



SULFATE RESISTING CEMENT

PRODUCT DESCRIPTION

Adelaide Brighton Cement produces Sulfate Resisting Cement Type SR, conforming to Australian Standard AS 3972.

Sulfate Resisting is special purpose cement which complies with the requirements of Type SR, Type SL and Type GP. This product is manufactured at our Angaston Works in South Australia 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 Angaston Works and Customer Service Centres in regional areas. Paper bags are palletised and stretch wrapped.

SPECIFICATION

Sulfate Resisting Cement exceeds the minimum specification given in AS 3972 for Type SR, Type SL and Type GP. All products are manufactured under a third party certified manufacturing and supply quality assurance system to AS/NZS ISO 9001 (NCS Certification No 6041).

Sulfate Resisting Cement complies with the low alkali requirement specified by ASTM C150.

Sulfate Resisting Cement is produced from Portland Cement Clinker 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 mechanism of failure for Portland Cement through sulfate attack is the reaction between dissolved sulfates in the water and the alumina bearing compounds in the cement. The product of this reaction is a crystal growth of greater volume than the original compound. This growth will lead to internal stresses in the 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 with the soil or in sulfate bearing waters, minimum cement contents and maximum water cement ratios should be as recommended in the Cement & Concrete Associations TN:57 "Durable Concrete Structures" and AS 3600.

TYPICAL PROPERTIES

Physical Properties

Test	Typical Values	AS 3972 Requirement
Fineness Index (m ² /kg) AS 2350.8		
	330 - 400	
Setting Time (hr:min) AS 2350.4		
Initial	3:00	min 00:45
Final	5:15	max 10:00
Soundness (mm) AS 2350.5		
	<2	max 5
Compressive Strengths ISO-CEN mortar bars (MPa) AS 2350.11		
3 Days	32	-
7 Days	43	20
28 Days	60	35
Mortar Expansion due to Sulfate Exposure (microstrain) AS 2350.14		
16 Weeks	326	750*
Mortar Shrinkage (microstrain) AS 2350.13		
28 Days	650	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.

Chemical Properties

Test	Units	Typical Values
Sulphur Trioxide	%	2.6
Loss on Ignition	%	1.2
Chloride	%	0.003
Equivalent Alkalies	%	0.3
Hexavalent Chrome	mg/kg	<10
Crystalline Silica	%	0.5
Components:		
Portland Clinker	%	97
Gypsum	%	3 - 8

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 up to one (1) year or in paper bags for six (6) months. Protection against ingress of moisture must be observed throughout the handling and storage.

SAFETY INFORMATION

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



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Typical Concrete Properties

Test	Units	Typical Properties	
Cement Content	kg/m ³	300	400
W/C ratio		0.64	0.48
Slump	mm	80	80
Compressive Strength			
1 Day	MPa	7.0	13.5
7 Days	MPa	23.5	35.5
28 Days	MPa	31.0	46.0

CONTACT POINTS

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