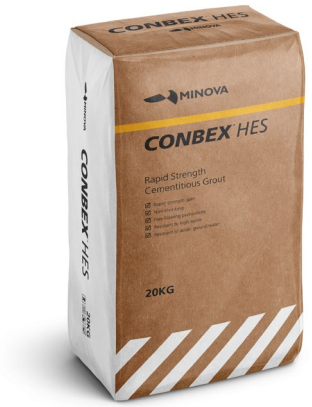
## SOFT ROCK MINING / HARD ROCK MINING

# CONBEX® HES

## RAPID STRENGTH, THIXOTROPIC CABLE BOLT GROUT

## DESCRIPTION

Conbex® HES is supplied as a ready to use, free flowing, blended cementitious powder. It requires only the addition of water in a high shear mixer to produce a free-flowing grout.




## APPLICATION AND USES

Cable bolt grouting in underground and surface mine applications where rapid strength gain is a prerequisite.

## ADVANTAGES

- Rapid strength gain reduces the likelihood of bed separation or slippage of strata.
- Rapid strength gain reduces down-time before drilling/blasting can recommence.
- Non-shrink, unique expansion system compensates for shrinkage
- Excellent pumpability
- Economical, high strength gain at significantly lower cost compared to resin grouts
- Excellent durability in high saline and/or acidic ground water

## TECHNICAL DATA

Typical properties using potable water:

| | |
|---|---|
| **Set Time @ 20°C (min)** | 60 |
| **Compressive Strength (MPa)** | |
| 2 hours | 20 |
| 4 hours | 40 |
| 6 hours | 50 |
| 1 day | 60 |
| 7 days | 75 |
| 28 days[1] | 80 |
| **Fresh Wet Density (kg/m$^3$)**: 2000 – 2200 | |

[1] Samples cured in saline water 230,000 ppm. Maximum exotherm equals 46ºC

| Temp ºC | Pot Life (mins) |
|---|---|
| 10 | 75 |
| 20 | 45 |
| 30 | 38 |
| 40 | 20 |

## APPLICATION METHOD

### Preparation

1. Drill hole to desired depth, ensuring it is free and clear of loose matter for entire length.
2. Place cable bolt, breather tube and grout filling tube into bolt hole.
3. Plug the bottom of the bolt hole with Conbex Plug.
4. Flush the hole out by pumping water up the grout filler tube. This also helps to prevent water being drawn from the mix.

### Mixing

It is very important to continually mix Conbex HES as it will set rapidly once mixing is stopped.

**Water requirements/20 kg bag:**

| Liters of water required |
|---|
| 4L |

- Fill mixer with water.
- Start mixer, then slowly add Conbex HES powder.
- If powder addition is too fast, large lumps will form and final mix will be slow reaching uniformity. Mix until lump free.
- Use a high shear mechanical mixer of approved design.

### Placing

(a) Pumpable Grout

- Continuous flow of grout is essential, therefore enough grout for the job must be prepared prior to placement. Do not try to mix and place grout at the same time.
- Connect the pump to the grout filling tube and place the breather tube in a small container of water.
- Pump the grout into the bolt hole until air ceases to bubble out of breather tube.
- Block off tube by folding and tying. Cut off excess filler tube.

(b) Troweled Grout

Mix as per instructions.

- Let grout stand for a few minutes until desired consistency is achieved.
- Use formwork to confine grout then trowel into place.
- If grout is too thick mixing will allow grout to flow again.
- Cure grout using wet hessian.

### Cleaning

Conbex HES should be removed from tools and equipment immediately after use with clean water. Cured material can be removed mechanically.

## SAFETY INSTRUCTIONS AND LIMITATIONS

At the recommended consistency, the approximate grout yield is as follows:

| Yield / 20kg bag |
|---|
| 11.4 L |

## PACKAGING AND TRANSPORTATION

Conbex HES is supplied in 20 kg bags. All bags are packed on stretch wrapped wooden pallets, 60 bags per pallet.

## STORAGE AND SHELF LIFE

Conbex HES has a shelf life of 12 months.

## STORAGE CONDITIONS

Conbex HES should be stored in original packing under dry warehouse conditions. High temperature and high humidity may reduce the shelf life.

## HEALTH AND SAFETY

For more information please refer to the Safety Data sheet at www.minovaglobal.com.

## TECHNICAL SUPPORT

We provide technical advisory service by a team of specialists in the field. The service includes on site assistance and advice on evaluation trials and laboratory work.

## MANUFACTURER

**Minova Australia Pty Ltd**

An ISO 9001:2015 Quality Management Certificated Company

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