

R.O.C. 44[®]

Responsive Optimum Concrete

High performance and high compressive and bonding strength concrete for sprayable and shotcrete applications



Technical Data Sheet

DESCRIPTION

R.O.C. 44 is a single component, cement based, shotcrete/gunite material for new and repair concrete applications. R.O.C. 44's unique rapid strength forming, high surface bond, shrinkage compensating formulations offers excellent resilience and durability and ease of application for difficult to place and/or repair surfaces.

USES

- Shotcrete/Gunite and sprayable applications
- Repair of concrete and other cement-based surfaces
- Tunnel and mining applications
- May be used in multiple layers and for structural application
- High resistance to freeze/thaw applications
- High resistance to sulfate, acid and bacterial attack

Features and advantages

- Single component material for new construction or as a repair material
- Rapid strength development after sprayed application
- Superior bond to a wide variety of surfaces
- Return to service in minutes not days
- Interior and exterior applications

INSTRUCTIONS FOR MIXING

For use with dry process equipment. Add R.O.C. 44 directly to the gunite/shotcrete machine. Gauge water at the nozzle and adjust to the desired consistency.

PLACEMENT

Typical application depths range from 1/2" to 6" for most projects. Generally recommended to follow ACI 506R "Guide to Shotcrete" for most placement applications.

SURFACE PREPARATION

• Ideally, existing concrete surfaces should be free of loose material or other surface contaminants.

SAFETY AND HANDLING

Use of product in extreme temperatures will affect set times. For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the Safety Data Sheet (SDS) containing physical, environmental, toxicological and other safety related data. User must read the current Safety Data Sheet before using any products.

Parameter	Time/Value (psi)
Compressive Strength (ASTM C39)	3 hour: 7,647 (52.7 MPa) 1 day: 9,448 (65.2 MPa) 7 day: 12,481 (86.1 MPa) 28 day: 15,161 (104.6 MPa) 56 day: 15,636 (107.8 MPa)
Bond Strength – Slant Shear (ASTM C882)	3 hour: 2000 (13.8 MPa) 1 day: 4500 (31 MPa) 7 day: 4800 (33.1 MPa)
Bond Strength - Adhesion (ASTM C1583)	1 day: 1250 (8.61 MPa) 7 day: 1400 (9.65 MPa)
Flexural Strength (ASTM C78)	1 day: 1,300 (9.0 MPa) 7 day: 2,328 (16.1 MPa) 28 day: 2,441 (16.8 MPa)
Freeze Thaw Resistance (ASTM C666, Procedure A)	300 cycles: 101%

SHELF LIFE

12 month shelf life if properly stored in dry conditions, protected from moisture, out of direct sunlight and in undamaged packaging (based on 80 F)

Set time at 72.5 F (ASTM C403)

Initial set: 5 mins Final Set: 5-10 mins

CURING

R.O.C. 44 is a self-curing repair material.

OPTIONAL FEATURES

Micro-synthetic fibers to improve flexural strength.



Reduces CO2 emissions by up to 75%

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