

Pozzoment

Pozzoment is a general purpose blended cement complying with AS 3972, type GB. It is manufactured from specially selected portland cement clinker, gypsum and fly ash.

APPLICATIONS

Pozzoment is a versatile alternative for General Purpose portland cement and can replace it in most situations. Some mix design adjustments will be necessary. When early age strengths are required, mixes should be suitably modified to provide the required performance.

Pozzoment may be used in all applications where chemical attack is not a predicted risk. It may be used in concrete, mortar, render or grout in general and major construction projects.

PROPERTIES

The following table provides an example of some typical properties for Pozzoment manufactured in NSW:

Property	Pozzoment	AS 3972 Type GB
Setting Time	Typical	Requirement
Initial	1.5-2.5 hours	45 minutes min.
Final	2.5-4.5 hours	10 hours max.
Soundness:	1.0mm	5.0mm max.
Fineness index	370-430m ² /kg	Not specified
Comp. Strength:		
3 days	22-28 MPa	Not specified
7 days	29-37 MPa	20 MPa min.
28 days	45-55 MPa	35 MPa min.
Nominal fly ash content 25%		More than 5%

CEMENT FINENESS

The ability to intergrind clinker and fly ash in the ball mill allows Boral Cement to optimise performance characteristics of Pozzoment. Fineness index is varied to ensure that the performance of Pozzoment remains consistent. Generally the fineness of Pozzoment will not exceed 450m²/kg.

COMPATIBILITY

Pozzoment may be mixed or blended with other cements complying with AS 3972. It may also be mixed with appropriate quantities of any supplementary cementitious materials (SCMs) complying with AS 3582 (fly ash, slag or amorphous silica). However, it must be remembered that Pozzoment already contains about 25 per cent fly ash.

Reference to AS 1379 (Concrete) and AS 3600 (Structures) is required. Pozzoment is compatible with chemical admixtures complying with AS 1478. Blending of SCMs, other cements or materials will alter the characteristics of Pozzoment.

CONCRETE PROPERTIES

Efflorescence

Efflorescence is the unsightly white deposits of carbonated hydrated lime (calcium hydroxide) on the surface of the concrete. This occurs when hydrated lime, as a byproduct of any cement hydration, is brought with water to the surface of concrete or mortar.

Lesser quantities of free hydrated lime will be liberated by the hydration process of Pozzoment than in the hydration of a similar amount of portland cement. Additionally, calcium hydroxide (hydrated lime) is also consumed internally by fly ash as a result of the pozzolanic activity of fly ash.

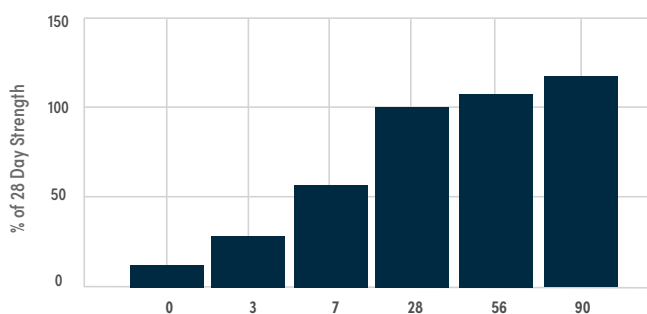
Properly compacted and cured concrete containing Pozzoment is therefore less likely to exhibit the problem of efflorescence.

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Compressive Strength Development

The following graph gives an indication of the rate of strength development of Pozzoment as a percentage of 28 day compressive strength.

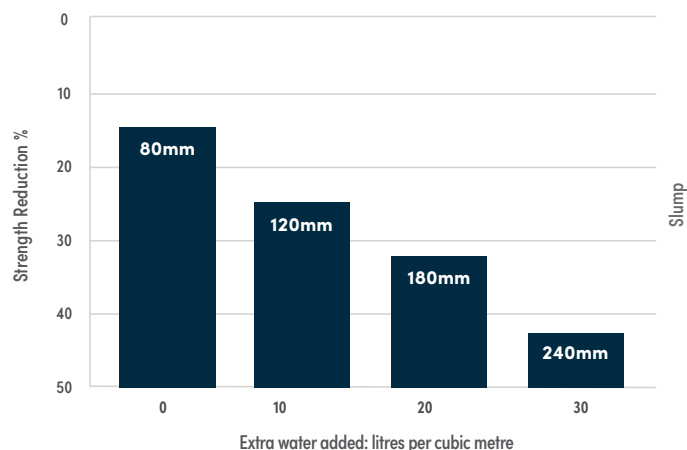
Rate of Strength Development of Pozzoment



Effect of excess water

Use only the minimum amount of water to mix and place the concrete.

Excess water will have a detrimental effect on the compressive strength and other properties of concrete. The following graph shows the reduction in compressive strength of concrete with increased water addition.



Other factors that affect the strength and durability of Pozzoment are:

- The mix design, including admixtures.
- Temperature (ambient and materials).
- Air content.
- Compaction of concrete.
- Curing of concrete.

MIX DESIGN

Dense, fully compacted concrete is essential to maximise both the strength and durability. Careful selection of mix components is essential and reference should be made to AS 1379 – The Specification and Manufacture of Concrete and AS 3600 – Concrete Structures when selecting the required strength and cement levels appropriate for the project.

Where concrete has a specific requirement for resistance to chloride and/or sulphate attack, Marine or Sulphate Resisting Cement should be used.

Additional technical advice can be obtained from the address on this Product Data Sheet.

MIXING

AS 1379 gives requirements for material quality and mixing of pre-mixed concrete. Presence of salts and organic matter in aggregates and mixing water may affect concrete performance and relevant requirements of AS 1379 must be observed.

PLACING

AS 3600 gives requirements for handling, placing and finishing concrete.

Exposure classification usually determines both the quality of concrete and the depth of cover to reinforcement. Appropriate selection of the exposure classification is therefore critical.

PLASTIC SHRINKAGE

Plastic shrinkage cracking can be avoided by protecting freshly placed concrete from excessive moisture losses from the surface. Application of evaporation retarding compounds (aliphatic alcohols) is recommended in dry and/or windy weather, irrespective of temperature conditions.

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CURING

A minimum curing period of seven days or longer, depending on the exposure classification, is required and should begin as soon as practicable. Wet or moist curing is recommended, but other techniques may be suitable, including curing compounds to AS 3799 or polyethylene sheeting.

Concrete will benefit from curing in terms of:

- Reduction in the potential for plastic shrinkage cracking.
- Improved surface quality with respect to abrasion resistance, permeability to air, water or aggressive solutions.
- Improved carbonation resistance.
- Increased compressive and flexural strength.

AVAILABILITY

Pozzoment is available in bulk only. Details on the price and availability of the product upon request by contacting the Sales Manager.

CLEAN UP AND STORAGE

The 'shelf life' of Pozzoment is influenced by the storage conditions, as contact with air and moisture will cause deterioration in cement performance. Cement storage silos must be kept in good repair, with no damp air or moisture ingress.

It is recommended that Pozzoment be retested if the age of cement exceeds three months.

SAFE HANDLING

This product may contain small amounts of Respirable Crystalline Silica and trace amounts of hexavalent chromium.

Avoid generating dust wherever possible. Use dust capture or otherwise use in well ventilated areas.

Use personal protection equipment against exposure and alkali burns.

The use of goggles, well-fitted P2 dust masks or better, barrier creams and rubber gloves is recommended. Wash product off unprotected skin immediately with water.

For further safety information consult the Safety Data Sheet for the product available at www.boral.com.au/cement

IMPORTANT NOTE

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