

# Shotcrete XL Rapid

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## DESCRIPTION

*ACS Shotcrete XL Rapid* is a pre-packaged multi-component cement based shotcrete mix for use in dry-mix processes.

*ACS Shotcrete XL Rapid* is made with accurately mass-batched blends of Portland cement, silica fume, sand, coarse aggregate and powdered accelerator.

It has been specifically designed for applications that require fast setting characteristics used in mining, tunnelling and civil projects.

## RECOMMENDED USES

*ACS Shotcrete XL Rapid* can be used in a wide range of civil engineering and mining applications, typical areas of use include:

- Mining applications, including ground support and lining of portals, shafts, drifts, raises, loading pockets, ore passes and underground chambers.
- Ground support and slope stabilization.
- Linings of tunnels and connecting shafts.
- Support and formwork for retaining walls.
- Concrete repair to structures such as bridges, dams, sewers, canals, reservoirs, and cooling towers.
- Repair to marine structures including wharves, jetties, piles, and sea walls.
- Repair to buildings and structures such as parking structures, grain silos, and chemical handling facilities.

## FEATURES AND BENEFITS

*ACS Shotcrete XL Rapid* offers many advantages to owners, contractors, and engineers particularly in situations where conventional formed concrete construction would not be appropriate or cost effective. The main advantages would be:

- Supplied ready to use under stringent quality control standards.

- Rapid setting characteristics provide high early set time.
- Ease of application in dry-mix spray systems.
- Elimination or reduction in formwork.
- Suitable for overhead applications up to 400mm thick.
- Greater thickness build-up in a single pass relative to conventional shotcrete, particularly in the dry-mix process.
- Substantial reductions in rebound, particularly in dry-mix processes.
- Superior bond.
- High early strengths to reduce down time.
- Easily pumped using the wet-mix process.
- Good working time.

## PACKAGING

Available in 20kg bags or one tonne bulk bags.

## COVERAGE RATES

One 20kg bag of *ACS Shotcrete XL Rapid* mixed with the required water will yield approximately 10.2 litres or 0.0102m<sup>3</sup>.

Calculations of coverage need to include provision for rebound waste and any waste during the cut off finishing procedure.

The approximate allowance for rebound is 5-10% not including cut-off.

This rebound percentage has been calculated based on the shotcrete being applied by an experienced applicator during ideal weather conditions.

## PERFORMANCE PROPERTIES

AGE	Compressive Strength MPa	Flexural Strength MPa
1 Day	10—12	3—5
7 Days	30—35	8—10
28 Days	40— 45	10 —12

**Note:-** Reasonable variations to the above data can be expected, as strengths may vary due to job site conditions, weather, curing procedures and levels of expertise during application.

## APPLICATION

The surface to be shotcreted shall be prepared by removing all unsound concrete and debris. When using *ACS Shotcrete XL Rapid* in structural repairs ensure that the substrate is clean and properly prepared. Additionally the repair zone should be saturated with clean water for a minimum of 5 -7 hours prior to shotcreting.

Mix *ACS Shotcrete XL Rapid* with approximately 1.8 —2.3 litres of water per 20kg (230 litres/m<sup>3</sup>).

*ACS Shotcrete XL Rapid* can be applied in depths of 10—400mm in one pass depending on the shotcrete method used and substrate and weather conditions.

## CLEANING

All tools should be rinsed with water immediately after use to remove all traces of *Shotcrete XL Rapid*.

## STORAGE AND SHELF LIFE

If kept dry and stored in its original condition, *Shotcrete XL Rapid* will keep for at least 12 months. The shelf life of the product may be reduced if subjected to high temperatures and high humidity.

## HEALTH AND SAFETY

- Avoid contact with the skin and eyes and wear suitable protective clothing, gloves, face mask and eye protection.
- Avoid the inhalation of dust from the cement powder during use.
- In the case of contact with the skin and eyes, wash with plenty of water
- If swallowed, seek medical attention immediately.

For further information consult the **Material Safety Data Sheet** and read the product label carefully before use. **Material Safety Data Sheets** are available by phoning **1800 077 744**.

**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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