italian law in order to establish whether this is the case or not, as only Italian courts can provide definitive guidance on this point. The Commission notes, however, that the 2004 Decree was never repealed or amended in order to restrict its scope to beneficiaries other than Alcoa. The Alcoa tariff continued to be paid de facto on the basis of the regulatory framework put in place by the AEEG (and mentioned in the 2004 opening decision).

⁽⁶¹⁾ On the basis of the information available, the Commission has doubts as to whether the measure at issue is comparable with the one assessed and approved by the Commission in 1996. In 1996, ENEL was the only producer and distributor of energy in Italy and the reduced electricity tariff granted by ENEL to Alcoa for the benefit of *Alumix* SpA was compared to ENEL's average marginal production cost for electricity for the period concerned. By contrast, in the case at hand, the Italian authorities intervene selectively, in a liberalised market, in favour of certain undertakings, in order to compensate the difference between the market price that may be agreed with any energy producer and the preferential tariff established in 1996.

⁽⁶²⁾ As implemented by AEEG Decisions Nos 148/04 and 217/05.

⁽⁶³⁾ Irrespective of the legal basis, there remains the change in the administrative mechanism described above in particular in recital 42, and for that reason the conclusion that there was a changeover from a real tariff to an operating aid and that the issue at hand is that of new aid is still valid.

6.2. Existence of State aid pursuant to Article 87(1) of the EC Treaty

- (143) A measure constitutes State aid within the meaning of Article 87(1) of the EC Treaty if the following conditions are all fulfilled: the measure (a) confers an economic advantage on the beneficiary; (b) is granted by the State or through State resources; (c) is selective; and (d) has an impact on intra-community trade and is liable to distort competition within the EU.
- (144) Both Italy and Alcoa claim that the tariff is not State aid.

6.2.1. Existence of an advantage

- (145) As a preliminary remark, the Commission notes that, under the tariff arrangement laid down in Article 11(11) of Law No 80/2005, the State intervenes to maintain an electricity price which is substantially lower than that which Alcoa could obtain (and did obtain) in actual market conditions. If Alcoa had been able to obtain this price directly from one of the electricity suppliers in the regions concerned, there would have been no need for State intervention. Neither Italy nor Alcoa contests the proposition that, in the regions concerned, actual market prices are higher than the price actually paid by Alcoa thanks to the repayments made by the Equalisation Fund.
- (146) As for the method proposed by Alcoa to assess the existence of an advantage (whether the special price is lower than the price prevailing in a fully competitive market), it must first be noted that this line of reasoning has already been rejected in the Court's judgment (paragraph 71 of the judgment). Neither the Community courts nor the Commission take into account, in their assessment of the existence of an advantage, the conditions that would prevail in a hypothetical, better functioning market. The conditions prevailing on the actual markets concerned are consistently taken as the reference framework, as shown, for example, in the Dutch glasshouse growers case⁽⁶⁴⁾, in which the Commission applied the market economy operator test to assess the existence of an advantage in certain gas prices.
- (147) Moreover, Alcoa's argument implies that, where a market does not function properly, it would be justified for a Member State to set prices which simulate conditions of effective competition. The reasoning is that if a fully competitive market is taken as a reference framework, the prices thus set by the State will not confer any advantage. This line of reasoning runs counter to the settled principle of Community case-law according to which 'the fact that a Member State seeks to approximate, by unilateral measures, conditions of competition in a particular sector of the economy to

those prevailing in other Member States cannot deprive the measures in question of their character as aid'⁽⁶⁵⁾. The Commission considers that the above principle applies equally to situations where a Member State seeks to approximate conditions of competition to those prevailing in a fully competitive market.

- (148) Further, if Alcoa's proposal was followed, subsidies granted by Member States to fill the gap between a price freely negotiated between two market operators and the theoretical price at which agreement might have been arrived at in conditions of full competition would not constitute State aid. This would defeat the very purpose of State aid control.
- (149) Alcoa maintains, however, that this is the very method developed by the Commission in the *Alumix* case.
- (150) The Commission recalls that the method followed in *Alumix* addressed a very specific situation. In *Alumix*, the tariff was allowed by ENEL, the then fully State-owned monopoly, in an electricity market which had yet to be liberalised⁽⁶⁶⁾. In that situation, the Commission had to ascertain whether ENEL was selling at an artificially low price or behaving like a rational market economy operator. Given the monopoly over electricity generation and supply held by ENEL, there was no competitive market price to which the Commission could refer to assess the existence of an advantage. Therefore, the Commission devised a method to identify the lowest theoretical market price at which a rational supplier would be prepared to sell to its 'best customer' (largest consumer with flat consumption profiles) in the specific circumstances of market in Sardinia and Veneto: a rational supplier would seek to cover at least its marginal production costs, plus a fraction of its fixed costs.
- (151) However, this method cannot be applied across-the-board and out of its original context, in a situation where prices are no longer set by a State-owned monopoly but are freely negotiated on the market, and the Alcoa price can no longer be construed as an ordinary business transaction, but is clearly a subsidised tariff. Following the developments described above in recitals 39 to 43, the scheme no longer constitutes a tariff in the strict sense, as it is no longer a price charged by Alcoa's supplier ENEL, or a net price financed by ENEL, but a 'final price' resulting from the repayment from the Equalisation Fund and the price paid to Alcoa's supplier. Therefore, the analysis developed in the *Alumix* decision, which examined ENEL's behaviour, is manifestly devoid of any relevance whatsoever, as was borne out by the Court's judgment, particularly in paragraph 132 thereof.

⁽⁶⁴⁾ Commission Decision 85/215/EEC of 13 February 1985 on the preferential tariff charged to glasshouse growers for natural gas in the Netherlands (OJ L 97, 4.4.1985, p. 49).

⁽⁶⁵⁾ See, for example, the judgment of the Court of Justice in Case C-372/97 *Italy v Commission* [2004] ECR I-3679, paragraph 67.

⁽⁶⁶⁾ The first Liberalisation Directive, Directive 96/92/EC (see footnote 21), was implemented in Italy by Decree No 79/1999.

- (152) Since the *Alumix* criteria are irrelevant for the purpose of establishing whether the current tariff arrangement confers an advantage on Alcoa, the calculations provided by Italy and Alcoa which purport to demonstrate that the price still fulfils the *Alumix* criteria, in that it covers ENEL's marginal production costs are equally irrelevant.
- (153) In any event, the Commission considers that the calculations provided by Italy and Alcoa do not accurately reflect the price that Alcoa would 'normally' pay on a perfectly competitive market, even assuming — which is denied — that the generator's marginal production cost could be taken as an appropriate benchmark.
- (154) In particular, the minimum IPEX price quoted by Alcoa as representative of what Alcoa would 'normally' pay in a perfect market (EUR 20) corresponds to the marginal production costs of baseload plants (the cheapest plants). However, electricity from baseload plants is sold at a low price only during off-peak hours⁽⁶⁷⁾. At peak times, all electricity generated (including that by baseload plants) is sold at a much higher price, since it will be set by a marginal plant which is a mid-merit or peak plant⁽⁶⁸⁾. Alcoa consumes electricity not only during off-peak hours but 24 hours a day. Therefore, a representative price that would reflect perfect competition plausibly would have to be a time-weighted average. This average should include some elements of low prices for baseload times but also some elements of high prices for peak times.
- (155) In Sardinia, where no gas is available, coal-fired plants are price-setting for 80 % of the year, whereas oil-fired plants are price-setting for the remaining 20 % of the year. Even using Alcoa's very conservative estimates of marginal costs for coal (EUR 20/MWh) and oil (EUR 60/MWh) a time-weighted average would be in the region of EUR 28/MWh, which is higher than the EUR 26/MWh Alcoa is currently paying. Therefore, the Commission considers that, at least for Sardinia, the Alcoa tariff is below the marginal production costs of electricity generators, and that it would not, in any event, comply with the *Alumix* criteria, supposing — which is denied — that they were relevant.
- (156) Alcoa and Italy contend that the Commission is wrong in proposing to use average IPEX prices as a proxy for the market price that large industrial customers would normally pay in the regions concerned (see recital 83). This is, however, a misrepresentation of the reasoning of the 2006 opening decision. In that decision, the comparison between average IPEX prices was intended only to justify doubts as to the claim that electricity prices in Sardinia were substantially higher than in other Italian regions. The Commission suggested that differences in average IPEX prices between regions could be representative of differences in bilateral prices.
- (157) By contrast, the Commission never suggested that average IPEX prices could be a proxy for the market price Alcoa might have obtained. In the case at hand it is not necessary to resort to a proxy. Alcoa established a contract with ENEL at a nominal price roughly equivalent, according to available information, to the standard tariff charged by ENEL for high voltage consumption sites. This contract is the benchmark against which to assess and quantify the advantage enjoyed by the company.
- (158) In conclusion, the tariff mitigates the charges which arise from the contract and which should normally be included in the company's budget, and therefore, in line with well-established case-law, the measure confers an economic advantage on Alcoa⁽⁶⁹⁾. The Commission considers that the advantage equals the compensatory contributions paid out by the Equalisation Fund, covering the difference between the contractual price and the preferential price. This conclusion holds for Alcoa's two smelters in Sardinia and Veneto.
- #### 6.2.2. Selectivity
- (159) Since preferential electricity tariffs in Italy are granted exclusively to Alcoa and a few other undertakings located in Sardinia, the advantage they confer is a selective one.
- #### 6.2.3. State resources and imputability to the State
- (160) It is settled case-law that an advantage can be qualified as State aid under Article 87(1) of the EC Treaty only if it is granted directly or indirectly through State resources⁽⁷⁰⁾ and is imputable to the State⁽⁷¹⁾.
- (161) As described in recital 43 the tariff under challenge is financed by means of a parafiscal charge collected by the Equalisation Fund via the A4 component of the electricity tariff. This charge is obligatory, being imposed by means of decision of the AEEG implementing national legislation. The Equalisation Fund is a public body established by law, which carries out its functions on the basis of precise instructions laid down in the decisions of the AEEG.
- ⁽⁶⁷⁾ Peak hours are generally between 8.00 a.m. and 8.00 p.m. on weekdays.
- ⁽⁶⁸⁾ Power plants are ranked in so-called merit order, ranging from plants with the lowest short-run marginal costs (variable costs of producing electricity including fuel and CO₂ costs) to plants with the highest costs. At any one time, plants compete on the basis of their marginal costs and are called to produce according to their ranking in the merit order: hydroelectric plants first, then nuclear, gas, oil, until the output of all the plants called meets demand. The last plant is known as the marginal plant, and its marginal costs set the price of the electricity at this time (the system clearing price).
- ⁽⁶⁹⁾ Judgment of the Court of Justice in Case C-241/94 *France v Commission* [1996] ECR I-4551, paragraph 34.
- ⁽⁷⁰⁾ See for example *PreussenElektra*, paragraph 58.
- ⁽⁷¹⁾ See for example judgment of the Court of Justice in Case C-482/99 *France v Commission (Stardust Marine)* [2002] ECR I-4397, paragraph 24.

- (162) It is also settled case-law that the yield of a levy which is obligatory under national law and is paid to a body established by law constitutes State resources within the meaning of Article 87(1) of the Treaty when it is earmarked for the funding of a measure which fulfils the other criteria of that Article ⁽⁷²⁾.
- (163) Italy and Alcoa rely on the judgments in *Preussen Elektra* ⁽⁷³⁾ and *Pearle* ⁽⁷⁴⁾ to substantiate the thesis that the measure at hand is not financed through State resources. Both parties claim that the funds required to finance the tariff are transferred by private entities (electricity consumers) to a private entity (Alcoa), the role of the State being confined to the adoption of a law mandating payment of the required sums, with no discretion to dispose of the funds other than in the implementation of the statutory scheme. In particular, according to Italy and Alcoa, the Equalisation Fund cannot exercise any control over the funds and is merely an accounting intermediary.
- (164) In the *PreussenElektra* case, the Court considered that a purchase obligation imposed on private electricity supply undertakings to purchase electricity from renewable sources at minimum prices higher than the real economic value of that type of electricity did not constitute State aid because the measure did not involve any direct or indirect transfer of State resources. According to Italy and Alcoa, the present case is comparable to *PreussenElektra* in that the funds are also transferred from private entities (electricity consumers) to a private entity (Alcoa), with the State exercising no control over the resources in question.
- (165) The Commission recalls that, in *PreussenElektra*, the resources required to finance the measure were provided directly by the electricity suppliers to the producers of renewable energies without transiting through any public body. Within that system, the sums to be transferred could never be at the disposal of the Member State's authorities. In the case at hand, however, the monies transit through a public body, the Equalisation Fund, before being channelled to the final beneficiary. Therefore, the *PreussenElektra* case-law addresses different factual circumstances and is not relevant to the present case.
- (166) The judgment in *Pearle* provides guidance of more direct relevance to this case. However, the Commission's interpretation of it differs from that put forward by Italy and Alcoa. In *Pearle*, the Court found that, under certain specific conditions, the resources of a levy which transit through a public body do not constitute State resources. In *Pearle*, the measures were financed entirely by an economic sector at the sole initiative of that sector. The monies were collected via a parafiscal levy transiting through a public body which could not, at any time, dispose of the funds. In addition, there was a correspondence between the entities which paid the levy and those which received the benefits of the measure.
- (167) Italy and Alcoa consider that the key criterion in *Pearle* is whether the State has a right to dispose of the funds otherwise than in implementation of the statutory scheme. They contend that the Equalisation Fund does not have any discretion in the disbursement of the funds, which are earmarked for the financing of the tariffs and never come within 'the perimeter of public finance'. Therefore, according to Italy and Alcoa, the State cannot freely dispose of the funds, which consequently do not constitute State resources.
- (168) As a preliminary remark, it should be pointed out that, while some of the *Pearle* criteria may be subjectively viewed as more central than others, there is no such thing as a 'key criterion' in *Pearle*. The conditions enumerated in the judgment are cumulative. This is also the interpretation given by the Court of First Instance in *Earl Salvat* ⁽⁷⁵⁾, where it examined a parafiscal levy challenged in that case in the light of each and every one of the *Pearle* criteria.
- (169) Before examining the role played by the Equalisation Fund, the Commission has ascertained whether any of the other criteria enumerated in *Pearle* are met. It is clear that, unlike in *Pearle*, the Alcoa tariff was established at the initiative of the State, not at the initiative of an economic sector. Moreover, in *Pearle* the beneficiaries of the measure were also the sole contributors of the resources, so that the intervention of the public body did not tend to create an advantage which would constitute an additional burden for the State. In the case at hand, the beneficiary Alcoa does not bear the financial burden of the levy, which rests solely on electricity consumers. Therefore, the *Pearle* case-law cannot validly be relied upon irrespective of whether merit can be found in Alcoa's and Italy's argument concerning the role of the Equalisation Fund as a mere accounting intermediary.
- (170) Turning now to the Equalisation Fund, the Commission recalls that, according to settled case-law, 'no distinction should be made between cases where the aid is granted directly by the State, and cases where it is granted by a

⁽⁷²⁾ See the judgments of the Court of Justice in Case C-78/76 *Steinike & Weinlig* [1977] ECR 595 and in Case C-47/69, *French textiles* [1970] ECR 487.

⁽⁷³⁾ See footnote 45.

⁽⁷⁴⁾ See footnote 46.

⁽⁷⁵⁾ Judgment of the Court of First Instance in Case T-136/05 *Earl Salvat v Commission*, not yet reported, paragraphs 137-165.

public or private body designated or established by the State' ⁽⁷⁶⁾. Therefore, the public or private status of the Equalisation Fund is not determinant for the purpose of applying the State aid rules. The fact that the Equalisation Fund is a public body does not automatically imply that Article 87 of the EC Treaty is applicable ⁽⁷⁷⁾; similarly, the intervention of a private body would not in itself preclude application of that Article ⁽⁷⁸⁾.

tariffs). The State is capable of controlling and orienting the use of the resources at issue: the Equalisation Fund discharges its accounting functions on precise instructions from the AEEG, which acts within its statutory regulatory powers and/or in implementation of national legislation (see recitals 26 and 27 above). Therefore, the resources handled by the Equalisation Fund remain under public control at all times.

(171) However, the analysis cannot be limited to the powers of the Equalisation Fund in its quality as a public body. What should be ascertained is rather whether, more generally, the State, either directly or through any other body designated by it, can exercise control over the funds used to finance the tariff. The same test would have to be applied if the Equalisation Fund was a private body.

(174) This analysis is consistent with the Commission's decision on the Italian stranded costs case ⁽⁸⁰⁾, in which it characterised as State resources the monies administered by the Equalisation Fund in the A6 account.

(172) The recent judgement of the Court of Justice in the *Essent* ⁽⁷⁹⁾ case provides definitive guidance on this point. In *Essent*, the Netherlands had introduced by law a surcharge on electricity prices. The surcharge was paid by electricity consumers to network operators, which in turn transferred the monies to a designated company, SEP. SEP had no discretion in the management of the funds and operated under close control by the authorities. The Court came to the conclusion that the proceeds of the surcharge constituted State resources, because the surcharge on the price of electricity was imposed by national law, and therefore constituted a charge and SEP was not entitled to use the proceeds from the charge for purposes other than those provided by the law, so that the monies remained under public control and were thus available to the national authorities. The Court considered that this was sufficient for such monies to be characterised as State resources.

(175) In any event, the categorisation as State resources of the monies administered by the Equalisation Fund was borne out incontrovertibly by the recent judgment of the Court of First Instance in the *Iride* case ⁽⁸¹⁾.

(173) The similarities with the case at hand are evident. The surcharge on the electricity price used to finance the Alcoa tariff is imposed, as in *Essent*, by law. The Equalisation Fund plays the same role as SEP, as it centralises and manages the proceeds of the parafiscal charge, and is subject to the same constraints, as it cannot use the proceeds from the charge for purposes other than those provided by law (the financing of preferential

(176) Italy's Court of Cassation had already ruled (judgment No 11632/03 of 3 April 2003) that the legal personality of the Equalisation Fund was not separate from that of the Italian State, and that the monies transferred to the Equalisation Fund should be considered as State property, even if they derived from private entities and were intended for private undertakings. In the *Iride* case, the applicants Iride SpA and Iride Energia SpA brought an action in the Court of First Instance challenging a decision whereby the Commission had categorised as State resources the sums administered by the Equalisation Fund in the A6 account. The arguments put forward by the applicants were very similar to those of Alcoa. The applicants disputed the reasoning of the Court of Cassation's ruling, contending that the role of the Equalisation Fund was merely that of an accounting intermediary between private citizens subject to a financial obligation and the beneficiaries of the sums concerned, a role which did not allow the Equalisation Fund to make use of the monies deposited even for a short period of time. The applicants likewise claimed the applicability of the *PreussenElektra* case-law.

(177) In its judgment delivered on 11 February 2009, the Court of First Instance was very clear. After emphasising that it had no jurisdiction to challenge the interpretation of Italian legislation by the Court of Cassation, the Court of First Instance confirmed that the monies held in the Equalisation Fund's A6 account were to be considered as State resources because, in addition to being State property, they were under constant State control ⁽⁸²⁾.

⁽⁷⁶⁾ Judgment of the Court of Justice in Case C-57/86 *Greece v Commission* [1988] ECR I-2855, paragraph 12; *PreussenElektra*, *ibid.*; preliminary ruling of the Court of Justice in Case C-126/01 *Gemo* [2003] ECR I-13769, paragraph 23.

⁽⁷⁷⁾ Judgments *Stardust Marine*, *ibid.*; *Pearle*, *ibid.*; and *Earl Salvat*, *ibid.*

⁽⁷⁸⁾ Alcoa submits that, under the tariff arrangement prior to the introduction of Article 11(11) of Law No 80/2005, the funds required to finance the tariff were handled by privately-owned distributors, and therefore did not constitute State resources. Even though that tariff arrangement is not in dispute in the present proceedings, the considerations outlined in this paragraph mean that the Commission must dismiss Alcoa's argument. The private nature of the distributors is not, in itself, determinant for the purpose of defining the nature of the resources involved.

⁽⁷⁹⁾ Judgment of 17 July 2008 in Case C-206/06 *Essent Netwerk Noord v Aluminium Delfzijl*, not yet reported, paragraphs 69 and 70.

⁽⁸⁰⁾ Commission Decision C(2004) 4333 of 1 December 2004, case No 490/2000 Italy — stranded costs.

⁽⁸¹⁾ Judgment of 11 February 2009 in Case T-25/07 *Iride*, not yet reported, paragraph 39.

⁽⁸²⁾ *Ibid.*, paragraph 28.

- (178) That conclusion concerned the Equalisation Fund's A6 account, used to finance the stranded costs of Italy's electricity sector. It can, however, logically be extended to the A4 component, which finances the disputed tariff. The judgment of the Court of Cassation was based on an analysis of the legal personality of the Equalisation Fund, and its finding with respect to State property therefore applies to all of the monies deposited with the Equalisation Fund. The same is true of the finding by the Court of First Instance that the State can control the resources administered by the Equalisation Fund. There is no difference between the A6 account and the A4 component other than the purpose of the resources collected (covering stranded costs in the case of the A6 account and financing preferential tariffs in the case of the A4 component). The sums transferred to Alcoa from the A4 component must also therefore be categorised as State resources.
- (179) In addition to being financed by State resources, the Alcoa tariff is imputable to the State⁽⁸³⁾, since the legal basis for the measure is laid down in national legislation and in the decisions of the AEEG, which is a public body.

6.2.4. Impact on trade and distortion of competition

- (180) As regards the impact of the measure on trade between Member States and the ensuing distortion of competition, it is undisputed that the aluminium market is fully open to competition. In its merger decisions, the Commission has consistently found that the geographical market for primary aluminium is worldwide⁽⁸⁴⁾.
- (181) It will be seen in recital 214 that Italy did not notify the extension of the Alcoa tariff. According to settled case-law⁽⁸⁵⁾, in the event of aid which has not been notified, the Commission is not obliged to demonstrate the consequences of the measure: 'If the Commission were required in its decision to demonstrate the real effect of aid which had already been granted, that would immediately favour those Member States which grant aid in breach of the duty to notify laid down in Article 93(3) of the Treaty, to the detriment of those which do notify aid at the planning stage'.
- (182) Consequently, the Commission is required only to demonstrate the possible negative impact of the measure on intra-Community trade and competition.
- (183) The Commission has considered Alcoa's and Italy's argument that the tariff does not have an impact on trade and does not distort competition, since there are no actual trade flows between Member States, it is unlikely that such trade flows will develop in the foreseeable future (see recitals 86 to 88), and due to the peculiarities of the aluminium sector the tariff does not harm Alcoa's European competitors (see recital 89).
- (184) It should be recalled that, in the Commission's decision-making practice and the case-law of the Court, the absence of actual trade flows has never been accepted as evidence that an aid measure has no impact on intra-Community trade. The Court has in fact consistently ruled that aid to an undertaking may be such as to affect trade between the Member States and distort competition even if the beneficiary undertaking does not participate in intra-Community trade itself. Where a Member State grants aid to an undertaking, domestic production may for that reason be maintained or increased, with the result that undertakings established in other Member States have less chance of exporting their products to the market in that Member State⁽⁸⁶⁾.
- (185) Moreover, the pattern of decreasing EU production and increasing imports from third countries, with limited or no trade flows between Member States, is not unusual: it is fact typical of sectors which are experiencing structural difficulties and/or are subject to high competitive pressure. Such sectors are particularly sensitive to measures taken by Member States to improve the competitive position of their domestic industries.
- (186) The fact that the modest production of primary aluminium in Italy may be unable to affect the reference price is irrelevant. The existence of a reference price for aluminium which is not easily influenced by conditions of production in a single Member State does not rule out the existence of keen competition between undertakings based in the EEA and selling on the worldwide aluminium market. It is conceivable that aid to Alcoa's Italian smelters does not enable Alcoa to reduce the world price for aluminium and squeeze competitors out of the market, and that other European producers may remain in business as long as they can sell profitably at the world price. However, the profits obtained by Alcoa in Italy thanks to the subsidised electricity tariff strengthen the company's competitive position in a general sense. For example, accumulated capital reserves can be used to take over competitors and increase market share.

⁽⁸³⁾ See the judgments of the Court of Justice in Case C-303/88 *Italy v Commission* [1988] ECR I-1433 and Case C-47/69 *France v Commission* [1970] ECR 4393; see also the judgment of the Court of First Instance in Case T-351/02 *Deutsche Bahn v Commission* [2006] ECR II-1047.

⁽⁸⁴⁾ See, for example, Decision M.2404 *Elkem/Sapa* of 26 June 2001 and Decision M.1663 *Alcan/Alusuisse* of 14 March 2000.

⁽⁸⁵⁾ Judgment of the Court of Justice in Case C-301/87 *France v Commission* [1990] ECR I-307, paragraphs 32 and 33; judgment of the Court of First Instance in Case T-214/95 *Vlaamse Gewest v Commission* [1998] ECR II-717, paragraph 67; and judgment of the Court of First Instance in *Alzetta v Commission*, *ibid.*, paragraph 79.

⁽⁸⁶⁾ Judgment of the Court of Justice in Case C-102/87 *France v Commission* [1988] ECR-4067, paragraph 19; judgment of the Court of Justice in Case C-305/89 *Italy v Commission* [1991] ECR I-1603, paragraph 26.

- (187) Contrary to what Alcoa claims, the fact that the price paid by Alcoa in Italy is comparable to the 'typical' electricity price paid in Europe by aluminium smelters cannot be taken as evidence that the interests of other European producers are not threatened by the Italian tariff. It was clearly established in Case C-372/97, *Italy v Commission* ⁽⁸⁷⁾ that unilateral measures aimed at approximating conditions of competition in a Member States to those prevailing in other Member States do affect trade (and therefore cannot escape classification as aid). Moreover, some of the power supply agreements in place in other EU Member States may involve State aid, and the Commission has opened in-depth investigations on several of the measures at issue ⁽⁸⁸⁾. Even though this defence has not been brought explicitly by Italy and Alcoa, the Commission considers it useful to recall the principle, well established in case-law ⁽⁸⁹⁾, that the existence of unlawful aid in some Member States cannot justify the adoption of similar measures by another Member State.
- (188) Alcoa's recent decision to build a smelter in Iceland (which is an EEA country) seems to contradict directly Alcoa's argument that capacity shut down in Italy would not be replaced elsewhere in the EU/EEA.
- (189) Therefore, the conclusion must be drawn that the preferential electricity tariff granted to Alcoa is liable to improve its competitive position vis-à-vis competing undertakings in intra-Community trade. It is settled case-law ⁽⁹⁰⁾ that in such circumstances intra-Community trade should be considered affected and competition distorted.

6.2.5. Conclusions on the existence of aid

- (190) In the light of the above, the Commission has come to the conclusion that the preferential tariff granted to Alcoa on the basis of Article 11(1) of Law No 80/2005 and of the 2004 Decree (insofar as the same measure may have resulted from the application of the 2004 Decree over the period January 2006-June 2007) constitutes State aid within the meaning of Article 87(1) of the EC Treaty and can be authorised only if it qualifies for one of the derogations laid down in the Treaty.

⁽⁸⁷⁾ See footnote 65.

⁽⁸⁸⁾ See, for example, the Commission decisions to open proceedings in respect of regulated electricity tariffs in France (case C 17/07, Commission Decision of 13 June 2007 No C/2007/2392, OJ C 164, 18.7.2007, p. 9) and Spain (case C 3/07, Commission Decision of 24 January 2007 No C/2007/123/3, OJ C 43, 27.2.2007, p. 9).

⁽⁸⁹⁾ Judgment of the Court of Justice in Joined Cases 6/69 and 11/69 *Commission v France* [1969] ECR 523.

⁽⁹⁰⁾ See for example the judgments of the Court of Justice in Case 730/79 *Philip Morris v Commission* [1980] ECR 2671, paragraph 11 and in Joined Cases C-393/04 and C-41/05 *Air Liquide Industries v Ville de Seraing et Province de Liège* [2006] ECR I-5293.

6.3. Classification of the new measure as new or existing aid

- (191) Paragraph 132 of the Court's judgment unequivocally confirms the Commission's preliminary finding that the tariff should be considered as new aid: 'it must be held that the measure at issue cannot be considered to be existing aid, not only because it covers a period that is different from that examined in the *Alumix* decision, but also because it consists no longer in ENEL applying the tariff laid down in the 1995 Decree-Law, which was equivalent to a market tariff, but in the grant of a reimbursement by the Equalisation Fund from public resources, in order to offset the difference between the tariff charged by ENEL and that laid down in the 1995 Decree-Law, as extended by the 2005 Decree-Law'.
- (192) Given that an appeal has been lodged against the Judgment (Case C 194/09), the Commission is of the view that there is reason here to conduct a thorough analysis of the issue in the light of Article 1(b) of Regulation (EC) No 659/1999, which identifies all the categories of existing aid.
- (193) It is undisputed that the challenged measure was not put into effect before Italy's accession to the EU (paragraph (i) of said Article), is not deemed to have been authorised due to the Commission's failure to take a decision within the prescribed procedural deadlines (paragraph (iii)) and cannot be considered existing aid because of the expiry of the limitation period (paragraph (iv)) ⁽⁹¹⁾.
- (194) Article 1(b)(v), second sentence, of Regulation (EC) No 659/1999 states that 'where certain measures become aid following the liberalisation of an activity by Community law, such measures shall not be considered as existing aid after the date fixed for liberalisation'. In the opening decisions the Commission does *not* rely on this provision to conclude that the Alcoa tariff constitutes new aid. However, for the sake of completeness, since the electricity sector was liberalised for business end-users after the approval of the original *Alumix* tariff, which did not constitute aid, the Commission has examined the question of whether liberalisation might be relevant to the classification of the tariff as existing or new aid. Alcoa submits that this is not the case. The Commission shares Alcoa's view ⁽⁹²⁾. The tariff did not become State aid as a result of the opening up of the electricity sector to competition, since the appropriate reference framework for the appraisal of aid to Alcoa is not the electricity market (on which Alcoa is not active) but the market for primary aluminium. There is, moreover, no causal link between the liberalisation of the electricity sector and the decision to finance the tariff through a mandatory contribution.

⁽⁹¹⁾ This definition has in any event the sole purpose of limiting the temporal scope of recovery of incompatible aid, and is therefore of no utility at this stage of the assessment.

⁽⁹²⁾ And therefore the Commission does not need to examine the legal arguments put forward by Alcoa to substantiate this conclusion (see recitals 95 and 96 above).

(195) In its submission, Alcoa claims that, even assuming (hypothetically) that the tariff might have become aid, it would have done so through a change of market conditions or other external circumstances, i.e. due to the evolution of the common market. This would warrant classification as existing aid. The Commission has therefore examined whether Article 1(b)(v), first sentence of Regulation (EC) No 659/1999 could be applicable to the case at hand. This provision confers existing aid status on measures which have become aid 'due to the evolution of the common market, and without having been altered by the Member State'.

(196) The Commission could not identify any evolution of the common market corresponding to the definition given by the Court⁽⁹³⁾, i.e. 'a change in the economic and legal framework of the sector concerned by the measure in question' which might have caused the tariff to become aid. Alcoa itself has failed to identify such change and prove the existence of a causal link with the change in nature of the tariff. Moreover, even assuming that an evolution of the common market had occurred — which is denied — it would not be relevant to the assessment of the measure at issue: the existing aid status conferred by a hypothetical evolution of the common market could not last beyond the introduction, by the Member State, of a subsequent substantive alteration of the measure (a financing mechanism based on State resources), in the light among other things of the second criterion of Article 1(b)(v), first sentence, of Regulation (EC) No 659/1999. Since the period under consideration in the present proceedings is subsequent to that alteration, the evolution of the common market cannot play a role in the assessment. An evolution factor coming into play after the introduction of the new financing mechanism would be equally irrelevant, because the measure would already have constituted State aid at the time the evolution took place. Therefore, Alcoa's claim can be dismissed.

(197) Lastly, the Commission has examined whether the Alcoa tariff could be considered existing aid on the basis of Article 1(b)(ii) of Regulation (EC) No 659/1999 concerning 'authorised aid, that is aid schemes and individual aid which have been authorised by the Commission or the Council'. Alcoa and Italy's arguments hinge on the unlimited validity of the *Alumix* approval decision, making the Alcoa tariff existing aid on the basis of the above provision.

(198) Alcoa and Italy submit that the *Alumix* decision was not limited in time (see above recitals 93 and 119). In the *Alumix* decision the Commission is said to have found — indefinitely — that the Alcoa tariff was not an aid measure. Moreover, they say the extension of an existing aid measure would constitute new aid, but there is no new aid where the measure extended had been held not to constitute aid. Therefore, if the

Commission now changes its appraisal and finds the measure to be State aid, the tariff enjoyed by Alcoa until now should at any rate be considered existing aid, or entitled to treatment as existing aid, on the basis of the *Belgian Coordination Centres* case-law⁽⁹⁴⁾ and recovery should be precluded (see recital 94 above).

6.3.1. Temporal scope of the *Alumix* decision

(199) A Commission decision finding that a certain measure does not constitute State aid is by its nature subject to temporal limitation when the finding that there is no aid is based on the market economy operator test, and involves taking a prospective view of market conditions, which can only properly be assessed over a limited period of time⁽⁹⁵⁾. The fact that there is this temporal limitation does not mean that the Commission considers that the measure will necessarily become State aid after the expiry of the period set by the decision.

(200) The *Alumix* decision was based on the Decree of 19 December 1995, which established the tariff for a period of 10 years. It explicitly stipulated that the tariff would be abolished after 31 December 2005. In the *Alumix* case, the Commission carried out a complex assessment of prices and trends in the electricity sector over 10 years, as shown in the tables which form an integral part of the decision and set the Alcoa tariff until 2005 only. Such prices and trends are in the nature of things subject to change, and the Commission could not state that there would be no State aid indefinitely, especially in view of the progressive liberalisation of the energy markets.

(201) The decision's findings, therefore, have to be interpreted as running until 2005 only. This was clearly acknowledged by the Court of First Instance in paragraphs 105 and 106 of its judgement upholding the 2006 decision to initiate proceedings⁽⁹⁶⁾.

⁽⁹⁴⁾ See footnote 48.

⁽⁹⁵⁾ A distinction must be made between the general assessment criteria set out in the *Alumix* decision and the application of those criteria to a material case. The general criteria of the *Alumix* decision hold that, in the absence of alternative market outlets and in order to avoid aggravating a situation of overcapacity, a rational electricity supplier will sell electricity to its best customers at a price covering its marginal costs of production, plus a small contribution to fixed costs. These general criteria remain valid irrespective of the temporal scope of the decision in which they were laid down, and the Commission has no intention of questioning them here.

⁽⁹⁶⁾ See footnote 40. Paragraph 105 states: 'it is very clear both from the application, which states that the tariff that the applicant's plants paid was authorised by the 1995 Decree-Law, and the very wording of that Decree-Law that the privatisation of [*Alumix*] requires the support of the Italian Government ... in order to define an energy tariff [for the two plants] with ENEL, possibly by agreeing on a future long-term contract (10 years) at prices that are competitive at the European level and that the manner of handling the excess charges [sovrapprezzi] laid down in [IPC decision No 13/92]... is abolished from 31 December 2005 onwards'.

⁽⁹³⁾ Judgment in Joined Cases C-182/03 and C-217/03 *Belgium v Commission* [2006] ECR I-5479.

(202) Italy's claim that the *Alumix* decision was intentionally unlimited in time in recognition of the need for a long-term measure (see recital 119) must also be dismissed. The paragraph in the *Alumix* decision relied upon by Italy ('the restructuring and the restoration of *Alumix*'s operations to viability ensures that the development of those areas is not short-lived but rather a long-term one') does not refer to the tariffs which were found not to constitute aid, but to other restructuring aid measures for *Alumix*. Moreover, the paragraph in question merely states that the continued presence of *Alumix* will contribute to the long-term development of the areas, and cannot be construed in the way suggested by Italy.

(203) To conclude, given that the validity of the *Alumix* decision was limited to 31 December 2005, the tariff applied from 1 January 2006 pursuant to Article 11(11) of Law No 80/2005 constitutes new aid owing to the change in the duration of the measure, in line with the judgment in *Diputación Foral de Álava* ⁽⁹⁷⁾.

6.3.2. Change in circumstances affecting the validity of the *Alumix* decision

(204) The Commission has examined Alcoa's argument that there never was a 'change in circumstances' that might have put an end to the effectiveness of the *Alumix* decision, since neither the liberalisation of the market nor the role entrusted to the Equalisation Fund affected the price paid by Alcoa. That price remained in line with the *Alumix* criteria, so that the Commission's finding that there was no aid remains fully valid (see recital 93).

(205) An examination of the facts shows, however, that the tariff arrangement which the Commission had cleared in *Alumix* underwent a fundamental change, which Alcoa tries to dismiss as a mere administrative detail, that is, the shift from a tariff granted by an electricity supplier on market terms to one that remains so in name only and is subsidised by the State.

(206) It is difficult to view this change as being of a 'purely formal nature' and 'not altering the substance of the approved tariffs', since the new financing mechanism altered the very economic conditions on which the *Alumix* decision was based.

(207) It will suffice to recall that, in *Alumix*, the focus of the assessment was the behaviour of the electricity supplier, ENEL. The preferential price did not provide an advantage to Alcoa because the Commission considered, on the basis of the market economy operator test, that it was rational for ENEL to sell electricity at the price in

question. However, the market economy operator test becomes meaningless in a situation where the tariff is no longer willingly offered by ENEL (which receives the ordinary price) but is the result of a compensation payment made by the State. In the new arrangement the conduct of the electricity supplier is no longer an issue.

(208) Moreover, the introduction on 1 January 2006 of an indexation mechanism with a 4 % cap in the yearly increase of the Alcoa price (see recital 49) constitutes an additional substantive alteration of the original tariff arrangement, and one that can hardly be taken as in conformity with the market, considering that as of 2005 onwards electricity prices on wholesale markets were constantly increasing.

(209) Contrary to what Alcoa maintains, the fact that the price paid by Alcoa under the new arrangement until the end of 2005 is identical to the price that was held not to constitute aid in the *Alumix* decision cannot justify the conclusion that the measure has not been significantly amended, if the Opinion of Advocate General Fennelly in *Italy and Sardegna Lines v. Commission* is to be followed ⁽⁹⁸⁾. In assessing what constitutes a substantive change to an aid measure, Advocate General Fennelly stated that 'the introduction of a wholly new method of providing effectively the same level of aid manifestly constituted a significant amendment of the original regime'. The tariff at issue is, thus, completely different from the scheme assessed in the *Alumix* decision. The *Alumix* findings are therefore irrelevant to the present case, and would remain irrelevant even if it were to be assumed, for the sake of argument, that the *Alumix* decision was not limited in time.

(210) For similar reasons, the *Belgian Coordination Centres* judgment, relied upon by Alcoa, is not a valid basis on which to request the application of the same procedural safeguards that would apply to existing aid. That judgment refers to cases in which the Commission changes its appraisal of a scheme which had previously been found not to constitute aid. In paragraph 77, the Court established the principle that, in such cases, the Commission must follow the procedure for the monitoring of existing aid. However, this principle can apply only if the regime has not been materially altered. In the present case, the Alcoa tariff arrangement has been materially altered by the Member State, as shown in recitals 205 to 208. Therefore, in the present instance, the Commission is not departing from its previous assessment of the same measure, but is rather assessing a new and different measure.

⁽⁹⁷⁾ Judgment of the Court of First Instance in Joined Cases T-127/99, T-129/99 and T-148/99 *Diputación Foral de Álava and others v Commission* [2002] ECR II-1275, paragraph 175, cited in paragraph 114 of the Court's judgment.

⁽⁹⁸⁾ Joined Cases C-15/98 and C-105/99 [2000] ECR I 8855, paragraph 74 of the Opinion.

- (211) The changes described cannot be severed from the initial scheme, since they affect the actual substance of the mechanism, and the tariff in dispute therefore constitutes aid in its entirety, in line with the *Gibraltar* judgment ⁽⁹⁹⁾.

6.3.3. Conclusions on the definition of the tariff as new aid

- (212) In the light of the above, the Commission considers that the prolongation of the Alcoa tariff at issue constitutes new aid as from 1 January 2006, the date when Law No 80/2005 took effect.

6.4. Lawfulness of the aid

- (213) Pursuant to Article 88(3) of the EC Treaty, Member States must notify any plans to grant or alter aid, and may not put the proposed measures into effect until the notification procedure has resulted in a final decision.
- (214) Since Italy failed to notify Article 11(11) of Law No 80/2005, the aid is unlawful.

6.5. Compatibility of the aid

- (215) In derogation from the general prohibition on State aid laid down in Article 87(1) of the EC Treaty, aid may be declared compatible if it qualifies for one of the exceptions enumerated in the Treaty.
- (216) The State aid granted to Alcoa pursuant to Article 11(11) of Law No 80/2005 can be classified as operating aid, which, in principle, is incompatible with the common market. In Case 86/89 *Italy v Commission*, the Court of Justice found that 'the aid in question, which was granted without any specific conditions and solely according to the quantities used, should be regarded as an operating aid to the undertakings concerned and that, as such, it affected trading conditions to an extent contrary to the common interest' ⁽¹⁰⁰⁾.
- (217) In the *Siemens v Commission* case ⁽¹⁰¹⁾ as well, the Court of First Instance recalled the principle that 'operating aid, that is to say, aid intended to relieve an undertaking of the expenses which it would normally have had to bear in its day-to-day management or its usual activities, does not in principle fall within the scope of Article 92(3) [now Article 87(3)]... According to the relevant case-law, the effect of such aid is in principle to distort competition in the sectors in which it is granted, while nevertheless being incapable, by its very nature, of

achieving any of the objectives of the aforesaid exceptions'.

- (218) Nevertheless, there are clearly defined situations in which operating aid may be granted. In particular, operating aid for environmental purposes may be granted under the Community guidelines on State aid for environmental protection ⁽¹⁰²⁾. Operating aid can also be authorised on an exceptional basis as regional aid in assisted areas. The Commission has assessed whether the Alcoa tariff might correspond to one of these categories.

- (219) The Commission notes that there is no possibility of authorising the tariff as environmental aid, since the purpose of the tariff in question is not of an environmental nature.

6.5.1. Compatibility with the guidelines on national regional aid (Sardinia)

- (220) Exceptionally, operating aid may be granted in assisted areas eligible for aid under the derogation of Article 87(3)(a) of the EC Treaty. Throughout the period considered, the Veneto Region, where the Fusina smelter is located, was not eligible for aid under Article 87(3)(a) of the Treaty. The Sardinia Region, however, was eligible for such aid until the end of 2006. The Commission has therefore examined whether the preferential tariff for Alcoa's Portovesme smelter can be authorised under the 1998 guidelines on national regional aid ⁽¹⁰³⁾.
- (221) According to point 4.15 of the guidelines, operating aid can be granted exceptionally, provided that (i) it is justified in terms of its contribution to regional development and its nature and (ii) its level is proportional to the handicaps it seeks to alleviate. It is for the Member State to demonstrate the existence of any handicaps and gauge their importance. In line with point 4.17 of the guidelines, operating aid must be both limited in time and progressively reduced.
- (222) Italy submits (see recital 125) that the persistent problem of high electricity costs for aluminium production in Sardinia and Veneto, acknowledged in the *Alumix* decision, justifies the prolongation of the tariff.
- (223) The *Alumix* decision did not approve the tariff for the period 1996-2005 as regional aid, but found that it did not constitute aid. It cannot be argued, therefore, that in *Alumix*, the Commission acknowledged that the grant of operating aid was justified on the basis of regional considerations.

⁽⁹⁹⁾ Judgment of the Court of First Instance in Joined Cases T-195/01 and T-207/01 *Government of Gibraltar v Commission* [2002] ECR II-2309, paragraph 111: 'Accordingly, it is only where the alteration affects the actual substance of the original scheme that the latter is transformed into a new aid scheme. There can be no question of such a substantive alteration where the new element is clearly severable from the initial scheme'.

⁽¹⁰⁰⁾ See judgment of the Court of Justice in Case C-86/89 *Italy v Commission* [1990] ECR I-3891; Case C-301/87 *France v Commission* [1990] ECR I-307, paragraph 50.

⁽¹⁰¹⁾ See judgment of the Court of First Instance in Case T-459/93 *Siemens v Commission* [1995] ECR II-1675, paragraph 48.

⁽¹⁰²⁾ OJ C 37, 3.2.2001, p. 3, and OJ C 82, 1.4.2008, p. 1.

⁽¹⁰³⁾ See footnote 34.

(224) According to Article 2 of the guidelines, 'an individual ad hoc payment made to a single firm, or aid confined to one area of activity, may have a major impact on competition in the relevant market, and its effects on regional development are likely to be too limited ... Consequently, the derogations in question [from the general prohibition of aid] will normally be granted only for multisectoral aid schemes open, in a given region, to all firms in the sectors concerned'. An electricity tariff which is granted selectively to a few individual undertakings in the metal sector is manifestly not in line with the spirit of regional aid, which is meant to be multisectoral. However, since there is no absolute prohibition on *ad hoc* aid, the Commission has considered whether there are exceptional circumstances that would warrant the granting of the tariff.

(225) The Commission has considered, in particular, the deficiencies of the Sardinian electricity market, as documented by Italy and Alcoa.

6.5.1.1. The Sardinian electricity market in the Italian context

(226) The Italian electricity market is generally highly concentrated, although less so in the North zone. The dominant operator in all zones is the former monopoly ENEL, except in Sardinia, where it holds a duopoly with E.ON. ENEL has considerable market power and has been found by the Italian Competition Authority to have abused this power in 2004-2005. Electricity prices in Italy are generally high, due to a generation mix based largely on fossil fuels (essentially gas), the absence of nuclear capacity and congestion on the interconnectors with the rest of Europe.

(227) In Sardinia, which accounts for 4,1 % of net installed power in Italy⁽¹⁰⁴⁾, electricity is produced mainly in thermoelectric power plants using fossil fuels (coal, fuel oil, refinery tar). The island has no natural gas infrastructure.

(228) Sardinia suffers from a situation of excess generation capacity, especially in the high-cost segment (oil-fired plants), owing to the government's aborted plans to concentrate Italy's heavy industry on the island. This led to overinvestment by ENEL in generation plants. Apart from being structurally more expensive, such plants are quickly becoming technically obsolete. The export of Sardinian electricity to the Italian mainland is also limited by the modest capacity of the interconnector⁽¹⁰⁵⁾, which is subject to congestion.

⁽¹⁰⁴⁾ Source: *Indagine conoscitiva sullo stato della liberalizzazione dei settori dell'energia elettrica e del gas naturale*, May 2005.

⁽¹⁰⁵⁾ Sardinia is currently connected to mainland Italy via a 270 MWh interconnector (SACOI).

(229) Two power companies, ENEL and E.ON, together hold a 95 % market share of electricity supply in Sardinia (roughly 58 % E.ON and 42 % ENEL). According to the Energy Sector Inquiry⁽¹⁰⁶⁾, in competition terms Sardinia can be classified as a duopoly with collective dominance. Market concentration is high, though not the highest in Italy⁽¹⁰⁷⁾. Owing to their control of virtually all mid-merit to peak plants, E.ON and ENEL set the price for practically all times of the day. However, the situation in Sardinia appears less critical than in the south of Italy⁽¹⁰⁸⁾, where ENEL sets the price on its own all the time.

(230) Wholesale electricity prices in Italy are among the highest in Europe⁽¹⁰⁹⁾, and prices in Sardinia are among the highest in Italy. In 2007, the national average price (PUN) was EUR 70,99 MW/h whereas the average Sardinian zonal price was EUR 75,00 MW/h, down from EUR 80,00 MW/h in 2006⁽¹¹⁰⁾. In 2008 and 2009, average regional prices in Sardinia began to rise again. In the first half of 2009, prices in Sardinia continually remained above the national average (with an average price of EUR 106,60 MW/h compared with a PUN of EUR 60,50 MW/h). There are no figures concerning the prices for bilateral contracts in Sardinia, as such data is not publicly available and Italy has chosen not to provide it (see recital 63).

(231) In conclusion, the electricity market in Sardinia exhibits a combination of problems (some of which are, however, common to the rest of Italy) which can be summarised as follows: high prices, a high degree of concentration of the market, dominant operators' market power, excess generation capacity in the high cost-segment, relative inefficiency of generating plants which are becoming obsolete, lack of access to natural gas infrastructure, and insufficient interconnection.

6.5.1.2. Contribution to regional development

(232) The first issue to be addressed is whether such problems have a severe impact on the economic development of Sardinia. Electricity prices are high on the island and interconnection is limited. In case C 34/02⁽¹¹¹⁾, the Commission did not accept that the lack of energy interconnection constituted a handicap for the development of SMEs.

⁽¹⁰⁶⁾ See footnote 43.

⁽¹⁰⁷⁾ The HHI index in Sardinia varies between 3 000 and 3 500. In the South zone, however, the HHI is higher.

⁽¹⁰⁸⁾ In Sardinia, E.ON can set the price for 67 % of the hours, ENEL for 29 % of the hours. If adjacent zones are also considered, ENEL is price-setting in the macrozone *MacroSud-Sardegna* for 63 % of the hours. However, in the region *MacroSud*, ENEL is price-setting for 100 % of the hours.

⁽¹⁰⁹⁾ For example, in 2007 the average wholesale price in Italy (for baseload power on the day-ahead market) on IPEX (Italy's electricity exchange) was EUR 70,99 per MW/h compared with EUR 37,97 on Germany's EEX exchange and EUR 40,78 on France's Powernext exchange.

⁽¹¹⁰⁾ 2008 Report of the AEEG, based on data from the GME (*Gestore del Mercato Elettrico*).

⁽¹¹¹⁾ See footnote 38.

(233) While it is true that SMEs suffer less from high electricity prices compared to large, energy-intensive industries, nevertheless the welfare of an individual industry cannot be automatically equated to the welfare of a region. In other words, operating aid in an assisted region cannot be authorised in view of the difficulties experienced by one industry, but must be shown to make a lasting contribution to regional development. The Commission considers that the regional handicap arising from the state of the Sardinian electricity market has not been sufficiently substantiated by Italy.

(234) But even if one were to assume the existence of a regional handicap, the criteria laid down by the guidelines would still have to be fulfilled. Aid must sustainably contribute to regional development and be proportional to the handicaps it seeks to alleviate.

(235) In the case at hand, it is implausible that such operating aid would make a sustainable contribution to regional development. Even if one admitted that the maintenance on the island of Alcoa's aluminium smelter (or indeed of the other beneficiaries of preferential tariffs) contributed to employment and to the maintenance of a manufacturing base on the island, such effects would not be lasting. Alcoa itself claims that the removal of the tariff would mean the immediate closure of the Portovesme smelter. The Italian authorities present the tariff as a temporary measure, designed to last only until the completion, in 2010, of the infrastructure projects in power generation and interconnection currently under way (the GALSI pipeline and SAPEI marine cable). The question is whether such structural developments are capable of bringing electricity prices to levels compatible with the needs of aluminium producers. The Commission considers that, with the new infrastructure, Sardinia will be able to produce and sell electricity at approximately the same price as on the Italian mainland, thus eliminating the regional disparity. However, the Commission fails to see how such projects could halve electricity prices to bring them to the level of EUR 30/MWh which, according to Alcoa, is required to make its smelter profitable.

(236) The Commission also notes that the existence of a State subsidy aimed at reducing electricity costs for large users does not encourage electricity suppliers to bring prices down in order not to lose their largest customers, and nor does it prevent a worsening of their cost structures. Instead, the subsidy tends to heighten the incentive for suppliers to use their market power. Therefore, even if were true, given the situation of overcapacity, that Alcoa would normally be able to obtain a competitive price, were it not for the market power of the electricity suppliers (who have an interest in keeping prices high,

see recitals 121 and 99 respectively), the Commission considers that the preferential tariff is not the appropriate instrument to curtail such market power.

(237) Incidentally, it should be noted that the *Alumix* decision was based on the opposite assumption, that is, that large customers like Alcoa had market power, in the form of high bargaining power vis-à-vis ENEL, and that therefore, if ENEL had been a private company, it would have had to sell at a lower price.

6.5.1.3. Proportionality

(238) The subsidy granted to Alcoa is much higher than whatever differential may exist between electricity prices in mainland Italy and prices in Sardinia for the same category of customers. Therefore, the tariff is not proportional to the regional handicaps it allegedly seeks to alleviate.

6.5.1.4. Degressivity

(239) Regional operating aid must be degressive (see point 4.17 of the regional aid guidelines). Under the indexation mechanism introduced by Article 11(11) of Law No 80/2005, as interpreted by the AEEG (see above, recitals 49 and 50) the tariff is increased yearly by a percentage reflecting trends in electricity prices in the EU, but the increase cannot exceed 4 %. Such a tariff is degressive only when average prices in the EU decrease in net terms (since the Alcoa tariff cannot decrease, but only increase). In all other cases the tariff is progressive and entails an increasing advantage for Alcoa⁽¹¹²⁾. Consequently, in a context of rapidly rising prices in the EU, aid for Alcoa has constantly increased in real terms since the introduction of the tariff at issue.

6.5.1.5. Conclusions on the compatibility of the measure as regional aid for Sardinia

(240) In view of the above, the Commission considers that the extension of the tariff at issue cannot be considered compatible as regional aid under the 1998 guidelines on national regional aid. Since Sardinia has ceased to be assisted pursuant to Article 87(3)(a) for the whole of the 2007-2013 period, it is not necessary to examine the compatibility of the aid in the light of the guidelines on national regional aid for 2007-2013.

⁽¹¹²⁾ Even supposing that average prices in the EU increase by less than 4 %, the tariff advantage for Alcoa would still increase in absolute terms. For example, if the Alcoa price was EUR 30 and the average electricity price in Europe was EUR 60 (advantage: EUR 30), a 3 % increase would mean an Alcoa price of EUR 30,9 versus an average European price of EUR 61,8 (new advantage: EUR 30,9).

6.5.2. Other considerations relevant to compatibility (Veneto and Sardinia)

- (241) It has been argued by Italy and Alcoa that the Alcoa tariff serves the purpose of remedying the shortcomings of the electricity markets, which have not yet delivered competitive prices. High energy prices are said to threaten the competitiveness of energy-intensive industries, including the production of primary aluminium. It is claimed that the aid will prevent the relocation of the company outside Europe. The aid is said to have an incentive effect, since, in the contrary scenario, in the absence of aid, the company would close down its smelters in Sardinia and Veneto.
- (242) The following general observations can be made with regard to such statements. The imperfect functioning of electricity markets cannot be considered, *stricto sensu*, a market failure: that concept refers to the incapacity of a competitive market alone to deliver a socially optimal result, whereas the problem here is that the markets concerned are not sufficiently competitive. The solution can lie only in more – and not less – competition, through the creation of a genuinely integrated energy market. Electricity tariffs set by the State generally have the opposite effect, i.e. they create foreclosure and barriers to new entry, thus hindering market integration. Therefore, the Commission considers that operating aid in the form of artificially low electricity tariffs is not the appropriate instrument to remedy the imperfections of electricity markets.
- (243) It should also be noted that the much-quoted conclusions of specialised fora such as the High Level Group on Competitiveness, Energy and the Environment (see above, recitals 78 and 124) do not suggest that special State aid should be granted to address the competitiveness issues raised by high energy prices, but defend the need for full compliance with the applicable State aid rules ⁽¹¹³⁾.
- (244) The Commission raised doubts about similar arguments linking aid measures to the goal of preventing the relocation of industry outside the EU in the Terni case ⁽¹¹⁴⁾,

and for similar reasons does not consider it necessary to analyse the question in greater depth in this Decision.

- (245) In the current situation of low aluminium prices on world markets (caused by the drop in world demand prompted by the economic crisis), Alcoa's Italian smelters may not be profitable or may operate at a loss in the absence of the tariff. Their closure cannot be ruled out, even if other factors may influence such a decision, including, for example, the social and environmental costs arising from closure, or the costs and timeframe for installing the new capacity potentially required to avoid losing market share.

6.5.3. The virtual power plant proposal (Sardinia)

- (246) In a letter dated 19 January 2007 (hereinafter 'the 2007 letter'), the staff of the Commission's Directorate-General for Competition explored the idea of transitional measures for the phasing-out of the tariff in Sardinia. The situation prevailing in the Sardinian market, due in part to its isolation, the limited interconnection capacity with mainland Italy and the unfavourable competitive conditions, appeared to warrant, on an exceptional basis, the approval of an operating aid in the form of a preferential tariff for a transitional phasing-out period of around two years ⁽¹¹⁵⁾, in exchange for the adoption of measures to bolster competition in the Sardinian market by way of the establishment of a virtual power plant or VPP ⁽¹¹⁶⁾. The letter expressly excluded the smelter located in Veneto ⁽¹¹⁷⁾.
- (247) The 2007 letter stipulated that an appropriate VPP should enable around 25 % of Sardinian electricity demand to be covered by the virtual generating capacity of third party suppliers for a period of at least five years. The letter further suggested that the Directorate-General for Competition should rapidly start to work together with the Italian authorities in order to determine the practicalities of the VPP.

⁽¹¹³⁾ For example, in the Third Report of February 2007, the High Level Group states 'Against this background, the use of incentives, including general purpose subsidies and state aids can be justified as a policy instrument. They may promote responsible social and environmental behaviour, regional cohesion, sustainable development and cultural diversity. However, they should only be used where there is a clear market failure, where subsidies prove to be the appropriate instrument for meeting a well defined common interest objective, and when they do not distort competition or harm the environment... Action is justified when such subsidies undermine other policy objectives such as fighting climate change, the Lisbon Strategy for Jobs and Growth, proper functioning of energy markets, or access to raw materials, without meeting their initial objective.' (http://ec.europa.eu/enterprise/environment/hlg/doc_07:third_report_27_02_2007.pdf).

⁽¹¹⁴⁾ Commission Decision of 20 November 2007 on the State aid C 36/A/06 implemented by Italy in favour of ThyssenKrupp, Cementir and Nuova Terni Industrie Chimiche, paragraphs 144 and 145.

⁽¹¹⁵⁾ The letter read: 'We would like to emphasise that it should be clear to all that the gradual withdrawal must be strictly limited to the time required for the VPP to take effect (which we calculate to be around two years) and will be subject to the "one time, last time" condition'.

⁽¹¹⁶⁾ The VPP provides for the release of virtual generation capacity by dominant operators within the framework of contract award procedures. VPPs are commonly used to promote competition in the wholesale market, insofar as they remove the incentive for the dominant operator to use its market power to maintain prices at a high level in the spot and futures markets. The price paid by the purchaser from the VPP consists of a strike price which typically reflect the variable costs of the generating capacity concerned, plus a premium which is set under the terms of the procurement rules.

⁽¹¹⁷⁾ Using the following reasoning: 'Other undertakings located on the mainland do not appear to be in the same exceptional market circumstances that prevail in Sardinia. The Directorate-General for Competition is of the opinion that there is no reason to derogate from the principles on State aid'.

(248) With considerable delay, on 9 July 2009, Italy adopted the legislative provisions necessary to grant the AEEG the power to establish such a mechanism. On 17 August 2009, the AEEG adopted Decision ARG/elt 115/09 laying down the provisions for implementing the VPP. The practicalities of the VPP are in line with the criteria established in the 2007 letter. The tariff is to be abolished three months after the launch of the VPP and by 31 December 2009 at the latest.

6.5.3.1. Description of the Italian VPP

(249) Pursuant to the detailed rules established by the AEEG, both ENEL and E.ON are to release virtual generating capacity to operators which have no ties with either company. The capacity to be released (225 MW by ENEL and 150 MW by E.ON) was determined in relation to the respective unilateral market power of each of the two dominant operators. The VPP is to cover at least 25 % of electricity demand in Sardinia and will last for five years, until the infrastructure projects currently under way to enhance electricity interconnection between Sardinia and mainland Italy have been completed.

(250) Participation in the contract award procedures is to be open to market operators active in the sale to end-users. The products on offer will be of one-year and/or five-year maturities. Contract awards will be for the period from 1 January 2010 onwards.

(251) In view of the physical constraints on the electricity network in Sardinia, the Italian VPP has been designed as a financial instrument ⁽¹¹⁸⁾. Under this type of VPP, the purchasers are not obliged physically to sell the electricity thus awarded to end-users. They benefit from financial settlement whenever the price paid on the day-ahead market exceeds a certain threshold. The advantage of owning VPP capacity for an existing operator or a new entrant which wants to expand its client base lies in the fact that the VPP can be used as a hedging instrument for (other) physical transactions carried out.

(252) The beneficial effect for competition of this type of VPP lies in the fact that the dominant operators are deprived of the incentive to use their market power to maintain prices in the day-ahead market at high levels, insofar as

any benefit derived from such a strategy will be transferred to the VPP purchasers.

6.5.3.2. Compatibility of the tariff on the basis of the VPP

(253) Although the VPP is expected to have a beneficial effect on competition in the Sardinian electricity market, and despite the proposal made in January 2007, the Commission has come to the conclusion that, in this instance, the VPP cannot constitute sufficient basis to render the aid compatible for a transitional period following the establishment of the VPP and much less so for the period before the VPP is set up, for the reasons set out in detail below.

(254) The Commission does not deny that, in exceptional circumstances, a remedy consisting of 'market liberalisation' (or better, in this case, a structural measure designed to enhance competition in a market which remains highly concentrated although legally open to competition) may provide a basis for the compatibility of State aid. In this specific case, the Commission has taken into consideration the nature of the problem of competition in the Sardinian electricity market ⁽¹¹⁹⁾, the causal link between this problem and the aid, and the effectiveness of the VPP as a corrective instrument.

(255) First, as regards the nature of the problem of competition in Sardinia, the following should be noted. The high prices in Sardinia are the consequence of a combination of factors: insufficient interconnection, the cost structure of the local generation portfolio and the market power of the two principal generators. The fact that electricity interconnection is insufficient in the island is not a liberalisation problem, but rather a corollary of its geographic location. Numerous EU countries include islands and almost all Member States possess islands with which electricity interconnection is insufficient or non-existent. The cost structure of the generation portfolio is not directly linked to how the electricity market works or to the exercise of market power by dominant operators. Instead, it results from the availability of primary energy resources and the other physical and geographical constraints which condition investment decisions by generating companies. Lastly, a highly concentrated market structure is probably the rule rather than an exception on islands. Therefore, the only competition issue which can be shown to exist is the duopoly, insofar as it potentially encourages the dominant operators to set high prices. This, however, is only one of the factors contributing to the high level of prices in Sardinia.

⁽¹¹⁸⁾ The VPP takes the form of a contract which grants the automatic right to its purchaser to obtain the difference, when positive, between the price paid to generators in Sardinia in the day ahead market and the strike price. The purchaser pays the vendor the premium fixed by the contract awards procedure and receives from the vendor the difference, when positive, between the price on the day-ahead market and the strike price.

⁽¹¹⁹⁾ To this end, the Commission has based itself on the analysis made by the AEEG in its reports.

(256) Second, the Commission has looked into the existence of a causal link between the preferential tariffs and conditions in the Sardinian market. These tariffs were never intended to address the competition situation in Sardinia, given that the Sardinian tariffs which Italy notified provided relief only to a restricted circle of consumers, who were in fact those with the greatest bargaining power. Italy itself has acknowledged that the purpose of the Alcoa tariff was to bring the price paid by Alcoa in Sardinia into line with those offered to aluminium producers in other European countries.

(257) If anything, the aid concerned may have exacerbated the situation resulting from the duopoly in generation. With the system of compensatory payments which constitutes the measure at hand, Alcoa had no incentive to draw on its own power as a purchaser to reduce its electricity costs, since Alcoa's interest in obtaining electricity at the lowest cost was met by the compensatory payments, and not by the exertion of Alcoa's own bargaining power on the retail market as a major electricity consumer in Sardinia. By reducing the incentive for Alcoa to seek sources of supply other than those offered by the incumbent operator, the compensatory payments may, to a certain extent, have had a negative influence on competition in the retail market to the detriment of all electricity consumers, insofar as they tended to bolster the financial position of the incumbent.

(258) Third, the expected beneficial impact of the VPP on actual competitive conditions in Sardinia does not appear to be proportional to the scope and intensity of the aid granted. The effects of the remedy on the Sardinian market would appear to be fairly limited. It will have an impact only on the behaviour of the dominant operators, given that a financial VPP such as that set up by Italy cannot have an effect on interconnection or on generating costs and, unlike a tolling agreement, it is not designed to lead to a change in the market structure in terms of the generating mix.

(259) Fourth, the aid distorts competition in the primary aluminium market, while the VPP will lead to some improvement in terms of competition in a different market, the electricity sector. By its nature, the VPP is not capable of having a direct impact on the aluminium market.

6.5.4. Conclusions on the compatibility of the aid (Veneto and Sardinia)

(260) In the light of the above, the Commission considers that the tariff applied to Alcoa's smelters in Veneto and

Sardinia cannot benefit from any of the derogations laid down in Article 87 of the EC Treaty. The derogations in Article 87(2) are not applicable, since the aid is not of a social character, is not designed to make good the damage caused by natural disasters or exceptional occurrences and was not granted to compensate for the economic disadvantages caused by the division of Germany. The derogations in Article 87(3)(b) and (d) are also inapplicable, since the measure is not aimed at promoting the execution of an important project of common European interest or remedying a serious disturbance in the economy of a Member State nor at promoting culture and heritage conservation. As for the derogation in Article 87(3)(a), the analysis carried out above in recitals 220 to 240 demonstrates that the tariff cannot be approved as aid aimed at promoting the economic development of an area where the standard of living is abnormally low or where there is serious unemployment. With respect to Article 87(3)(c), the analysis shows that the tariff, even coupled with a VPP, cannot be considered compatible on the basis of that derogation (see in particular recitals 216, 217, 241 to 245 and 253 to 259).

(261) Therefore the extension of the preferential tariff in favour of Alcoa introduced by Article 11(11) of Law No 80/2005 and by the 2004 Decree (insofar as the same measure may have resulted from the application of said Decree over the January 2006-July 2007 period) should be declared incompatible with the common market.

6.6. Recovery

(262) Pursuant to Article 14(1) of Regulation (EC) No 659/1999, in cases of unlawful aid which is not compatible with the common market, effective competition should be restored without delay, unless recovery would be contrary to a general principle of Community law.

6.6.1. Legitimate expectations and other general principles of Community law which may prevent recovery

6.6.1.1. Legitimate expectations

(263) According to settled case-law, when aid has been granted without prior notification pursuant to Article 88(3) of the EC Treaty, the recipient of the aid cannot have a legitimate expectation that its grant is lawful⁽¹²⁰⁾. A diligent undertaking is very well capable of establishing if the notification procedure has been followed and if the aid is lawful.

⁽¹²⁰⁾ Judgments of the Court of Justice in Case C-24/95 *Alcan Deutschland* [1997] ECR I-1591, paragraphs 25, 30 and 31, and in Joined Cases C-183/02 P and C-187/02 *Demasa and Territorio histórico de Álava v Commission* [2004] ECR I-10609, paragraph 45.

- (264) However, a recipient of unlawful aid is not precluded from relying on exceptional circumstances on the basis of which it had legitimately assumed the aid to be lawful and thus declining to refund that aid ⁽¹²¹⁾. On the other hand, if 'a prudent and discriminating trader could have foreseen the adoption of a Community measure likely to affect his interests, he cannot plead that principle if the measure is adopted' ⁽¹²²⁾.
- (265) The Commission has examined whether the exceptional circumstances alleged by Alcoa, which are linked to the existence of the *Alumix* decision, may have led it to entertain such legitimate expectations.
- (266) The Court has consistently held that legitimate expectations can arise from only precise, unconditional and concordant assurances, given by the Community institutions, of such a nature as to give rise to a justified expectation that the measure was not aid or was lawful ⁽¹²³⁾.
- (267) Alcoa submits that, even if the current scheme was not to be considered as 'existing aid', Alcoa could still claim legitimate expectations, because it had relied upon the *Alumix* finding that there was no aid when it purchased *Alumix* and decided to make further investments in the two smelters. Alcoa also cites as a precedent the Commission decision on tax-free treatment for steel companies setting up establishments abroad ⁽¹²⁴⁾ (see recital 97 above).
- (268) In that Commission decision, which concerned the tax-free treatment granted by France to steel companies, the provisions on existing aid could not be applied directly, since aid to the steel sector was governed by the ECSC Treaty, which did not recognise the concept of existing aid. The Commission recognised the beneficiaries' legitimate expectations by applying, by analogy, the relevant provisions of the EC Treaty, and accordingly did not order the recovery of the aid. However, the case was in substance similar to the *Belgian Coordination Centres* case, in that the Commission had changed its appraisal of a measure previously classified as not comprising aid without that measure having been altered by the Member State. The considerations developed in recital 210 meant that the Commission must dismiss the claim that the cited decision can be taken as a basis to acknowledge legitimate expectations on the part of Alcoa.
- (269) As regards the relevance attributed by Alcoa to the *Alumix* decision, it should be pointed out that that decision could give the beneficiary a legitimate expectation that the tariff arrangement assessed therein did not constitute aid only until 31 December 2005.
- (270) No legitimate expectations can, however, be derived from the *Alumix* decision in respect of the extension in time of the tariff provided for by Article 11(11) of Law No 80/2005. Alcoa could not legitimately have entertained the expectation that the 2005 measure, which prolonged the tariff until 2010, would likewise automatically qualify as not constituting aid. Faced with a measure which had been (a) substantially amended and (b) extended in time, a prudent beneficiary should have verified that the aid was lawful.
- (271) The lack of legitimate expectations deriving from the *Alumix* decision is expressly confirmed in paragraph 109 of the Court's judgment.
- (272) The fact that Alcoa has made investments in its Italian plants is not capable of giving rise to legitimate expectations vis-à-vis the lawfulness of the amended and extended tariff arrangement, given that it was clear when the original Alcoa tariff was granted that it was to last for no more than ten years and that Alcoa programmed its own investments on that basis and not on the assumption of the unlimited duration of the tariff.
- (273) In the light of the above considerations, the Commission has concluded that there are no extraordinary circumstances which could have led Alcoa to entertain legitimate expectations as to the lawfulness of the measure at issue.
- (274) With respect to the Sardinian plant, the Commission has also considered whether the 2007 letter and the subsequent developments deriving from it could constitute a source of legitimate expectations for Alcoa.

⁽¹²¹⁾ Judgment of the Court of Justice in Case C-5/89 *Germany v Commission* [1990] ECR I-3437, paragraph 16.

⁽¹²²⁾ See the judgments in Case C-78/77, *Lühns* [1978] ECR I-169, paragraph 6; Case C-265/85 *Van den Bergh en Jurgens v Commission* [1987] ECR I-1155, paragraph 44; and Case T-489/93 *Unifruit Hellas v Commission*, [1994] ECR II-1201, paragraph 51.

⁽¹²³⁾ See the judgments in Case C-265/85 *Van den Bergh en Jurgens v Commission* *Ibid.*, paragraph 44; Case C-152/88 *Sofrimport v Commission* [1990] ECR I-2477, paragraph 26; Case T-290/97 *Mehibas Dordtselaan v Commission* [2000] ECR II-15, paragraph 59; and Case T-223/00 *Kyowa Hakko Kogyo v Commission* [2003] ECR II-2553, paragraph 51.

⁽¹²⁴⁾ See footnote 51.

(275) It should be noted in this respect that in the 2007 letter the Commission did not give any precise and unconditional assurances as to the value of the VPP for the purposes of a finding on the compatibility of the aid. The letter from the services of the Commission did no more than indicate that 'the European Commissioner for Competition will be willing to propose to the College a gradual and brief phasing-out period for the electricity tariffs in Sardinia'. That wording implied that a positive outcome to the case would, in any event, be conditional on approval of the draft decision by the whole Commission. In view of its status (a letter from the Commission departments) and its content (a conditional assurance), the 2007 letter could not, therefore, give rise to legitimate expectations of a nature recognised by the Court.

6.6.1.2. Other general principles of Community law

(276) Neither Italy or Alcoa have advanced arguments in this respect. However, the Commission has examined whether other general principles of Community law prevent recovery, in full or in part.

(277) With respect to the plant located in Veneto, it should be noted that recovery does not violate any general principle of Community law; the Commission expressed serious doubts about the compatibility of the aid for the Veneto site in the opening decision and nothing in the subsequent course of the proceedings could have changed the impression given to Alcoa by the opening of the investigation.

(278) As for the plant located in Sardinia, the Commission has examined the situation deriving from the 2007 letter and its subsequent developments. As illustrated above in recital 275, the letter from the Commission departments did not give any precise and unconditional assurances as to the value of the VPP for the purposes of a finding on the compatibility of the aid, but confined itself to indicating that, if Italy reacted promptly to the proposal, the Commissioner for Competition would propose a brief phasing-out period for the tariff for approval by the Commission. However, the idea of a VPP was put to one side in the subsequent course of the proceedings, until Italy decided to put it into effect.

(279) Despite this proposal, as explained in recitals 253 to 259 above, the Commission came to the conclusion that the VPP could not constitute a basis for a decision on the compatibility of the aid, for reasons related to the circumstances of the measure and the general nature of the VPP, reasons which did not derive from its discussions with Italy. There is, however, reason to ponder whether the prolonged talks on the VPP might

overcome the presumption that an assessment of incompatibility of an unlawful aid measure ought necessarily to lead to the full refund of that aid.

(280) Irrespective of the fact that the duration of the investigation was not, in itself, excessively long (three years), the Commission acknowledges that, in the present case, the duration was prolonged by talks regarding the introduction of a VPP.

(281) Although the length of the talks on the VPP was in large part due to Italy's belated reply to the proposal, the Commission acknowledges that the lengthy discussions on the VPP were not conducive to the principle of sound administration, and affected the behaviour of the beneficiary over the subsequent course of the investigation. The prospect that, thanks to the VPP, a favourable outcome to the case might be secured for the Sardinian plant, a prospect which was created by the Commission and not dissipated in a sufficiently timely manner, may have altered Alcoa's perception of the risk of recovery of the aid to the Sardinian plant following the opening of the proceedings, and this may in turn have influenced its business strategy in terms of investments and the siting of activities. If the 2007 letter had not been sent, Alcoa might have decided not to continue activities in Sardinia, and thus limited the amount to be refunded.

(282) In the light of the above circumstances, the Commission find that it is appropriate not to impose the recovery of the aid for the Sardinian plant for the period from the date of sending the letter, 19 January 2007, until that of this Decision.

6.6.2. Quantification of the amounts to be recovered

(283) In conclusion, all amounts of incompatible aid received by Alcoa pursuant to Article 11(11) of Law No 80/2005 from 1 January 2006 onwards must be recovered, with interest, in accordance with Chapter V of Commission Regulation (EC) No 794/2004 of 21 April 2004 implementing Council Regulation (EC) No 659/1999 laying down detailed rules for the application of Article 93 of the EC Treaty ⁽¹²⁵⁾.

(284) The purpose of recovery is to restore the competitive situation of the beneficiary prevailing before the grant of the incompatible aid. In order to quantify the amounts to be recovered, it is therefore necessary to establish the price Alcoa would have paid on the market for its electricity supplies if the tariff had not been prolonged.

⁽¹²⁵⁾ OJ L 140, 30.4.2004, p. 1.

(285) As shown in recital 157, Alcoa established a bilateral contract with ENEL for a nominal price roughly equivalent to the standard high-voltage tariff charged by the utility. In the Commission's view, this is the price Alcoa would have paid for its electricity supplies in the absence of the tariff. The Commission therefore considers that the amount to be recovered equals the difference between the contractual price and the preferential price. This amount coincides with the compensatory contribution received by the company over the period concerned⁽¹²⁶⁾. The same calculation method was prescribed by the Commission in the *Terni* case⁽¹²⁷⁾, which is directly comparable to the present case.

(286) For the sake of completeness, the Commission has examined – and rejected – the argument that, in the absence of the State subsidy, Alcoa would have negotiated a better price with the utility, and that therefore recovery should be based on a different, supposedly more realistic benchmark.

(287) Firstly, the Commission is not in favour, as a matter of principle, of the idea of constructing a theoretical benchmark when a concrete and appropriate benchmark is available. In *Unicredito*⁽¹²⁸⁾, the Court rejected a similarly hypothetical approach and ruled that 're-establishing the status quo ante... does not imply reconstructing past events differently on the basis of hypothetical elements such as the choices, often numerous, which could have been made by the operators concerned'.

(288) Therefore, after the Commission opened formal investigation proceedings into the tariff in 2004 and 2006 and Alcoa was required to provide a parent company guarantee to cover the risk of recovery, the company had a clear incentive to negotiate the best possible terms of supply with ENEL. There are, therefore, no indications that the contractual price freely negotiated between Alcoa and ENEL misrepresents the market price Alcoa would have paid in the absence of the aid.

7. CONCLUSION

(289) The Commission finds that Italy has unlawfully implemented, in breach of Article 88(3) of the EC Treaty, the provisions of Article 1 of the Prime Ministerial Decree of 6 February 2004 and Article 11(11) of Decree-Law No 35/05, converted into statute by Law No 80/2005, providing for the extension in time of the preferential electricity tariff applicable to Alcoa. The Commission considers that the measure, which constitutes pure operating aid, is not eligible for any derogation from

the general prohibition of State aid under the EC Treaty, and is therefore incompatible with the common market. Therefore, all payments of outstanding aid must be cancelled, while the aid already paid is to be recovered. The amount to be recovered corresponds to the sum of all compensatory components made by the Equalisation Fund to Alcoa. For the Veneto plant, this recovery corresponds to the period from 1 January 2006 until the date of adoption of this Decision. For the plant in Sardinia, the recovery corresponds to the period prior to the 2007 letter, that is from 1 January 2006 to 18 June 2007,

HAS ADOPTED THIS DECISION:

Article 1

The State aid unlawfully granted by Italy to Alcoa Trasformazioni from 1 January 2006 on the basis of Article 1 of the Prime Ministerial Decree of 6 February 2004 and Article 11(11) of Law No 80/2005, in breach of Article 88(3) of the Treaty, is incompatible with the common market. The amount of aid shall be calculated according to the method indicated in recital 285 of this Decision.

Article 2

1. Italy shall recover the aid referred to in Article 1 paid to the beneficiary. For the Veneto plant, the period concerned by this recovery is from 1 January 2006 until the date of adoption of this Decision. For the Sardinian plant, the period concerned by this recovery is from 1 January 2006 to 18 June 2007.

2. The sums to be recovered shall bear interest from the date on which they were put at the disposal of the beneficiary until their actual recovery.

3. The interest shall be calculated on a compound basis in accordance with Chapter V of Regulation (EC) No 794/2007 and Commission Regulation (EC) No 271/2008⁽¹²⁹⁾ amending Regulation (EC) No 794/2004.

4. Italy shall cancel all future payments of the aid referred to in Article 1 with effect from the date of adoption of this Decision.

Article 3

1. Recovery of the aid referred to in Article 1 shall be immediate and effective.

2. Italy shall ensure that the Decision is implemented within four months following the date of notification of this Decision.

⁽¹²⁶⁾ The Commission does not possess the data required to carry out an exact calculation of this amount.

⁽¹²⁷⁾ See footnote 9. In the *Terni* case, the preferential tariff, which was also prolonged by Article 11(11) of Law No 80/2005 was calculated, financed and paid out in substantially the same way as for Alcoa (albeit with a different end-price for the beneficiaries).

⁽¹²⁸⁾ Judgment of the Court of Justice in Case C-148/04 *Unicredito* [2005] ECR I-11137.

⁽¹²⁹⁾ OJ L 82, 25.3.2008, p. 1.

Article 4

1. Within two months following notification of this Decision, Italy shall submit the following information to the Commission:

- (a) the total amount (principal and recovery interest) to be recovered from the beneficiary;
- (b) a detailed description of the measures already taken and planned to comply with this Decision;
- (c) documents demonstrating that the beneficiary has been ordered to repay the aid.

2. Italy shall keep the Commission informed of the progress of the national measures taken to implement this Decision until

recovery of the aid referred to in Article 1 has been completed. It shall immediately submit, on simple request by the Commission, information on the measures already taken and planned to comply with this Decision. It shall also provide detailed information concerning the amounts of aid and recovery interest already recovered from the beneficiary.

Article 5

This Decision is addressed to the Italian Republic.

Done at Brussels, 19 November 2009.

For the Commission

Neelie KROES

Member of the Commission

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