Australian Standard™

Refractories and refractory materials—Physical test methods

Method 31.2: Modulus of elasticity—Compression method

This Standard incorporates Amendment No. 1 (November 2001) and Amendment No. 2 (May 2002). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

1 SCOPE

This Standard sets out a method for determining the modulus of elasticity in compression, at a given temperature, for all formed refractories.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS	
1774	Refractories and refractory materials—Physical test methods
1774.30	Method 30: Drying and firing schedules
2243	Safety in laboratories (series)
2780	Refractories and refractory materials—Glossary of terms

3 DEFINITIONS

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

3.1 Modulus of elasticity

The stress divided by the corresponding strain with no permanent deformation.

3.2 Stress

The force per unit area tending to produce a deformation.

3.3 Strain

The ratio of the deformation to the total value of the dimension in which the deformation occurred.

4 PRINCIPLE

A test specimen is brought to the desired test temperature, then the specimen is deformed at a constant rate to failure. The modulus of elasticity in compression is then determined from the stress/strain relationship.