



# EUCO DIAMOND SHOT

## HIGH-STRENGTH SHOTCRETE MIX

EUCLID CHEMICAL

### PACKAGING

50 lb (22.7 kg) bag  
Code: 106 50

### APPROXIMATE YIELD

**50 lb (22.7 kg) unit:** 0.42 ft<sup>3</sup> (0.012 m<sup>3</sup>)  
per unit when placed per application instructions.

### MINIMUM/MAXIMUM APPLICATION THICKNESS

Typically 1/2 to 6 inches (1.2 to 15 cm) per lift

### CLEAN UP

Clean tools and equipment with water before the material hardens.

### SHELF LIFE

1 year in original, unopened package

## DESCRIPTION

EUCO DIAMOND SHOT is a high strength dry shotcrete mix that uses a proprietary technology to offer high early and ultimate strengths. EUCO DIAMOND 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. EUCO DIAMOND SHOT also offers higher resistance to hydrogen sulfide making it ideal for use in municipal wastewater projects.

## PRODUCT CHARACTERISTICS

### FEATURES/BENEFITS

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

### PRIMARY APPLICATIONS

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

### APPEARANCE

EUCO DIAMOND SHOT is a free flowing powder as packaged.

## TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Test Method	Test Property	Values
ASTM C109 2" (50 mm) cubes	Compressive Strength	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)
ASTM C348M	Flexural Strength	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)
ASTM C882M	Shear Bond Strength	2 hours. . . . . 1,245 psi (8.6 MPa) 4 hours. . . . . 1,375 psi (9.5 MPa) 7 days . . . . . 3,167 psi (21.8 MPa)
ASTM C157 50% RH	Length Change	2 days . . . . . - 0.045% 7 days . . . . . - 0.084% 14 days . . . . . - 0.096% 21 days . . . . . - 0.101%
ASTM C666 Procedure A	Freeze/Thaw Resistance	300 cycles . . . . . > 98% RDM

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## DIRECTIONS FOR USE

**Surface Preparation:** The substrate should be clean and rough. All oil, dirt, debris, paint and any unsound surface must be removed. The surface must be prepared mechanically to achieve a surface profile similar to CSP 7 or greater in accordance with ICRI Guideline 310.2. The final step in preparation should be the complete removal of all residue by pressure washing.

**Exposed Reinforcement Steel:** Remove all loose rust and scaling, preferably by sandblasting to white metal prior to application.

**Bonding:** No bond coat should be used for this product.

**Dry Shotcrete/Gunite:** Set up dry process equipment in an area convenient to the placement site. Conventional Pre-dampening is not recommended when using EUCO DIAMOND SHOT. For best results use a Hydromix or Pre-dampening nozzle.

**Application of Dry Shotcrete/Gunite:** In general EUCO DIAMOND SHOT should be applied in accordance with the recommendations of ACI 506R "Guide to Shotcrete". Pay special attention to the angle of the application (i.e. 90°) and distance from the substrate, normally 2 ft (0.6 m) to 6 ft (1.8 m). Typical application depths range from 1/2" to 6" (12 to 150 mm). If placement at a depth greater than 6" (150 mm) is required, cross hatch the surface of the initial layer. After the surface has sufficiently hardened additional layers may be placed.

**Caution:** EUCO DIAMOND SHOT is not intended to be mixed with water and used as a wet-mix shotcrete material. At 70 °F (21 °C), initial set is achieved in approximately 45 minutes allowing for finishing of architectural surfaces. Heat generation after initial set is similar to conventional shotcrete.

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## PRECAUTIONS/LIMITATIONS

- For optimum results, condition material to 65 to 85 °F (18 to 29 °C).
- Store product in a dry place.
- In all cases, consult the Safety Data Sheet before use.

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