INTERNATIONAL STANDARD

# ISO 8504-2

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# Preparation of steel substrates before application of paints and related products — Surface preparation methods —

## Part 2:
Abrasive blast-cleaning

*Préparation des subjectiles d'acier avant application de peintures et de produits assimilés — Méthodes de préparation des subjectiles —*

*Partie 2: Décapage par projection d'abrasif*

Reference number
ISO 8504-2:1992(E)

## 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.

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.

International Standard ISO 8504-2 was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Sub-Committee SC 12, *Preparation of steel substrates before application of paints and related products*.

ISO 8504 consists of the following parts, under the general title *Preparation of steel substrates before application of paints and related products — Surface preparation methods*:

— *Part 1: General principles*

— *Part 2: Abrasive blast-cleaning*

— *Part 3: Hand- and power-tool cleaning*

Further parts are planned.

Annex A of this part of ISO 8504 is for information only.





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# Introduction

The performance of protective coatings of paint and related products applied to steel is significantly affected by the state of the steel surface immediately prior to painting. The principal factors that are known to influence this performance are

a) the presence of rust and mill scale;

b) the presence of surface contaminants, including salts, dust, oils and greases;

c) the surface profile.

International Standards ISO 8501, ISO 8502 and ISO 8503 have been prepared to provide methods of assessing these factors, while ISO 8504 provides guidance on the preparation methods that are available for cleaning steel substrates, indicating the capabilities of each in attaining specified levels of cleanliness.

These International Standards do not contain recommendations for the protective coating systems to be applied to the steel surface. Neither do they contain recommendations for the surface quality requirements for specific situations even though surface quality can have a direct influence on the choice of protective coating to be applied and on its performance. Such recommendations are found in other documents such as national standards and codes of practice. It will be necessary for the users of these International Standards to ensure that the qualities specified are

— compatible and appropriate both for the environmental conditions to which the steel will be exposed and for the protective coating system to be used;

— within the capability of the cleaning procedure specified.

The four International Standards referred to above deal with the following aspects of preparation of steel substrates:

ISO 8501 — *Visual assessment of surface cleanliness*;

ISO 8502 — *Tests for the assessment of surface cleanliness*;

ISO 8503 — *Surface roughness characteristics of blast-cleaned steel substrates*;

ISO 8504 — *Surface preparation methods*.

Each of these International Standards is in turn divided into separate parts.

The primary objective of surface preparation is to ensure the removal of deleterious matter and to obtain a surface that permits satisfactory ad-

hesion of the priming paint to the steel. It should also assist in reducing the amounts of contaminants that initiate corrosion.

This part of ISO 8504 describes abrasive blast-cleaning methods. It should be read in conjunction with ISO 8504-1.

Abrasive blast-cleaning is a most effective method for mechanical surface preparation. It is widely applicable because this method of surface preparation has a number of versatile features listed below.

a) The method allows a high production rate.

b) The equipment can be stationary or mobile and is adaptable to the objects to be cleaned.

c) The method is applicable for most types and forms of steel surfaces.

d) Many different surface states can be produced, for example different preparation grades and surface profiles.

e) Effects such as cleaning, peening, roughening, levelling and lapping can be produced.

f) It is possible to remove selectively partly failed coatings leaving sound coatings intact.

# Preparation of steel substrates before application of paints and related products — Surface preparation methods —

# Part 2:
## Abrasive blast-cleaning



**WARNING — The procedure described in this part of ISO 8504 is intended to be carried out by qualified chemists or by other suitably trained and/or supervised personnel. The substances and procedures used in this method may be injurious to health if adequate precautions are not taken. Attention is drawn in the text to certain specific hazards. This part of ISO 8504 refers only to its technical suitability and does not absolve the user from statutory obligations relating to health and safety.**

## 1 Scope

This part of ISO 8504 describes abrasive blast-cleaning methods for the preparation of steel surfaces before coating with paints and related products. It also contains information on the effectiveness of the individual methods and their fields of application.

ISO 8504 is applicable to new and corroded steel surfaces and to steel surfaces that are uncoated or have been previously coated with paints and related products. For limitations see also note 2.

NOTES

1 These methods are essentially intended for hot-rolled steel to remove mill scale, rust, etc., but could also be used for cold-rolled steel of sufficient thickness to withstand the deformation caused by the impact of abrasive.

2 There are several items that should be included in the purchaser's procurement documents to supplement this part of ISO 8504. Items that should be considered as a part of surface preparation before coating are edge grinding, removal of grease and oil, porosity of welds, removal of weld spatter, grinding of welds, filling of pits and other surface imperfections that may cause premature failure of the coating system.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 8504. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 8504 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2591-1:1988, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate.*

ISO 4628-3:1982, *Paints and varnishes — Evaluation of degradation of paint coatings — Designation of intensity, quantity and size of common types of defect — Part 3: Designation of degree of rusting.*

ISO 8501-1:1988, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel sub-*

*strates and of steel substrates after overall removal of previous coatings.*

ISO 8501-2:—[1], *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 2: Preparation grades of previously coated steel substrates after localized removal of previous coatings.*

ISO/TR 8502-1:1991, *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness — Part 1: Field test for soluble iron corrosion products.*

ISO 8502-2:1992, *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness — Part 2: Laboratory determination of chloride on cleaned surfaces.*

ISO 8502-3:1992, *Preparation of steel substrates before application of paints and related products — Tests for the assessment of surface cleanliness — Part 3: Assessment of dust on steel surfaces prepared for painting (pressure-sensitive tape method).*

ISO 8503-1:1988, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 1: Specifications and definitions for ISO surface profile comparators for the assessment of abrasive blast-cleaned surfaces.*

ISO 8503-2:1988, *Preparation of steel substrates before application of paints and related products — Surface roughness characteristics of blast-cleaned steel substrates — Part 2: Method for the grading of surface profile of abrasive blast-cleaned steel — Comparator procedure.*

ISO 8504-1:1992, *Preparation of steel substrates before application of paints and related products — Surface preparation methods — Part 1: General principles.*

ISO 8504-3:—[1], *Preparation of steel substrates before application of paints and related products — Surface preparation methods — Part 3: Hand- and power-tool cleaning.*

## 3 Definition

For the purposes of this part of ISO 8504, the following definition applies.

**3.1 abrasive blast-cleaning:** The impingement of a high-kinetic-energy stream of abrasive on to the surface to be prepared.

NOTE 3 The abrasive is typically propelled either by centrifugal force or by a high-velocity stream of fluid such as air or water to remove rust, mill scale, existing coatings and other contaminants and expose the substrate. The cleaned surface has a characteristic secondary profile dependent on the blast-cleaning conditions, the properties of the abrasive, the initial condition of the surface and the properties of the steel being blast-cleaned. The initial surface roughness or primary profile may be altered by the abrasive blast-cleaning procedure. Surface profiles are assessed using the method described in ISO 8503-2. When selecting a surface preparation method, it is necessary to consider the preparation grade required to give a level of surface cleanliness and, if required, a surface profile (roughness), such as coarse, medium or fine (see ISO 8503-1 and ISO 8503-2), appropriate to the coating system to be applied to the steel surface. Since the cost of surface preparation is usually in proportion to the level of cleanliness, a preparation grade appropriate to the purpose and type of coating system or a coating system appropriate to the preparation grade which can be achieved should be chosen.

## 4 Abrasives

### 4.1 Materials and types

**4.1.1** A wide variety of natural and synthetic solid materials and several liquids are used for abrasive blast-cleaning. Solid materials commonly in use for the preparation of steel surfaces before coating are given in table 1. Each material provides a characteristic performance and surface finish.

When selecting a blast-cleaning abrasive, the following factors relating to its initial condition shall be considered:

— sub-group and type (see table 1);

— indication of chemical composition;

— range of particle size (see 4.1.2);

— particle hardness (for example Vickers, Rockwell or Mohs, or as measured by another appropriate method).

**4.1.2** The size and shape of the particles of an abrasive may change during use or re-use and this change can affect the resultant surface texture of the blast-cleaned steel.

1) To be published.

**Table 1 — Commonly used blast-cleaning abrasives for steel substrate preparation**

| Type | | | | Abbreviation | Initial particle shape (see table 2) | Comparator[1] | Remarks |
|---|---|---|---|---|---|---|---|
| Metallic (M) blast-cleaning abrasives | Cast iron | Chilled | | M/CI | G | G | Mainly for compressed-air blast-cleaning |
| | Cast steel | High-carbon | | M/HCS | S or G | S[2] | Mainly for centrifugal blast-cleaning |
| | | Low-carbon | | M/LCS | S | S | |
| | Cut steel wire | — | | M/CW | C | S[2] | |
| Non-metallic (N) blast-cleaning abrasives | Natural | Silica sand | | N/SI | G | G | Mainly for compressed-air blast-cleaning |
| | | Olivine sand | | N/OL | | | |
| | | Staurolite | | N/ST | S | G | |
| | | Garnet | | N/GA | G | G | |
| | Synthetic | Iron furnace slag | (Calcium silicate slags) | N/FE | G | G | Mainly for compressed-air blast-cleaning |
| | | Copper refinery slag | (Ferrous silicate slags) | N/CU | | | |
| | | Nickel refinery slag | | N/NI | | | |
| | | Coal furnace slag | (Aluminium silicate slags) | N/CS | | | |
| | | Fused aluminium oxide | | N/FA | G | G | — |

1) Comparator to be used when assessing the resultant surface profile. The method for evaluating the surface profile by comparator is described in ISO 8503-2.

2) Certain types of abrasive rapidly change their shape when used. As soon as this happens, the appearance of the surface profile changes and becomes closer to that of the "shot" comparator.

**Table 2 — Initial particle shape**

| Designation and initial particle shape | Symbol |
|---|---|
| Shot — round | S |
| Grit — angular, irregular | G |
| Cylindrical — sharp-edged | C |

## 4.2 General requirements

### 4.2.1 Technical

Abrasives shall be dry (except when added to pressurized liquid or slurry blast-cleaning systems) and shall be free-flowing to permit consistent metering into the blast stream.

Abrasives shall be free from corrosive constituents and adhesion-impairing contaminants. Because of their deleterious effect on the blast-cleaned steel surface, permanently contaminated abrasives (for example those that cannot be cleaned before recycling and abrasives produced from slag that has been granulated by the use of saline water, i.e. sea water, for cooling) are not permitted.

### 4.2.2 Health and safety

Equipment, materials and abrasives used for surface preparation can be hazardous if used carelessly. Many national regulations exist for those materials and abrasives that are considered to be hazardous during or after use (waste management), such as free silica or carcinogenic or toxic substances. These regulations are therefore to be observed. It is important to ensure that adequate instructions are given and that all required precautions are exercised.

## 4.3 Selection considerations

**4.3.1** Selection of a suitable abrasive, together with an appropriate blast-cleaning method and operating conditions, is necessary to achieve the required standard of surface preparation.

The type of blast-cleaning abrasive — i.e. its particle size distribution, shape, hardness, density and impact behaviour (deformation or shatter characteristics) — is important in determining the standards of cleanliness, the cleaning rate and the resulting surface profile of the blast-cleaned surface.

NOTE 4 The particle size distribution of abrasives should be determined using a suitable sieve test method such as one of those specified in ISO 2591-1.

**4.3.2** Preliminary blast-cleaning tests are recommended to determine the most effective abrasive, the resulting surface preparation grade and the resulting surface profile (see ISO 8501-1 or ISO 8501-2 and ISO 8503-2). If recycled abrasive is to be used for the surface preparation work, it is essential that a preliminary test is carried out with the same material as new abrasive may give misleading results [see also 4.3.3 c)].

**4.3.3** When selecting an abrasive, it is essential that the following considerations are taken into account:

a) The influence of a particular particle size on the resulting surface profile is normally greater for metallic abrasives than for non-metallic abrasives. This is because the shatter characteristics differ and because differences in density affect the kinetic energy of the abrasive particles.

b) A balanced mixture of particle sizes will produce the optimum level of cleanliness, cleaning rate and surface profile.

c) In blast-cleaning plants where the abrasive is recycled, it is necessary

   — to remove dust and contaminants before the abrasive is re-used and

   — to make up for the abrasive which is lost by wear and adherence to the workpieces. This is done by controlled additions of new abrasive so that the abrasive mixture is maintained within the prescribed particle size limits or particle size distribution.

Complete renewal of abrasive charges in recycling machines requires a period of use before the mixture reaches a steady condition.

# 5 Abrasive blast-cleaning methods

## 5.1 Dry abrasive blast-cleaning

### 5.1.1 Centrifugal abrasive blast-cleaning

#### 5.1.1.1 Principle

Centrifugal abrasive blast-cleaning is carried out in enclosed plants in which the abrasive is fed to rotating wheels or impellers positioned to throw the abrasive evenly and at high velocity on to the surfaces to be cleaned.

#### 5.1.1.2 Field of application

The method is suitable for continuous operation on workpieces with accessible surfaces, such as plates, plate girders, castings or rolling-mill products. It is also applicable to workpieces having different rust grades (see ISO 8501-1).

NOTE 5 Most centrifugal abrasive blast-cleaning equipment is stationary and the abrasive is circulated in a closed system. The workpieces are either fed through or rotated within the equipment. In certain cases, the equipment may be mobile, and therefore useful for cleaning large uninterrupted surfaces, such as ships' hulls and oil storage tanks.

#### 5.1.1.3 Effectiveness

This method can achieve preparation grade Sa 3 on steel of all the rust grades defined in ISO 8501-1 or ISO 8501-2.

#### 5.1.1.4 Limitations

Centrifugal abrasive blast-cleaning equipment has to be carefully set up for each application and so this method is generally limited to repetitive work associated with high-volume through-put or continuous production.

Generally, chemicals contaminating a steel surface cannot be totally removed by centrifugal blast-cleaning. Thus, additional treatment is required (see 6.3) if complete removal is necessary.

### 5.1.2 Compressed-air abrasive blast-cleaning

#### 5.1.2.1 Principle

Compressed-air abrasive blast-cleaning is carried out by incorporating the abrasive into an air stream and, from a nozzle, directing the air/abrasive mixture at high velocity on to the surfaces to be cleaned.

The abrasive 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.

#### 5.1.2.2 Field of application

The method is suitable for cleaning workpieces (including large structures) of all types. It is also applicable to workpieces having different rust grades (see ISO 8501-1). It may be used either continuously or intermittently and may be used when centrifugal abrasive blast-cleaning (5.1.1) is not suitable.

This system of cleaning can be used in factories, rooms or cabinets, or on site.

#### 5.1.2.3 Effectiveness

This method is versatile and can achieve preparation grade Sa 3 on steel of all rust grades, including previously coated steel as defined in ISO 8501-1 or ISO 8501-2.

#### 5.1.2.4 Limitations

This method gives rise to evolution of free dust and its use may be restricted in applications where dust suppression or extraction facilities are unable to meet permissible environmental contamination levels.

Generally, chemicals contaminating a steel surface cannot be totally removed by compressed-air abrasive blast-cleaning. Thus, additional treatment is required (see 6.1 and 6.3) if complete removal is necessary.

### 5.1.3 Vacuum or suction-head abrasive blast-cleaning

#### 5.1.3.1 Principle

This method is similar to compressed-air abrasive blast-cleaning (5.1.2) but with the blasting nozzle enclosed in a suction-head sealed to the steel surface, collecting spent abrasive and contaminants. Alternatively, the air/abrasive stream may be sucked on to the surface by reduced pressure at the suction-head.

#### 5.1.3.2 Field of application

The method is particularly suitable for localized cleaning where the dust and debris resulting from other blast-cleaning techniques are unacceptable and where the technical requirements (for example tight sealing of the suction-head to the surface) can be met.

#### 5.1.3.3 Effectiveness

This method is clean, with little dust produced in the area, and can achieve preparation grade Sa 2 1/2 as defined in ISO 8501-1 or ISO 8501-2. After an extended period of cleaning with this method, preparation grade Sa 3 may be obtained.

#### 5.1.3.4 Limitations

This method is more time-consuming than other blast-cleaning methods. It is unsuitable for cleaning heavily corroded steel (of rust grade D as defined in ISO 8501-1) and not applicable to irregular shapes due to the necessity to seal the suction head tightly to the surface and difficulties in handling the equipment.

Generally, chemicals contaminating a steel surface cannot be totally removed by vacuum or suction-head abrasive blast-cleaning. Thus, additional treatment is required (see 6.1 and 6.3) if complete removal is necessary.

## 5.2 Moisture-injection abrasive blast-cleaning (compressed-air moisture-injection abrasive blast-cleaning)

### 5.2.1 Principle

This method is similar to compressed-air abrasive blast-cleaning (5.1.2) but with the addition of a very small amount of liquid (usually clean fresh water) to the air/abrasive stream before the nozzle, resulting in

a blast-cleaning procedure which is dust-free in the suspended-particle size range of less than 50 µm. The consumption of water can be controlled and is usually 15 l/h to 25 l/h.

A suitable rust inhibitor may be added to the water (see 5.2.4).

#### 5.2.2 Field of application

This method is suitable for cleaning workpieces (including large structures) of all types. It is also applicable to workpieces having different rust grades (see ISO 8501-1) as the addition of liquid can be controlled to match the intensity of the dust produced from the surface. It can be used in the majority of cases where high dust levels and large amounts of water are to be avoided in the surrounding area.

The addition of liquid, which binds the dust, is controlled in such a way that liquid drips out of the nozzle only in extreme cases. This means that the individual abrasive particles are enveloped with an extremely thin liquid film that, when the particles burst, prevents the formation of dust around the surface being treated.

#### 5.2.3 Effictiveness

This method is versatile and can achieve preparation grade Sa 3 on steel of all rust grades, including previously coated steel as defined in ISO 8501-1 or ISO 8501-2.

#### 5.2.4 Limitations

The surface preparation quality achieved by this method differs from that obtained by compressed-air abrasive blast-cleaning (5.1.2) only by the fact that the prepared surface is initially moist. The moisture disappears within a few minutes, the time depending on the ambient conditions, and may cause a light, negligible rust trace on the peaks of the roughened surface. In cases where "flash rusting" occurs, suitable coating systems are necessary.

When a rust inhibitor is used, it shall be compatible with subsequent coatings.

### 5.3 Wet abrasive blast-cleaning

#### 5.3.1 Compressed-air wet abrasive blast-cleaning

##### 5.3.1.1 Principle

This method is similar to compressed-air abrasive blast-cleaning (5.1.2) but with the addition of liquid (generally clean fresh water) before or after the nozzle to produce a stream comprising air, water and abrasive.

A suitable rust inhibitor may be added to the water (see 5.3.1.4).

##### 5.3.1.2 Field of application

This method is suitable for cleaning workpieces (including large structures) of all types. It is also applicable to workpieces having different rust grades (see ISO 8501-1) and particularly for pitted and chemically contaminated steel, provided the presence of water is permitted. It may be used in both continuous and intermittent operations, particularly where cleaned surfaces are required to have low levels of residual soluble salts.

For surface preparation during maintenance, it is possible to partially or selectively remove existing coatings by adjusting the pressure and the proportions of air, water and abrasive in the mixture.

##### 5.3.1.3 Effectiveness

This method can achieve preparation grade Sa 3 as defined in ISO 8501-1 or ISO 8501-2. The method is particularly suitable for reducing the amount of soluble salts and minimizing dust generation during cleaning. Where water is added after the nozzle, the chemical cleaning action is less effective.

##### 5.3.1.4 Limitations

The blast-cleaned surface is usually covered with a slurry that impairs visual examination by the operator. This slurry must therefore be removed by a dry blast or water jet. The surfaces may need to dry before application of paint, and "flash rusting" may occur. This thin iron oxide film will need to be removed if considered detrimental to the subsequent coating.

Wet blast-cleaning shall not be used where the presence of water can be harmful.

The abrasives used are generally restricted to expendable non-ferrous materials.

When a rust inhibitor is used, it shall be compatible with subsequent coatings.

#### 5.3.2 Slurry blast-cleaning

##### 5.3.2.1 Principle

A dispersion of fine abrasive in water or another liquid is directed, with or without compressed air, on to the workpiece(s) to be cleaned.

A suitable rust inhibitor may be added (see 5.3.1.4).

#### 5.3.2.2 Field of application

This method is suitable for producing a fine surface profile on surfaces requiring little or no secondary profile, often needed for small workpieces.

#### 5.3.2.3 Effectiveness

This method leads to a particularly fine and even surface texture and is particularly suitable for reducing the amount of soluble salts.

### 5.3.3 Pressurized-liquid blast-cleaning

#### 5.3.3.1 Principle

An abrasive (abrasive mixture) is introduced into a stream of liquid (generally clean fresh water) and the wet abrasive stream directed through a nozzle on to the workpiece.

The stream is predominantly pressurized liquid, and additions of solid abrasives are normally less than for compressed-air wet abrasive blast-cleaning.

The abrasive may be introduced either dry (with or without air) or as a wet slurry.

A suitable rust inhibitor may be added to the water (see 5.3.1.4).

#### 5.3.3.2 Field of application

As for compressed-air wet abrasive blast-cleaning (see 5.3.1.2).

#### 5.3.3.3 Effectiveness

This method can achieve preparation grade Sa 3 on steel of rust grades A and B and Sa 2 1/2 on steel of rust grade D, including previously coated steel, as defined in ISO 8501-1 or ISO 8501-2. It is particularly suitable for reducing the amount of soluble salts but is less easy to control than compressed-air wet abrasive blast-cleaning (see 5.3.1) for removal of soluble salts, and the high water pressure is a potential hazard.

#### 5.3.3.4 Limitations

As for compressed-air wet abrasive blast-cleaning (see 5.3.1.4).

## 6 Procedure

### 6.1 Preparation before blast-cleaning

Check visually for the presence of oil, grease, salts or similar contaminants. Remove any deposits of these using a degreasing or washing procedure and check that the contaminants are no longer detectable. Mask off areas not to be blast-cleaned.

NOTES

6 It is important that surface deposits of grease, oil, dirt and slags be removed prior to blast-cleaning, preferably with a detergent wash; if this stage is omitted, the presence of these deposits when transferred to the abrasive makes it difficult and sometimes impossible to clean the abrasive for re-use.

7 It may be advantageous to remove heavy, firmly adhering rust and scale by hand- or power-tool cleaning (see ISO 8504-3). In addition, recommendations regarding the preliminary treatment of welds, the removal of weld spatter and removal of burrs and other sharp edges should be provided.

8 When using wet abrasive blast-cleaning methods (5.3), a suitable detergent may be added to the liquid to assist the removal of grease, oil, dirt and soluble salts during the blast-cleaning process.

### 6.2 Blast-cleaning

**6.2.1** Assess the rust grade(s) of the workpiece, by the method described in ISO 8501-1 and/or in ISO 4628-3, within the limits of a contract or specification, if any.

**6.2.2** Determine the minimum preparation grade required, by reference to 6.2.1 and to the preparation grades defined in ISO 8501-1 and/or ISO 8501-2. Also determine the required surface profile by reference to ISO 8503-2.

**6.2.3** Select the appropriate blast-cleaning method from those described in clause 5 to produce the required preparation grade and surface profile.

**6.2.4** Select the appropriate type and particle size distribution of blast-cleaning abrasive to suit the properties of the workpiece, the characteristics of the blast-cleaning equipment and the required preparation grade and surface profile. For information on existing International Standards, see annex A.

**6.2.5** Blast-clean the surface to be prepared, using the selected blast-cleaning method (see 6.2.3) and abrasive (see 6.2.4), until the required preparation grade and surface profile have been achieved.

### 6.3 After blast-cleaning

After dry abrasive blast-cleaning, remove loosely adhering dust, debris and blast-cleaning abrasive from the surface by vacuum, by brushing or by use of compressed air free of oil and moisture. If the amount of residual soluble impurities is to be reduced, wash with a steam jet, hot fresh water, solvent or other suitable cleaner (followed by rinsing with clean fresh water) and dry.

After wet abrasive blast-cleaning, wash all surfaces down with fresh water to remove loosely adhering abrasive and other residues. The water may contain an agreed rust inhibitor. Compressed air free of oil and moisture or other means (for example heated air) may then be used to assist in drying the surfaces before application of paint.

NOTE 9 Before application of paints and related products, a blast-cleaned surface may be required to dry. Whilst drying, "flash rusting" may occur and it may be necessary to remove this thin oxide film if it is considered it could be detrimental to the subsequent coating.

### 6.4 Assessment of the blast-cleaned surface

Assess all cleaned surfaces as described in ISO 8501 and ISO 8502 for compliance with the requirements of a contract/specification. In the event of non-compliance, repeat the procedure.