

A P P L I E D


concrete
SOLUTIONS

CONSTANT PERFORMANCE

ACS GROUT HF30

NEW AGE TECHNOLOGY GROUT

DESCRIPTION

ACS Grout HF30 is a high strength, shrinkage compensated, low viscosity cement based grout containing a blend of selected premium grade cements, graded fillers and special additives which facilitate controlled expansion in both the plastic and hardened states.

ACS Grout HF30 is designed to flow into voids and gaps with un-interrupted flow without being affected by rapid gelation of the grout properties.

ACS Grout HF30 is supplied as a ready to use powder which when mixed with water, produces a free flowing and pumpable, self consolidating precision grout. It has been specially designed to minimise bleed and segregation over a large range of applications.

ACS Grout HF30 is ideally suited for use where large voids require in-filling such as behind bulkheads, seals, and stopping's or where broken strata requires consolidation.

RECOMMENDED USES

- Filling voids behind bulkheads, seals or stoppings
- Consolidating broken strata in excavated workings
- Foundations for pit and pipe installations
- Machine base plates
- Bridge bearing pads
- Piers and jetties
- Securing boat moorings
- Anchor bolts
- Crane rail sole plates
- Stanchion plates

ADVANTAGES

- Excellent flow retention
- Self compacting
- Cohesive - Can be poured or tremied
- Dual system compensates for shrinkage in both the plastic and hardened states
- High 28 day strengths and low permeability ensure durability of the hardened grout
- Excellent resistance to impact, vibration and thermal variations

- Chloride free, non-corrosive to steel or iron
- Pre-packed to ensure batching and blending consistency and on-site convenience
- Ideal for pumping, injecting and pouring over a number of applications and environmental conditions
- Exclusive formulation makes ACS Grout HF30 ideal for use in areas exposed to water, including marine and salt water environments

PACKAGING

ACS Grout HF30 is available in 20kg bags or 1 tonne bulk bags.

STORAGE

If kept dry and stored in its original condition, ACS Grout HF30 will keep for up to 6 months. The shelf life of the product may be reduced if subjected to high temperatures and high humidity.

STANDARDS COMPLIANCE

ACS Grout HF30 conforms to ASTM C 1107-02 (Type C) Standard Specification for Packaged Dry, Hydraulic Cement Grout (non-shrink) and AS1478.2 - 2005 Methods of Sampling and Testing Admixtures for concrete, mortar and grout.

APPLICATION GUIDELINES

Surface Preparation

All substrates should be sound, clean and free from dust, oil, or any other surface contaminants such as curing compounds and release agents. All bolt holes and fixing pockets must be cleaned out by flushing with clean water.

To maximise adhesion, we recommend that surfaces be mechanically abraded or roughened.

After preparation is complete, saturate the surface with clean water for a minimum of four hours prior to grouting. Care should be taken to remove all surplus water prior to grouting.

Formwork

As ACS Grout HF30 is a free flowing grout, it is important to construct the formwork to be leakproof. Formwork should also be built so that a grout head above the level of the underside of the base plate is maintained. This will enable gravity flow to completely fill the void to be grouted.

To allow easy removal of the forms, coat the formwork with oil and ensure adequate air holes are installed to facilitate removal of bleed water.

MIXING

ACS Grout HF30 should be mixed using a high speed drill and spiral mixer, mechanical grout mixer, or a suitable high shear drum mixer. As ACS Grout HF30 is formulated to offer extended setting age. Caution needs to be observed to ensure grout does not harden in pumps or mixers.

Because continuous grout flow is essential, ensure that the mixing method and labour is sufficient to enable continuity of the operation.

- 1 Add the correctly measured water content into the mixing vessel, to achieve the selected consistencies. The amount of clean water to be added per 20kg bag should be:

Consistency	Litres of Water
Plastic	3.6 - 3.7 litres / 20kg bag
Flowable	3.8 - 3.9 litres / 20kg bag
Fluid	3.9 - 4.2* litres / 20kg bag

*Segregation could occur at this water level

- 2 Slowly add the total contents of the ACS Grout HF30 bag and mix continuously for three to five minutes until a smooth and even consistency is obtained. Allow to stand so any entrapped air can escape.

Placement

The mixed grout should be placed within 120 minutes to gain the full benefit of the expansion. Although ACS Grout HF30 can be placed in large volumes and thicknesses we recommend that a minimum of 10mm be observed. It is essential to maintain continuous flow of the grout.

Pour the mixed grout from only one side of the void, to eliminate the entrapment of air. The pouring side should be raised by means of a hopper or grout box to maintain a minimum 150mm head of grout at all times.

For larger applications ACS Grout HF30 can be placed by means of pumping.

TEMPERATURE AND WORKING LIMITATIONS

For maximum performance it is important to maintain the grout, base concrete and steel substrates within a temperature range of 18 - 25°C prior to, during and for 48 hours following placement of the grout.

Grouting should not take place if the temperature is 5°C or lower. Warm water can be used to accelerate strength development during colder weather.

When temperatures exceed 30°C, grouting should be sheltered from the heat or conducted early morning. Keep materials cool and use cold water in the mix.

Do not submerge grout for 2 hours post setting.

CURING

It is necessary to cure all exposed surfaces. The use of a concrete curing membrane, wet hessian or continuous water spray is recommended.

CLEANING

All tools should be rinsed with water immediately after use to remove all traces of ACS Grout HF30 .

TECHNICAL PROPERTIES

Form	Grey Powder
Fresh wet density	Approximately 2088kg/ m ³ (depending on consistency)
Potlife at 23°C ± 2°C	30 minutes

Yield

(Qty of 20kg bags required for 1m³ of mixed grout)

Flowable	91
Fluid	90

Flow Characteristics

AS1478.2 - 2005 Appendix C and D

ASTMC230 / C230M (Results obtained at 23 ± 2°C)

Consistency	Test Method	Range
Plastic	Flow Table	100 - 125%
Flowable	Flow Trough	400 -600mm
Fluid	Flow Cone	< 30 seconds

Compressive Strength (MPa)

AS1478.2 - 2005 Appendix A (Restrained)

Consistency	1 Day	7 Days	28 Days
Plastic	35	40	55
Flowable	33	38	53
Fluid	25	36	51

Flexural Strength (MPa)
AS1012.11 - 2000 (Tested at Flowable Consistency)

Age	Flexural Strength
1 day	0.5
3 days	2.0
7 days	3.5
28 days	4.5

Setting Time
AS2350.4 - 1999

Initial Set Time	120 minutes
Final Set Time	140

Expansion Characteristics
AS1248.2 Appendix D and ASTM C1090

Plastic State	Approximately 2088kg/m ³ at flowable consistency
Hardened State	Long term expansion to compensate for drying shrinkage

HEALTH AND SAFETY

During use, avoid inhalation of dust and contact with the skin and eyes. Wear suitable clothing, gloves, eye protection and respiratory protective equipment.

If contact with the skin occurs, thoroughly clean the area with plenty of fresh water and soap. In case of contact with the eyes rinse with plenty of fresh water and seek medical advice.

If swallowed, seek medical attention immediately - do not induce vomiting.

For further information consult the Material Safety Data Sheet (MSDS) and read the product label carefully before use.

MSDS documents are available by phoning 1800 077 744.



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PLEASE NOTE

The information given in this data sheet is based on our current knowledge of the product when properly stored, handled and applied. We cannot guarantee that the product will be suitable, effective or safe when used for any purpose other than its stated uses.

To the extent that it is lawful, we exclude warranties implied by law and limit our liability to the cost of replacing the product. We accept no responsibility for loss or injury caused by improper use, incompetent preparation, inexpert or negligent application, or ordinary wear and tear.

Service or advice given by our staff should not amount to responsibility for the project - since the owner, or their contractor (and not River Sands), is responsible for procedures relating to the application of the product.

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