BRITISH STANDARD

BS EN
15162:2008

Machines and plants for mining and tooling of natural stone — Safety requirements for gang saws

ICS 73.120

National foreword

This British Standard is the UK implementation of EN 15162:2008.

The UK participation in its preparation was entrusted by Technical Committee MCE/3, Safeguarding of machinery, to Subcommittee MCE/3/15, Machines for natural stone.

A list of organizations represented on this committee can be obtained on request to its secretary.

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2008

ISBN 978 0 580 55097 3

Amendments/corrigenda issued since publication

Date	Comments

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15162

May 2008

ICS 73.120

English Version

Machines and plants for mining and tooling of natural stone - Safety requirements for gang saws

Machines et installations d'extraction et d'usinage des pierres naturelles - Prescriptions de sécurité pour les scies alternatives

Maschinen und Anlagen zur Gewinnung und Bearbeitung von Naturstein - Sicherheitsanforderungen für Gattersägen

This European Standard was approved by CEN on 18 April 2008.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 15162:2008: E

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Foreword

This document (EN 15162:2008) has been prepared by Technical Committee 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of an identical text or by endorsement, at the latest by November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

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 Annexes ZA and ZB, which are integral parts of this document.

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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.

1 Scope

This standard applies to monoblade or multiblade gang saws, as defined in 3.1, for cutting marble, granite, other types of natural stone, artificial or natural conglomerates and similar materials.

This standard does not deal with noise as a significant hazard.

This standard deals with all significant hazards, hazardous situations and events relevant to gang saw machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Clause 4). This European Standard deals with the hazards during transport, commissioning, use and maintenance.

This document is not applicable to gang saws which are manufactured before the date of its publication as EN.

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.

EN 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

EN 614-1:2006, *Safety of machinery — Ergonomic design principles — Part 1: Terminology and general principles*

EN 953:1997, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

EN 982:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Hydraulics*

EN 983:1996, *Safety of machinery — Safety requirements for fluid power systems and their components — Pneumatics*

EN 1037:1995, *Safety of machinery — Prevention of unexpected start-up*

EN 1088:1995, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 1760-1:1997, *Safety of machinery — Pressure sensitive protective devices — Part 1: General principles for the design and testing of pressure sensitive mats and pressure sensitive floors*

EN 1760-2:2001, *Safety of machinery — Pressure sensitive protective devices — Part 2: General principles for the design and testing of pressure sensitive edges and pressure sensitive bars*

EN 60204-1:2006, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements (IEC 60204-1:2005, modified)*

EN 60529:1991, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN 61310-1:1995, *Safety of machinery — Indication, marking and actuation — Part 1: Requirements for visual, auditory and tactile signals (IEC 61310-1:1995)*

EN 61496-1:2004, *Safety of machinery — Electro-sensitive protective equipment — Part 1: General requirements and tests (IEC 61496-1:2004, modified)*

EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*

EN ISO 13849-1:2006, *Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (ISO 13849-1:2006)*

EN ISO 13850:2006, *Safety of machinery — Emergency stop — Principles for design (ISO 13850:2006)*

EN ISO 14122-1:2001, *Safety of machinery — Permanent means of access to machinery — Part 1: Choice of fixed means of access between two levels (ISO 14122-1:2001)*

EN ISO 14122-2:2001, *Safety of machinery — Permanent means of access to machinery — Part 2: Working platforms and walkways (ISO 14122-2:2001)*

EN ISO 14122-3:2001, *Safety of machinery — Permanent means of access to machinery — Part 3: Stairs, stepladders and guard-rails (ISO 14122-3:2001)*

EN ISO 14122-4:2004, *Safety of machinery — Permanent means of access to machinery — Part 4: Fixed ladders (ISO 14122-4:2004)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100-1 and the following apply.

3.1
types of gang saws
machines for cutting of marble, granite, other types of natural stone, artificial and natural conglomerates as well as similar materials, hereafter referred to as gang saws, are classified according to the material to be cut and the number of blades. A further classification is based on the technology used to position the block in relation to the blades which may be done by a fixed carriage with the descent of the blades or a mobile rising carriage with blades at fixed height.

Following these principles, the machines in the scope are classified and described in 3.1.1 to 3.1.3

3.1.1
granite and hard stone gang saw (see Figure 1)
machine for cutting blocks of granite or hard stones into slabs.

The machine consists of 4 upright columns connected to one another which support a vertically and horizontally moving blade-carrying structure. This structure moves vertically (descent movement) by a screw system positioned in the columns and horizontally by a system composed of a flywheel connected by a rod with the blade-carrying structure. While operating both directions together, the structure creates a swinging movement of the blade carriage.

A mobile railed carriage moves the granite block into position under the blade carriage.

A system of pipes with nozzles above the blades provides a mixture of water, lime and abrasive steel shot which acts as the cutting tool between the blade and the granite block and additionally ensures the cooling of the blades

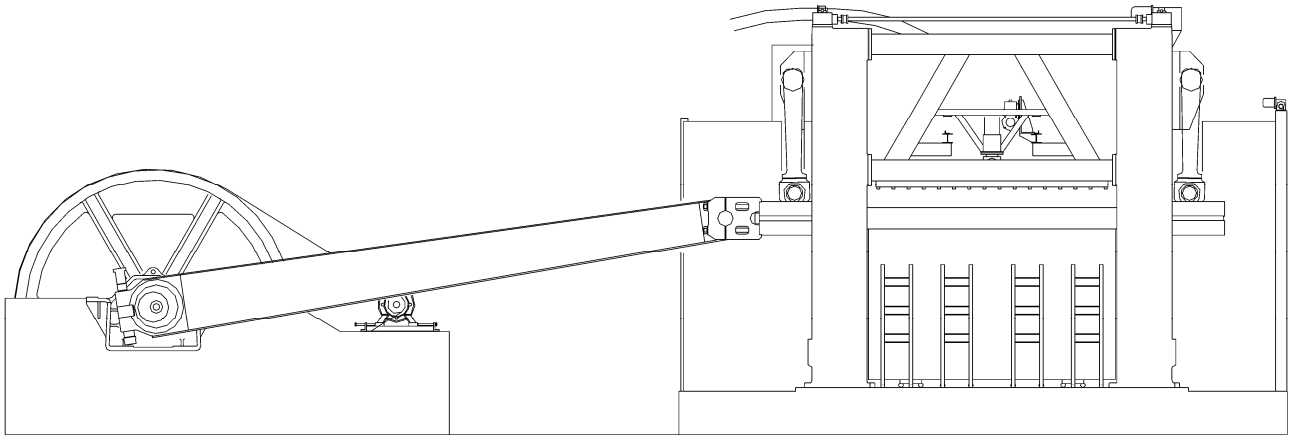


Figure 1 — Granite and hard stone gang saw

3.1.2
marble, stone, artificial and natural conglomerates gang saws

3.1.2.1
closed marble gang saws
machinery for cutting blocks of marble or soft stones into slabs.

The machine consists of 4 upright columns connected to one another which support a vertically and horizontally moving blade-carrying structure. This structure moves vertically (descent movement) by a screw system positioned in the columns and horizontally by a system composed of a flywheel connected by a rod with the blade-carrying structure. While operating both directions together, the structure creates a rectilinear movement of the blade carriage (see Figure 2). In some machines, the vertical movement is carried out by raising the block and keeping the blade carriage at a set height (see Figure 3).

A mobile railed carriage moves the block into position under the blade carriage.

The cutting of the stone is performed by the diamond bits of the blades.

A system of pipes with nozzles above ensures the cooling of the blades

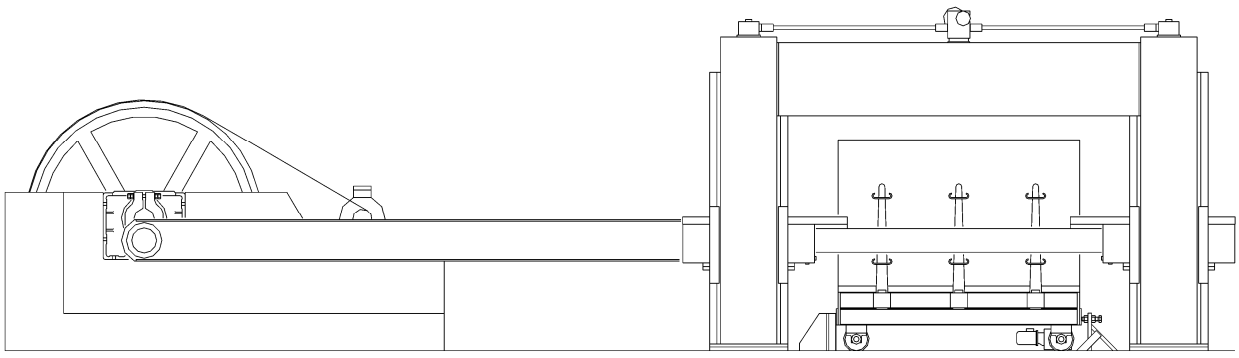


Figure 2 — Marble gang saw with closed structure and fixed block carriage

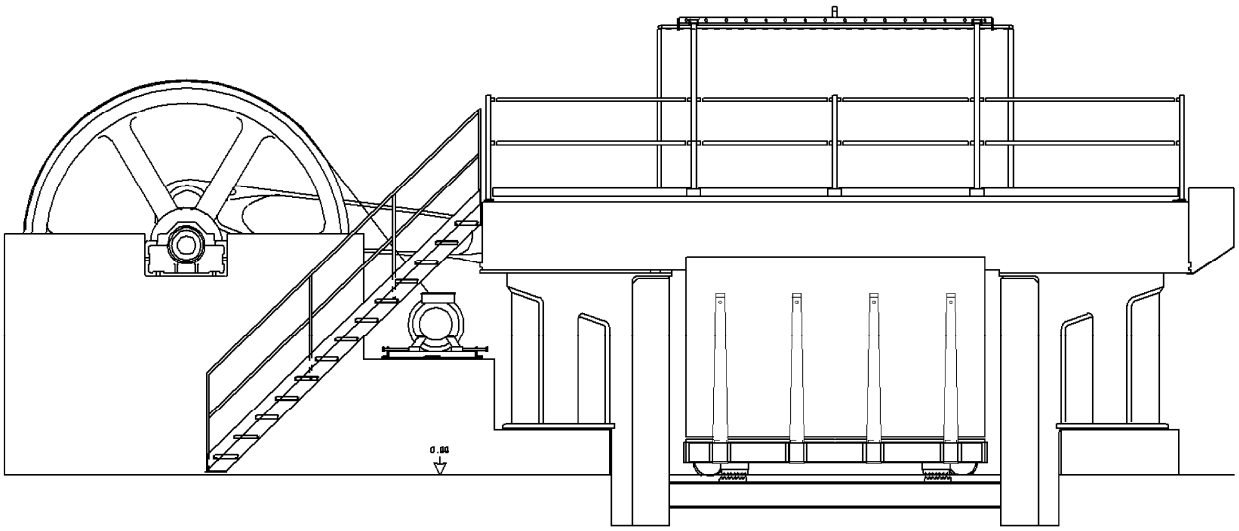


Figure 3 — Marble gang saw with closed structure and block-raising system

3.1.2.2
marble gang saws with open structure (see Figure 4)
machinery for cutting blocks of marble or soft stones into slabs.

The machine consists of an open blade frame which slides vertically inside a structure, the alternating horizontal cutting movement is generated by a flywheel-connecting rod unit.

A mobile railed carriage moves the block into position under the blade carriage.

The cutting of the stone is performed by the diamond bits of the blades

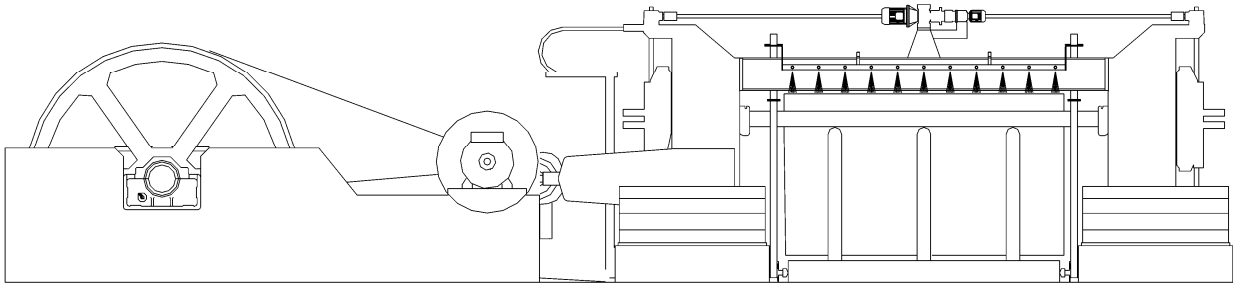


Figure 4 — Marble gang saw with open structure and mobile blade carriage

3.1.3
monoblade gang saw (see Figure 5)
machinery for cutting the tops of blocks of marble or other, soft stones and to cut very thick pieces of these stone materials.

The machine consists of a system for the vertical and horizontal movement of the blade, a tensioning system for the blade (generally hydraulic), a block carriage and a blade-cooling system.

The cutting of the stone is performed by the diamond bits of the blade

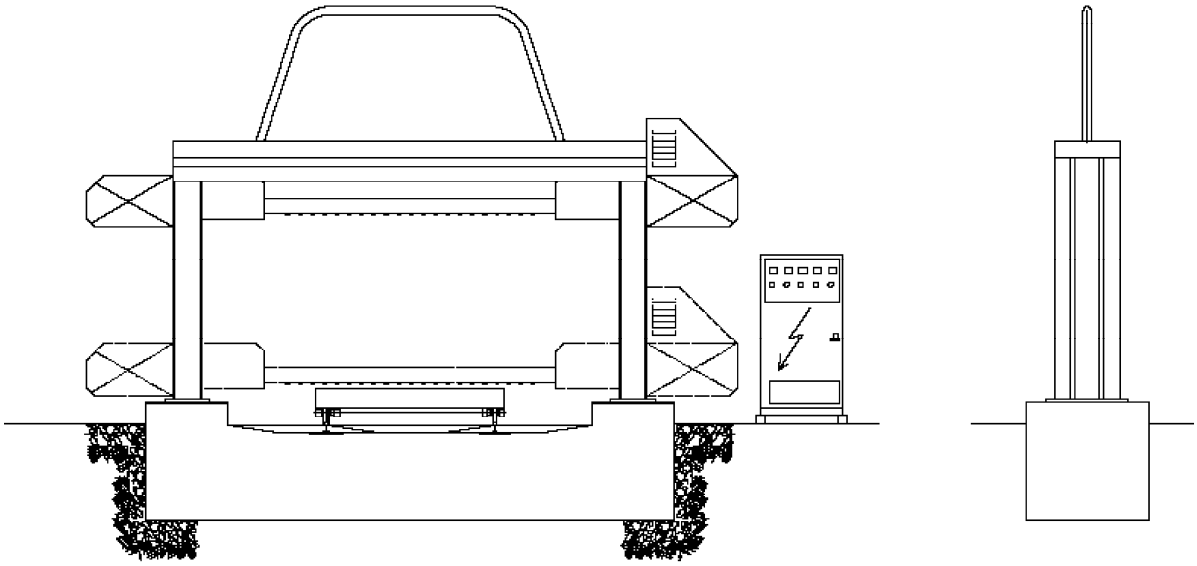


Figure 5 — Monoblade gang saw

3.2
terms

3.2.1
longitudinal beam
component of the blade frame which longitudinally connects the front and rear part of the blade frame

3.2.2
slider
structure which slides between the uprights (one per column)

3.2.3
steel shot (granite gang saw)
metal particles of various sizes and hardness which perform abrasion for cutting

3.2.4
slurry (granite gang saw)
suspension of water, lime and steel shot used for cutting

3.2.5
plate
part of the blade frame which the tension rods and tensioner rest upon

3.2.6
blade frame
structure consisting of two plates and two longitudinal beams which tension the blades by means of the blade tensioner

3.2.7
connecting rod
connects the main drive shaft to the blade frame

3.2.8
tensioner
hydraulic device which enables the tensioning of the blades

3.2.9
block carriage
steel structure which carries the blocks in the working phase, in some machine types motorized

3.2.10
wedge
iron, wooden or concrete wedge positioned on the carriage underneath the block

4 List of significant hazards

This clause contains all the significant hazards, hazardous situations and events, as far as they are dealt with in this standard, identified by risk assessment as significant for this type of machinery and which require action to eliminate or reduce the risk.

Table 1 — List of significant hazards

Hazards		Relevant subclauses
4.1	Mechanical hazards	
4.1.1	Crushing	5.2.2, 5.2.4, 5.2.6.1, 5.2.6.2, 5.2.8
4.1.2	Shearing	5.2.2
4.1.3	Cutting or severing	5.2.3, 5.2.4, 5.2.6.1, 5.2.6.2, 5.2.8
4.1.4	Entanglement	5.2.4, 5.2.6.1, 5.2.6.2, 5.2.8
4.1.5	Ejection of parts	5.2.3, 5.2.5
4.2	Hazard caused by loss of stability	5.2.1
4.3	Slip, trip and fall hazard in relationship with machinery	5.2.3, 5.2.5, 5.2.6.3, 5.2.9
4.4	Fluid ejection hazard	5.4
4.5	Hazards caused by dust	5.2.9, 7.3.3
4.6	Hazard caused by failure of power supply	5.3.7
4.7	Hazard caused by failure/disorder of control system	5.3.2 to 5.3.6, 5.3.8 to 5.3.10
4.8	Hazards caused by electrical contact direct or indirect	5.3.1, 5.3.8
4.9	Hazard caused by human errors	7.3.3
4.10	Lack or inadequacy of visual or acoustic warning means	7.3.3
4.11	Insufficient instruction for the operator	7
4.12	Hazards due to break-up during operation	5.2.7
4.13	Hazards due to neglecting ergonomic principles in the design	5.5

5 Safety requirements and/or protective measures

5.1 General

Machinery shall comply with the safety requirements and/or protective measures of this clause.

In addition, the machine shall be designed according to the principles of EN ISO 12100 for hazards relevant but not significant which are not dealt with by this document (e.g. sharp edges).

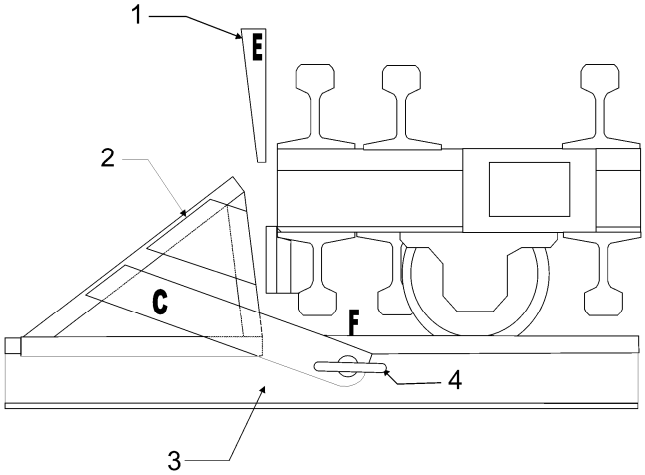
For application of type B standards (such as EN 294, EN 614-1, EN 953, EN 982, EN 983, EN 1037, EN 1088, EN 1760-1, EN 14122-1 to 4, EN 60204-1, EN ISO 13849-1, EN ISO 13850), the manufacturer shall carry out an adequate risk assessment for the requirements thereof where choice is necessary (as far as the choice is not made in the requirements of this clause).

5.2 Protection against mechanical hazards

5.2.1 Locking the carriage

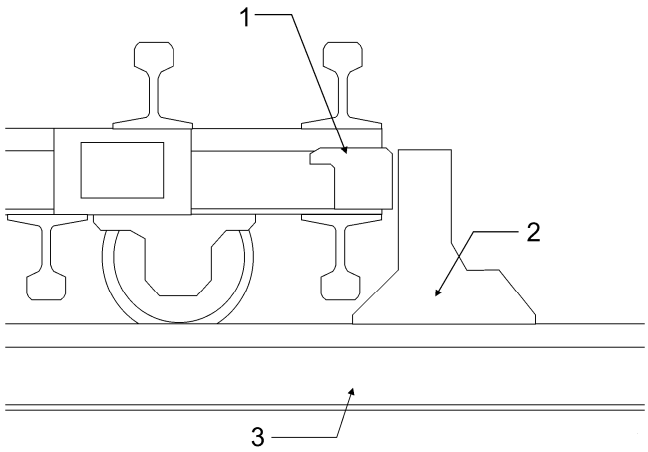
This requirement is applicable to machines with fixed carriage.

The machine shall be equipped with a device to lock the carriage onto the rails, consisting of a fixed stop (bumper) and a moveable stop as shown in Figure 6.



Key

1 iron wedge for locking
2 front moveable stop
3 rail fixed to the foundation
4 PIN



Key

1 carriage
2 fixed stop (bumper)
3 rail fixed to the foundation

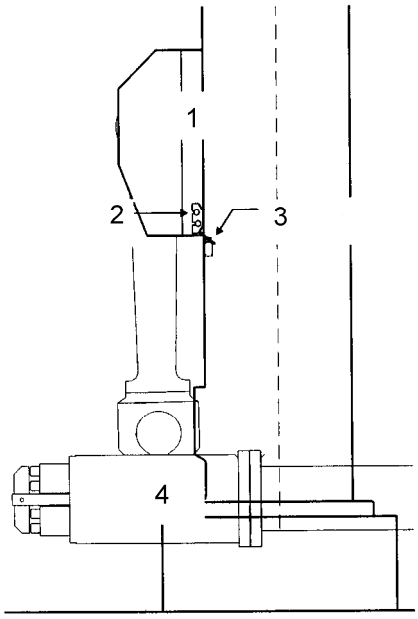
Figure 6 — Carriage-fixing elements

5.2.2 End run of blade frame

A feed overtravel limiting device shall be provided for preventing the contact of the blade(s) with the structure of the carriage.

The position detector shall comply with the principles of EN 1088, and the related part of the control system shall have a Performance Level not less than c in accordance with EN ISO 13849-1:2006.

Example of feed overtravel limiting device for machine with fixed carriage is shown in Figure 7.



Key

1 slider 2 cam 3 switch 4 blade

Figure 7 — End run of blade frame (safety cam)

5.2.3 Hazard of belt breakage

A belt guard in accordance with the principles of EN 953 shall protect persons against the ejection of the belt in case of belt breakage. It shall ensure that the belt end cannot reach persons in a volume with a height of minimum 2 200 mm above ground level.

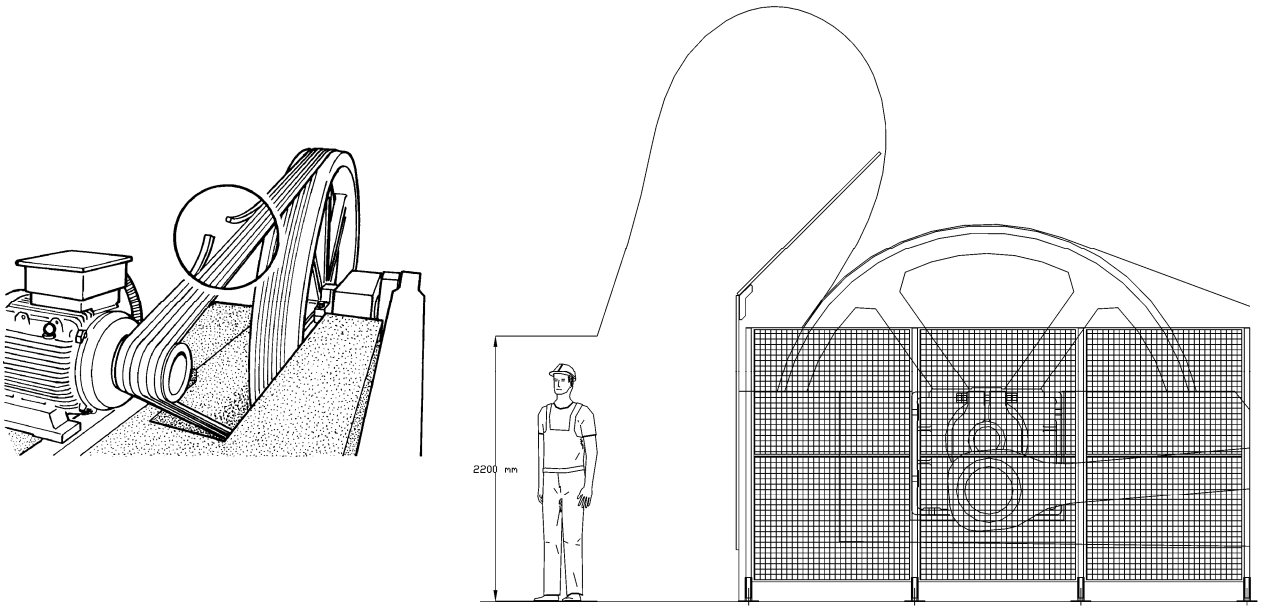


Figure 8 — Example of belt and flywheel guard

5.2.4 Guards around motor and flywheel area

Access to the moving parts of motor and flywheel shall be prevented by fixed distance guards in accordance with EN 953 and positioned in accordance with EN 294:1992, Table 1. Openings in the fixed guards shall comply with EN 294:1992, Table 4. Access openings shall comply with 5.2.6.1.

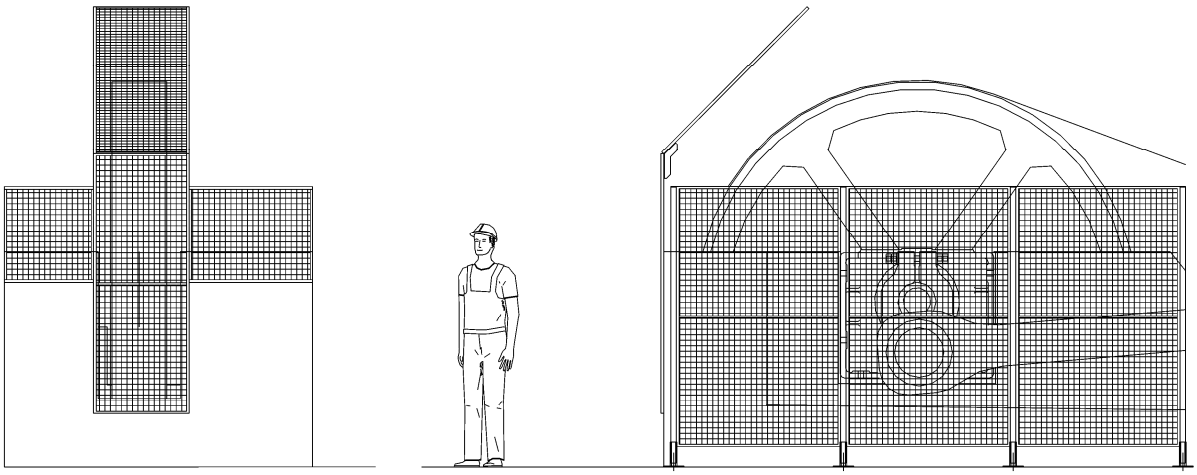
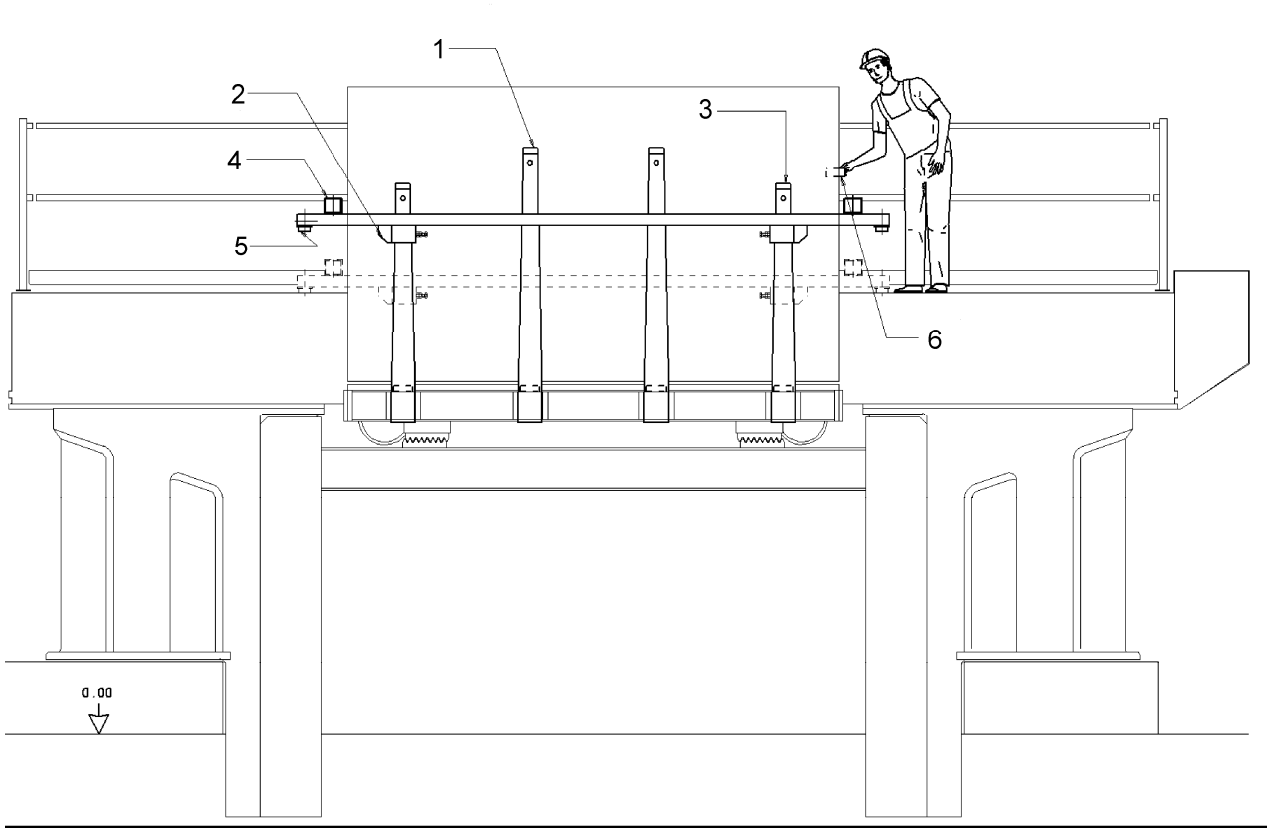


Figure 9 — Example of side and rear guards

5.2.5 Slabs-holding device

A slabs-holding device (for example a frame) shall be provided for ensuring the stability of the slabs during cutting and wedging of the block.



Key

1	long pole	3	short pole	5	longitudinal beam
2	pole tie	4	traverse beam	6	wedge

Figure 10 — Example of slabs-holding device

5.2.6 Access to machine

5.2.6.1 Access to machine motor and flywheel area

Access to the machine motor and flywheel area for adjustment, maintenance, etc. shall only be possible when the machine and all its moving parts are stopped. For this reason, the access openings in the guarding (see 5.2.4) shall be interlocking with guard locking.

Interlocking and locking devices shall be in accordance with EN 1088, and the related part of the control system shall have a Performance Level not less than d in accordance with EN ISO 13849-1:2006.

5.2.6.2 Moveable guards

Moveable interlocking guards shall prevent during cutting access to the working area (carriage and block area).

The access limiting guards shall be made in accordance with EN 953, and safety distances shall comply with EN 294:1992, Tables 1 and 4.

NOTE An inside-protection screen against abrasion may be additionally used for reinforcing the guard up to a height of 2 000 mm.

Interlocks shall be in accordance with EN 1088, and the related parts of the control system shall have a Performance Level not less than d according to EN ISO 13849-1:2006.

To avoid the risk of crushing, powered guards shall have a protective device detecting the presence of a person. If the closing speed of powered guards is ≤ 2 m/min, a hold-to-run control is sufficient.

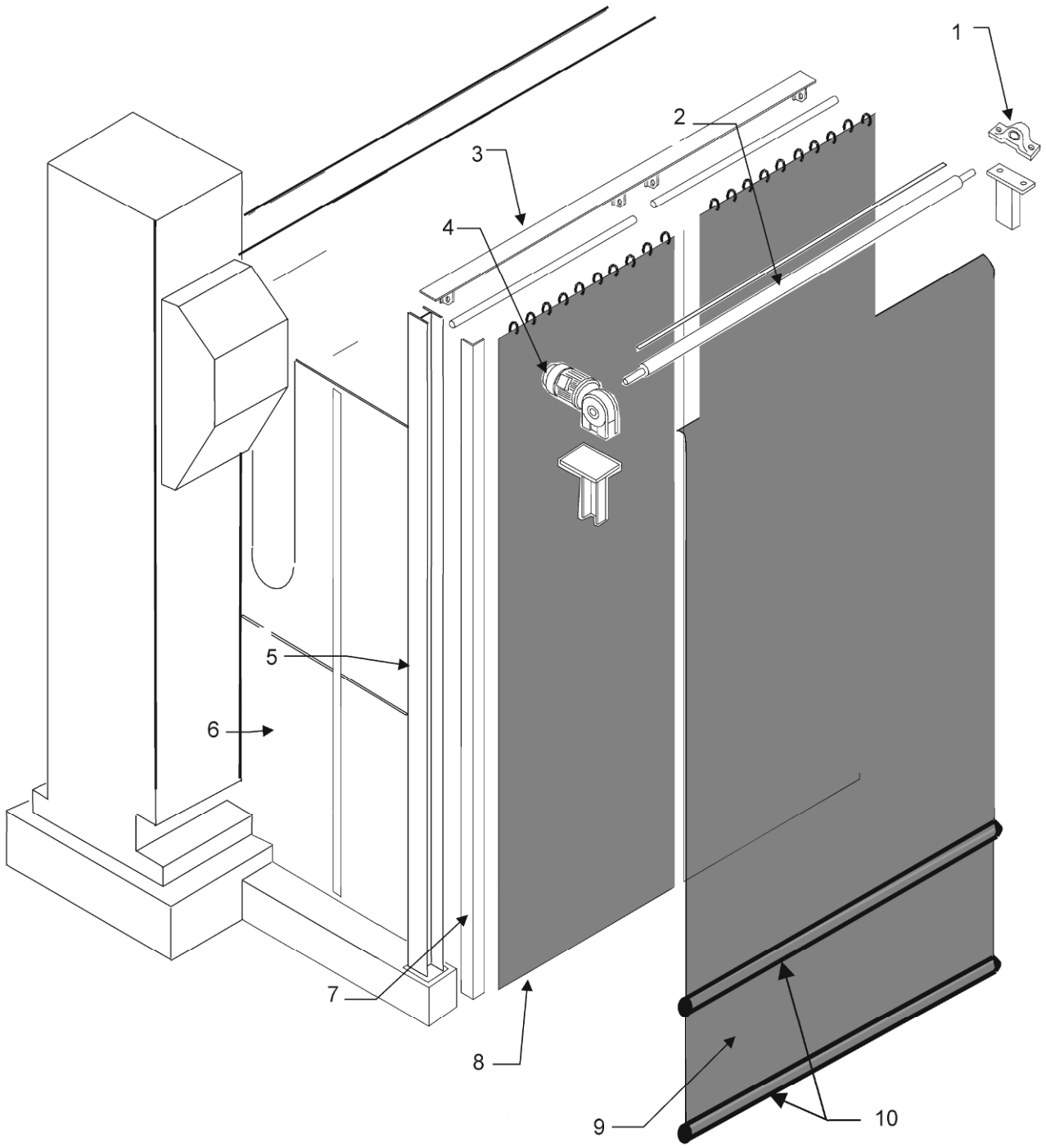
Acceptable protective devices are:

— pressure-sensitive edge or bar in accordance with the requirements of EN 1760-2:2001 for category 1;

— light barrier in accordance with EN 61496-1:2004, type 2.

The related parts of the control system shall have a Performance Level not less than c according to EN ISO 13849-1:2006.

The stopping distance in case of activation of the device shall be maximum 50 mm or the movement shall be reversed.



Key

1 support for the canvas-winding mechanism
2 bar for winding canvas
3 canvas beam support
4 motor reducer safety canvas
5 mud guards beam support
6 mud guards
7 angle bar canvas
8 mud guard canvas
9 safety canvas
10 safety pipe

Figure 11 — Screen guards (shields)

5.2.6.3 Access to upper or lower areas of the machine

The machine shall be equipped with platforms, stairs and/or stepladders and guard-rails in accordance with EN ISO 14122-1 to 4 when access to upper or lower areas is required.

The selection of the means of access shall be made on the basis of the risk assessment in accordance with EN ISO 14122-1.

NOTE An example of risk analysis can be found in EN 1010-1:2004 [1], informative Annex C.

5.2.7 Lifting and descent of blade frame and carriage

The lifting/descent system for the blade frame and carriage shall be equipped with an anti-fall safety device, capable of stopping the frame or carriage in case of failure of the lifting/descent system.

NOTE An acceptable solution is to use a second nut activated in case of failure of the main nut that is part of the lifting system by screw. An acceptable solution for the hydraulic system is to provide the cylinder(s) with a hydraulic restraint valve fitted as close as possible to the cylinder(s) outlet using flanged or welded pipe-work capable of holding the lifted weight.

5.2.8 Pump room for gang saw

The pumps and their mixture and collection tanks shall be guarded with fixed or moveable interlocking guards in accordance with EN 953 and EN 294:1992, Table 4.

5.2.9 System of distribution and collection of the (abrasive) slurry

The machine shall be equipped with a device to distribute and collect the (abrasive) slurry.

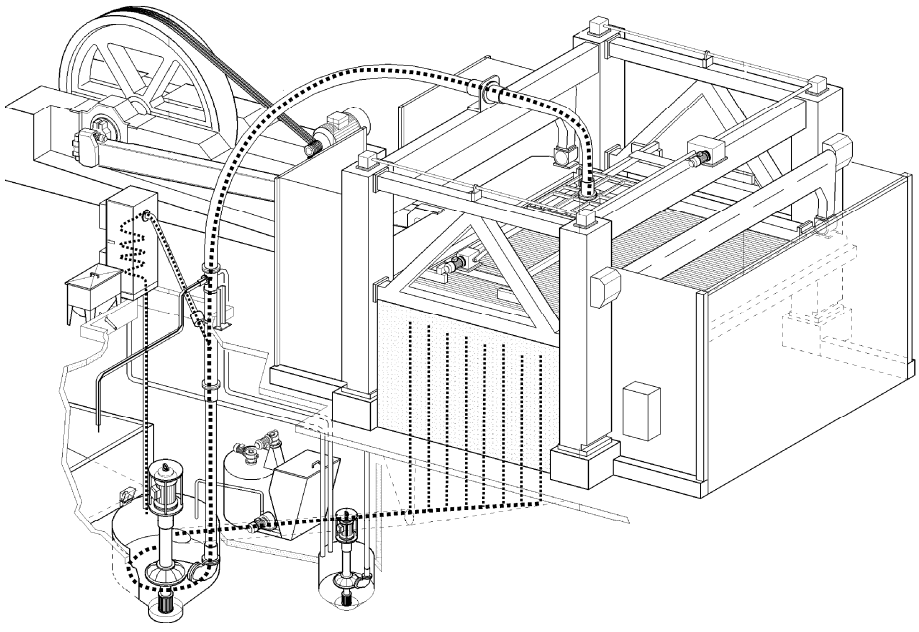


Figure 12 — The (abrasive) slurry circuit

5.3 Electrical equipment and energy supply

5.3.1 General

The whole electrical equipment associated with the machine shall comply with the requirements of EN 60204-1.

5.3.2 Control panel

The electrical control panel of the machine shall be protected not less than IP 54 according to EN 60529:1991.

5.3.3 Start-up and mode selector

The machine shall be equipped with a mode selector for choosing among others between manual start-up mode and automatic mode.

In the manual start-up mode, movements shall be initiated with hold-to-run control devices.

If other operating modes are provided during which some of the safety measures are not operational the selection of these modes shall require a key or analogous measures for restricting the use of these modes to certain categories of persons.

The safety measures of EN ISO 12100-2:2003, 4.11.8 and 4.11.9, shall be observed.

5.3.4 Starting procedures and sequence

The parts of control systems regarding hold-to-run controls shall be not less than EN ISO 13849-1:2006, Performance Level c.

5.3.5 Emergency stop

The machine shall have an emergency-stop equipment of stop category 0 or 1 as specified in EN ISO 13850:2006, 4.1.4. Emergency-stop devices shall be located at each control position. They shall be easily accessible and permanently operational.

Emergency devices to stop the machine shall be located inside the pump room.

The parts of control systems regarding emergency-stop controls shall be not less than EN ISO 13849-1:2006, Performance Level d.

5.3.6 Safety-related parts of the control systems

Safety-related parts of the control system shall have a Performance Level not less than EN ISO 13849-1:2006, Performance Level c, unless otherwise stated.

The use of programmable electronic and pneumatic systems shall not reduce the safety levels specified in this standard.

5.3.7 Power failure

If a machine stops in any working position as result of a power supply failure, no further dangerous movements shall be made. The manufacturer shall make a note in the operation manual what measures shall be taken before a restart of the machine.

5.3.8 Motor and motor enclosure

The motor(s) shall comply with EN 60204-1:2006, 14.2. All motors of the machines or the motors with their enclosures shall have minimum degree of protection of IP 54 according to EN 60529:1991.

5.3.9 Safety requirements related to electromagnetic phenomena

The machines shall have sufficient immunity to electromagnetic disturbances to enable them to operate safely as intended and not fail to danger when exposed to the levels and types of disturbances intended by the manufacturer.

The manufacturer of the machines shall design, install and wire the equipment and sub-assemblies taking into account the recommendations of the suppliers of these sub-assemblies.

5.3.10 Supply disconnecting devices

Machines shall have lockable devices for isolating them from all their energy sources.

Electrical devices shall comply with EN 60204-1:2006, 5.3. Pneumatic devices shall comply with EN 983 and hydraulic devices with EN 982.

Measures to be taken for avoiding unexpected start-up of a drive shall be in accordance with EN 1037.

5.4 Hydraulic and pneumatic equipment

The hydraulic and pneumatic systems shall comply with the requirements of EN 982 and EN 983.

5.5 Ergonomic aspects

The ergonomic design of the machine shall comply with EN 614-1 and with EN ISO 12100-2:2003, 4.8.

6 Verification of safety requirements and/or protective measures

The conformity with the requirements of Clauses 5 and 7 shall be verified with one or more of the following methods as relevant:

— visual check;

— measurement;

— functional test;

— design check.

In principle, the criteria for acceptance are included in the requirements.

7 Information for use

7.1 General

Information for use shall be provided in accordance with EN ISO 12100-2:2003, Clause 6.

The following specific information shall be given.

7.2 Signal and warning devices

The residual risks of the machine shall be marked clearly without ambiguity preferably with use of pictograms.

Pictograms shall comply with the principles of EN 61310-1.

7.3 Instruction handbook

7.3.1 General

The operator's manual shall be drawn up according to EN ISO 12100-2:2003, 6.5, and shall contain the following items:

7.3.2 Description of the machine

The description of the machine shall contain at least the following items:

a) a general description of the machine with drawings;

b) an explanation of pictograms and symbols used on the machine and in the documentation;

c) a list of tools to be used with their nominal characteristics;

d) a list of materials which can be cut off by the machine.

7.3.3 Instructions for transport, handling and storage of the machine and its dismountable parts

The instructions for transport, handling and storage of the machine and its dismountable parts shall contain at least the following items:

a) the nominal mass of the machine and the mass of heavy parts requiring mechanical handling;

b) the sliding and lifting conditions (including lifting points);

c) reference concerning requirements of the tool manufacturer for storage and handling of the tools.

7.3.4 Instructions for the installation and the use of the machine

The instructions for the installation and the use of the machine shall contain at least the following items:

— information to adjust the length of the connecting rod with residual risk of error in adjustment and presetting of machine;

— procedure for positioning of the block on carriage;

— procedure for positioning of the block in the machine;

— safety procedure for blade replacement;

— visibility and definition of machine starting;

— procedure for access to upper areas of the machine;

— cleaning of the abrasive slurry distribution system (if relevant);

— safety information for pump room;

— information regarding the minimum protection devices to be used in all the procedures and work phases;

— define procedure for wedging the blocks half-way through and at the end of the work cycle;

— define the type and suitability of the tool, recommendations for use defined by the manufacturer of the blade, the procedure for changing the blade, blade wear and maintenance, procedure for changing the blade in case of breakage during cutting and subsequent restart of operations;

— define procedure for locking the carriage before beginning the cutting phase;

— define the life cycle and duration of the belts and their correct tensioning;

— define the abrasive slurries and the relative hazards (if relevant) in their use, the safety procedures for use, define the aerosol and/or substances dispersed in the air;

— define the control programme for the structures, equipment and block carriage to check that no damage has been incurred due to corrosion or chemical agents in the oxidising slurries used for the abrasion (if relevant);

— information about the residual risks;

— information on control devices (in particular start and stop device and emergency stop);

— instructions for the identification and localisation of defects, for debugging and for restarting work after an interruption;

— information about the need of wearing adequate clothing and personal protection equipment (e.g. eye and ear protection);

— information on service water flow rate;

— the instruction handbook and the technical documentation describing the equipment shall provide the following information on noise emission:

  — the A-weighted emission sound pressure level at workstations where this exceeds 70 dB. Should this level not exceed 70 dB, this fact shall be indicated;

  — the peak C-weighted emission sound pressure level at workstations where this exceeds 63 Pa (130 dB in relation to 20 μPa);

  — the A-weighted sound-power level emitted by the equipment where the A-weighted emission sound pressure level at any workstation exceeds 80 dB, the operating conditions of the equipment during noise-emission measurement, the workstation position(s) where the emission sound pressure level(s) have been determined.

    NOTE 1 Information on noise emission should also be provided in the sales literature.

    NOTE 2 A specific noise-test code is not yet available; it is in preparation.

7.3.5 Maintenance instructions

The maintenance instructions shall contain at least the following items:

— the list of operations (e.g. adjustment, maintenance, lubrication, repair, cleaning and servicing) which shall be carried out only while the machine is shut down and the prime mover stopped; when drawing up procedures for the safe intervention for maintenance, attention shall be paid to the following aspects:

supply disconnection, measures against reconnection, neutralising residual energy and verification of zero-energy state;

— type and frequency of inspections and replacement intervals;

— instructions concerning the maintenance procedures which may be carried out by the user and the list of the maintenance procedures which require particular technical knowledge and which shall be performed only by a competent person;

— diagrams and drawings to allow the correct repair of the machine;

— electrical diagrams (if relevant).

7.3.6 Spare parts list

The spare parts list shall contain all relevant safety-related spare parts with an unambiguous identification and information of the location of the part to be replaced.

7.4 Marking

The following minimum markings shall be displayed:

— business name and full address of the manufacturer and, where applicable, his authorised representative;

— mandatory marking[1)];

— year of construction;

— designation of the machinery;

— designation of series or type, if any;

— serial or identification number, if any;

— rating information (mandatory for electrotechnical products: voltage, frequency, power, etc.).

Other markings which shall be specified, if appropriate, include:

— rating information (for non-electrotechnical products), e.g. working-load limit, safe working load, load limits;

— centre of gravity, gross weight;

— conditions of use (e.g. where intended for use in a potentially explosive atmosphere);

— reference to instructions for installation, use and maintenance.

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1) For machines and their related products intended to be put on the market in the EEA, CE marking as defined in the applicable European directive(s), e.g. Machinery.

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide a means of conforming to Essential Requirements, of the New Approach Directive Machinery 98/37/EC, amended by 98/79/EC.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements, except essential requirements 1.5.8 and 1.7.4 f), of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Annex ZB
(informative)

Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 2006/42/EC on machinery.

Once this standard is cited in the Official Journal of the European Communities under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard confers, within the limits of the scope of this standard, a presumption of conformity with the relevant Essential Requirements, except Essential Requirements 1.5.8 and 1.7.4.2 u), of that Directive and associated EFTA regulations.

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this standard.

Bibliography

[1] EN 1010-1:2004, *Safety of machinery — Safety requirements for the design and construction of printing and paper converting machines — Part 1: Common requirements*

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