
Refractories and refractory materials—Physical test methods

Method 33: Determination of the setting time of castables

1 SCOPE

This Standard sets out a method for determining the initial and final set times of hydraulically bonded refractory castable.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

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| 1774 | Refractories and refractory materials—Physical test methods |
| 1774.4.1 | Method 4.1: Preparation of test pieces—By casting |
| 2243 | Safety in laboratories (series) |
| 2780 | Refractories and refractory materials—Glossary of terms |
| 2701 | Methods of sampling and testing mortar for masonry construction |
| 4433 | Guide to the sampling of particulate materials |
| 4433.2 | Part 2: Preparation of samples |

3 DEFINITIONS

For the purpose of this Standard, the definitions given in AS 2780 and those below apply.

3.1 Heat of hydration

The heat evolved when a cement hydrates with water.

3.2 Exothermic maximum

The maximum temperature reached during hydration.

3.3 Initial set time

The time interval measured from the time at which water is added to the castable, to the time at which the castable is no longer workable, as indicated by the flow having decayed to half of the initial flow value.

3.4 Final set time

The time interval measured from the time at which water is added to the castable, to the time at which the cement hydration is complete, as indicated by the exothermic maximum.

4 PRINCIPLE

A specimen is prepared using a prescribed procedure. Initial set time is determined by flow measurements and the final set time is determined from heat of hydration data.