



# SULFATE RESISTING CEMENT

## PRODUCT DESCRIPTION

Sulfate Resisting Cement is a special purpose cement which conforms to the requirements of AS 3972 'Type SR cement'.

It is manufactured for Adelaide Brighton Cement Limited by Northern Cement Limited for use in the construction and building industry and in domestic applications.

## SUPPLY

Sulfate Resisting Cement is available in bulk, bulk bags and in 20 kg multi walled paper bags from the Birkenhead Works and Customer Service Centres in regional areas. Paper bags are palletised and stretch wrapped.

## SPECIFICATION

Sulfate Resisting Cement conforms with the requirements of AS 3972 for Type SR and Type GB cements. All products are manufactured under a third party certified manufacturing and supply quality assurance system to ISO 9001 (BSI Certification No FS 604665).

Sulfate Resisting Cement is produced from Portland Cement Clinker, Granulated Blast Furnace Slag, and gypsum.

## APPLICATIONS

Sulfate Resisting Cement is used in concretes and mortars where the possibility of attack by sulfate bearing waters and soils is high.

Typical examples for use are where underground waters are present; in marine conditions, sewage treatment works or where sulfates are in the soil (wherever salts occur naturally within the soil or as contamination from industrial wastes).

The sulfate attack of concrete is simplistically explained as a result of the reaction between free and mobile sulfates and cementitious alumina bearing compounds in the concrete (from the cement), to form a complex and expansive crystalline mineral. The mineral product of this reaction is characterised by crystal growth of greater volume than the original hydrated cement matrix. This expansive crystalline growth ultimately leads to internal stresses in the concrete structure and general weakening of the concrete.

Sulfate Resisting Cement has a low content of alumina bearing compounds. This minimises the material liable to sulfate attack and reduces the possibility of expansive products forming.

For Sulfate Resisting Cement, when used in concrete where sulfates will be present either within the soil or in sulfate bearing waters, minimum cement contents and maximum water cement ratios should be as recommended in the CCAA Technical Note 68 "Sulfate Resisting Concrete" and AS 3600.

## TYPICAL PROPERTIES

### Typical Physical Properties

Test	Typical Values	AS 3972 Requirement
Fineness Index (m <sup>2</sup> /kg) AS 2350.8		
	330 - 410	
Setting Time (hr:min) AS 2350.4		
Initial	2:40	min 00:45
Final	4:20	max 10:00
Soundness (mm) AS 2350.5		
	1	max 5
Compressive Strengths ISO-CEN mortar bars (MPa) AS 2350.11		
3 Days	14	-
7 Days	26	20
28 Days	51	35
Mortar Expansion due to Sulfate Exposure (microstrain) AS 2350.14		
16 Weeks	220	750*

### Note:

\* When testing the sulfate resistance of cement mortar the difference in sulfate expansion between tests in the same laboratory, under conditions of repeatability can be up to 150 microstrain. To satisfy the requirements of sulfate resistance no single test may exceed 750 microstrain after 16 weeks.

### Typical Chemical Properties

Test	Units	Max AS 3972	Typical Values
Sulphur Trioxide	%	3.5	2.6
Loss on Ignition	%	-	1.0
Chloride	%	0.1	0.01
Equivalent Alkalies	%	-	0.4
Hexavalent Chrome	mg/kg	-	Trace
Crystalline Silica	%	-	Trace
Components:			
Portland Clinker	%	-	30 – 50%
Granulated Blast furnace Slag	%	-	50 – 70%
Gypsum	%	-	2 – 5%

## HANDLING AND STORAGE

Transportation may be in bulk road or in paper bags. Sulfate Resisting Cement can be stored in concrete or steel silos for three months provided that protection against moisture ingress is observed during the storage interval.

## SAFETY INFORMATION

For safety information refer to the Safety Data Sheet for Sulfate Resisting Cement.



# SULFATE RESISTING CEMENT

## CONTACT POINTS

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