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Building construction machinery and equipment — Mobile crushers —

Part 1: Terminology and commercial specifications

Machines et matériels pour la construction des bâtiments — Concasseurs mobiles —
Partie 1: Terminologie et spécifications commerciales

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Foreword

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ISO 21873-1 was prepared by Technical Committee ISO/TC 195, *Building construction machinery and equipment*.

Introduction

This part of ISO 21873 deals with mobile crushers used together with earth-moving machinery mainly at construction job sites for crushing natural rocks, stones or concrete debris.

Building construction machinery and equipment — Mobile crushers —

Part 1: Terminology and commercial specifications

1 Scope

This part of ISO 21873 establishes terminology and content of commercial literature specifications for mobile crushers, mounted on crawler, truck or semi-trailer, used in the building construction industry. It is not applicable to fixed crushers.

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 11375:1998, *Building construction machinery and equipment — Terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11375 and the following apply.

3.1
mobile crusher
machine intended for reducing the size of mineral-based material to particles of smaller dimension and which is capable of relocation on its own chassis

NOTE 1 Depending on the method of relocation, three mobile crusher types are identified:

— self-propelled mobile crusher mounted on crawler chassis (see Figure A.1);

— truck-mounted mobile crusher;

— semi-trailer-mounted mobile crusher.

NOTE 2 An equivalent definition is given in ISO 11375:1998, 3.4, as “Crushing and screening plant (recycling plant)”.

3.2
basic unit
base machine of the mobile crusher usually composed of a working device, an operation control device, a power source, and transmitting device, and a travel device

NOTE An hydraulic device is most often used as the power transmitting device.

3.3
attachment
additional component that can be added to the basic unit to adapt it for a different application

NOTE Attachments can include the following: magnetic separator, metal detector, vibrating screen, dust suppression system, conveyor belt scale, additional conveyors, hydraulic rock pick and hopper extensions. These are attached to, and move with, the mobile crusher.

3.4
charged material
input material
primarily mineral-based material

EXAMPLE Natural stone, concrete, asphalt, or clean demolition rubble.

NOTE The charged material can also contain small amounts of foreign materials such as wood and metal.

3.5
feed hopper
receptacle that takes in charged material transitorily and charges it into the feed device

NOTE See Annex B for a simplified method of calculating hopper volume for a sloped side-feed hopper with constant cross-section.

3.6
feed device
feeder
device that supplies charged material to the crushing system

NOTE The following feed device types are identified:

— vibrating (grizzly) feeder;

— belt feeder;

— apron feeder;

— reciprocating plate feeder;

— roller grizzly;

— push feeder;

— vibrating screen.

3.7
by-pass device
device that diverts material separated from the crusher feed (by-pass material) away from the crusher

NOTE The following by-pass device types are identified:

— chute;

— reversible belt conveyors;

— vibrating screen.

A chute can have internal baffles that allow the diverted material to combine with material that passes through the crusher, or else the diverted material can be separated from the material that passes through the crusher and discharged with the by-pass conveyor. A reversible belt conveyor can work in the same way as the chute by changing the belt rotation direction.

3.8
by-pass conveyor
side conveyor
discharge device for fine material separated from the crusher feed (by-pass)

3.9
crushing device
crusher
mechanism that reduces the size of charged material by fracturing larger pieces into multiple smaller pieces

NOTE For examples of crushing devices (crushers) types, see ISO 11375.

3.10
discharge device
mechanism that removes processed material

NOTE The following discharge device types are identified:

— belt conveyor;

— screw conveyor;

— chute;

— vibrating feeder;

— reciprocating plate feeder.

3.11
return conveyor
device used to transfer oversized material back to the crusher or crusher feed device for additional processing

3.12
magnetic separator
device for removing, using magnets, ferrous contaminants from the material processed by the crusher

3.13
dust suppression system
device or set of components used to reduce the amount of fugitive dust emission from a mobile crusher

NOTE The following dust suppression system types are identified:

— water spray system;

— suction filter system (e.g. bag filter).

3.14
belt scale
device mounted to conveyor used to weigh material carried by the conveyor

3.15 machine mass

3.15.1
machine mass
⟨in operating mode⟩ mass of the machine without operator and charged material with working device and attachments designated by the manufacturer, full fuel tank, and full lubricating, hydraulic and cooling systems

3.15.2
machine mass
〈in transporting mode〉 mass of the machine without operator, without charged material, with working device and attachments designated by the manufacturer, fuel tank half-full, and with full lubricating, hydraulic and cooling systems

NOTE When specifying the machine mass of a self- propelled crusher, a mass representing the operator equal to 75 kg is added. Where parts are removed or attached for transporting, their weights are deducted from and/or included in the machine mass.

3.16
ground clearance
height of the lowest point of the machine from the ground when travelling, at the centre part of the machine and with a minimum width of 25 % of track gauge or axle track

NOTE The ground clearance for wheel-mounted units does not include axles.

3.17
gradability
maximum inclination which allows the mobile crusher, without charged material, to climb, descend and stop without losing stability, spilling fluids or causing engine or other component damage

4 Description of components

4.1 Working device

The working device can contain the following components:

a) feed hopper;

b) feed device;

c) crushing device;

d) discharge device.

4.2 Operation control device

The operation control device consists of one or more of the following types of systems:

a) mechanical;

b) electric (electronic);

c) hydraulic.

4.3 Power source and transmitting devices

Power source and transmitting devices consist of one or more of the following components:

a) internal combustion engine;

b) electric generator;

c) electric motor;

d) transmission:

- hydraulic device (see 4.4);
- fluid coupling;
- torque converter;
- clutch;
- v-belts and sheaves;
- drive shaft.

4.4 Hydraulic device

The hydraulic device consists of one or more of the following components:

a) pump;

b) oil filter;

c) pipe and hose;

d) cylinder;

e) valve;

f) motor;

g) oil tank;

h) oil cooler.

4.5 Travel device

The travel device consists of one of the following:

a) crawler type undercarriage;

b) truck chassis for truck mounted crushers;

c) semi-trailer chassis for semi-trailer mounted crushers.

5 Commercial specifications

5.1 General data

Specify the following:

a) manufacturer or importer (if imported);

b) model;

c) prime mover type (internal combustion engine, electric motor);