

Earth-moving machinery — Safety

Part 5. Requirements for hydraulic excavators

The European Standard EN 474-5 : 1996 has the status of a
British Standard

ICS 53.100

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/513, Construction equipment and plant and site safety, to Subcommittee B/513/1, Earth-moving machinery (International), upon which the following bodies were represented:

- British Coal Corporation
- Construction Plant-hire Association
- Federation of Civil Engineering Contractors
- Federation of Manufacturers of Construction Equipment and Cranes
- Health and Safety Executive
- Institution of Civil Engineers
- Silsoe Research Institute

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Amendments issued since publication

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The following BSI references relate to the work on this standard:
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National foreword

This British Standard has been prepared by Subcommittee B/513/1 and is the English language version of EN 474-5: 1996 *Earth-moving machinery — Safety — Part 5: Requirements for hydraulic excavators*, including corrigendum March 1997, published by the European Committee for Standardization (CEN). It is one of a number of British Standards implementing European Standards on machinery safety matters, in the development of which the United Kingdom has played an active part.

This British Standard covers the essential safety requirements in the Machinery Directive (89/392/EEC) and its amendments 91/368/EEC and 93/44/EEC.

Attention is drawn to the requirements in 4.1.3 regarding tests for the front guard and for the tip over protective structures (TOPS).

In 4.1.3.2 it should be noted that a test method is not referenced and the testing set-up and requirements of ISO 3449 : 1992, referenced in 4.1.3.1 are not relevant.

In 4.1.3.3 the UK recommends that ISO/DIS 12117 : 1994 is referenced to determine the test energy requirements.

The UK is continuing to discuss this issue as part of the revision of EN 474-5.

Cross-references

Publication referred to	Corresponding British Standard
	BS EN 292 <i>Safety of machinery. Basic concepts, general principles for design</i>
EN 292-1 : 1991	Part 1 : 1991 <i>Basic terminology, methodology</i>
EN 292-2 : 1991	Part 2 : 1991 <i>Technical principles and specifications</i>
	BS EN 474 <i>Earth-moving machinery. Safety</i>
EN 474-1 : 1994	Part 1 : 1995 <i>General requirements</i>
ENV 1070 : 1993	DD ENV 1070 : 1993 <i>Safety of machinery. Terminology</i>
EN 23411 : 1988	BS 5538 : 1983 <i>Specification for minimum operator space envelope for earth-moving machinery</i>
EN 25353 : 1988	BS 5631 : 1978 <i>Specification for earth moving machinery and tractors and machinery for agriculture and forestry — Seat index point</i>
	BS EN 60204 <i>Safety of machinery. Electrical equipment of machines</i>
EN 60204-1 : 1992	Part 1 : 1993 <i>Specification for general requirements</i>
	BS 6912 <i>Safety of earth-moving machinery</i>
ISO 2867 : 1994	Part 15 : 1995 <i>Specification for access systems</i>
ISO 3164 : 1992	Part 7 : 1992 <i>Specification for laboratory evaluations of roll-over and falling-object protective structures : the deflection-limiting volume for earth-moving machinery</i>
ISO 3449 : 1992	Part 6 : 1992 <i>Specification for falling-object protective structures on earth-moving machinery : Laboratory tests and performance requirements</i>
ISO 3471 : 1994	Part 14 : 1995 <i>Specification for laboratory tests and performance requirements of roll-over protective structures</i>
	BS AU 50 <i>Tyres and wheels</i>
	Part 1 <i>Tyres</i>
	Section 3 <i>Off-the-road tyres</i>
ISO 4250-2 : 1991	Subsection 3.2a : 1991 <i>Specification for narrow and wide base tyre loads and inflation pressures</i>
	BS 6911 <i>Testing earth-moving machinery</i>
ISO 5006-1 : 1991	Part 5 : 1992 <i>Determination of operator's field of view</i>
ISO 6014 : 1986	BS 5982 : 1987 <i>Method for determination of ground speed of earth-moving machinery</i>
ISO 6016 : 1982	BS 6300 : 1982 <i>Methods of measuring the masses of whole machines, their equipment and components of earth-moving machinery</i>
	BS 6812 <i>Airborne noise emitted by earth-moving machinery</i>

ISO 6393 : 1985	Part 1 : 1987 <i>Method of measurement of exterior noise in a stationary test condition</i>
ISO 6682 : 1986	BS EN ISO 6682 : 1995 <i>Earth-moving machinery. Zones of comfort and reach for controls</i>
ISO 7096 : 1994	BS 6912 <i>Safety of earth-moving machinery</i> Part 17 : 1995 <i>Specification for laboratory evaluation of operator seat vibration</i>
ISO 7135 : 1993	BS 6914 <i>Terminology (including definitions of dimensions and symbols) for earth-moving machinery</i> Part 8 : 1993 <i>Terminology and commercial specifications for hydraulic excavators</i>
ISO 7546 : 1983	BS 6422 : 1983 <i>Method for volumetric rating of loader and front loading excavator buckets used for earth-moving</i> BS 6912 <i>Safety of earth-moving machinery</i>
ISO 8643 : 1988	Part 1 : 1988 <i>Specification for hydraulic excavator and backhoe loader boom lowering control device</i> BS 6912 <i>Safety of earth-moving machinery</i>
ISO 9244 : 1995	Part 23 : 1996 <i>Safety signs and hazard pictorials — General principles</i> Part 22 <i>Operator enclosure environment</i>
ISO 10263-2 : 1994	Section 22.2 : 1996 <i>Air filter test</i>
ISO 10263-4 : 1994	Section 22.4 : 1996 <i>Operator enclosure ventilation, heating and/or air-conditioning test method</i>
ISO 10567 : 1992	Part 9 : 1992 <i>Methods for the calculation and verification of the lift capacity of hydraulic excavators</i>
ISO 10968 : 1995	Part 20 : 1996 <i>Specification for operator's controls</i>
ISO 12509 : 1995	Part 21 : 1996 <i>Specification for lighting, signalling and marking lights, and reflex-reflector devices</i>

Compliance with a British Standard does not of itself confer immunity from legal obligations.

English version

Earth-moving machinery — Safety — Part 5: Requirements for hydraulic excavators

Engins de terrassement — Sécurité —
Partie 5: Exigences applicables aux pelles
hydrauliques

Erdbaumaschinen — Sicherheit —
Teil 5: Anforderungen für Hydraulikbagger

This European Standard was approved by CEN on 1996-01-06. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by CEN/TC 151, Construction equipment and building material machines — Safety, the secretariat of which is held by DIN.

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 December 1996, and conflicting national standards shall be withdrawn at the latest by December 1996.

This European Standard 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).

The annex A is normative and contains 'List of additional hazards', annex B is informative and contains 'Rated object handling capacity tables' and annex C is informative and contains 'Illustrations'.

EN 474 *Earth-moving machinery — Safety* comprises the following parts:

Part 1	<i>General requirements</i>
Part 2	<i>Requirements for tractor-dozers</i>
Part 3	<i>Requirements for loaders</i>
Part 4	<i>Requirements for backhoe loaders</i>
Part 5	<i>Requirements for hydraulic excavators</i>
Part 6	<i>Requirements for dumpers</i>
Part 7	<i>Requirements for tractor-scrapers</i>
Part 8	<i>Requirements for graders</i>
Part 9	<i>Requirements for pipelayers</i>
Part 10	<i>Requirements for trenchers</i>
Part 11	<i>Requirements for earth- and landfill compactors</i>
Part 12	<i>Requirements for cable excavators.</i>

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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