

Australian Builders

Low Carbon General Blend Cement

Australian Builders Low Carbon GB cement is produced by blending general purpose cement and ground granulated blast furnace slag. The product conforms to Australian standard AS3972 "Portland and Blended Cement."

APPLICATIONS

Australian Builders Low Carbon GB can be used in several concrete and mortar jobs where high early age strength is not critical.

- Structural Concrete
- Brick Laying
- Concrete Masonry
- Mortars
- Paving
- Footings
- Renders
- Concrete Slab
- Grouts

PROPERTIES OF AUSTRALIAN BUILDERS LOW CAROBON GB CEMENT

The table to the right shows the typical properties of Australian Builders Low Carbon GB cement. The testing is conducted in accordance with the relevant Australian Standards test methods, at a NATA registered laboratory.

PROPERTY	Low Carbon GB Cement	AS3972
	Typical	Requirement
Setting Time		
Initial (hours)	2-3	45 mins (min)
Final (hours)	5-6	10 hours (max)
Soundness	0-1 mm	5.0mm (max)
Fineness Index (kg/m ³)	380-420	380-420
Compressive Strength (Mortar)		
3 day (MPa)	20-25	NR
7 day (MPa)	30-35	20 (MPa)
28 day (MPa)	50-60	35 (MPa)

COLOUR

Australian Builders Low Carbon GB cement is slightly lighter in colour than GP cement. Always use one type of cement for the projects where colour of mortar/concrete is critical.

MORTAR AND RENDER WITH AUSTRALIAN BUILDERS LOW CARBON GB CEMENT

Australian Builders Low Carbon GB cement can be used to produced mortar and render products for different applications. The addition of other ingredients in the mortar/render mix will also impact the properties of the final product.

MIX DESIGN

The following table gives guide to the proportions (by volume) to be used to produce mortar/render product. It is important to use sand with a low clay or silt content. Clean water should always be used in mortar/render mixes.

MIX PROPORTIONS (BY VOLUME FOR MORTAR/RENDER)

The table below shows the mix proportions that can be used to produced mortar/render mixes. Hydrated lime can be used to get better workability (Note: This information is a guide only, (specific advice should be searched for the special projects).

APPLICATION	MORTAR TYPE (AS 3700)	CEMENT	HYDRATED LIME	SAND
Brick and Block Mortar	M3	1	1	6
General use	NA	1	-	4
Plaster rough cast and stucco	NA	1	-	3
General render	NA	1	0.5	4

CONCRETE WITH AUSTRALIAN BUILDERS LOW CARBON GB CEMENT

Australian Builders Low Carbon GB cement can be used in most concrete applications. Other factors including admixtures, concrete mix designs, compaction methods, curing and environment conditions can also change the properties of concrete. However, special projects need to have concrete mixes which are accessed by a professional Engineer.

MIX PROPORTIONS (BY VOLUME) FOR CONCRETE

The following table gives guide to the proportions (by volume) to be used. Note: This information is a guide only, specific advice should be searched for the special concrete projects

APPLICATION	CEMENT	SAND	AGGREGATE
High strength grade	1	2	3
General usage- paths, driveway etc.	1	2.5	4
Concrete-Foundations, Footings	1	3	5

MIXING

Initially, all the aggregates and cement should be mixed properly. Then water should be added stepwise until desired workability is achieved. Additional water added into concrete can reduce the performance of concrete including strength reduction, increased porosity and durability issues.

CURING

Fresh concrete should be protected from rapid moisture loss. Concrete can be kept moist all the time by covering with plastic sheets and wet Hessian. Curing should start as soon as the concrete has been finished. First seven days of curing is very important for achieving the maximum performance of the end-product.

COMPRESSIVE STRENGTH DEVELOPMENT

Figure 1 shows the compressive strength development of Australian Builders Low Carbon GB based concrete compared to GP cement. Early age strength of GB based concrete is lower than that of GP based concrete. However, after 28 days, GB cement-based concrete has higher strength than that of GP based concrete. Strength development of GB based concrete is primarily dependent on the amount of water add into concrete mix.

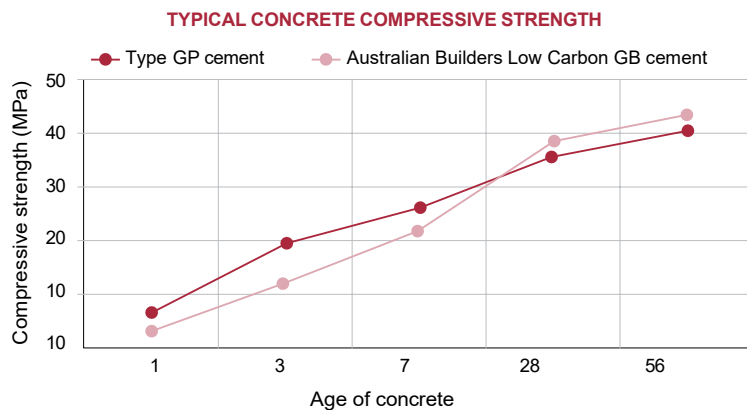


Figure 1: Compressive strength development of concrete. These concrete results are based on slump=80±10mm, cementitious content=300kg/m³ water to cement ratio ~ 0.6

Note: All the testing is conducted in accordance with the relevant Australian Standards test methods, at a NATA registered laboratory.

HANDLING AND STORAGE

Manual handling of bag products without due care and attention may result in personal injury. Unless you have been trained in manual handling methods. It is suggested that you share the load with another person.

Australian Builders Low Carbon GB cement can be stored up to six months provided it is stored in a place dry place which is protected from ingress of moisture.

SAFETY INFORMATION

For safety information refer to the safety data sheet (SDS) for Portland and blended cement. SDS is available in www.bpsaust.com

AVAILABILITY

Australian Builders Low Carbon GB cement is available in 20kg bags.

