



## THE EUCLID CHEMICAL COMPANY

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# EUCO DENSI-SHOT

## HIGH-STRENGTH SHOTCRETE MIX

**EUCO DENSI-SHOT** is a high strength dry shotcrete mix that uses a patented technology to offer high early and ultimate strengths. EUCO DENSI-SHOT can develop 3,500 psi (23 MPa) within two hours, and over 14,000 psi (96.5 MPa) in 28 days. Dust generation and rebound are similar to wet shotcrete mixes. Cohesion of the mix, allows high build and higher shear bond strengths than conventional shotcrete mixes.

### PRIMARY APPLICATIONS

- Rapid tunnel development
- Utility structures
- Mining applications requiring fast cycle times

### FEATURES/BENEFITS

- High early strength could allow an extra mining cycle per day
- High ultimate strength could allow a thinner application
- Rebound is typically < 3%
- 90% less dust than conventional dry shotcrete
- Vertical build >9" (225mm) in single pass
- Overhead build >6" (150mm) in single pass
- Extremely low permeability
- Approximately 2 times the abrasion resistance of conventional shotcrete

### PACKAGING

EUCO DENSI-SHOT is packaged in 50 lb (22.7 kg) moisture resistant bags and is also available in 2,200 lb (1,000 kg) sacs. Yield will vary according to the amount of water added during the shotcreting operation.

**Shelf Life:** 1 year in original, unopened package.

### TECHNICAL INFORMATION

#### Typical Engineering Data

Typical engineering data under laboratory conditions; actual field results may vary.

#### Compressive Strength

ASTM C-109 2" (50 mm) Cubes

2	hours	3,500 psi	(23.4 MPa)
4	hours	4,500 psi	(31.0 MPa)
24	hours	6,750 psi	(46.5 MPa)
3	days	8,000 psi	(55.2 MPa)
7	days	10,200 psi	(70.3 MPa)
28	days	14,250 psi	(98.2 MPa)

#### Flexural Strength ASTM C-348 (modified)

2	hours	760 psi	(4.6 MPa)
4	hours	775 psi	(5.3 MPa)
24	hours	1,190 psi	(8.2 MPa)
3	days	1,615 psi	(11.1 MPa)
7	days	1,820 psi	(12.5 MPa)
28	days	2,048 psi	(14.1 MPa)

#### Shear Bond Strength ASTM C-882 (modified)

2	hours	1,245 psi	(8.6 MPa)
4	hours	1,375 psi	(9.5 MPa)
7	days	3,167 psi	(21.8 MPa)

#### Length Change ASTM C-157, 50% R.H.

2	days	-0.045%
7	days	-0.084%
14	days	-0.096%
21	days	-0.101%

#### Freeze/Thaw Resistance

ASTM C-666 Procedure A

300 cycles >98% RDM

**Appearance**-EUCO DENSI-SHOT is a free flowing powder as packaged.

**Usage**-When using EUCO DENSI-SHOT at 70°F (21°C), initial set is in approximately 45 minutes allowing time to finish the surface for architectural purposes. After initial set, strength development is very rapid; the heat generated from the exothermic reaction is similar to conventional shotcrete mixes.

### PRECAUTIONS / LIMITATIONS

- For optimum results, condition material to 65-85°F (18-29°C).
- Store product in a dry place.

### ADDITIONAL INFORMATION

For more information on the use of EUCO DENSI-SHOT or any other Euclid Chemical product, contact The Euclid Chemical Company, Underground Sales and Marketing at 1-800-321-7628, extension 8395. The Euclid Chemical Company will assist mining and tunneling operations in testing of materials to assess correct product usage for specific applications.



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