

Cement Australia Builders Cement is a Fly Ash blended Portland cement that fully complies with the requirements of Australian Standard AS3972 - General purpose and blended cements for Type GB (General Purpose Blended) cement.

BUILDERS CEMENT PROPERTIES

Property		AS3972 – 1997 Type GP	Typical GP
Setting Time	Min	45 min	100-150 min
	Max	10 hrs	3.0-4.0 hrs
Soundness	Max	5mm	< 3mm
SO ₃	Max	3.50%	< 2.5%
ISO Mortar Compressive Strength	3 Day (min)	–	21-32 MPa
	7 Day (min)	15 MPa	30-41 MPa
	28 Day (min)	30 MPa	46-58 MPa

All testing is conducted in accordance with the relevant Australian Standards test methods, at a NATA registered laboratory. Results are reflective of the testing results across all Cement Australia's manufacturing plants.

Builders Cement is primarily a Type GB cement but also meets the requirements of AS3972 for classification as both Shrinkage Limited (Type SL) and a Sulfate Resisting (Type SR) cements. Use of this product does not guarantee sulfate resistant or low shrinkage concrete as there are other factors which may influence concrete performance including cementitious content, water to cement ratio, compaction and curing as well as aggregate type. Further advice should be sought on the use of this product where high performance requirements exist.

APPLICATIONS

Builders Cement can be used as a cementitious binder in a broad range of applications including:

- Concrete
- Mortars
- Renders
- Grouts
- Stabilisation

Where specific properties such as rapid setting or high early strength are required a more specialised cement should be considered.

AVAILABILITY

Builders Cement is available in 20kg bags, 500kg and 1 tonne bulk bags.

For more information
call **1300 CEMENT (1300 236 368)**
or visit www.cementaustralia.com.au

Mix it with the best.

COMPATIBILITIES

Builders Cement is compatible with:

- Admixtures that comply with **AS 1478 Chemical Admixtures for Concrete.**
- Fly Ashes complying with **AS 3582.1 Supplementary Cementitious Materials for Use with Portland cement: Fly Ash.**
- Ground granulated blast furnace slags complying with **AS3582.2 – Supplementary cementitious materials for use with Portland cement: Slag – ground granulated Iron blast-furnace.**
- Other cements complying with **AS3972 – General purpose and blended cements.**

Caution: Builders Cement must not be mixed with high alumina cement as this may result in uncontrollable expansion and short setting times.

CONCRETE PROPERTIES

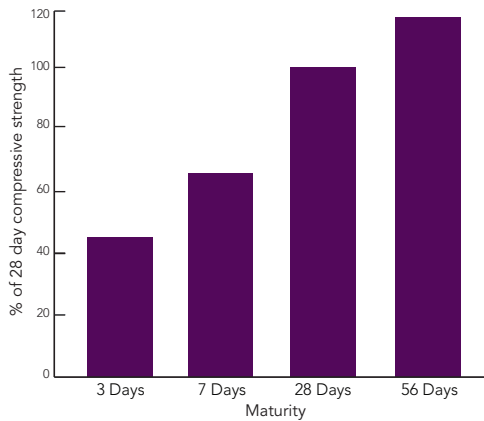
Compressive Strength Development:

Strength development in Portland cement concrete is affected by a number of factors such as the physical and chemical properties of the cement, water to cement ratio, admixtures, curing and environmental conditions.

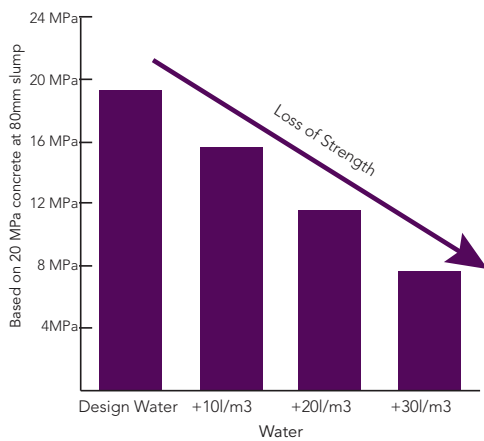


The following graph depicts the indicative compressive strength development of Builders Cement concrete over time.

COMPRESSIVE STRENGTH DEVELOPMENT



EFFECT OF EXCESS WATER ADDITION ON CONCRETE COMPRESSIVE STRENGTH



Mix Design

The proportioning of constituent materials in a concrete mix is a complicated matter which can be influenced by many factors. We recommend that trials be conducted with the available materials.

Workability/Setting Times

Concrete produced with a Type GB cement may require less water to achieve a specified level of workability when compared to concrete produced with a Type GP cement. Setting times may also be extended when using Type GB cement.

NOTE:

The Builders Cement Material Safety Data Sheet (MSDS) is available at www.cementaustralia.com.au

PRODUCT DISCLAIMER

Recommendations regarding the use of this product are to be taken as a guide only. If in doubt contact Cement Australia Pty Limited ("Cement Australia") or seek professional advice. To the extent permitted by law, Cement Australia excludes all implied warranties, conditions and guarantees imposed by legislation. Cement Australia excludes all liability for loss, damage or injury arising from use of the product (i) otherwise than in accordance with the recommendations or (ii) for purposes other than those for which it is ordinarily acquired. For all other loss, damage or injury arising from the use of this product, to the extent permitted by law Cement Australia's liability is limited, at its discretion, to refunding the cost of the product or resupplying the product or equivalent product.

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Curing

A minimum curing period of seven days is recommended for all exposure classifications. Concrete should be maintained in a continually moist condition wherever practicable. Water sprays, wet sand or moisture retaining techniques, such as clear polyethylene sheets or curing compounds are recommended.

Curing should begin as soon as the concrete has been finished or in accordance with manufacturers instructions where proprietary curing compounds are used.

In concrete, the practice of curing can deliver compressive strength results up to 100% greater than concrete not subjected to curing. Water application or moisture retaining curing is more effective for most concrete. Curing will also beneficially affect other concrete properties including:

- Reduction in the potential for plastic cracking
- Improvements in surface quality, durability and impermeability
- Improvement in abrasion resistance
- Reduction in the carbonation rate

Mortar/Render Mix Properties

Builders Cement is suitable for use in brick mortars, wall renders and concretes. The following table gives a guide to the proportions (by volume) to be used (Note: This information is a guide only, specific advice for your project should be obtained for the materials you are using.)

Additives such as air entrainers, thickening agents or plasticisers can be used but should always be used in accordance with the manufacturers recommendations.

Application	Cement	Sand	Aggregate	20kg bags per m ³
Concrete – Improved Water Tightness High Strength	1	1.5	3	17
Concrete – Paths and Driveways	1	2	3	16
Concrete – Foundations, Footings	1	3	3	13
Mortar (general purpose)	1	4	-	15
Mortar (enhanced workability)	1	6 + 1 hydrated lime	-	8
Render	1	3	-	20

STORAGE, HANDLING & SAFETY

- The 'shelf life' of Portland cement products is dependent on the storage conditions. It is necessary for bagged Portland cement to be stored in dry conditions and protected from rain, dew or any other moisture source. Bagged cement that has hardened or is lumpy as a result of exposure to moisture should not be used.
- Portland cement products are highly alkaline materials and are significantly affected by exposure to water.

