TECHNICAL SPECIFICATION

ISO/TS 20474-14

First edition
2008-12-15

Earth-moving machinery — Safety —

Part 14: Information on national and regional provisions

Engins de terrassement — Sécurité —

Partie 14: Information sur les dispositions nationales et régionales

Reference number
ISO/TS 20474-14:2008(E)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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

ISO/TS 20474-14 was prepared by Technical Committee ISO/TC 127, *Earth-moving machinery*, Subcommittee SC 2, *Safety requirements and human factors*.

ISO 20474 consists of the following parts, under the general title *Earth-moving machinery — Safety*:

— *Part 1: General requirements*
— *Part 2: Requirements for tractor-dozers*
— *Part 3: Requirements for loaders*
— *Part 4: Requirements for backhoe-loaders*
— *Part 5: Requirements for hydraulic excavators*
— *Part 6: Requirements for dumpers*
— *Part 7: Requirements for scrapers*
— *Part 8: Requirements for graders*
— *Part 9: Requirements for pipelayers*
— *Part 10: Requirements for trenchers*

— *Part 11: Requirements for earth and landfill compactors*

— *Part 12: Requirements for cable excavators*

— *Part 13: Requirements for rollers*

— *Part 14: Information on national and regional provisions* [Technical Specification]

Introduction

For the purposes of global relevance, this Technical Specification presents provisions applicable in Australia, the European Union, Japan or the United States of America that are mandatory for compliance with specific governmental laws, directives or regulations in force in the particular country or region.

It is complementary to the other parts of ISO 20474 and is provided for information.

NOTE Other countries or regions may also have regional requirements.

Earth-moving machinery — Safety —

Part 14: Information on national and regional provisions

1 Scope

This part of ISO 20474 presents amendments, exceptions and requirements additional to the safety requirements for earth-moving machinery given in the other parts of ISO 20474, in conjunction with which it is intended to be used. These provisions are specific to Australia, the EU, Japan or the USA, and relate to laws, directives or regulations in force in the applicable country or region, as well as to other national and international standards, including ISO International Standards.

2 National/regional provisions related to ISO 20474-1 — General

2.1 Australia

See Table 1.

NOTE For additional Australian provisions, see AS/NZS 2080, AS 1418.8, AS 3868, AS 4457-1 and AS 4772.

Table 1 — Amendments, exceptions and requirements additional to ISO 20474-1 specific to Australia

Subclause of ISO 20474-1	Australian provision(s)
4.2.1	The height of the first step from the ground to the machine should not exceed 400 mm when the machine is parked on level ground, in accordance with AS 3868:1991, 3.2.2.
4.3.2.9	Windows shall be made of safety glass or other material, which provides similar safety performance, see AS/NZS 2080.
4.9	Reverse alarms shall be fitted to all earthmoving machinery. The test procedure shall be in accordance with ISO 9533.
4.10	Rims and wheel assemblies shall be identified in accordance with the requirements of AS 4457-1.
4.12	Earth-moving machinery used to lift freely suspended loads shall meet the requirements of AS 1418.8:2008, Section 5.
4.12.1	Lifting lugs shall not be fitted to the shell of earthmoving machinery buckets as per AS 4772.
4.20	Requirements for fire protection for mobile and transportable equipment, see AS 5062.

2.2 European Union (EU)

See Table 2.

NOTE 1 For the list of significant hazards, see EN 474-1:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-1:2006, Annex ZA.

Table 2 — Amendments, exceptions and requirements additional to ISO 20474-1 specific to EU

Subclause of ISO 20474-1	EU provision(s)
3.1.2	EN 474-1:2006, 3.1.2
—	EN 474-1:2006, Clause 4
4.3.1.1	EN 474-1:2006, 5.3.1.1
4.3.1.2	EN 474-1:2006, 5.3.1.2
4.3.1.5	EN 474-1:2006, 5.3.1.5
4.3.2.5	EN 474-1:2006, 5.3.2.5
4.3.2.6	EN 474-1:2006, 5.3.2.6
4.3.2.9	EN 474-1:2006, 5.3.2.9
4.3.5	EN 474-1:2006, 5.3.5
4.4.1.4	EN 474-1:2006, 5.4.1.4
4.5.1	EN 474-1:2006, 5.5.1
4.8.2	EN 474-1:2006, 5.8.2
4.9	EN 474-1.2006, 5.9
4.12.1	EN 474-1:2006, 5.12.1
4.13.1	EN 474-1.2006, 5.13.1.
4.14.2	EN 474-1:2006, 5.14.2
4.14.4	EN 474-1.2006, 5.14.4
4.14.7	EN 474-1.2006, 5.14.7
4.15.2	EN 474-1.2006, 5.15.2
4.15.3	EN 474-1:2006, 5.15.3
4.15.4	EN 474-1:2006, 5.15.4
4.15.5	EN 474-1:2006, 5.15.5
4.16	EN 474-1:2006, 5.16
4.18.1	EN 474-1:2006, 5.18.1
4.19.3	EN 474-1:2006, 5.19.3
4.19.4	EN 474-1.2006, 5.19.4
4.21	EN 474-1:2006, 5.21
4.22.4	EN 474-1:2006, 5.22.4
4.22.5	EN 474-1:2006, 5.22.5
4.23	EN 474-1:2006, 5.23
4.24	Not applicable
6.1	EN 474-1:2006,7.1
6.2	EN 474-1:2006, 7.2
6.3	EN 474-1.2006, 7.3

2.3 Japan

See Table 3.

NOTE For additional Japanese provisions, see JIS D 5301, JIS R 3212, JIS A 8340-1, JCMAS H 014, and References [24] and [25].

Table 3 — Amendments, exceptions and requirements additional to ISO 20474-1 specific to Japan

Subclause of ISO 20474-1	Japanese provision(s)
4.3.1.1	Machines with an operating mass according to ISO 6016 greater than or equal to 1 500 kg shall be so designed and constructed that a cab can be fitted. A cab shall be fitted on the machine under the following conditions: — if the machine is intended for use in such an area where protection against severe weather conditions for operator is needed; — if the machine is intended for use in unhealthy environments, e.g. contaminated areas.
4.7	Brake systems shall comply with the following requirements: a) for off-road machines with construction vehicle structure, under the Occupational Safety and Health Law; b) for on-road machines, with the Safety Code under the Road Transport Vehicle Law.
4.11	Tractor-dozers, graders and scrapers shall not overturn laterally when inclined up to 35° laterally on a flat, stiff horizontal surface under the condition of the base machine with the equipment and empty attachment as specified by the manufacturer, full fuel tank and all fluid systems at the levels full as specified by the manufacturer. If the mass ratio, “total of said mass and payload also with the operator of 55 kg [and (an)other rider(s) (55 kg per one) if specified]” being divided by said mass without payload nor the mass of the operator is equal to or less than 1,2 or if the machine maximum ground speed is less than 20 km/h, they shall not overturn laterally when inclined up to 30 degrees laterally. Excavator stability shall be in accordance with JIS A 8340-4.
4.12	Lifting objects using earth-moving machinery is prohibited, unless the machinery complies with the Mobile Crane Structural Standard under the Occupational Safety and Health Law.
4.17.5	Batteries shall comply with JIS D 5301. Batteries with a mass of 20 kg or more shall be provided with handles and/or grips according to JIS A 8340-1.
4.19.4	Pressure vessels shall comply with Pressure Vessel Structural Standard under the Occupational Safety and Health Law.
6.3	Machine marking shall be located where it can easily be visible from the operator's position. Each machine shall bear the following information: a) name of the manufacturer; b) the serial number or the year and the month of the machine being made; c) the specific machine mass: 1) the mass of the base machine with the equipment and empty attachment as specified by the manufacturer, full fuel tank and all fluid systems at the levels full as specified by the manufacturer; 2) the total mass of the above and the rated paymass also with the operator (55 kg) (also with other riders, if specified); d) stability factor (see table below):

Table 3 (*continued*)

<table>
<tr><th>Subclause of ISO 20474-1</th><th colspan="3">Japanese provision(s)</th></tr>
<tr><td rowspan="6">6.3</td><td colspan="3"></td></tr>
<tr><td>Machine family or type</td><td>Machine condition</td><td>Direction</td></tr>
<tr><td>Tractor-dozers and track type scrapers (scraper-dozers)</td><td>The base machine with the equipment and empty attachment as specified by the manufacturer, full fuel tank and all fluid systems at the levels full as specified by the manufacturer</td><td>Fore-aft and lateral</td></tr>
<tr><td>Graders and scrapers</td><td>As above</td><td>Lateral</td></tr>
<tr><td>Loaders</td><td>Possible worst case for stability factor</td><td>Fore-aft and lateral</td></tr>
<tr><td colspan="3">e) the engine rated output;
f) maximum ground speed;
g) average ground contact pressure;[a]
h) volume or maximum paymass of the bucket, if the machine is so equipped.</td></tr>
<tr><td colspan="4">[a] Average ground contact pressure refers to the machine total mass of the base machine with the equipment and attachment, with the rated paymass as specified by the manufacturer, full fuel tank and all fluid systems at full levels as specified by the manufacturer, and with the operator (and other riders, if specified).
For crawler machines, ground contact pressure refers to the ground contact area, width or the shoe multiplied by the ground contact length from the front idler to the rear sprocket or rear idler then multiplied by the number of tracks.</td></tr>
</table>

2.4 United States (USA)

See Table 4.

NOTE For additional US provisions, see References [30] to [38].

Table 4 — Amendments, exceptions and requirements additional to ISO 20474-1 specific to USA

Subclause of ISO 20474-1	USA provision(s)
4.4.1.5	See SAE J386.
4.5.2	Starters shall be shielded according to SAE J1493 to prevent hazardous by-pass starting of the machine and shall comply with SAE J297 — neutral start protection requirements.
4.8.1	Back-up alarms shall be provided if the visibility to the rear is obstructed such that the operator cannot see behind the machine.
4.14.4	The fan blades shall be guarded.
4.17.2	Electrical systems shall comply with SAE J1614.
4.19.4	Pneumatic systems shall be constructed per ASME Pressure Vessel Code and all pneumatic systems shall be fitted with automatic pressure relief valves, pressure gauges and drain values per SAE J10 installed and maintained in accordance with the standards and specifications of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code.

3 EU regional provisions related to ISO 20474-2 — Tractor-dozers

See Table 5.

NOTE 1 For the list of additional significant hazards, see EN 474-2:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-2:2006, Annex ZA.

Table 5 — Amendments, exceptions and requirements additional to ISO 20474-2 specific to EU

Subclause of ISO 20474-2	EU provision(s)
—	EN 474-2:2006, Clause 4
4.2	EN 474-2:2006, 5.2
4.3	EN 474-2:2006, 5.3
4.4	EN 474-2:2006, 5.4

NOTE 3 No other national/regional provisions are identified.

4 National/regional provisions related to ISO 20474-3 — Loaders

4.1 Australia

See Table 6.

Table 6 — Amendments, exceptions and requirements additional to ISO 20474-3 specific to Australia

Subclause of ISO 20474-3	Australian provision(s)
4.6.6	Requirements for object handling shall be in conformance with AS 1418.8:2008, section 5

4.2 European Union (EU)

See Table 7.

NOTE 1 For the list of additional significant hazards, see EN 474-3:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-3:2006, Annex ZA.

Table 7 — Amendments, exceptions and requirements additional to ISO 20474-3 specific to EU

Clause/subclause of ISO 20474-3	EU provision(s)
—	EN 474-3:2006, Clause 4
4.4	EN 474-3:2006, 5.4
4.5.1	EN 474-3:2006, 5.5.1
4.5.2	EN 474-3:2006, 5.5.2
4.5.6	EN 474-3:2006, 5.5.6
4.6.1	EN 474-3:2006, 5.6.1
4.6.2	EN 474-3:2006, 5.6.2
4.6.3	EN 474-3:2006, 5.6.3
4.6.4	EN 474-3:2006, 5.6.4
4.6.6	EN 474-3:2006, 5.6.6
Clause 6	EN 474-3:2006, Clause 6

4.3 Japan

See Table 8.

Table 8 — Amendments, exceptions and requirements additional to ISO 20474-3 specific to Japan

Subclause of ISO 20474-3	Japanese provision(s)
4.5.1	ROPS requirements are not applicable for tunnelling machines.
4.6.6	Loader object handling application, unless the machine is prepared as a crane, is prohibited.

5 National/regional provisions related to ISO 20474-4 — Backhoe-loaders

5.1 Australia

See Table 9.

Table 9 — Amendments, exceptions and requirements additional to ISO 20474-4 specific to Australia

Subclause of ISO 20474-4	Australian provision(s)
4.5.2.5.2	Requirements for object handling shall be in conformance with AS 1418.8:2008, Section 5.
4.5.3.3	

5.2 European Union (EU)

See Table 10.

NOTE 1 For the list of additional significant hazards, see EN 474-4:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-4:2006, Annex ZA.

Table 10 — Amendments, exceptions and requirements additional to ISO 20474-4 specific to EU

Clause/subclause of ISO 20474-4	EU provision(s)
—	EN 474-4:2006, Clause 4
4.2.1	EN 474-4:2006, 5.2.1
4.2.2	EN 474-4:2006, 5.2.2
4.3.2	EN 474-4:2006, 5.3.2
4.3.3	EN 474-4:2006, 5.3.3
4.4	EN 474-4:2006, 5.4
4.5.3.2	EN 474-4:2006, 5.5.4.2
4.5.3.3	EN 474-4:2006, 5.5.4.3
4.5.3.4	EN 474-4:2006, 5.5.4.4
6	EN 474-4:2006, Clause 6
Annex A	EN 474-4:2006, Annex B

6 National/regional provisions related to ISO 20474-5 — Hydraulic excavators

6.1 Australia

See Table 11.

Table 11 — Amendments, exceptions and requirements additional to ISO 20474-5 specific to Australia

Subclause of ISO 20474-5	Australian provision(s)
4.6.4	Requirements for object handling shall be in conformance with AS 1418.8:2008, Section 5.

6.2 European Union (EU)

See Table 12.

NOTE 1 For the list of additional significant hazards, see EN 474-5:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-5:2006, Annex ZA.

Table 12 — Amendments, exceptions and requirements additional to ISO 20474-5 specific to EU

Clause/subclause of ISO 20474-5	EU provision(s)
4	EN 474-5:2006, Clause 4
4.3.1	EN 474-5:2006, 5.3.1
4.3.2.2	EN 474-5:2006, 5.3.2.2
4.4	EN 474-5:2006, 5.4
4.6.4.3	EN 474-5:2006, 5.6.4.3
4.6.4.4	EN 474-5:2006, 5.6.4.4
4.7	EN 474-5:2006, 5.7
4.8.4.3.2	EN 474-5:2006, 5.8.4.3.3
4.8.4.3.3	EN 474-5:2006, 5.8.4.3.4

6.3 Japan

See Table 13.

NOTE For additional Japanese provisions, see JIS A 8340-1 and JIS A 8340-4.

Table 13 — Amendments, exceptions and requirements additional to ISO 20474-5 specific to Japan

Clause/subclause of ISO 20474-5	Japanese provision(s)
3	**Additional terms and definitions**
	minimal tail swing radius excavator (MTRX) excavator for operation in confined space having an upper structure with a short tail swing radius within 120 % of the width of the undercarriage with equipment and attachment being unable to be within said 120 % **extra-long reach equipment application** application of hydraulic excavator being equipped with extra long reach equipment NOTE *Extra-long reach equipment application* includes the following: — extra-long front equipment application consisting of an extra-long boom and an extra-long arm with lighter duty bucket for extra wide working range purpose; — telescopic arm application; — telescopic arm with clamshell bucket application; — extra-long front equipment demolition application consisting of an extra-long boom (multi-booms), extra-long arm and demolition attachment. **material handling application** application of hydraulic excavator being equipped with material-handling attachment, single-axis supported clamps, grapples, magnetic and so on handling device, or, parallel axes supported posture controllable one(s)
4.3.1	For compact excavators having an operating mass of less than 1 500 kg, the requirements of 4.3.1 may be relaxed.
4.3.2.2	Replace the current text by the following: Compact excavators, including MTRX, having an operating mass greater than 2 200 kg, other than MSRX, shall be fitted with a tip-over protective structure (TOPS) according to ISO 12117.
4.4.1.3	In addition to the current text: For compact excavators having an operating mass less than 2 200 kg, requirements of ISO 20474-1:2008, 4.4.1.3 may be relaxed.
4.3.3	The excavator seat shall be equipped with an operator restraint system.
4.4	For the horizontally/pivoted boom side-angular/ side-offset operation, if a foot pedal is located accessible to the operator's left foot, ISO 10968:2004, B.5.5, applies: On some very small machines, if a foot pedal is located within the RH side of the machine centreline and accessible to the operator's right foot, downward motion of the front of the pedal shall effect anticlockwise motion and vice versa; For a laterally arranged pedal, downward motion of the LH side of the pedal shall effect anticlockwise motion or LH side offset and vice versa.

Table 13 (*continued*)

Clause/subclause of ISO 20474-5	Japanese provision(s)
4.6.4	See ISO 20474-1:2008, 4.12. Lifting objects by earth-moving machinery stating is prohibited, unless the machinery complies with Mobile Crane Structural Standard under the Occupational Safety and Health Law. The materials-handling device may be controlled from the operator's station, and its holding force shall be enough to keep the material in place and be of such design that loss of holding force shall be avoided.
—	Stability and safety devices of extra-long reach equipment application shall be of appropriate design and construction, with well-prepared instructions for safety purposes (JIS A 8340-4).
6	The following additions shall be made to Clause 6: — warning to operator to fasten seat belt and wear a safety helmet when operating a compact excavator with TOPS; — recommendation to operator to fasten seat belt and wear a safety helmet when operating an excavator of operating mass beyond 6 000 kg; — notice on correct installation of “quick” attachment coupler and on confirming that the attachment is surely coupled; — warning that the movement of the travelling controls in relation to their neutral position may not be in the same general direction as the machine response, unless the swinging upper structure is at the design specific “normal” position; — safe use precautions relating to extra long reach equipment application.

7 National/regional provisions related to ISO 20474-6 — Dumpers

7.1 European Union (EU)

See Table 14.

NOTE 1 For the list of additional significant hazards, see EN 474-6:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-6:2006, Annex ZA.

Table 14 — Amendments, exceptions and requirements additional to ISO 20474-6 specific to EU

Subclause of ISO 20474-6	EU provision(s)
—	EN 474-6:2006, Clause 4
4.2.2	EN 474-6:2006, 5.2.2
4.2.4	EN 474-6.2006, 5.2.4
4.4	EN 474-6:2006, 5.4
4.5	EN 474-6.2006, 5.5
4.6.3.2	EN 474-6:2006, 5.6.3.2
4.7.2	EN 474-6.2006, 5.7.2
4.7.3.3	EN 474-6:2006, 5.7.3.3

7.2 Japan

See Table 15.

Table 15 — Amendments, exceptions and requirements additional to ISO 20474-6 specific to Japan

Clause/subclause of ISO 20474-6	Japanese provision(s)
4.3	The following shall apply for crawler dumpers to avoid hazardous situations in downhill operation: — service brake performance shall be sufficient for downhill operation with maximum load (machine at gross machinery mass state) — for example, by the addition of a mechanical brake system to the HST braking function, by providing a large-enough HST system braking capacity; — machine retarding capacity shall be enough for said downhill operation by enough *engine brake* capacity, etc.; — machine shall be equipped with an inclination alarm device that warns more than 10° or shall be equipped with a machine inclination indicator; — instructions for downhill operation safety (see Clause 6).
4.5	ISO 20474-1:2008, 5.3.3, shall apply, except that compact dumpers having an operating mass beyond 1 500 kg and with an enclosed cab shall have ROPS in accordance with ISO 3471.
6	Additional instructions for crawler dumper downhill operation: — prohibition of use on more than 20° slope. — instructions for more than 10° downhill operation that the transmission shall be at first (low) range, the engine rotation speed at less than the half of the high idle and that the travelling direction shall not offset to the direction of the slope. The operator's manual shall additionally contain the following, emphasizing and warning of dumper-related hazards: — warning not to over-load beyond the rated paymass; — instructions to the operator of hazards relating to limitation of operator visibility of dumpers and advice to the operator and/or machine customer of necessary and appropriate countermeasures such as checking that there are no bystanders around the machine before moving the machine or placing guide personnel for the machine; — warning not to operate the crawler-dumper on a slope beyond 20°; — instructions to the operator in safe operation of the crawler-dumper on an up to 20° slope; — instructions to the operator of the crawler dumper that the transmission shall be at low (first) speed and that the engine revolution shall be below the half of the high idle; also that the machine shall go straight (not turn) under downhill operation on more than 10° slope; — instructions to the operator that machine frames shall be in line when dumping the material from the articulated frame dumper; — instructions to the operator that dumping operation shall be performed on flat ground; — advice to the operator of the risk that the machine could lose the support on poor ground conditions when dumping the load, and that the forces distributed onto the supporting ground could shift suddenly during this operation; — advice to the operator of the risk of loss of stability due to the load becoming stuck to the body, especially when operating in muddy conditions on slopes;

Table 15 (*continued*)

Clause/subclause of ISO 20474-6	Japanese provision(s)
6	— advice to the operator of a compact dumper with self-loading equipment to place the machine on firm, flat ground, and not on poor supporting rough terrain when loading the material; — instructions to the operator of the necessary actions to obtain the maximum possible braking performance through downhill operation on frozen, etc. or slippery slopes, such as locking the differential gear between front and rear drive systems; — instructions to the operator of the proper use of a retarder, such as using the retarder before actuating the service brake; — warning to the operator of a swing dumper not to swing the upper structure, including the body, when travelling on slopes.

7.3 United States (USA)

See Table 16.

Table 16 — Amendments, exceptions and requirements additional to ISO 20474-6 specific to USA

Subclause of ISO 20474-6	USA provision(s)
4.7.3.1	The allowable speed is 10 km/h.
4.9	The instructor's seat shall have seat belts that comply with the requirement of SAE J386 on all dumpers and shall comply with requirements for seat belts given in ISO 13459.

8 EU regional provisions related to ISO 20474-7 — Scrapers

See Table 17.

NOTE 1 For the list of additional significant hazards, see EN 474-7:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-7:2006, Annex ZA.

Table 17 — Amendments, exceptions and requirements additional to ISO 20474-7 specific to EU

Subclause of ISO 20474-7	EU provision(s)
—	EN 474-7:2006, Clause 4

NOTE 3 No other national/regional provisions are identified.

9 EU regional provisions related to ISO 20474-8 — Graders

See Table 18.

NOTE 1 For the list of additional significant hazards, see EN 474-8:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-8:2006, Annex ZA.

Table 18 — Amendments, exceptions and requirements additional to ISO 20474-8 specific to EU

Subclause of ISO 20474-8	EU provision(s)
—	EN 474-8:2006, Clause 4
4.2.1	EN 474-8:2006, 5.2.1
4.2.2	EN 474-8:2006, 5.2.2
4.4.2	EN 474-8:2006, 5.4.2
4.4.3	EN 474-8:2006, 5.4.3

NOTE 3 No other national/regional provisions are identified.

10 EU regional provisions related to ISO 20474-9 — Pipelayers

See Table 19.

NOTE 1 For the list of additional significant hazards, see EN 474-9:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-9:2006, Annex ZA.

Table 19 — Amendments, exceptions and requirements additional to ISO 20474-9 specific to EU

Subclause of ISO 20474-9	EU provision(s)
—	EN 474-9:2006, Clause 4
4.2.4	EN 474-9:2006, 5.2.4
4.3.2.4	EN 474-9:2006, 5.4.2.4

NOTE 3 No other national/regional provisions are identified.

11 EU regional provisions related to ISO 20474-10 — Trenchers

See Table 20.

NOTE 1 For the list of additional significant hazards, see EN 474-10:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-10:2006, Annex ZA.

Table 20 — Amendments, exceptions and requirements additional to ISO 20474-10 specific to EU

Subclause of ISO 20474-10	EU provision(s)
—	EN 474-10:2006, Clause 4
4.3.2	EN 474-10:2006, 5.2.2
4.3.3.3	EN 474-10:2006, 5.2.3.3

NOTE 3 No other national/regional provisions are identified.

12 EU regional provisions related to ISO 20474-11 — Earth and landfill compactors

See Table 21.

NOTE 1 For the list of additional significant hazards, see EN 474-11:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-11:2006, Annex ZA.

Table 21 — Amendments, exceptions and requirements additional to ISO 20474-11 specific to EU

Subclause of ISO 20474-11	EU provision(s)
—	EN 474-11:2006, Clause 4
4.3	EN 474-11:2006, 5.3
4.5	EN 474-11:2006, 5.5
4.7	EN 474-11:2006, 5.7
4.8	EN 474-11:2006, 5.8

NOTE 3 No other national/regional provisions are identified.

13 National/regional provisions related to ISO 20474-12 — Cable excavators

13.1 European Union (EU)

See Table 22.

NOTE 1 For the list of additional significant hazards, see EN 474-12:2006, Annex A.

NOTE 2 For the relation to EU Directives, see EN 474-12:2006, Annex ZA.

Table 22 — Amendments, exceptions and requirements additional to ISO 20474-12 specific to EU

Subclause of ISO 20474-12	EU provision(s)
—	EN 474-12:2006, Clause 4
4.3.3	EN 474-12:2006, 5.3.3
4.3.4	EN 474-12:2006, 5.3.4
B.2	EN 474-12:2006, C.2

13.2 Japan

See Table 23.

Table 23 — Amendments, exceptions and requirements additional to ISO 20474-12 specific to Japan

Clause/subclause of ISO 20474-12	Japanese provision(s)
1	Cable excavators for lifting applications treated as “cranes” do not fall within the Scope.
4.7	Cable excavators shall be equipped with a brake system for the lift system according to the criteria as specified in MOL Bulletin No. 150 [21].
4.11	Cable excavators for pile-driving/extracting applications shall not overturn fore and aft nor laterally when being inclined up to 5 degrees on the flat, stiff horizontal surface under the worst stability conditions of the machine.
6	Cable excavators for pile-driving/extracting applications shall have additional markings as specified in MOL Bulletin No. 150 [21].

14 National/regional provisions related to ISO 20474-13 — Rollers

14.1 European Union (EU)

See Table 24.

NOTE For the relation to EU Directives, see EN 500-1:2006, and EN 500-4:2006.

Table 24 — Amendments, exceptions and requirements additional to ISO 20474-13 specific to EU

Subclause of ISO 20474-13	EU provision(s)
4.5.4	The following are additional requirements for remote infrared controls for rollers with attending operator: All travel movements shall be switched off automatically by the receiver if: a) the maximum range exceeds 20 m; b) the distance of the machine to the operator is closer than 2 m.
4.6	EN 500-4:2006, 5.10

14.2 Japan

See Table 25.

Table 25 — Amendments, exceptions and requirements additional to ISO 20474-13 specific to Japan

Subclause of ISO 20474-13	Japanese provision(s)		
4.8	Ride-on type smooth drum rollers, rubber-tyred rollers and vibration rollers with their emitting A-weighted sound power level, measured according to MLIT Bulletin No. 1537, within the limits as shown in the following table may be type-approved as “low-noise emission type construction machinery” through the process as specified in MLIT Bulletin No. 1536:		
	Machine type	**Engine output** kW	**A-weighted sound power level** dB
	Ride-on-type smooth drum rollers, rubber-tyred rollers and vibration rollers	$P < 55$	101
		$P \geqslant 55$	104

Bibliography

[1] ISO 3471, *Earth-moving machinery — Roll-over protective structures — Laboratory tests and performance requirements*

[2] ISO 6016:—[1)], *Earth-moving machinery — Methods of measuring the masses of whole machines, their equipment and components*

[3] ISO 6165, *Earth-moving machinery — Basic types — Identification and terms and definitions*

[4] ISO 9533:1989, *Earth-moving machinery — Machine-mounted forward and reverse audible warning alarm — Sound test method* [2)]

[5] ISO 10968:2004, *Earth-moving machinery — Operator's controls*

[6] ISO 12117, *Earth-moving machinery — Tip-over protection structure (TOPS) for compact excavators — Laboratory tests and performance requirements*

[7] ISO 13459:1997, *Earth-moving machinery — Dumpers — Trainer seat/enclosure*

[8] ISO 20474-1:2008, *Earth-moving machinery — Safety — Part 1: General requirements*

[9] AS 1418.8:2008, *Cranes, hoists and winches — Special purpose appliances*

[10] AS/NZS 2080:2006, *Safety glazing for land vehicles*

[11] AS 3868:1991, *Earth-moving machinery — Design guide for access systems*

[12] AS 4457-1:2007, *Earth-moving machinery — Off-the-road wheels, rims and tyres — Maintenance and repair — Wheel assemblies and rim assemblies*

[13] AS 4772:2008*, Earth-moving machinery — Quickhitches for excavators and backhoe loaders*

[14] AS 5062:2006, *Fire protection for mobile and transportable equipment*

[15] EN 474 (all parts), *Earth-moving machinery — Safety*

[16] JIS R 3212:1998, *Test method of safety glazing materials for road vehicles*

[17] JIS D 5301:2006, *Lead-acid starter batteries*

[18] JIS A 8340-1:2004, *Earth-moving machinery — Safety — Part 1: General requirements*

[19] JIS A 8340-4:2004, *Earth-moving machinery — Safety — Part 4: Requirements for hydraulic excavators*

[20] JCMAS H 014:2000, *Construction Machinery — Safety Signs*

[21] MOL Bulletin No. 150 (as amended) [3)]

1) To be published. (Revision of ISO 6016:1998)

2) Under revision.

3) Formerly Japan Ministry of Labour (MOL), now Ministry of Health, Labour and Welfare (MHLW).

[22] MOC Bulletin No. 1536 [4)]

[23] MOC Bulletin No. 1537 [4)]

[24] *Occupational Safety and Health Law* (Japan), Law No. 57 of June 8, Showa 47th year (1972) (as amended)

[25] *Road Transport Vehicle Law* (Japan), Law No.185 of June 1, Showa 26th year (1951) (as amended)

[26] SAE J386:2006, *Operator Restraint System for Off-Road Work Machines*

[27] SAE J1493, *Shielding of Starter System Energization*

[28] SAE J297:2002, *Operator Controls on Industrial Equipment*

[29] SAE J1614:2008, *Wiring Distribution Systems for Construction, Agricultural, and Off-Road Work Machines*

[30] FMVSS 49 Part 571, *Federal Motor Vehicle Safety Standard*

[31] OSHA 29 CRF Part 1910.212, *General Requirements for all machines* [5)]

[32] OSHA 29 CRF Part 1910.266, *Logging Operation*

[33] OSHA 29 CRF Part 1926.602, *Material-handling equipment*

[34] MSHA 30 CRF Parts 56, 57, 75, 77 [6)]

[35] FMCSA 49 CRF Part 392, *Driving of commercial vehicles*

[36] FMCSA 49 CRF Part 393, *Parts and accessories necessary for safe operation*

[37] FMVSS 205, *Federal Motor Vehicle Safety Standard — Glazing Materials*

[38] ANSI Z26.1-1996, *Safety Glazing Materials for Glazing Motor Vehicles Operating on Land Highways*

[39] 67/548/EEC, Article (2) of Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to classification, packaging and labelling of dangerous substances

[40] 73/23/EEC, Council Directive of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

[41] 87/404/EEC, Council Directive of 25 June 1987, on the harmonisation of the laws of the Member States relating to simple pressure vessels and its amendments

[42] 89/336/EEC, Council Directive of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility and its amendments

[43] 92/58/EEC, Council Directive of 24 June 1992 on the approximation of the laws, regulations and administrative provisions of the Member States relating to safety signs at places of work

---

4) Formerly Japan Ministry of Construction (MOC), now Ministry of Land, Infrastructure and Transport (MLIT).

5) US Occupational Safety and Health Administration (OSHA).

6) US Federal Mine Safety and Health Administration (MSHA).

Japanese law being written in Japanese, any translation, including the title, is unofficial.

[44] 94/9/EC, Directive of the European Parliament and of the Council of 23 March 1994 approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres

[45] 97/23/EC, Directive of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Member States concerning pressure equipment

[46] 97/68/EC, Directive of the European Parliament and of the Council of 16 December 1997 on the approximation of the laws of the Member States relating to measures against the emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery

[47] 98/37/EC, Council Directive of 22 June 1998 on the approximation of the law of the Member States relating to machinery (Machinery Safety Directive) and its amendment 98/79 EC

[48] 2000/14/EC. Directive of the European Parliament and of the Council of 8 May 2000 on the approximation of laws of the Members relating to the noise emission in the environmental by equipment for use outdoors

[49] Position paper on guidelines for the application of the European Parliament and Council Directive 2000/14/EC on the approximation of the laws of the Member States relating to the noise emission in the environment by equipment for use outdoors

[50] Common position (EC) No 20/97 adopted by the Council on the 17 April 1997 with a view to adopting Decision No. 1971/EC of the European Community programme of policy and action in relation to the environment and sustainable development “Towards sustainability”

ICS 53.100

Price based on 18 pages