



BSI Standards Publication

Building construction machinery and equipment — Classification

National foreword

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TECHNICAL REPORT

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Building construction machinery and equipment — Classification

*Machines et matériels pour la construction des bâtiments —
Classification*



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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.

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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 exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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/TR 12603 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*.

This second edition cancels and replaces the first edition (ISO/TR 12603:1996), which has been technically revised.

Introduction

This Technical Report classifies the machines and equipment used in building and construction while at the same time presenting a broad list of applicable standards. In doing so, it gives guidance on the appropriate standard to use in a particular case.

The list represents the state of development of standardization work in the field and makes the division of this work within the ISO system comprehensible to the user. To this end, ISO Technical Committees who, in addition to ISO/TC 195, are involved in the development of International Standards applicable to building construction machinery and equipment, are identified. These include the committees responsible for cranes (ISO/TC 96), earth-moving machinery (ISO/TC 127) and elevating work platforms (ISO/TC 214).

Building construction machinery and equipment — Classification

Scope

This Technical Report classifies machinery and equipment used in the building and construction industry into three hierarchical levels, and nine groups and into subgroups. It covers machines and equipment employed in the majority of works in the field, classified according to their specified use. In as far as possible, and where existent, International Standards corresponding to subgroups are specified. The ISO Technical Committees responsible for the International Standards are also given, together with, for the convenience of the user, any related European standards.

NOTE See the Bibliography for the titles of the standards listed.

1 Earth-moving machinery and equipment

	Technical Committee	International Standard	European standard
1.1 Tractor-dozers	ISO/TC 127	ISO 6747	EN 474-2
1.1.1 Wheeled dozers			
1.1.2 Crawler dozers			
1.1.3 Loaders	ISO/TC 127	ISO 7131 ISO 6165	EN 474-3
1.2.1 Wheeled loaders			
1.2.2 Crawler loaders			
1.2.3 Digging arm loaders	ISO/TC 127	ISO 8812	EN 474-4
1.3 Backhoe loaders			
1.3.1 Wheeled backhoe loaders			
1.3.2 Crawler backhoe loaders	ISO/TC 127	ISO 7135 ISO 15219	EN 474-5 EN 474-12
1.4 Excavators			
1.4.1 Hydraulic excavators			
1.4.2 Cable excavators			
1.4.3 Wheel excavators			
1.4.4 Bucket chain excavators			
1.4.5 Others			

	Technical Committee	International Standard	European standard
1.5 Dumpers	ISO/TC 127	ISO 7132	EN 474-6
1.5.1 Articulated steer dumpers			
1.5.2 Rigid frame dumpers			
1.5.3 Site (dumpers) carriers			
1.5.4 Crawler dumpers			
1.6 Tractors-scrappers	ISO/TC 127	ISO 7133	EN 474-7
1.6.1 Articulated steer			
1.6.2 Wheel steer			
1.7 Graders	ISO/TC 127	ISO 7134	EN 474-8
1.7.1 Articulated steer			
1.7.2 Wheel steer			
1.8 Landfill compactors	ISO/TC 127	ISO 6165	EN 474-11
1.9 Trenchers	ISO/TC 127	ISO 13539	EN 474-10
1.10 Pipelayers	ISO/TC 127	ISO 7136	EN 474-9
1.11 Rotating pipelayers	ISO/TC 127	ISO 6165	—
1.12 Rollers	ISO/TC 127	ISO 8811	EN 500-4
1.12.1 Smooth drum rollers			
1.12.2 Pneumatic tyred rollers			
1.12.3 Combination rollers			
1.13 Compact machines (excavators and loaders)	ISO/TC 127	ISO 6165	—
1.14 Compact dumpers	ISO/TC 127	—	—
1.15 Compact tool carriers	ISO/TC 127	ISO 6165	—
1.16 Equipment for trenchless technology-horizontal directional drills	ISO/TC 127	ISO 21467	—
1.17 Equipment for trenchless technology: pipe-jacking (pushing), impact ramming (moling), and microtunnelling equipment	ISO/TC 127	—	—
1.18 Remote control systems for earth-moving machinery	ISO/TC 127	ISO 15817	—
1.19 Hydro-excavation and air-excavation equipment	ISO/TC 127	—	—
1.20 Others	—	—	—

2 Foundation and drilling equipment

	Technical Committee	International Standard	European standard
2.1 Pile driving and extracting equipment	ISO/TC 195	ISO 11886 ISO 11375	EN 996
2.2 Pile forming rigs (pile drilling rigs)	ISO/TC 195	ISO 11375	EN 791
2.3 Equipment for soil strengthening (grouting processes)	—	—	—
2.4 Drill rigs for water wells, soil and, geothermal energy exploration, mining and quarrying, and other applications	ISO/TC 195	ISO 11375	EN 791
2.5 Diaphragm walling equipment	ISO/TC 127	ISO 11375	
2.6 Others	—	—	—

3 Equipment for preparing, conveying and compaction of concrete, mortar and processing reinforcement

	Technical Committee	International Standard	European standard
3.1 Equipment for storage of materials	ISO/TC 195	—	—
3.2 Machines and equipment for concrete mix production	ISO/TC 195	ISO 11375	EN 12151
3.2.1 Concrete mixing plants		ISO 11375 ISO 18650-1	—
3.2.2 Concrete mix batching plants			
3.2.3 Concrete mixers			
3.3 Machinery and equipment for concrete mix transport from the producer to jobsite	ISO/TC 195	ISO 11375	—
3.3.1 Truck mixers			
3.3.2 Truck mixers with concrete pumps or belt conveyors			
3.3.3 Concrete transport skips			
3.4 Machinery and equipment for conveying concrete mix to final location on the job site	ISO/TC 195	ISO 11375	EN 12001
3.4.1 Concrete pumps		ISO 11375 ISO 21573-1	—
3.4.2 Tower-mounted concrete mix distributing booms		ISO 11375	—
3.4.3 Self-loading mobile mixers		—	—
3.4.4 Concrete dumpers	ISO/TC 195	ISO 11375	—

	Technical Committee	International Standard	European standard
3.4.5 Truck-mounted belt conveyors for concrete	ISO/TC 195	—	—
3.4.6 Feeders of fresh concrete and mortar		ISO 11375	—
3.4.7 Concrete buckets and concrete mix transfer tanks		ISO 11375	—
3.4.8 Concrete spraying machines		ISO 21592	—
3.5 Machines and equipment for placing concrete mix at its final location	ISO/TC 195		EN 12001
3.5.1 Horizontal concrete mix distributors		—	
3.5.2 Concrete compactors: internal, external and surface vibrators		ISO 11375	
3.5.3 Floor screeding and compaction equipment			
3.5.4 Floating machines			
3.5.5 Concrete vacuum treatment units			
3.6 Machines for plastering	ISO/TC 195	ISO 11375	EN 12001
3.6.1 Plastering units for cement-lime mortars			
3.6.2 Spraying unit for plaster like coats			
3.6.3 Plastering units for gypsum mortars			
3.6.4 Equipment for storing and transporting dry mortar			
3.6.5 Mortar mixers and pumps			
3.6.6 Mortar rendering units			
3.6.7 Float finish device			
3.7 Formworks and moulds	ISO/TC 195	ISO 11375	EN 12812
3.8 Adjustable telescopic steel props	ISO/TC 195	—	EN 1065
3.9 Machinery and equipment for reinforcement work	ISO/TC 195	—	—
3.9.1 Steel bar bending/cutting machines			
3.9.2 Steel mesh bending/cutting machines			
3.9.3 Equipment for welding and fixation bars			
3.10 Equipment used for production of prestressed and postensioned concrete elements	ISO/TC 195	ISO 11375	—
3.11 Others	—	—	—

4 Lifting machinery and equipment

	Technical Committee	International Standard	European standard
4.1 Tower cranes	ISO/TC 96	ISO 4306-1 ISO 4306-3	—
4.1.1 Stationary			
4.1.2 Rail-mounted			
4.1.3 Track (moving on track)			
4.1.4 Climbing cranes (moving up with erected building structure)			
4.1.5 Quick-assembling (self-erecting)			
4.2 Mobile cranes	ISO/TC 96	ISO 4306-1 ISO 4306-2	—
4.2.1 Truck mounted			
4.2.2 Terrain wheeled			
4.2.3 Crawler			
4.3 Derrick cranes	ISO/TC 96	ISO 4306-1	—
4.4 Off-shore cranes	ISO/TC 96	—	—
4.5 Cable type cranes	ISO/TC 96	ISO 4306-1	—
4.6 Gantry cranes	ISO/TC 96	ISO 4306-1	—
4.7 Small capacity portable cranes, gantries and winches (up to 2500N lifting capacity)	ISO/TC 96	—	—
4.8 Variable-reach trucks	ISO/TC 110	ISO 5053	—
4.8.1 Industrial trucks			
4.8.2 Variable reach rough-terrain forklift trucks (tele-handlers)			
4.9 Building hoists	ISO/TC 178	—	—
4.9.1 Builder's hoist for goods			EN 12158-1 EN 12158-2
4.9.2 Builder's hoist for persons and materials			EN 12159
4.10 Winches, pulley blocks, etc.	TC96	—	—
4.11 Lifting accessories	ISO/TC 111	—	—
4.11.1 Lifting straps and slings			
4.11.2 Chains	ISO/TC 105	—	—
4.11.3 Steel wire ropes			
4.11.4 Hooks			

5 Access machinery and equipment

	Technical Committee	International Standard	European standard		
5.1 Static scaffolds (stationary and portable)	ISO/TC 195		EN 39:2001 EN 12811-1		
5.1.1 Tube coupler type			—		
5.1.2 Ladder type					
5.1.3 Prefabricated elements (system scaffolds)			EN 12810-1 EN 12810-2		
5.2 Hanging scaffolds and cradles	ISO/TC 195	—	—		
5.2.1 Stationary					
5.2.2 Mobile					
5.3 Elevating work platforms	ISO/TC 214				
5.3.1 Mast climbing				ISO 16369	—
5.3.2 Mobile				ISO 16368	—
5.4 Trench lining equipment	ISO/TC 195	—	EN 13331-1 EN 13331-2		
5.5 Others	—	—	—		

6 Equipment for installation, finishing work and maintenance

	Technical Committee	International Standard	European standard
6.1 Wallpaper preparation devices	ISO/TC 195	ISO 11375	
6.2 Facing works (ceramic tiles, stoneware setting)	—	—	—
6.3 Painting and polishing equipment	ISO/TC 195	ISO 11375	—
6.4 Machines for floor works	ISO/TC 195	ISO 11375	—
6.5 Equipment for roof work (damp-proofing machines)	ISO/TC 195	ISO 11375	—
6.6 Clean-up equipment	ISO/TC 195	ISO 11375	—
6.7 Equipment for sanitary, electrical, gas and air-conditioning installations	ISO/TC 195	—	—
6.8 Equipment for fixing and connecting	ISO/TC 195	—	—
6.9 Others	—	—	—

7 Road construction and maintenance machinery and equipment

	Technical Committee	International Standard	European standard
7.1 Machinery and equipment for pavement construction and restoration including among others powder binder spreaders and soil stabilizers	ISO/TC 195	ISO 22242 ISO 15689 ISO 15688	EN 500-3 EN 13020
7.2 Machines and equipment for bituminous binders including among others spreaders/sprayers	ISO/TC 195	ISO 22242 ISO 15643	—
7.3 Machines and equipment for asphalt mix production including asphalt mixing plants	ISO/TC 195	ISO 22242 ISO 15642	EN 536
7.4 Machines and equipment for concrete asphalt pavement construction including among others chipping spreaders and asphalt pavers	ISO/TC 195	ISO 22242 ISO 15644 ISO 15878	EN 500-6
7.5 Machines and equipment for concrete pavement construction including among others slipform pavers	ISO/TC 195	ISO 22242 ISO 16039	EN 500-6 EN 13862
7.6 Machines and equipment for finishing road works	ISO/TC 195	ISO 22242	—
7.7 Road-cleaning machines	ISO/TC 195	ISO 22242	EN 13019 EN 13524 EN 15429-1
7.8 Machines and equipment for removal of undesired vegetation	ISO/TC 195	ISO 22242	EN 13524
7.9 Machines and equipment for road winter maintenance	ISO/TC 195	ISO 22242	EN 13021 EN 15059
7.10 Machines and equipment for road repairs including road milling machinery	ISO/TC 195	ISO 22242 ISO 15645	EN 500-2 EN 500-3 EN 13020 EN 13862

8 Machines and equipment for specialized works and processes in construction

	Technical Committee	International Standard	European standard
8.1 Machines and equipment for tunnel-building and underground engineering	—	—	EN 12110 EN 12111
8.1.1 Shield tunnels			EN 12336
8.1.2 Mountain tunnels			EN 815
8.2 Machines and equipment for underwater works — dredgers, pneumatic caisson, and others	—	—	—
8.3 Machines and equipment for railway works — track-laying and restoration	—	—	—
8.4 Bridge building equipment	—	—	—
8.5 Machines for power and telecommunication lines construction	—	—	—
8.6 Machines for aggregate processing — crushing, screening and washing equipment	ISO/TC 195	ISO 11375	—
8.7 Demolition equipment	ISO/TC 195	—	CEN/TS 13778
8.7.1 Demolition units equipped with hydraulic brakers, hammers, shearers and pulverizers			
8.7.2 Water-jet concrete chipping units		ISO 11375	—
8.7.3 Hydraulic bursters			
8.8 Machines for recycling building materials	ISO/TC 195	ISO 21873-1 (mobile crushers)	—
8.9 Equipment for abrasives blasting	ISO/TC 195	—	—
8.10 Fireproof covering material spraying equipment	—	—	—
8.11 Material handling equipment for interior finishes	—	—	—
8.12 Machines and equipment for execution of buildings in automated building construction systems (ABCS)	—	—	—
8.13 Wall saws and wire saws for job site	ISO/TC 195	ISO 11375	EN 15027
8.14 Core drilling machines on stands	ISO/TC 195	ISO 11375	EN 12348
8.15 Masonry and cutting-off machines for job site	ISO/TC 195	ISO 19432	EN 12418
8.16 Floor cutting machines	ISO/TC 195	ISO 11375	—
8.17 Pedestrian controlled-vibratory plates and rammers	ISO/TC 195	ISO 19432 and ISO 19452	EN 500-4

	Technical Committee	International Standard	European standard
8.18 Equipment for protection of workers from accidents	—	—	—
8.18.1 Barriers and nets	—	—	—
8.18.2 Heavy machinery accident prevention systems	—	—	—
8.19 Special equipment for topographic survey in construction works	—	—	—
8.20 Equipment for maintenance buildings	ISO/TC 195	—	—
8.21 Equipment for trenchless technology - pipeline internal inspection and rehabilitation systems	ISO/TC 195	—	—
8.22 Cleaning equipment for construction machinery, e.g. scaffold elements and undercarriages of building machines	—	—	—
8.23 Equipment for inspection and monitoring: rooms' environment, piping, exterior wall tiles, underwater structures and so on	ISO/TC 209, ISO/TC 195	—	—
8.24 Others	—	—	—

9 General-use machinery and equipment used in construction

	Technical Committee	International Standard	European standard
9.1 On road trucks, tipping trucks, trailers and semi-trailers	ISO/TC 22	—	—
9.2 Industrial trucks	ISO/TC 110	ISO 5053	
9.3 Belt conveyors	ISO/TC 41		—
9.4 Screw and hydraulic lift jacks	—	—	—
9.5 Capstans	—	—	—
9.6 Machinery and equipment for generation, conversion and transmission of energy	ISO/TC 195	ISO 11375	—
9.6.1 Electric power machines	—	—	—
9.6.2 Thermal energy machines	ISO/TC 118	—	—
9.6.3 Compressed air machines		—	—
9.7 Hand-held motor-operated electric tools	IEC/TC 61 IEC/TC 78	—	—

	Technical Committee	International Standard	European standard
9.8 Electric, pneumatic, hydraulic and petrol-driven portable hand-guided hammers	IEC/ISO/TC 61 IEC/ISO/TC 78 ISO/TC 118	—	—
9.9 Equipment for welding and other jointing processes	ISO/TC 44	—	—
9.10 Pumps	ISO/TC 115	—	—
9.11 Ladders	ISO/TC 195	—	EN 131-1 EN 131-2
9.12 Measuring and inspection equipment	—	—	—
9.13 Personal protection clothing and equipment: protection against falls, dust, gases, chemicals, mechanical and thermal injuries, noise and vibration	ISO/TC 94	—	—
9.14 Others	—	—	—

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