

COMMISSION OF THE EUROPEAN COMMUNITIES

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PROPOSAL FOR A COUNCIL DIRECTIVE (EEC) ON THE
APPROXIMATION OF THE LAWS OF THE MEMBER STATES
RELATING TO ROLL-OVER PROTECTIVE STRUCTURES (ROPS)
FOR CERTAIN CONSTRUCTION PLANT

PROPOSAL FOR A COUNCIL DIRECTIVE (EEC) ON THE
APPROXIMATION OF THE LAWS OF THE MEMBER STATES
RELATING TO FALLING-OBJECT PROTECTIVE STRUCTURES
(FOPS) FOR CERTAIN CONSTRUCTION PLANT

(Submitted to the Council by the Commission)

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EXPLANATORY MEMORANDUM

I. INTRODUCTION

1. Taken as a whole, the highly important Community market in construction plant covers 10 % of the mechanical engineering sector (*). The bulk of the construction plant sector is made up of: front-end loaders, diggers, motor graders, prime movers and rubber tyred and tracked dozers, i.e., the categories considered in these Directives.

In 1978 the EEC's annual production amounted to some 60 000 construction plant units, representing a value of the order of 3 000 million EUA. To-day Community production accounts for almost a quarter of the world total, with the Community in second place after the United States and followed immediately by Japan. Some 85 manufacturers in 130 factories are currently building this type of construction plant in the Community.

According to the trade associations, 52 000 persons are directly employed in the sector.

In 1978 about 40 % of the EEC's annual production was used in the country of manufacture, while a little over a third of the remainder, i.e., nearly a quarter of the total production, stayed in the Community. The main customers for exports to non-Community countries were the OPEC and EFTA countries.

2. According to the Commission's information, the number of accidents resulting from the roll-over of such construction plant is not very high, in comparison with the total number of industrial accidents. In the majority of cases, however, they fall into the category of serious or even fatal accidents, with the operator being either thrown from the cab, seriously injured, or killed inside. A case-by-case analysis of the many accidents described shows that the presence of a protective structure has been instrumental in substantially reducing the gravity of accidents liable to have serious or fatal consequences for the operator.

(*) Not including means of transport

These findings have been further reinforced in the case of accidents where, in addition, the operator has been correctly wearing a seat belt. In this instance the majority of the accidents have been limited to slight injuries.

Accidents caused by falling objects are less numerous than roll-over accidents and in most cases are the direct result of on-site materials-handling errors. Hence it is that the presence of such protection against falling objects is not called for in all cases where such plant is used; indeed, it may, on occasion, even prove a hindrance, although for other applications it appears necessary.

3. These factors have prompted one Member State (Federal Republic of Germany) to introduce legal provisions covering the design, construction and testing of roll-over protective structures (ROPS) and falling-object protective structures (FOPS).

In two other Member States draft legal provisions exist, either at a very advanced stage of drafting (France) or at an exploratory stage (Italy).

In addition, the problems concerning protective structures and the testing of protective structures for construction plant have been in the forefront of efforts to achieve international standardization. ISO standards have been laid down which have served not only as a basis for Community efforts to approximate the laws of the Member States but also, despite their differences, as a basis for existing or contemplated national legislation.

4. It is clear that the provision of greater safety for construction plant operators as a result of fitting protective structures will have an impact on manufacturing costs. According to information which the Commission has obtained from the trade, the average cost of a roll-over protective structure for mass-produced units is 3 % of the total cost but, in the case of units produced on a small scale, this figure may be as high as 6 %.

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In the case covered by these Directives, where the falling-object protective structure would be added to the roll-over protective structure and would consist mainly of a reinforced roof, the additional cost is very small and is likely to be, on average, 400 EUA.

5. While there is no question of the Commission contesting the merits of the safety measures taken or envisaged, it is an undeniable fact that the national laws, enacted in a haphazard manner and containing discrepancies as regards both technical and administrative requirements, compel the manufacturers to adapt the construction plant protective structures to a variety of provisions, thus creating barriers to trade. It is for this reason that, at the request of, and by agreement with, the Community industry, the Commission has carried out a study of how the approximation of the laws could eliminate the adverse effects of disparities in national laws.
6. Accordingly, the object of these Directives is to remove established instances of technical barriers to trade by approximating the laws. The legal basis is Article 100 of the EEC Treaty.
7. These Directives on protective structures for certain construction plant are separate directives arising out of the proposal for a Council Directive on the approximation of the laws of the Member States relating to common provisions for construction plant and equipment (*).
If necessary, the Commission will also present a proposal for a directive on seat belts and their anchoring points.
8. The Commission has convened a working party of government experts and representatives from the trade with a view to obtaining advice on technical matters.

It has also consulted the Advisory Committee on Safety, Hygiene and Health Protection at Work, which has delivered a favourable opinion.

(*) OJ No C 82, 14.4.1975, p. 91

II. COMMENTS ON THE PROPOSALS FOR DIRECTIVES

1. The proposed Directives concern practically all construction plant which involve a roll-over hazard or which are likely to expose the operator to falling objects.
2. The procedure adopted at Community level for placing on the market and bringing into service construction plant protective structures is the EEC type-examination.
3. The Commission has proposed the total harmonization solution in the case of roll-over protective structures which must be fitted to construction plant. For practical operating reasons it has restricted this total harmonization to the technical criteria with which these structures must comply in order to afford protection from falling objects. The question whether or not requirements should be laid down on the fitting of falling-object protective structures to construction plant for the execution of certain types of work is left to the discretion of the national or local authorities or the owners.
4. The technical annexes, as regards both the deflection limiting volume and the laboratory tests, and the performance criteria, as agreed with the vast majority of the experts consulted, refer to the ISO international standards. Some of these standards are currently under review and, should the new editions of these standards be available before the Council adopts these Directives, the Commission reserves the right to amend its proposal accordingly. The Commission further proposed that the subsequent adaptation of these technical annexes should be subjected to the so-called "Committee on the Adaptation to Technical Progress" procedure.

III. CONSULTATION OF THE EUROPEAN PARLIAMENT AND THE ECONOMIC AND SOCIAL COMMITTEE

Pursuant to the second paragraph of Article 100 of the EEC Treaty, the opinions of these two bodies are mandatory, since the implementation of the provisions contained in these Directives will involve the amendment of legislation in all Member States.

PROPOSAL FOR A COUNCIL DIRECTIVE (EEC)

on the approximation of the laws of the Member States relating to roll-over protective structures (ROPS) for certain construction plant

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Having regard to the Opinion of the Economic and Social Committee,

Whereas in one Member State the design, construction, testing and procedure for admission to the market of roll-over protective structures for certain categories of construction plant are already the subject of national provisions requiring such construction plant to be fitted with the abovementioned protective structures; whereas this situation is likely to create barriers to intra-Community trade; whereas the object of these provisions is to protect the operator of the plant; whereas, however, the roll-over protective structure for a construction plant unit is effective only if it is also fitted with seat belts and these are used by the operators in the course of their work; whereas it is therefore necessary to approximate these provisions;

Whereas Council Directive 80/..../EEC of on the approximation of the laws of the Member States relating to common provisions for construction plant and equipment (*) has defined a series of joint procedures - in particular, EEC type-approval, EEC type-examination and EEC independent certification - for the placing on the market and bringing into service of such construction plant; whereas provision should be made for the EEC type-examination procedure, coupled with an EEC inspection procedure, in respect of roll-over protective structures for certain construction plant;

Whereas this Directive is a separate directive within the meaning of the second paragraph of Article 3 of Directive 80/..../EEC;

Whereas the laboratory tests, performance criteria and deflection limiting volume are laid down by ISO international standards; whereas reference should therefore be made to these existing standards;

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(*) OJ No C 82, 14.4.1975

Whereas technical progress necessitates rapid adaptation of the technical requirements; whereas the procedure laid down in Article 24 of Directive 80/..../EEC should therefore be adopted for such adaptations of this Directive;

HAS ADOPTED THIS DIRECTIVE :

Article 1

1. This Directive is a separate Directive within the meaning of outline Council Directive 80/..../EEC of
2. This Directive applies to roll-over protective structures (ROPS) for certain construction plant within the meaning of Directive 80/..../EEC on the approximation of the laws of the Member States relating to common provisions for construction plant and equipment.
3. This Directive applies only to roll-over protective structures for construction plant as defined in ISO Standard 3471 of 1.6.1975.

Article 2

Member States shall take all necessary steps to ensure that the construction plant referred to in Article 1 (3) is placed on the market only if it is fitted with a roll-over protective structure which complies with the provisions of this Directive and when this structure has undergone EEC type-examination in accordance with the provisions of Directive 80/..../EEC.

Article 3

1. The approved bodies referred to in Article 9 of Directive 80/..../EEC, shall issue an EEC type-examination certificate only when the type of the roll-over protective structure complies with the provisions set out in Annex I to this Directive.
2. Application for EEC type-examination in respect of a roll-over protective structure shall be accompanied by a data sheet conforming to the model attached as Annex II to this Directive.

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3. For each type of roll-over protective structure that has undergone the examinations and tests provided for in Annex I to this Directive, the approved body shall, on the basis of the test report a model of which is shown in Annex III to this Directive, complete all the headings of the EEC type-examination certificate a model of which is shown in Annex III to Directive 80/..../EEC.
4. The approved body which has issued the EEC type-examination certificate shall upon a duly substantiated request by the Commission or a Member State, forward part A of the test report shown in Annex III to this Directive, together, where appropriate, with the technical data of part B.
5. For each roll-over protective structure built in conformity with the type which has undergone EEC type-examination and fitted to construction plant referred to in Article 1 (3) of this Directive, the manufacturer or his representative shall draw up the certificate of conformity, a model of which is shown in Annex IV to Directive 80/..../EEC, and supply this together with the roll-over protective structure.
6. The manufacturer shall also affix to each roll-over protective structure (ROPS) a visible, permanent and indelible EEC conformity mark a model of which is shown in Annex IV to this Directive.

Article 4

EEC inspection aims at ensuring the correct use of the certificate of conformity and of the EEC mark under the EEC type-examination procedure referred to in Article 2. It shall be carried out by the approved body which issued the EEC type-examination certificate.

Each approved body may delegate the task of carrying out testing and inspection to one or more laboratories.

.../...

Article 5

1. When it is foreseen that the production of protective structures for which an EEC type-examination certificate has been issued is about to commence, the manufacturer or his authorized agent established in the Community shall:
 - a) inform the approved body which granted the EEC type-examination certificate of:
 - the place of manufacture and/or, in the case of roll-over protective structures imported from non-member countries, the places of warehousing;
 - the date of commencement of production and/or in the case of roll-over protective structures imported from non-member countries, the commencement of deliveries;
 - b) allow representatives of the approved bodies access for the purpose of inspection to the said places of manufacture or warehousing and provide all necessary information relevant to such inspection;
 - c) make available, at the request of the approved body and within a reasonable period a sample selected by that body, for inspection purposes.
2. The holder of the EEC mark shall carry out an inspection so as to verify adequately that the roll-over protective structures manufactured conform to the type tested as regards the materials used and the quality of workmanship.

Article 6

1. Each approved body shall be responsible for arranging EEC inspection as it sees fit, in order to ensure that the roll-over protective structures manufactured conform to the type for which the EEC type-examination certificate was granted.

This inspection shall enable the approved body to ascertain whether the manufacturer is in fact carrying out the check referred to in Article 5 (2) on the conformity of the roll-over protective structures manufactured with the type for which the EEC type-examination certificate was granted.

The approved body may also request a sample, selected by that body, for inspection purposes. A further test in accordance with Annex 1 which destroys the roll-over protective structure and possibly the chassis shall be performed only if there are reasonable grounds for assuming that the roll-over protective structure does not comply with the performance requirements of the approved type.

2. If the place of manufacture, is situated in a Member State other than that of the approved body which granted the EEC type-examination certificate, that body shall collaborate with the approved body in the Member State in which the above-mentioned inspection is to take place.

The same shall apply with regard to warehouses in the case of roll-over protective structures imported from non-member countries.

Article 7

1. If the inspection referred to in Article 5 reveals that the roll-over protective structures do not conform to the type for which the EEC type-examination certificate was granted, or that not all the requirements of this Directive have been fulfilled the approved body shall take one of the following measures against the authorized holder of the EEC mark:

- a) a simple warning with a demand that the infringements noted shall cease within a given period;
- b) a warning as referred to in a) but coupled with greater frequency of inspection;
- c) temporary suspension of the EEC type-examination certificate;
- d) withdrawal of the EEC type-examination certificate.

2. The first two measures shall be taken where the disparities do not affect the basic design of the roll-over protective structures or where the infringements are minor ones and in no way impair safety. One of the last two measures shall be taken where the disparities or infringements noted are substantial and in all cases, where they represent a safety hazard.

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3. Temporary suspension or withdrawal of the EEC type-examination certificate shall be notified without delay to the other approved bodies.

Article 8

No Member State may, on grounds relating to the requirements laid down in this Directive for roll-over protective structures, refuse, prohibit or restrict, the marketing and placing in service of the construction plant referred to in Article 1 (3) which is fitted with a roll-over protective structure which complies with the requirements of this Directive.

Where a roll-over protective structure bears the EEC mark and is accompanied by a certificate of conformity it shall be presumed that it complies with these requirements.

Article 9

Amendments that are necessary in order to adjust Article 1 (3) and the Annexes to this Directive to technical progress shall be adopted in accordance with the procedure laid down in Article 24 of Directive 80/..../EEC.

Article 10

1. Member States shall adopt and publish the laws, regulations and administrative provisions necessary in order to comply with this Directive within twenty-four months after its notification and shall forthwith inform the Commission thereof.

They shall implement these provisions thirty-six months after notification of this Directive.

2. As soon as this Directive has been notified, Member States shall also ensure that the Commission is informed, in sufficient time for it to submit its comments, of any draft laws, regulations or administrative provisions which they intend to adopt in the field covered by this Directive.

Article 11

This Directive is addressed to the Member States.

ANNEX I

1. All construction plant within the meaning of Article 1 of this Directive shall conform in respect of the deflection limiting volume of the roll-over protective structure, to International Standard ISO 3164, second edition, of 1.11.1976.

2. Furthermore, the roll-over protective structures of all construction plant shall conform in respect of laboratory tests and performance requirements, to International Standard ISO 3471, first edition, of 1.6.1975.

The provisions of point 7.5.2.7. shall be considered to have been complied with if:

In tests of lateral loading the rate of application of force F (e.g. if this relates to the forward movement speed of the cylinders which develops this load) cannot exceed the following values:

Mass of construction equipment (m) kg	Rate of load application max. mm/s
$m \leq 20\ 000$	3
$m > 20\ 000$ $m \leq 40\ 000$	2
$m > 40\ 000$	1

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ANNEX II

MODEL OF A DATA SHEET TO BE FURNISHED FOR THE PURPOSE OF EEC TYPE-EXAMINATION
OF A FALLING-OBJECT PROTECTIVE STRUCTURE (FOPS) FOR CONSTRUCTION PLANT

1. Equipment concerned

- 1.1. Name and address of manufacturer:
- 1.2. Name and address of manufacturer's authorized representative, if any:
- 1.3. Description of equipment:
- 1.4. Trade mark or name:
- 1.5. Type designation:
- 1.6. Mass of equipment: kg
(Maximum mass with falling-object protective structure, normal attachments and full tanks, but without driver, payload or any towed accessories)
- 1.7. Attachment of falling-object protective structure to the equipment: detachable/not detachable *)

2. Falling-object protective structure (if not manufactured by the maker of the equipment)

- 2.1. Name and address of manufacturer:
- 2.2. Name and address of manufacturer's authorized representative, if any:
- 2.3. Trade mark or name:
- 2.4. Type designation:.....

3. Any other construction plant to which the falling-object protective structure can be fitted

(Repeat questions 1.1 to 1.7)

*) Delete whichever is not applicable.

ANNEX III

MODEL OF A TEST REPORT CONCERNING A FALLING-OBJECT PROTECTIVE STRUCTURE
(FOPS) FOR CONSTRUCTION PLANT

Test report No Part A

1. Description

1.1. Construction plant on which the test is carried out, or the type of construction plant to which the test chassis corresponds.

1.1.1. Name and address of manufacturer and, where appropriate, name and address of manufacturer's authorized representative:
.....

1.1.2. Description of equipment:

1.1.3. Trade mark or name and type designation:

1.1.4. Serial number, (where applicable):

1.1.5. Component number of chassis:

1.2. Falling-object protective structure.

1.2.1. Name and address of manufacturer and, where appropriate, name and address of manufacturer's authorized representative:.....
.....

1.2.2. Trade mark or name and type designation:

1.2.3. Serial number (where applicable):

1.2.4. Component number of falling-object protective structure:
.....

2. Information provided by manufacturer

Arrangement of the deflection-limiting volume DLV according to drawing No

(accurate 1:10 scale drawing attached to test report. Side and front views of the falling-object protective structure and of the surrounding parts, with indication of seat and deflection-limiting volume DLV in the correct positions. Indication of main dimensions of falling-object protective structure).

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3. Confirmation

3.1. The minimum performance requirements specified in ISO Standard 3449, first edition, of 1.6.1975 were met in this test.

3.2. Date of test:

3.3. Name and address of test establishment:
.....

3.4. Name and signature of examiner:

3.5. Date of test report:

Test report No

Part B

1. Test specimen

1.1. Shape of test specimen

1.1.1. According to ISO Standard 3449 of 1.6.1975, Fig. 6

diameter mm, length mm, mass kg

1.1.2. Sphere, diameter mm, mass kg

1.2. Height of fall of test specimen mm

2. Photographs

(a photograph of the test set-up taken from the front or rear and from the side)

2.1. Before loading

2.2. After loading

3. Test results

3.1. The falling-object protective structure absorbed J of energy without penetration of the deflection-limiting volume DLV by any part of the falling-object protective structure.

3.2. Material temperature

3.2.1. During the test the temperature of the falling-object protective structure and of the chassis was°C, or

The steel parts of the falling-object protective structure attained in conformity with EURONORM 45-63 the Charpy V-notch impact strength values with J at -30°C in the case of the x mm test piece.

3.2.2. Strength classification of the bolts and nuts used.

ANNEX IV

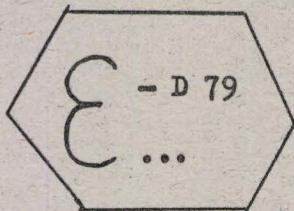
EEC MARK OF CONFORMITY

The EEC mark provided for in Article 3 (6) of this Directive shall be a stylized letter ξ in a hexagon which contains:

- in the upper part, the serial number of the separate Directive allocated according to the chronological order of adoption, the capital letter(s) identifying the State where the certificate was issued (B for Belgium, D for Federal Republic of Germany, DK for Denmark, F for France, I for Italy, IRL for Ireland, L for Luxembourg, NL for the Netherlands, UK for the United Kingdom) and the two final figures of the year of issue of the EEC certificate; the number of the separate Directive to which the EEC certificate refers will be allocated by the Council when this Directive is adopted;
- in the lower part, the number of the EEC type-examination certificate.

An example of this mark is shown below:

Example:



EEC type-examination certificate granted in 1979 by an approved body in the Federal Republic of Germany, pursuant to this Directive.

EEC type-examination certificate No

The diameter of the circle surrounding the mark shall be not less than 20 mm.

The mark of conformity shall be affixed at a point immediately adjacent to or on the identification plate.

Where a roll-over protective structure and a falling-object protective structure are combined (ROPS and FOPS) the two corresponding marks of conformity must appear immediately adjacent to each other.

PROPOSAL FOR A COUNCIL DIRECTIVE (EEC)

on the approximation of the laws of the Member States relating to falling-object protective structures (FOPS) for certain construction plant

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Economic Community, and in particular Article 100 thereof,

Having regard to the proposal from the Commission,

Having regard to the Opinion of the European Parliament,

Having regard to the Opinion of the Economic and Social Committee,

Whereas in one Member State the design, construction, testing and procedure for admission to the market of falling-object protective structures for certain categories of construction plant are already the subject of national provisions requiring that these protective structures comply with special technical criteria and undergo specific tests; whereas this situation is likely to create barriers to intra-Community trade; whereas it is therefore necessary to approximate these provisions;

Whereas Council Directive 80/..../EEC of on the approximation of the laws of the Member States relating to common provisions for construction plant and equipment (*) has defined a series of joint procedures - in particular, EEC type-approval, EEC type-examination and EEC independent certification - for the placing on the market and bringing into service of such construction plant; whereas provision should be made for the EEC type-examination procedure, coupled with an EEC inspection procedure, in respect of falling-object protective structures for certain construction plant;

Whereas this Directive is a separate directive within the meaning of the second paragraph of Article 3 of Directive 80/..../EEC;

(*) OJ No C 82, 14.4.1975.

Whereas the laboratory tests, performance criteria and deflection limiting volume are laid down by ISO international standards; whereas reference should therefore be made to these existing standards;

Whereas the categories of construction plant covered by this Directive are identical to those covered by the Directive on roll-over protective structures; whereas the falling-object protective structure is thereby incorporated in the roll-over protective structure; whereas it is not necessary, for various types of work, to fit a falling-object protective structure to the construction plant; whereas this may even prove a hindrance in certain cases; whereas it is therefore necessary to lay down at Community level the requirements which these structures must satisfy and to allow the Member States to decide how far and under what conditions construction plant should be fitted with this protective structure;

Whereas technical progress necessitates rapid adaptation of the technical requirements; whereas the procedure laid down in Article 24 of Directive 80/..../EEC should therefore be adopted for such adaptations of this Directive,

HAS ADOPTED THIS DIRECTIVE :

Article 1

1. This Directive is a separate Directive within the meaning of outline Council Directive 80/..../EEC of
2. This Directive applies to falling-object protective structures (FOPS) for certain construction plant within the meaning of Directive 80/..../EEC on the approximation of the laws of the Member States relating to common provisions for construction plant and equipment.
3. This Directive applies to falling-object protective structures for construction plant as defined in ISO Standard 3449 of 1.6.1975 only when these construction plant are fitted with such protective structures.

Article 2

Member States shall take all necessary steps to ensure that construction plant referred to in Article 1 (3) which is fitted with a falling-object protective structure is placed on the market only when this structure complies with the provisions of this Directive and when this structure has undergone EEC type-examination in accordance with the provisions of Directive 80/..../EEC.

Article 3

1. The approved bodies referred to in Article 9 of Directive 80/..../EEC shall issue an EEC type-examination certificate only when the type of the falling-object protective structure complies with the provisions set out in Annex I to this Directive.
2. Application for EEC type-examination in respect of a falling-object protective structure shall be accompanied by a data sheet conforming to the model attached as Annex II to this Directive.

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3. For each type of falling-object protective structure that has undergone the examinations and tests provided for in Annex I to this Directive, the approved body shall, on the basis of the test report a model of which is shown in Annex III to this Directive, complete all the headings of the EEC type-examination certificate a model of which is shown in Annex III to Directive 80/.../EEC.
4. The approved body which has issued the EEC type-examination certificate, shall upon a duly substantiated request by the Commission or a Member State, forward Part A of the test report a model of which is shown in Annex III to this Directive, together, where appropriate, with the technical data of Part B.
5. For each falling-object protective structure built in conformity with the type which has undergone EEC type-examination and fitted to construction plant referred to in Article 1 (3) of this Directive, the manufacturer or his representative shall, draw up the certificate of conformity, a model of which is shown in Annex IV to Directive 80/.../EEC and supply this together with the falling-object protective structure.
6. The manufacturer shall also affix to each falling-object protective structure (FOPS) a visible, permanent and indelible EEC conformity mark a model of which is shown in Annex IV to this Directive.

Article 4

EEC inspection aims at ensuring the correct use of the certificate of conformity and of the EEC mark under the EEC type-examination procedure referred to in Article 2. It shall be carried out by the approved body which issued the EEC type-examination certificate.

Each approved body may delegate the task of carrying out testing and inspection to one or more laboratories.

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Article 5

1. When it is foreseen that the production of protective structures, for which an EEC type-examination certificate has been issued is about to commence, the manufacturer or his authorized agent established in the Community shall:
 - a) inform the approved body which granted the EEC type-examination certificate of:
 - the places of manufacture and/or, in the case of falling-object protective structures imported from non-member countries, the places of warehousing;
 - the date of commencement of production and/or, in the case of falling-object protective structures imported from non-member countries, the commencement of deliveries.
 - b) allow representatives of the approved bodies access for the purpose of inspection to the said places of manufacture or warehousing and provide all necessary information relevant to such inspection.
 - c) make available, at the request of the approved body and within a reasonable period a sample, selected by that body, for inspection purposes.

2. The holder of the EEC mark shall carry out an inspection so as to verify adequately that the falling-object protective structures manufactured conform to the type tested as regards the materials used and the quality of workmanship.

Article 6

1. Each approved body shall be responsible for arranging EEC inspection as it sees fit, in order to ensure that the falling-object protective structures manufactured conform to the type for which the EEC type-examination certificate was granted.

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This inspection shall enable the approved body to ascertain whether the manufacturer is in fact carrying out the check referred to in Article 5 (2) on the conformity of the falling-object protective structures manufactured with the type for which the EEC type-examination certificate was granted.

The approved body may also request a sample, selected by that body, for inspection purposes. A further test in accordance with Annex I which destroys the falling-object protective structure and possibly the cabin shall be performed only if there are reasonable grounds for assuming that the falling-object protective structure does not comply with the performance requirements of the approved type.

2. If the place of manufacture is situated in a Member State other than that of the approved body which granted the EEC type-examination certificate, that body shall collaborate with the approved body in the Member State in which the above-mentioned inspection is to take place.

The same shall apply with regard to warehouses in the case of falling-object protective structures imported from non-member countries.

Article 7

1. If the inspection referred to in Article 5 reveals that the falling-object protective structures do not conform to the type for which the EEC type-examination certificate was granted, or that not all the requirements of this Directive have been fulfilled, the approved body shall take one of the following measures against the authorized holder of the EEC mark:
 - a) a simple warning with a demand that the infringements noted shall cease within a given period;
 - b) a warning as referred to in a) but coupled with greater frequency of inspection;
 - c) temporary suspension of the EEC type-examination certificate;
 - d) withdrawal of the EEC type-examination certificate.

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2. The first two measures shall be taken where the disparities do not affect the basic design of the falling-object protective structures or where the infringements are minor ones and in no way impair safety.

One of the last two measures shall be taken where the disparities or infringements noted are substantial and in all cases where they represent a safety hazard.

3. Temporary suspension or withdrawal of the EEC type-examination certificate shall be notified without delay to the other approved bodies.

Article 8

No Member State may, on grounds relating to the requirements laid down in this Directive for falling-object protective structures, refuse, prohibit or restrict the marketing and placing in service of the construction plant referred to in Article 1 (3) which is fitted with a falling-object protective structure which complies with the requirements of this Directive.

Where a falling object protective structure bears the EEC mark and is accompanied by a certificate of conformity it shall be presumed that it complies with these requirements.

Article 9

Amendments that are necessary in order to adjust Article 1 (3) and the Annexes to this Directive to technical progress shall be adopted in accordance with the procedure laid down in Article 24 of Directive 80/..../EEC.

Article 10

1. Member States shall adopt and publish the laws, regulations and administrative provisions necessary in order to comply with this Directive within twenty-four months after its notification and shall forthwith inform the Commission thereof.

They shall implement these provisions thirty-six months after notification of this Directive.

2. As soon as this Directive has been notified, Member States shall also ensure that the Commission is informed, in sufficient time for it to submit its comments, of any draft laws, regulations or administrative provisions which they intend to adopt in the field covered by this Directive.

Article 11

This Directive is addressed to the Member States.

ANNEX 1

1. The falling-object protective structure of construction plant shall conform, in respect of laboratory tests and performance requirements to International Standard ISO 3449, first edition, 1.6.1975.
2. Construction plant within the meaning of Article I of this Directive shall conform, in respect of the deflection-limiting volume of the falling-object protective structure, to International Standard ISO 3164, second edition, 1.11.1976.

ANNEX II

MODEL OF A DATA SHEET TO BE FURNISHED FOR THE PURPOSE OF EEC TYPE-
-EXAMINATION OF A ROLL-OVER PROTECTIVE STRUCTURE (ROPS) FOR
CONSTRUCTION PLANT

1. Equipment concerned

- 1.1. Name and address of manufacturer:
- 1.2. Name and address of manufacturer's authorized representative,
if any:
- 1.3. Description of equipment:
- 1.4. Trade mark or name:
- 1.5. Type designation:
- 1.6. Mass of equipment: kg
(maximum mass with roll-over protective structure, normal
attachments and full tanks, but without driver, payload or
any towed accessories)
- 1.7. Attachment of roll-over protective structure to the equipment:
detachable/not detachable (*)

2. Roll-over protective structure (if not manufactured by the maker
of the equipment)

- 2.1. Name and address of manufacturer:
- 2.2. Name and address of manufacturer's authorized representative,
if any:
- 2.3. Trade mark or name:
- 2.4. Type designation:

3. Any other construction plant to which the roll-over protective
structure can be fitted

(Repeat questions 1.1 to 1.7)

(*) Delete whichever is not applicable.

ANNEX III

MODEL OF TEST REPORT CONCERNING A ROLL-OVER PROTECTIVE
STRUCTURE (ROPS) FOR CONSTRUCTION PLANT

Test report No Part A

1. Description

1.1 Construction plant on which the test is carried out, or the type of construction plant to which the test chassis corresponds:

1.1.1 Name and address of manufacturer and, where appropriate name and address of manufacturer's authorized representative:...

1.1.2 Description of equipment:

1.1.3 Trade mark or name and type designation:

1.1.4 Serial number (where applicable):

1.1.5 Component number of chassis:

1.2 Roll-over protective structure

1.2.1 Name and address of manufacturer and, where appropriate name and address of manufacturer's authorized representative:...

1.2.2 Trade mark or name and type designation:

1.2.3 Serial number (where applicable):

1.2.4 Component number of roll-over protective structure:

2. Information provided by manufacturer

2.1 Mass of construction plant: kg
(maximum mass with roll-over protective structure, normal attachments and full tanks, but without driver, payload or any towed accessories).

2.2 Arrangement of the deflection-limiting volume DLV according to drawing No
(accurate 1: 10 scale drawing attached to test report. Side and front views of the roll-over protective structure and of the surrounding parts, with indication of seat and deflection limiting volume DLV in the correct positions. Indication of main dimensions of roll-over protective structure).

3. Calculation of minimum performance requirements

- 3.1 Force F N under lateral loading
- 3.2 Energy absorption U J under lateral loading
- 3.3 Value of M kg under vertical loading

4. Confirmation

- 4.1 The minimum performance requirements specified in ISO 3471, first edition, of 1.6.1975 were satisfied in this test, the maximum mass of the construction plant being kg.
- 4.2 Date of test:.....
- 4.3 Name and address of test establishment:.....
- 4.4 Name and signature of examiner:
- 4.5 Date of test report:

1. Measuring instruments

- 1.1 Description of measuring instruments used:
- 1.2 Accuracy of measuring instruments used in conformity with ISO Standard 3471 of 1.6.1975 point 7.2.....

2. Photographs

(one photograph of the test set-up taken from the front or rear and one taken from the side at which the load is applied)

- 2.1 Prior to application of lateral load
- 2.2 At or near maximum lateral load
- 2.3 Prior to application of vertical load
- 2.4 At or near maximum vertical load

3. Test results

3.1 Lateral loading

3.1.1 Maximum force applied, after energy absorption was reached or exceeded, without penetration of the deflection-limiting volume DLV by any part of the roll-over protective structure (ROPS) or of the theoretical base plane:

..... N

3.1.2 Energy absorbed without penetration of the deflection-limiting volume DLV by any part of the roll-over protective structure (ROPS) or of the theoretical base plane:

..... J

3.2 Vertical loading

Maximum mass raised without penetration of the deflection-limiting volume DLV by any part of the roll-over protective structure (ROPS) or of the theoretical base plane:

..... kg

3.3 Material temperature

3.3.1 During the test the temperature of the roll-over protective structure and of the chassis was °C, or
The steel parts of the roll-over protective structure attained in conformity with EUROENORM 45-62
the Charpy V-notch impact strength values with J at
- 30°C in the case of the x mm test piece.

3.3.2 Strength classifications of the bolts : and
nuts : used.

3.4 Force-deflection curve

A force-deflection curve in accordance with ISO Standard 3471 of 1.6.1975 is attached.

ANNEX IV

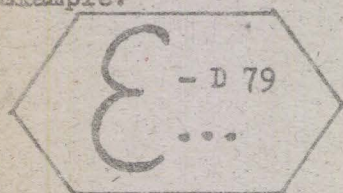
EEC MARK OF CONFORMITY

The EEC mark provided for in Article 3 (6) of this Directive shall be a stylized letter \mathcal{E} in a hexagon which contains:

- in the upper part, the serial number of the separate Directive allocated according to the chronological order of adoption; the capital letter(s) identifying the State where the certificate was issued (B for Belgium, D for the Federal Republic of Germany, DK for Denmark, F for France, I for Italy, IRL for Ireland, L for Luxembourg, NL for the Netherlands, UK for the United Kingdom) and the two final figures of the year of issue of the EEC certificate; the number of the separate Directive to which the EEC certificate refers will be allocated by the Council when this Directive is adopted;
- in the lower part, the number of the EEC type-examination certificate.

An example of this mark is shown below:

Example:



- EEC type-examination certificate granted in 1979 by an approved body in the Federal Republic of Germany, pursuant to this Directive

- EEC type-examination certificate No

The diameter of the circle surrounding the mark shall be not less than 20 mm.

The mark of conformity shall be affixed at a point immediately adjacent to or on the identification plate.

Where a roll-over protective structure and a falling-object protective structure are combined (ROPS and FOPS) the two corresponding marks of conformity must appear immediately adjacent to each other.

