Independent Cement

PRODUCT DATA SHEET

SHRINKAGE LIMITED CEMENT

Product Description

Independent Cement's Shrinkage Limited Cement, Type SL, conforms to Australian Standard AS 3972.

Shrinkage limited cement can be used where reduced Drying Shrinkage is required, and is a popular binder in industrial and commercial concrete Design.

SL Cement is manufactured under a third party certified manufacturing and supply quality assurance system to AS/NZS ISO 9001.

Applications

Shrinkage Limited Cement is ideal for use in structural concrete, mortars, renders, grouts and cement based products.

Typical Properties

The following tables provide some typical chemical and physical properties of the SL Cement supplied by Independent Cement.

Chemical Properties		
Test	Units	Shrinkage Limited Cement
Sulphur Trioxide	%	2.6
Loss on Ignition	%	2.7 – 3.6
Chloride	%	0.010
Equivalent Alkalies	%	0.5
Hexavalent Chromium	mg/kg	< 10
Crystalline Silica	%	< 1
Components		
Portland Clinker	%	85 – 94
Gypsum	%	5 - 7
Mineral Addition	%	up to 7.5

Physical Properties		
Test	Shrinkage Limited Cement	AS 3972 Requirement
Fineness Index (m^2/kg) AS 2350.8	370 - 430	
Setting Time (hr:min) AS 2350.4		
Initial	1:30	Min 0:45
Final	3:00	Max 6:00
Soundness (mm) AS 2350.5	<1	max 5
Compressive Strength ISO-CEN mortar bars (MPa) AS 2350.11		
3 Day	36	-
7 Day	48	35
28 Day	60	45
Mortar Shrinkage (Micro strain (με))	600	<750

Shrinkage Limited Cement is compatible with:

- Admixtures that comply with AS 1478
- Fly ashes complying with AS 3582.1
- Ground granulated blast furnace slags complying with AS3582.2
- Amorphous Silica complying with AS3582.3

Handling and Storage

Transportation can be in bulk tankers or in Bulker bags. General Purpose Cement may be stored in concrete or steel silos for up to one (1) year. Protection against ingress of moisture must be observed throughout the handling and storage. It is recommended that the cement be retested if the age of cement exceeds three months.

This product contains trace quantities of Hexavalent Chromium. For more information please refer to the Material Safety Data sheet, found at

www.independentcement.com.au

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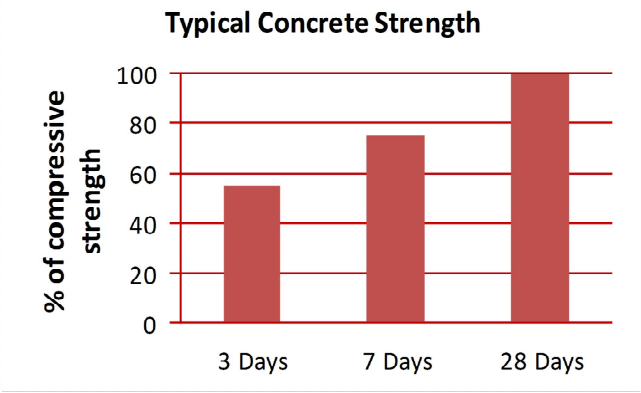
Concrete Properties

Strength development. The strength development of GP Cement is primarily dependent on the water-cement ratio. Graph One gives indicative data on the strength development of concrete produced using GP Cement.

Effect of excess water. Use only the minimum amount of water to mix and place concrete. Graph to the right shows the reduction in compressive strength of concrete with the addition of water.



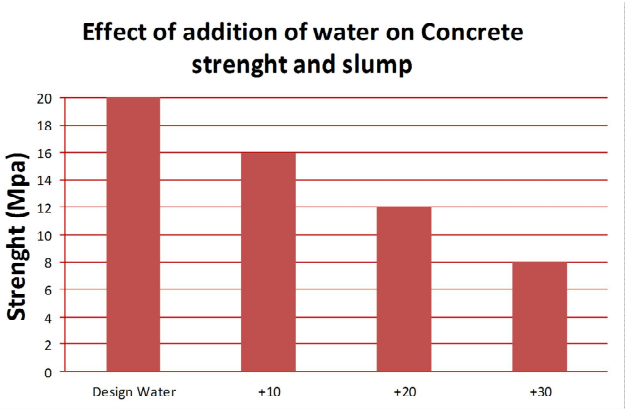
The porosity of concrete made with excess water is also increased resulting in a structure with less resistance to chemical attack.

Other factors, which affect the strength and durability of concrete containing GP Cement, are:

- Concrete mix design (including admixtures)
- Temperature (ambient and materials)
- Entrained air content
- Compaction of concrete
- Curing

Concrete Mix Design

The cement content for each grade of concrete will be dependent on the nominated target strengths. AS 3600 Concrete Structures, recommends minimum strengths to achieve adequate concrete durability for various exposure conditions.



AS 1379 The Specification and Manufacture of Concrete is the relevant standard for the production and ordering of concrete.

For site mixed concrete the following mix proportions are suggested.

Mixing: AS 1379 outlines requirements for material quality and mixing procedures for pre-mix concrete. Any Deleterious matter including salts and organic matter may adversely affect the strength, durability, set time and appearance of the concrete. Sand contaminated by the above will also have a similar effect.

Placing: AS 3600 outlines requirements for handling, placing and finishing concrete. Minimum cover to reinforcement is 20 mm for lowest exposure classification. The cover will need to be increased where concrete is cast against the ground, for fire resistance and for exposure classification other than A1.

Curing: A minimum curing period of seven days is recommended for all exposure classifications. Concrete should be maintained in a moist condition where practicable. Water sprays, wet sand or moisture retaining techniques, such as polyethylene sheets or curing compounds, have been used successfully. Curing should begin as soon as the selected technique allows.

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