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ISO 18886:2016

Australian STANDARD®

STANDARDS Australia

Refractories and refractory materials — Physical test methods

Part 4.6: Refractory test-piece preparation — Gunning refractory panels by wet gunning techniques (ISO 18886:2016, IDT)



AS 1774.4.6:2026

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- Australasian Institute of Mining & Metallurgy
- Australian Ceramic Society
- Australian Foundry Institute
- Australian Industry Group
- Bureau of Steel Manufacturers of Australia
- Cement Industry Federation
- Institute of Refractories Engineers
- Materials Australia
- Minerals Council of Australia
- University of New South Wales

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This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

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Requirements

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

Recommendations, permissions and possibilities

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

Structure of Standards

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply.

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

Preface

This Standard was prepared by the Standards Australia Committee MN-007, Refractories and Refractory Materials.

The objective of this document is to specify the procedures for the preparation of test pieces from refractory materials by wet gunning at ambient temperatures. The test pieces are for the determination of properties on wet-gunned products prepared under either "standard conditions" (as required for quality assurance or product development) or "site conditions". In the case of "site conditions", the purpose of the testing is to establish the properties pertaining to a given installation or a given set of installation conditions.

This procedure applies to refractory materials that can be transported through a gunning hose after having been mixed with the total water requirement for material placement.

Refractory materials that are pneumatically conveyed in the "dry" state through a gunning hose, even after mixing with a portion of the total water requirement (the bulk of the water being added at the nozzle) are dealt with in AS 1774.4.5.

This document does not apply to the gunning of plastic refractory materials (refer to ISO 1927-1).

This document is identical to, and has been reproduced from, ISO 18886:2016, *Refractory test-piece preparation — Gunning refractory panels by wet gunning techniques.*

As this document has been reproduced from an international document, the following apply:

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The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 33, *Refractories*.

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Australian Standard®

Refractories and refractory materials — Physical test methods

Part 4.6: Refractory test-piece preparation — Gunning refractory panels by wet gunning techniques (ISO 18886:2016, IDT)

1 Scope

This International Standard specifies the procedures for the preparation of test pieces from refractory materials by wet gunning at ambient temperatures. The test pieces are for the determination of properties on wet-gunned products prepared under either “standard conditions” (as required for quality assurance or product development) or “site conditions”. In the case of “site conditions”, the purpose of the testing is to establish the properties pertaining to a given installation or a given set of installation conditions. In this case, the gunned panel is obtained during the on-site installation. Such parameters as activator addition (type, amount, method of addition), conveying pressure and curing conditions (temperature, orientation of the panel) applying during the preparation of the panel are as near as possible to the same parameters pertaining to the site installation.

This procedure applies to refractory materials that can be transported through a gunning hose after having been mixed with the total water requirement for material placement. The consistency of these materials (see 7.5) is typically such that they would be suitable for placement by casting were they not to be transported through the gunning hose and applied by spraying.

Refractory materials that are pneumatically conveyed in the “dry” state through a gunning hose, even after mixing with a portion of the total water requirement (the bulk of the water being added at the nozzle) are dealt with in ISO 20182.

This International Standard does not apply to the gunning of plastic refractory materials (refer to ISO 1927-1).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 836, *Terminology for refractories*

ISO 1927-4, *Monolithic (unshaped) refractory products — Part 4: Determination of consistency of castables*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 836 and the following apply.

3.1
activator
chemical solution added to the refractory at, or prior to, the gunning nozzle which causes the refractory to set, stiffen or coagulate

Note 1 to entry: This International Standard may involve the use of hazardous materials, operations and equipment. It does not attempt to address the safety problems associated with its use. It is the responsibility of the user of this International Standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.

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