
**Building construction machinery
and equipment — Mobile crushers —**

**Part 2:
Safety requirements**

*Machines et matériels pour la construction des bâtiments —
Concasseurs mobiles —*

Partie 2: Exigences de sécurité



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.

This document is a preview generated by EVS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

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	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Safety requirements and/or protective measures	3
4.1 General	3
4.2 Access	3
4.3 Operator's station	3
4.4 Visibility	4
4.5 Controls and indicators	4
4.6 Steering systems	5
4.7 Brake systems	5
4.8 Feeding units (hopper, feeder)	6
4.9 Crushing units	6
4.10 Belt conveyor	9
4.11 Magnetic separator	9
4.12 Warning devices	9
4.13 Stability	10
4.14 Noise and vibration	10
4.15 Protective measures and devices	10
4.16 Lifting and tie-down	11
4.17 Electromagnetic compatibility (EMC)	11
4.18 Electrical and electronic systems	11
4.19 Pressurized systems	12
4.20 Fuel tanks, hydraulic tanks and pressure vessels	13
4.21 Fire protection	13
4.22 Maintenance	14
5 Verification of safety requirements and/or protective measures	14
6 Information for use	15
6.1 Machine safety labels	15
6.2 Operator's manual	15
6.3 Marking	16
Annex A (informative) List of significant hazards	17
Annex B (informative) Conveyor guard recommendations	21
Annex C (informative) Guidelines for safely clearing blocked crushers	29
Bibliography	31

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.

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 21873-2 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*.

ISO 21873 consists of the following parts, under the general title *Building construction machinery and equipment — Mobile crushers*:

- *Part 1: Terminology and commercial specifications*
- *Part 2: Safety requirements*

Introduction

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

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

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

This document is a preview generated by EVS

Building construction machinery and equipment — Mobile crushers —

Part 2: Safety requirements

1 Scope

This part of ISO 21873 establishes the safety requirements for mobile crushers, as defined in ISO 21873-1, used in the building construction industry for crushing concrete debris and stones.

It deals with all the significant hazards, hazardous situations and events relevant to mobile crushers when used as intended and under the conditions foreseen by the manufacturer (see Clause 4).

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.

ISO 2860, *Earth-moving machinery — Minimum access dimensions*

ISO 2867, *Earth-moving machinery — Access systems*

ISO 3457, *Earth-moving machinery — Guards — Definitions and requirements*

ISO 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*

ISO 3795, *Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behaviour of interior materials*

ISO 4413, *Hydraulic fluid power — General rules relating to systems*

ISO 4414, *Pneumatic fluid power — General rules relating to systems*

ISO 6011:2003, *Earth-moving machinery — Visual display of machine operation*

ISO 6395, *Acoustics — Measurement of exterior noise emitted by earth-moving machinery — Dynamic test conditions*

ISO 6405-1, *Earth-moving machinery — Symbols for operator controls and other displays — Part 1: Common symbols*

ISO 6750, *Earth-moving machinery — Operator's manual — Content and format*

ISO 9244, *Earth-moving machinery — Machine safety labels — General principles*

ISO 9247, *Earth-moving machinery — Electrical wires and cables — Principles of identification and marking*

ISO 9533, *Earth-moving machinery — Machine-mounted forward and reverse audible warning alarm — Sound test method*

ISO 10264, *Earth-moving machinery — Key-locked starting systems*

ISO 10265, *Earth-moving machinery — Crawler machines — Performance requirements and test procedures for braking systems*

ISO 10533, *Earth-moving machinery — Lift-arm support devices*

ISO 10968, *Earth-moving machinery — Operator's controls*

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

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

ISO 12508, *Earth-moving machinery — Operator station and maintenance areas — Bluntness of edges*

ISO 13333, *Earth-moving machinery — Dumper body support and operator's cab tilt support devices*

ISO 13766, *Earth-moving machinery — Electromagnetic compatibility*

ISO 13850, *Safety of machinery — Emergency stop — Principles for design*

ISO 14120, *Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards*

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

ISO 15817:2005, *Earth-moving machinery — Safety requirements for remote operator control*

ISO 15818, *Earth-moving machinery — Lifting and tying-down attachment points — Performance requirements*

ISO 15998, *Earth-moving machinery — Machine control systems (MCS) using electronic components — Performance criteria and tests for functional safety*

ISO 21507, *Earth-moving machinery — Performance requirements for non-metallic fuel tanks*

ISO 21873-1:2008, *Building construction machinery and equipment — Mobile crushers — Part 1: Terminology and commercial specifications*

IEC 60204-1, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 12100-1 and ISO 21873-1 apply.