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Irish Standard  
I.S. EN 1777:2010

# Hydraulic platforms (HPs) for fire fighting and rescue services - Safety requirements and testing

## I.S. EN 1777:2010

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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English Version

## Hydraulic platforms (HPs) for fire fighting and rescue services - Safety requirements and testing

Bras Élévateur Aérien (BEA) des services d'incendie et de secours - Prescriptions de sécurité et essais

Hubrettungsfahrzeuge für Feuerwehren und Rettungsdienste, Hubarbeitsbühnen (HABn) - Sicherheitstechnische Anforderungen und Prüfung

This European Standard was approved by CEN on 6 February 2010.

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## Contents

Page

Foreword.....	4
Introduction .....	6
1 Scope .....	7
2 Normative references .....	7
3 Terms and definitions .....	9
4 List of significant hazards .....	12
5 Safety requirements and/or protective measures .....	15
5.1 General.....	15
5.2 Stability and structural calculations .....	15
5.2.1 General.....	15
5.2.2 Loads and forces .....	16
5.2.3 Determination of loads and forces.....	16
5.2.4 Stability calculations .....	19
5.2.5 Structural calculations .....	24
5.3 Chassis and stabilizers .....	26
5.4 Extending structure .....	28
5.4.1 Methods to reduce the risk of overturning and exceeding permissible stresses .....	28
5.4.2 Operation of the extending structure in a specific sequence to avoid instability .....	31
5.4.3 Locking of masts at fixed working position.....	32
5.4.4 Crushing and shearing points between parts of the extending structure, the base and platform.....	32
5.4.5 Emergency evacuation means for the platform .....	32
5.4.6 Operator seat.....	34
5.4.7 Supporting of extending structure in transport position .....	34
5.5 Extending structure drive systems .....	34
5.5.1 General.....	34
5.5.2 Wire rope drive systems .....	35
5.5.3 Chain drive systems .....	37
5.6 Platform .....	38
5.7 Controls .....	41
5.8 Electrical systems.....	44
5.9 Pneumatic control systems .....	45
5.10 Hydraulic drive systems .....	46
5.11 Hydraulic cylinders.....	47
5.11.1 Structural design .....	47
5.11.2 Prevention of unintended movement of the cylinder.....	52
5.11.3 Verification of requirements on hydraulic cylinders.....	52
5.12 Static tilt angle $\delta$ .....	53
5.13 Safety devices .....	53
6 Verification .....	56
6.1 Type tests .....	56
6.1.1 General.....	56
6.1.2 Static test to verify the stability calculation.....	56
6.1.3 Residual load test .....	57
6.1.4 Static overload test.....	57
6.1.5 Ladder type tests .....	57
6.1.6 Dynamic tests.....	58
6.1.7 Tests of vertical load sensing and total moment sensing systems .....	58

6.1.8	Type test on noise .....	59
6.2	Acceptance tests .....	59
7	Information for use .....	59
7.1	Instruction handbook .....	59
7.1.1	General .....	59
7.1.2	Operating instructions .....	59
7.1.3	Transport, handling and storage information .....	60
7.1.4	Information on commissioning .....	61
7.1.5	HP details .....	61
7.1.6	Maximum permitted loads on the platform .....	61
7.1.7	Maintenance information for use by trained personnel .....	61
7.1.8	Special working methods or conditions .....	62
7.1.9	Operating instructions for emergency .....	62
7.1.10	Periodical examinations and tests .....	62
7.2	Marking .....	62
7.3	Safety signs .....	64
Annex A	(informative) Special loads and forces — Use of HP's in wind speeds greater than Beaufort Scale 6 (see 5.2.3.4.1) .....	65
Annex B	(informative) Dynamic factors in stability and structural calculations .....	66
Annex C	(informative) Major alterations and repairs .....	67
Annex D	(normative) Design of wire rope drive systems for the extending structures and platform levelling systems .....	68
D.1	General .....	68
D.2	Calculation of rope drive .....	68
D.3	Calculation of rope diameter (coefficient $c$ ) .....	68
D.4	Calculation of the diameters of rope drums, rope pulleys and compensating pulleys [coefficient ( $h_1 \times h_2$ )] .....	70
D.5	Efficiency of rope drives .....	73
Annex E	(informative) Calculation example of Annex D for wire rope, drum and pulley diameters .....	75
E.1	Notes .....	75
E.2	Annex D method summarised .....	75
E.3	Example .....	76
E.3.1	General .....	76
E.3.2	Drive group — See D.2 and Table D.1 .....	76
E.3.3	Calculation of minimum rope diameter — See D.3 .....	76
E.3.4	Calculation of the diameters of rope drums, pulleys and static pulleys — See D.4 .....	77
Annex ZA	(informative) Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC .....	80
Bibliography	.....	81

## Foreword

This document (EN 1777:2010) has been prepared by Technical Committee CEN/TC 192 "Fire service equipment", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2010, and conflicting national standards shall be withdrawn at the latest by September 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1777:2004+A1:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

### Significant changes

The significant changes with respect to the previous edition EN 1777:2004+A1:2009 are listed below:

- a) Scope revised to state more precisely, limitation of scope to HP's with classification group B – type 1 according to EN 280:2001, 1.4 only and deletion of requirements and tests relating to all other groups and types not covered by the scope, flat belts for extending structure drive systems excluded from scope;
- b) terms and definitions of "hydraulic platform (HP)" and "levelling" added;
- c) some terms and definitions revised;
- d) list of significant hazards editorially revised and hazards relating to self propelled HP's and Group A HP's (where the vertical projection of the centre of gravity of the load is always inside the tipping lines) deleted, which are outside the scope;
- e) specific tests directly linked to the appropriate requirement;
- f) requirements relating to temperature range, forces, calculation, fatigue stress analyses, chassis and stabilizers revised;
- g) requirements and tests added relating to "Moment sensing system with increased safety requirements and enhanced overload criteria" as a new, fourth solution to reduce tilting hazards and hazards caused by exceeding of permissible loads;
- h) requirements and tests added relating to a minimum residual load of 6 % of the vehicle's unladen mass (obtained on the not loaded side, in the most unfavourable position);
- i) new subclause 5.13 "Safety devices" added analogous to EN 280/A1:2004;
- j) requirement added that the extending structure shall be supported in the transport position in such a way as to avoid harmful vibrations during transport;
- k) requirement added that failures in wire rope or chain drive systems for extending structure shall be self-revealing;
- l) maximum tensile grade of the wires in wire rope drive systems for extending structure increased to 2 160 N/mm<sup>2</sup>;
- m) leadscrew and rack and pinion drive systems deleted;

- n) warning signals shall consist of a continuous visual warning and an acoustic signal;
- o) height difference after the static overload test is now depending from the rescue height (for HP's with a rescue height up to 30 m, the height difference shall be less than 100 mm following application of 150 % of the rated load 10 min after unloading, for HP's with a rescue height greater than 30 m the manufacturer shall state the maximum height difference);
- p) emergency evacuation means for the platform added (rescue ladder fixed in parallel to the extending structure or alternatives after carrying out a risk assessment);
- q) requirements on platform doors and guardrails/handrails revised;
- r) anchoring points for the allowed number of persons in the cage for personal protective equipment against falling added;
- s) device added to stop all aggravating movements on sustaining impact;
- t) requirements and tests relating to operator seat, controls and electrical systems revised;
- u) pneumatic and hydraulic control systems revised that besides the specific requirements the basic standards EN 983 and EN 982 applies;
- v) requirements and tests revised relating to static tilt angle  $\delta$ ;
- w) at acceptance tests and at periodical examinations and tests the static overload test has been added;
- x) instruction handbook added with test report, where appropriate, detailing the static and dynamic tests;
- y) operating instructions for emergency added;
- z) marking revised;
- aa) Annex A and Annex B revised according to the changes in EN 280;
- bb) former Annex F (Calculation example — Dynamic factor, kerb test) deleted, because the kerb test relates to self propelled HP's, which are outside the scope;
- cc) content of standard editorially revised.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## **Introduction**

This document is a type C standard as stated in EN ISO 12100.

The machinery concerned and the extent to which hazards, hazardous situations and events are covered are indicated in the scope of this document.

When provisions of this type C standard are different from those which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

As no satisfactory explanation could be found for the dynamic factors used for stability calculations in EN 280 and previous national standards, the results of the tests carried out by CEN/TC 98 "Lifting platforms" to determine a suitable factor and stability calculation method for mobile elevating work platforms (MEWPs) have been adopted. The test method is described in Annex B as a guide for manufacturers wishing to use higher or lower operating speeds and to take advantage of developments in control systems.

Similarly, to avoid the unexplained inconsistencies in wire rope coefficients of utilization and drum and pulley diameters found in other standards for lifting devices, EN 280:2001, Annex C based on DIN 15020-1, together with EN 280:2001, Annex D, have been adopted.



## 1 Scope

This European Standard applies to vehicle mounted Hydraulic Platforms (HP's) as defined in 3.1, intended for use by fire and rescue services. HP's may participate in fire fighting, rescue or protection of persons, protection of the environment and in a variety of other technical operations.

This document identifies the significant hazards (see Clause 4) for all sizes of HP's used by fire and rescue services, on the basis that they are supplied in a complete form, tested and ready for use. It also gives methods for the elimination or reduction of these hazards. This document applies only to HP's classified in group B – type 1 according to EN 280:2001, 1.4.

NOTE 1 HPs of group B – type 1 are those where the vertical projection of the centre of gravity of the load may be outside the tipping lines and for which travelling is only allowed with the HP in its travel condition.

Consequently this document does not apply to HP's with the following classification according to EN 280:2001, 1.4:

- group A – type 1;
- group A – type 2;
- group A – type 3;
- group B – type 2;
- group B – type 3.

This document is intended to be used in conjunction with EN 1846-2 and EN 1846-3.

This document deals with the technical safety requirements to minimise the hazards listed in Clause 4 which can arise during the commissioning, the operational use, the routine checking and maintenance of hydraulic platforms when carried out in accordance with the specifications given by the manufacturer or his authorised representative.

This document deals with all significant hazards, hazardous situations and events relevant to HP's, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer and taking account of their whole lifecycle (see Clause 4).

NOTE 2 The lifecycle includes construction, transport, assembly and installation, commissioning, use (including setting, teaching/programming or process changeover), operation, cleaning, fault finding, maintenance, decommissioning, dismantling and, as far as safety is concerned, disposal.

This document does not deal with the additional hazards for:

- use in underground work (mines);
- use in potentially explosive atmospheres;
- flat belts for extending structure drive systems.

This document is not applicable to HP's which were manufactured before the date of publication of this document by CEN.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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