



**International
Standard**

ISO 1514

**Paints and varnishes — Standard
panels for testing**

Peintures et vernis — Panneaux normalisés pour essai

**Sixth edition
2024-07**

STANDARDSISO.COM : Click to view the full PDF of ISO 1514:2024

STANDARDSISO.COM : Click to view the full PDF of ISO 1514:2024



COPYRIGHT PROTECTED DOCUMENT

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Steel panels	2
4.1 Properties	2
4.2 Storage prior to preparation	2
4.3 Preparation by solvent cleaning	2
4.4 Preparation by aqueous cleaning (spray or immersion process)	3
4.5 Preparation by abrasion	3
4.5.1 General	3
4.5.2 Hand abrasion	3
4.5.3 Circular mechanical abrasion	4
4.5.4 Linear grinding	4
4.6 Inspection and cleaning	4
4.7 Preparation by phosphate treatment	4
4.7.1 General	4
4.7.2 Amorphous iron phosphate treatment	4
4.8 Preparation by blast-cleaning	4
5 Tinplate panels	4
5.1 Properties	4
5.2 Preparation by solvent or aqueous cleaning	5
5.3 Preparation by abrasion	5
6 Zinc- and zinc-alloy-coated panels	5
6.1 Properties	5
6.2 Preparation by solvent cleaning	5
6.3 Preparation by aqueous cleaning	5
7 Aluminium panels	6
7.1 Properties	6
7.2 Preparation by solvent cleaning	6
7.3 Preparation by aqueous cleaning	6
7.4 Preparation by abrasion	6
8 Coil-coating panels of steel or aluminium	6
8.1 Properties	6
8.2 Coating	6
8.3 Substrate	7
8.4 Preparation by solvent cleaning	7
9 Plastics panels	7
9.1 Properties	7
9.2 Preparation by solvent cleaning	7
9.3 Preparation by detergent cleaning	7
9.4 Pre-treatment by flaming	7
10 Glass-fibre reinforced plastic composite panels (GRP)	7
10.1 Properties	7
10.2 Preparation by solvent cleaning	7
10.3 Preparation by detergent cleaning	7
11 Carbon-fibre reinforced plastic composite panels (CFRP)	8
11.1 Properties	8
11.2 Preparation by solvent cleaning	8

11.3	Preparation by detergent cleaning	8
12	Glass panels	8
12.1	Properties	8
12.2	Preparation by solvent cleaning	8
12.3	Preparation by detergent cleaning	8
13	Hardboard	8
13.1	Properties	8
13.2	Preparation	8
14	Gypsum plasterboards panels and gypsum boards with fibrous reinforcement panels	9
14.1	Properties	9
14.2	Preparation	9
15	Fibre-reinforced cement panels	9
16	Concrete	9
Annex A (informative)	General guidelines on preparation of steel panels by blast-cleaning	10
Annex B (informative)	Common substrate panels	11
Bibliography		12

STANDARDSISO.COM : Click to view the full PDF of ISO 1514:2024

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 document 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

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.

This document was prepared by Technical Committee ISO/TC 35, *Paints and varnishes*, Subcommittee SC 9, *General test methods for paints and varnishes*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 139, *Paints and varnishes*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This sixth edition cancels and replaces the fifth edition (ISO 1514:2016), which has been technically revised.

The main changes are as follows:

- [Clause 3](#) (terms and definitions) has been added;
- the preparation of plastics substrate including glass-fibre reinforced plastic composite panels (GRP) and carbon-fibre reinforced plastic composite panels (CFRP) has been updated;
- concrete test panels have been added;
- the normative references have been updated.

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.

Introduction

For many of the most widely used test methods for paints and varnishes, the type of panel used and the particular way in which it is prepared for use can affect the test results to a significant degree. Consequently, it is important to standardize as carefully as possible both the panels and the procedures used to prepare the panels prior to painting.

It is not possible to include in this document all the types of panels and preparation needed for paint testing. Thus, this document describes preparation procedures that are known to be reproducible and gives additional guidance and requirements in instances where there can still be doubt, due to lack of international uniformity of the procedure.

Common substrate panels and the documents which specify their technical delivery conditions are listed in [Table B.1](#).

STANDARDSISO.COM : Click to view the full PDF of ISO 1514:2024

Paints and varnishes — Standard panels for testing

1 Scope

This document specifies several types of standard panels and provides guidance and requirements on the procedures for their preparation prior to painting. The standard panels described in this document are intended for use in general methods of test for paints, varnishes and related products.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1268-1, *Fibre-reinforced plastics — Methods of producing test plates — Part 1: General conditions*

ISO 1268-2, *Fibre-reinforced plastics — Methods of producing test plates — Part 2: Contact and spray-up moulding*

ISO 1268-3, *Fibre-reinforced plastics — Methods of producing test plates — Part 3: Wet compression moulding*

ISO 1268-4, *Fibre-reinforced plastics — Methods of producing test plates — Part 4: Moulding of prepregs*

ISO 1268-5, *Fibre-reinforced plastics — Methods of producing test plates — Part 5: Filament winding*

ISO 1268-6, *Fibre-reinforced plastics — Methods of producing test plates — Part 6: Pultrusion moulding*

ISO 1268-7, *Fibre-reinforced plastics — Methods of producing test plates — Part 7: Resin transfer moulding*

ISO 1268-8, *Fibre-reinforced plastics — Methods of producing test plates — Part 8: Compression moulding of SMC and BMC*

ISO 1268-9, *Fibre-reinforced plastics — Methods of producing test plates — Part 9: Moulding of GMT/STC*

ISO 1268-10, *Fibre-reinforced plastics — Methods of producing test plates — Part 10: Injection moulding of BMC and other long-fibre moulding compounds — General principles and moulding of multipurpose test specimens*

ISO 1268-11, *Fibre-reinforced plastics — Methods of producing test plates — Part 11: Injection moulding of BMC and other long-fibre moulding compounds — Small plates*

ISO 2409, *Paints and varnishes — Cross-cut test*

ISO 2808, *Paints and varnishes — Determination of film thickness*

ISO 4618, *Paints and varnishes — Vocabulary*

ISO 8336, *Fibre-cement flat sheets — Product specification and test methods*

ISO 11949, *Cold-reduced tinmill products — Electrolytic tinplate*

ISO 21920-2, *Geometrical product specifications (GPS) — Surface texture: Profile — Part 2: Terms, definitions and surface texture parameters*

EN 520, *Gypsum plasterboards — Definitions, requirements and test methods*

EN 622-1, *Fibreboards — Specifications — Part 1: General requirements*

EN 622-2, *Fibreboards — Specifications — Part 2: Requirements for hardboards*

EN 622-3, *Fibreboards — Specifications — Part 3: Requirements for medium boards*

EN 622-4, *Fibreboards — Specifications — Part 4: Requirements for softboards*

EN 622-5, *Fibreboards — Specifications — Part 5: Requirements for dry process boards (MDF)*

EN 1396, *Aluminium and aluminium alloys — Coil coated sheet and strip for general applications — Specifications*

EN 1766, *Products and systems for the protection and repair of concrete structures — Test methods — Reference concretes for testing*

EN 10205, *Cold reduced tinmill products — Blackplate*

EN 13523-1, *Coil coated metals — Test methods — Part 1: Film thickness*

EN 13523-22, *Coil coated metals — Test methods — Part 22: Colour difference — Visual comparison*

EN 15283-2, *Gypsum boards with fibrous reinforcement — Definitions, requirements and test methods — Part 2: Gypsum fibre boards*

EN 16245-1, *Fibre-reinforced plastic composites — Declaration of raw material characteristics — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4618 apply.

ISO and IEC maintain terminology 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/>

4 Steel panels

4.1 Properties

Steel panels intended for general testing (as opposed to panels intended for testing particular applications and uses) shall be free from rust, scratches, staining, discoloration and other surface defects. The physical dimensions of the panel shall be as specified in the description of the test method, or as otherwise agreed.

4.2 Storage prior to preparation

Prior to preparation, panels shall be stored in a manner that protects them from corrosion.

4.3 Preparation by solvent cleaning

Wipe the panel to remove any excess oil and then wash it thoroughly with a suitable solvent to remove all excess of oil.

Ensure that any small fibres deposited by cleaning cloths are removed in the cleaning process and that cloths are changed at predetermined intervals to avoid redistribution of oily residues. Do not contaminate the cleaned panels. Suitable methods of drying include allowing the solvent to evaporate, lightly wiping the panels with a clean linen cloth and subjecting the panels to a stream of warm dry air. If necessary, lightly warm the panels to remove any traces of condensed moisture.

If it is not feasible to apply the paint coating immediately after cleaning, the cleaned panels shall be stored in a dry and clean atmosphere, such as a desiccator containing an active desiccant, until required for use. It is also acceptable practice to wrap the panels in suitable paper.

Contaminated surfaces may be cleaned using a solvent which evaporates rapidly, is residue-free, and does not alter the material chemically.

4.4 Preparation by aqueous cleaning (spray or immersion process)

Clean the panels with a commercially available aqueous alkaline cleaner. A spray cleaning process is recommended, but an immersion cleaning process is also acceptable. Maintain the cleaner concentration and temperature in accordance with the recommendations of the cleaner manufacturer.

Cleaning by a spraying method is performed in four steps.

- a) Clean each side of the plates for at least 10 s. Set the temperature and the spray pressure as recommended by the manufacturer of the cleaning agent.
- b) Rinse each side of the plates with tap water. Ensure that the wash water is not significantly contaminated during the cleaning process. This can be achieved by flooding the reservoir for the wash water continuously or from time to time with fresh tap water.
- c) Rinse each side of the plates with deionized water, which has a conductivity of max. 20 $\mu\text{S}/\text{cm}$.
- d) Dry the plates immediately after rinsing in an oven or with a hot air stream.

Steps b) to d) shall also be applied after the cleaning in an immersion process.

If it is not feasible to apply the paint coating immediately after cleaning, the cleaned panels shall be stored in a dry and clean atmosphere, such as a desiccator containing an active desiccant, until required for use. It is also acceptable to wrap the panels in suitable paper.

Contaminated surfaces may be cleaned using a solvent which evaporates rapidly and is residue-free, which does not alter the material chemically.

4.5 Preparation by abrasion

4.5.1 General

Some testing applications require a more uniform and reproducible surface than is available on steel, as rolled by the mill. In such cases, it is necessary to remove surface variability and contamination through mechanical abrasion. To ensure complete removal of contamination and variability, it is necessary to completely remove the original mill surface.

Prior to abrading, panels should be cleaned as described in [4.3](#) or [4.4](#). Unless otherwise agreed, the surface removal shall be accomplished as described in [4.5.2](#) and [4.5.3](#).

4.5.2 Hand abrasion

This involves abrading the panel by hand using preferably P220 silicon carbide paper. The following is a suitable sequence of operations for use in hand abrasion.

- a) Abrade the panel uniformly straight across its face in a direction parallel to any one side.
- b) Abrade the panel at a right angle to the initial direction until all signs of the original abrasion have been removed.
- c) Abrade the panel using a circular motion, until a pattern is produced consisting solely of circular abrasion marks, superimposed one upon another.

4.5.3 Circular mechanical abrasion

This involves burnishing the panel by mechanical means using preferably P220 silicon carbide paper. When this method is employed, the panel shall be burnished using a circular motion. The operation shall be considered complete when no sign of the original surface or any undulations are visible.

4.5.4 Linear grinding

This involves a conveyor system using an abrasive belt mounted on a vertical grinding head to remove the original mill surface and produce a linear scratch finish on the panel. Grinding the surface with abrasive belts removes contamination and provides a surface that is more uniform and reproducible than a typical mill finish. A P100 aluminium oxide abrasive belt is suitable for use in this operation.

4.6 Inspection and cleaning

Inspect the abraded panels to ensure that the original surface has been completely removed. Clean the panels thoroughly as described in [4.3](#) or [4.4](#) to remove any loose grit, steel particles or other contaminants.

If it is not feasible to apply the subsequent coating immediately, store the clean panels in a clean and dry atmosphere, such as a desiccator containing an active desiccant, or wrap the panels in suitable paper.

4.7 Preparation by phosphate treatment

4.7.1 General

Phosphate conversion coatings are available from a number of sources, as proprietary compounds or processes, for application by spray or immersion. Follow the manufacturer's directions as to the application of the conversion coating. Preparation of test panels may consist of one or more steps of cleaning, rinsing and conditioning prior to the application of the conversion coating. Additional rinsing will usually be required after the conversion coating has been applied. If phosphate-treated panels are required, use the method of preparation described in [4.7.2](#).

4.7.2 Amorphous iron phosphate treatment

This conversion coating method consists of reacting the steel surface in an acid phosphate solution containing oxidizing agents and accelerating salts. The steel surface is converted to an amorphous iron phosphate coating which improves the adhesion of subsequently applied coatings and inhibits corrosion to a lesser degree than the crystalline zinc phosphate coating. This treatment can be applied by spraying or immersion. Solution temperatures, concentrations and contact times will vary with the method of application and should be maintained according to the chemical manufacturer's recommendations. Iron phosphate coatings typically range in colour from yellow-blue to purple.

4.8 Preparation by blast-cleaning

Before blast-cleaning, clean the panels using the procedure described in [4.3](#) or [4.4](#).

General guidelines on the preparation of steel panels by blast-cleaning are given in [Annex A](#).

It is emphasized, however, that this preparation by blast-cleaning is not intended for cold-rolled steel panels that are specified in [4.1](#) for general testing purposes.

5 Tinplate panels

5.1 Properties

The panel shall be bright-finish standard grade tinplate conforming to the requirements of ISO 11949 for electrolytic tinplate or EN 10205 for blackplate. The panel shall be of nominal thickness between 0,2 mm and 0,3 mm. When the tinplate panels prepared in accordance with this document are subsequently used in

a test method, it is important that the designation code for the tinplate used is recorded in the test report for the test method concerned.

5.2 Preparation by solvent or aqueous cleaning

It is not necessary for tinplate panels to be specially protected during storage in the same manner as bare steel panels. Nevertheless, the surface of the panels can become contaminated with lubricants during processing. It is therefore recommended that the panels be cleaned prior to use, following the procedure specified in [4.3](#) or [4.4](#) for steel panels.

5.3 Preparation by abrasion

Abraded tinplate panels are recommended if it is necessary to use a test surface more uniform than the one produced by solvent or aqueous cleaning. Carry out the abrasion operation as described for steel panels (see [4.5](#)), but much more carefully to avoid embedding abrasive in the surface and to avoid the complete removal of the tin plating at any point. It is therefore recommended that a good quality, fine silicon carbide paper be used, such as grade P320.

Continue the abrasion until the whole of the surface of the panel is covered by a pattern of circular abrasion marks superimposed one upon another and the original surface pattern is no longer visible with normal or corrected vision.

Clean the abraded panels thoroughly before use, as described in [4.3](#) or [4.4](#), to ensure that all loose grit, tin particles and other contaminants are removed. Do not contaminate the cleaned panel.

If the paint coating cannot be applied immediately, store the cleaned panels in a dry and clean atmosphere, such as in a desiccator containing an active desiccant, or wrap the panels in suitable paper.

6 Zinc- and zinc-alloy-coated panels

6.1 Properties

The panel shall be cold-rolled carbon steel sheet coated with zinc or a zinc alloy. The specific type of zinc or zinc-alloy coating, as well as the thickness and physical dimensions of the panel shall be agreed between the purchaser and the seller. Some types of zinc and zinc-alloy coating are described in EN 10346.

The panel shall be free of chemical passivated treatments, as surface changes resulting from these treatments interfere with the adhesion of subsequently applied coatings.

A passivating treatment is applied at the mill in order to prevent wet storage stain (or white rusting) of the zinc-coated surface during storage. This passivated treatment, if not removed, interferes with the adhesion of subsequently applied coatings. If necessary, remove the passivated treatment by abrasion as described in [5.3](#).

6.2 Preparation by solvent cleaning

If clean panels are required, without further preparation, use the cleaning procedure specified in [4.3](#) for steel panels.

6.3 Preparation by aqueous cleaning

If clean panels are required, without further preparation, use the cleaning procedure specified in [4.4](#) for steel panels. In general, cleaner concentration, temperature and contact time is lower when cleaning zinc-coated steel. Highly alkaline cleaners attack the zinc coating. For this reason, the alkaline solution used to clean zinc-coated steel should be in the pH range of 11 to 12, and never higher than 13.

7 Aluminium panels

7.1 Properties

Aluminium alloy panels intended for general testing shall be of sheet or strip conforming to the requirements of EN 1396. Where other aluminium alloys are required for testing, the alloy shall be stated in the test report. The hardness shall be as specified for the particular test method. The thickness and other dimensions of the panel shall be as specified in the test method or as otherwise agreed.

7.2 Preparation by solvent cleaning

If clean panels are required, without any further preparation, use the cleaning procedure specified in [4.3](#) for steel panels.

7.3 Preparation by aqueous cleaning

If clean panels are required, without any further preparation, use the cleaning procedure specified in [4.4](#) for steel panels. In general, cleaner concentration, temperature and contact time is lower when cleaning aluminium. In addition, it is important to verify that the selected alkaline cleaner is safe for use with aluminium. Some alkaline cleaners etch aluminium. These cleaners shall not be used in the preparation of aluminium panels for general testing. Consult the cleaner manufacturer to determine if the product is safe for use with aluminium, and at what temperatures and concentrations it may be safely used. Panels cleaned by this method should be completely wetted by the water. This can be determined by momentarily immersing the panel in distilled or deionized water. When the panel is removed, the water should form an unbroken film on the metal surface, without beading up into discrete droplets or other water breaks.

7.4 Preparation by abrasion

If abraded panels are required, silicon carbide paper within the range of P220 to P400 shall be used. Use the abrasion procedure specified in [4.5](#). Record the number of the used silicon carbide paper in the test report.

The sequence of abrading operations shall be as specified in [4.5.2](#), but the silicon carbide paper shall be wetted with a suitable solvent.

Continue the abrasion until the whole of the surface of the panel is covered by a pattern of circular burnishing marks superimposed one upon another and the original surface pattern is no longer visible with normal or corrected vision.

Clean the abraded panels thoroughly before use, as described in [4.3](#), to ensure that all loose grit, aluminium particles and other contaminants are removed.

Aluminium panels shall be prepared immediately prior to painting.

8 Coil-coating panels of steel or aluminium

8.1 Properties

The material of the coil can be steel or aluminium. The thickness and other dimensions of the coil shall be as agreed.

8.2 Coating

The coil shall be coated with the agreed filler and dried (or stoved) for the specified time and under the specified conditions.

The following properties of the coating shall be agreed:

- a) colour in accordance with RAL 840-HR, determined in accordance with EN 13523-22;

- b) thickness of the dried coating, in micrometres, determined in accordance with one of the procedures specified in ISO 2808 or EN 13523-1. The method used shall be stated in the report;
- c) roughness of the coating, determined in accordance with ISO 21920-2;
- d) cross-cut test, determined in accordance with ISO 2409.

8.3 Substrate

The cut panels shall be flat. The thickness and other dimensions of the panels shall be as specified in the test method or as otherwise agreed.

8.4 Preparation by solvent cleaning

Clean the coated panels with a suitable solvent on the day of use.

9 Plastics panels

9.1 Properties

The surface properties, thickness and other dimensions of the panels shall be as specified in the individual test method or as otherwise agreed.

9.2 Preparation by solvent cleaning

The solvent used for cleaning shall be compatible with the plastics material. The drying time after cleaning depends on the substrate, the solvent and the coating method.

9.3 Preparation by detergent cleaning

Wash the panels thoroughly in a warm, aqueous solution of a non-ionic detergent.

Take care to remove the humidity caused by cleaning and the wetting agent before coating. The panels should then be stored at 40 °C for at least 16 h.

9.4 Pre-treatment by flaming

Non-polar plastics, e.g. PP/EPDM (polypropylene/ethylene propylene diene monomer), and some types of PA 6 (polyamide from caprolactam) substrates shall be activated, for example by flaming or plasma treating. Before this, the procedures specified in [9.2](#) and [9.3](#) shall be performed.

10 Glass-fibre reinforced plastic composite panels (GRP)

10.1 Properties

Glass-fibre reinforced plastic composite panels intended for general testing shall conform to the requirements of ISO 1268-1, and either ISO 1268-2, ISO 1268-3, ISO 1268-4, ISO 1268-5, ISO 1268-6, ISO 1268-7, ISO 1268-8, ISO 1268-9, ISO 1268-10 or ISO 1268-11, depending on the type of GRP.

10.2 Preparation by solvent cleaning

Clean the panels with a suitable solvent on the day of use.

10.3 Preparation by detergent cleaning

Wash the panels thoroughly in a warm, aqueous solution of a non-ionic detergent.

Take care to remove the humidity caused by cleaning and the wetting agent before coating. The panels should then be stored at 40 °C for at least 16 h.

11 Carbon-fibre reinforced plastic composite panels (CFRP)

11.1 Properties

Carbon-fibre reinforced plastic composite panels intended for general testing shall conform to the requirements of EN 16245-1.

11.2 Preparation by solvent cleaning

Clean the panels with a suitable solvent on the day of use.

11.3 Preparation by detergent cleaning

Wash the panels thoroughly in a warm, aqueous solution of a non-ionic detergent.

Take care to remove the humidity caused by cleaning and the wetting agent before coating. The panels should then be stored at 40 °C for at least 16 h.

12 Glass panels

12.1 Properties

The thickness and other dimensions of the glass panel shall be as specified in the test method or as otherwise agreed.

12.2 Preparation by solvent cleaning

Clean the panels on the day of use by the procedure specified in [4.3](#) for steel panels.

12.3 Preparation by detergent cleaning

Wash the panels thoroughly in a warm, aqueous solution of a non-ionic detergent.

Dry the cleaned panels by allowing the rinse water to evaporate from the surface. If necessary, warm the panels slightly to remove remaining traces of moisture.

13 Hardboard

13.1 Properties

Fibre building boards shall be sheet materials in accordance with the requirements of EN 622-1 and either EN 622-2, EN 622-3, EN 622-4 or EN 622-5 depending on the type of material, with primary bonding derived from the felting of the fibres and their inherent adhesive properties. The strength of these boards can be enhanced by using bonding materials, e.g. adhesives or additives.

13.2 Preparation

Cut the sheet to produce test panels of the required size. Using a dry cloth, wipe both sides and all edges of each panel until free from dust. Store the panels at (23 ± 2) °C and at (50 ± 5) % relative humidity, with free access to air, for a period of not less than three weeks. The moisture content of the hardboard panels shall be (6 ± 2) % (mass fraction). Use the smooth surface for testing the paint or related product. Wipe all panels free from dust immediately prior to use.

14 Gypsum plasterboards panels and gypsum boards with fibrous reinforcement panels

14.1 Properties

Gypsum plasterboard and gypsum boards with fibrous reinforcement panels shall be building boards composed of a core of set gypsum plaster in accordance with the requirements of EN 15283-2 for gypsum fibre boards and EN 520 for gypsum plasterboards. The core may be solid or cellular gypsum and may contain a small proportion of fibre. The thickness of the board is approximately 10 mm. One paper face of the board is designed to be directly decorated, without the initial application of a plaster coat or coats. This face shall be used for testing the paint or related product. When stored in direct sunlight, the paper facing can have a tendency to discolour or “bleed” when coated with certain types of paint.

14.2 Preparation

Cut the panels under dry conditions to produce test panels of the required size. Seal the edges of each test panel with a suitable adhesive tape. Wipe the panels free from dust with a dry cloth. Store the panels at $(23 \pm 2) ^\circ\text{C}$ and $(50 \pm 5) \%$ relative humidity, with free access to air, for a period of not less than three weeks. The panels should not be exposed to direct sunlight during storage. Wipe all panels free from dust immediately prior to use.

15 Fibre-reinforced cement panels

The material and preparation of fibre-reinforced cement panels shall conform to the requirements of ISO 8336.

16 Concrete

The material and preparation of concrete shall conform to the requirements of EN 1766.

Annex A (informative)

General guidelines on preparation of steel panels by blast-cleaning

Preparation of steel panels by blast-cleaning is not intended for cold-rolled steel sheet, but can be required for hot-rolled steel to remove rust, mill scale, etc. For such purposes, the following general guidelines are given. For additional information, see ISO 8504-2.

The selection of abrasive size and type should be based on the hardness and surface condition of the steel to be cleaned, the type of blast-cleaning to be employed and the surface profile to be produced. For general testing purposes, the abrasive used should be angular or sub-angular and of a material harder than the steel to be cleaned. Suitable abrasives include steel grit, aluminium oxide, garnet, and copper or coal slag. The particle size of the abrasive used may conveniently be between 0,5 mm and 1,2 mm. Other abrasives and sizes may be specified for particular tests. Requirements for blast-cleaning abrasives are given in the ISO 11124 series for metallic blast-cleaning abrasives and in the ISO 11126 series for non-metallic blast-cleaning abrasives.

Before blast-cleaning, it is recommended to remove any visible deposits of oil or grease by solvent cleaning, aqueous cleaning or any other suitable method. These deposits, if not removed, will contaminate the abrasive, resulting in contamination of subsequently blast-cleaned panels. Any other surface imperfections, such as sharp edges or burrs, should also be removed.

Clean, dry compressed air should be used for nozzle blasting. Any of the methods of blast-cleaning described in ISO 8504-2:2019, Clause 5, can be used to achieve a blast-cleaned surface. Compressed-air abrasive blast-cleaning and centrifugal abrasive blast-cleaning are effective for this purpose.

It should be noted that, when steel is cleaned with a wet abrasive, it can rust rapidly. It can be necessary to add rust inhibitors to the water to temporarily prevent rust formation. Some inhibitors can interfere with the performance of certain coating systems.

Blast-cleaning should be continued until the surface shows a blast-cleaned pattern which is completely free from any visible contamination or discoloration, and which corresponds to preparation grade Sa 3 as defined in ISO 8501-1. Panels prepared as described in this annex should have a surface roughness R_z (maximum height of profile) of not greater than 30 % of the recommended dry film thickness of the coating to be applied. After dry abrasive blast-cleaning, it is recommended to remove any dust and loose residues from the surface by vacuum, by brushing or by blowing off with a stream of compressed air which is clean and dry. After wet abrasive blast-cleaning, the surface should be rinsed with fresh water to remove loosely adhering residue. The surface should be dried using compressed or heated air prior to application of paint. Unless otherwise agreed, the panels should be painted as soon as possible after blast-cleaning.

Blast-cleaned panels are susceptible to rusting if they are not coated immediately after cleaning. To minimize the risk of rust formation, it is not recommended to blast-clean panels unless the temperature of the panel is at least 3 °C higher than the dew point of the surrounding air.