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**Foundry machinery — Vocabulary —  
Part 4:  
Abrasive blasting machines and other  
equipment related to cleaning and  
finishing for casting**

**iTeh STANDARD PREVIEW**  
*Machines de fonderie — Terminologie —*

*(standards.iteh.ai)*  
*Partie 4: Machines de grenailage abrasif et autres équipements liés  
au nettoyage et à la finition pour le moulage*

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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 306, *Foundry machinery*.

A list of all parts in the ISO 23472 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

Documentation gives rise to numerous international exchanges of both intellectual and material nature. These exchanges often become difficult, either because of the great variety of terms used in various fields or languages to express the same concept, or because of the absence, or imprecision, of useful concepts.

To avoid misunderstandings due to this situation and to facilitate such exchanges, it is advisable to select terms to be used in various languages or in various countries to express the same concept, and to establish definitions providing satisfactory equivalents for the various terms in different languages.

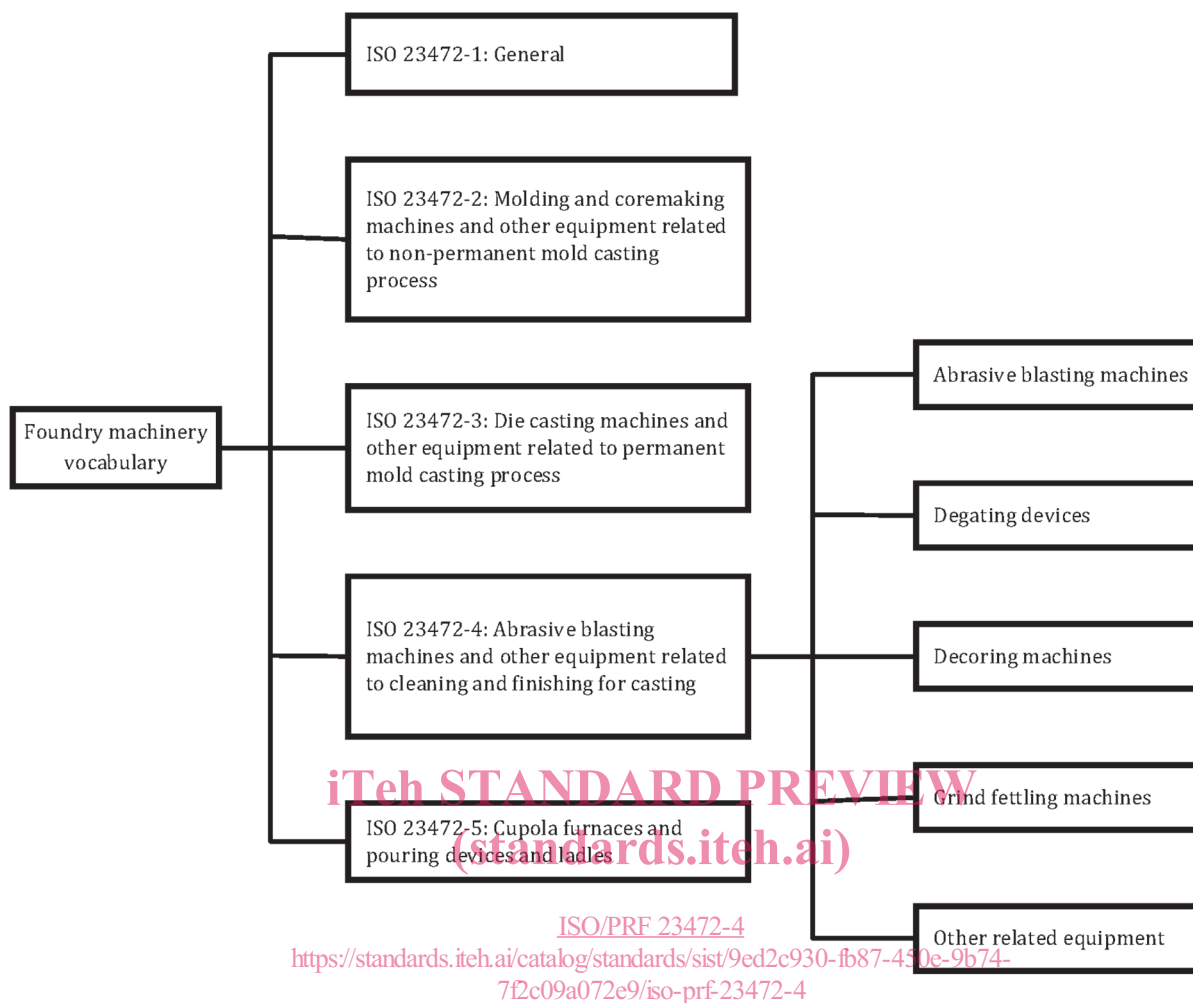
The objects involved in the ISO 23472 series are foundry machines used in foundry production.

The purpose of the ISO 23472 series is to provide definitions in English that are rigorous, uncomplicated and which can be understood by all concerned. The scope of each concept defined has been chosen to provide a definition that is suitable for general application within foundry machinery, which includes machines and equipment adapted at each stage of the processes within different casting processes.

As a metal thermoforming method that fills molten metal into the mold to produce machine parts or rough parts after solidification, casting has a long history and various processes, and its technology is constantly developing and changing. According to the differences in the mold used, or different ways of molten metal filling or solidification, casting processes are usually divided into sand casting, permanent casting and other casting processes. According to different casting processes and different stages of production, casting equipment covered by foundry machinery is divided into the following major categories:

- molding and coremaking machines and other equipment related to non-permanent mold casting process;
- die casting machines and other equipment related to permanent mold casting process;
- abrasive blasting machines and other equipment related to cleaning and finishing for casting;
- cupola furnaces and pouring devices and ladles.

This document only involves terms and definitions of abrasive blasting machines and other equipment related to cleaning and finishing for casting, including basic concepts specifically concerning structural characteristics and functions, important mechanisms and parts, main technological processes and parameters of various abrasive blasting machines, degating devices, decorating machines, grind fettling machines and other related equipment (see [Figure 1](#)).



**Figure 1 — Structure of vocabulary on abrasive blasting machines and other equipment related to cleaning and finishing for casting**

# Foundry machinery — Vocabulary —

## Part 4:

# Abrasive blasting machines and other equipment related to cleaning and finishing for casting

## 1 Scope

This document defines a set of terms and definitions of abrasive blasting machines and other equipment related to cleaning and finishing for casting in foundry machinery.

It applies to standard development in the foundry machinery field, technical documentation, related scientific and technical publications, etc.

## 2 Normative reference

There are no normative references in this document.

## 3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### abrasive blasting

#### shot blasting

process in which workpiece to be cleaned or surface to be treated is subjected to continuous attack by *abrasive media* (3.4) to achieve a desired result

[SOURCE: ISO 23472-1: 2020, 3.1]

### 3.2

#### abrasive blasting machine

#### shot blasting machine

machine used for *abrasive blasting* (3.1) by either centrifugal force or compressed air to accelerate *abrasive media* (3.4)

Note 1 to entry: Terms “abrasive blasting machinery”, “shot blasting machinery” are used to address the same assembly of machines

### 3.3

#### abrasive cut-off machine

#### grinding cutter

device for cutting gate and riser of castings or other metal materials with a high-speed rotating grinding *wheel* (3.84)

**3.4  
abrasive media  
shot blasting media**

granular metallic or non-metallic material to be forcibly applied to a surface to achieve a desired result

Note 1 to entry: Classification of metallic abrasives is provided in ISO 11124-1, and of non-metallic abrasives in ISO 11126-1.

[SOURCE: ISO 23472-1: 2020, 3.3]

**3.5  
abrasive media recirculating system**

system in *abrasive blasting machine* (3.2) that collects the mixture of *abrasive media* (3.4) and abraded material, separates the *abrasive media* (3.4) from this mixture, and supplies it to the blasting process

Note 1 to entry: This system usually consists of *bucket elevator* (3.25), screw conveyor, *abrasive media separator* (3.6), vibrating screen, storage hopper, *switch valve* (3.72), pipe, etc.

**3.6  
abrasive media separator**

device that removes impurities from used *abrasive media* (3.4) and separates reusable *abrasive media* (3.4) by means of gravity, air stream, mesh screen and/or magnetic force

**3.7  
abrasive media throughput rate  
abrasive media flow rate**

amount of *abrasive media* (3.4) blasted by the *wheel blaster* (3.86) or *air blaster* (3.8) in unit time during *abrasive blasting* (3.1)

Note 1 to entry: Usually in minutes as unit time.

**3.8  
air blaster**

assembly consisting of blast *nozzle(s)* (3.16), *blast pot(s)* (3.17) and connected hose(s) or tube(s), which accelerates *abrasive media* (3.14) by pressurized air

**3.9  
air blasting machine**

*abrasive blasting machine* (3.2) that uses *air blaster* (3.8)

**3.10  
air chipper**

hand-held pneumatic tool for removing flashes, burrs and raised defects of castings

**3.11  
automatic cleaning cell**

system that automatically completes the cleaning process of castings by robots, manipulators, machine tools, etc.

Note 1 to entry: It is equipped with a tool library, and the robot can automatically replace cleaning tools according to the requirements of the program.

**3.12  
band cutting machine  
band saw**

device for cutting gate and riser of castings with ring endless band

Note 1 to entry: It is usually used to cut gate and riser of castings made of light weight metal.



**3.13****blade  
vane**

component of *wheel blaster* (3.86) that receives and blasts *abrasive media* (3.4)

**3.14****blast gun**

rod-shaped component connected to the outlet end of *blast hose* (3.15) of *air blaster* (3.8) for holding or clamping, holding the *blast nozzle* (3.16) at the outlet

**3.15****blast hose****blast tube**

hose or tube connecting a nozzle to the *blast pot* (3.17)

**3.16****blast nozzle**

component connected at the outlet of the *blast gun* (3.14) with the desired shape, size and abrasive resistance which determines the *abrasive media* (3.4) flow and angle

**3.17****blast pot****blast hopper**

container of *air blaster* (3.8) for storing *abrasive media* (3.4)

**3.18****blasting angle**

angle between the centre line of the abrasive beam ejected from the nozzle and the surface of the workpiece being blasted during *abrasive blasting* (3.1)

**3.19****blasting chamber**

chamber of *abrasive blasting machine* (3.2) which contains the workpiece and also prevents the *abrasive media* (3.4) from escaping to the environment after impacting on the workpiece

**3.20****blasting density**

amount of *abrasive media* (3.4) blasted per unit area within the surface that has been impacted by the *abrasive media* (3.4)

**3.21****blasting distance**

distance between the nozzle and the surface of workpiece to be blasted during *abrasive blasting* (3.1)

**3.22****blasting pattern**

effective area of workpiece surface covered by abrasive beam blasted by *wheel blaster* (3.86)

**3.23****blasting pressure**

working pressure of compressed air fed into nozzle or in *blast pot* (3.17) during *compressed-air abrasive blasting* (3.29)

**3.24****bogie decorating machine**

*decorating machine* (3.36) that uses bogie to transport workpieces

**3.25****bucket elevator**

continuous conveyor that uses a series of bucket shaped hoppers uniformly fixed on the endless circular traction component to vertically lift *abrasive media* (3.4), foundry sand and impurities

**3.26**

**carbon-arc-gouging torch**

device for purging molten metal and oxides with compressed air while melting flash and burr by arc heat generated between graphite rod or carbon rod and castings

**3.27**

**casting cooling and transferring system**

system used for recooling of casting after demolding

Note 1 to entry: It uses continuous conveyor, such as vibrating conveyor or overhead chain conveyor, and can be equipped with ventilating and spray cooling system.

[SOURCE: ISO 23472-1: 2020, 3.14]

**3.28**

**centrifugal abrasive blasting**

**wheel blasting**

*abrasive blasting* (3.1) using *wheel blasting machine* (3.87)

**3.29**

**compressed-air abrasive blasting**

**air blasting**

*abrasive blasting* (3.1) using *air blasting machine* (3.9)

Note 1 to entry: The *abrasive media* (3.4) may be injected into the air stream from a pressurized container or may be drawn into the air stream by suction from an unpressurized container.

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**3.30**

**continuous grind fettling machine (standards.iteh.ai)**

*grind fettling machine* (3.46) with automatic workpiece conveying and clamping mechanism which is capable of continuous grinding operation

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**3.31**

**conveyor type blasting machine**

*abrasive blasting machine* (3.2) that uses conveyor to carry the workpiece into and out of the *blasting chamber* (3.19)

Note 1 to entry: The machines are further differentiated by conveyor type, i.e., rollers, rubber belt, wire mesh, chain.

**3.32**

**coverage**

percentage of a surface that has been impacted by *abrasive media* (3.4) to the surface area required for treatment

**3.33**

**deburring**

removal of flashes and burrs from castings

**3.34**

**decoring**

**core knock-out**

process in which sand core is removed from the inner cavity of the casting by hammering or any other way

[SOURCE: ISO 23472-1: 2020, 3.38]

**3.35****decoring cell**

complete set of *decoring* (3.34) equipment that consists of a *decoring machine* (3.36), a robot for loading and unloading workpieces, an exhaust system, etc.

[SOURCE: ISO 23472-1: 2020, 3.39]

**3.36****decoring machine**

machine that removes the sand core from the inner cavity of the casting by pneumatic or hydraulic *impact hammer* (3.52)

Note 1 to entry: It is usually composed of a hammering mechanism, a conveying mechanism for workpiece and a chamber which prevents dust from escaping. Among them, the conveying of the workpiece can adopt motorized roller(s), mobile car(s), turntable(s), manipulator(s) or robot(s).

[SOURCE: ISO 23472-1: 2020, 3.40]

**3.37****degating device**

equipment and device used to remove gate and riser of castings, such as gate hydraulic cutting machine and riser impacting hammer

[SOURCE: ISO 23472-1: 2020, 3.43]

**3.38****derusting**

removal of rust on the surface of castings

**3.39****descaling**

removal of oxide scale on the surface of castings

**3.40****direct pressurized air blaster**

one type of *air blaster* (3.8) that injects compressed air in the *blast pot* (3.17) to transport the *abrasive media* (3.4) to the *blast gun* (3.14)

**3.41****electro-hydraulic cleaning device**

complete set of devices used to remove adhering sand on the surface of castings and sand core in the inner cavity of castings by means of electro-hydraulic cleaning process

**3.42****fettling**

removal of surface adhering sand and core residues, gate and riser, and other excess metals (e.g., flash, burr, oxide scale) from castings after knock-out

**3.43****finishing**

fine cleaning process with the main purpose of improving the surface condition of castings by manual, mechanical or robotic means after initial cleaning of removing the adhering sand, core residues, gate and riser, including deflashing, *deburring* (3.33), repairing, etc.

**3.44****finishing room**

room accessible to personnel for *finishing* (3.43) of castings, including workpiece conveying system and/or lifting appliances, and *finishing table* (3.45)

Note 1 to entry: The room is enclosed or semi-enclosed with sound insulation and dust escape prevention functions.