



METALCRETE SC

High-Strength Metallic Aggregate Shotcrete Mortar

1. Product Description

a. Basic Use: Metalcrete SC is a high strength metallic aggregate shotcrete mortar that uses a proprietary chemical blend to achieve exceptionally high early and ultimate strengths. After 56 days, Metalcrete SC has strengths over 13,000 psi (96.5 MPa). Metalcrete SC is applied by using shotcrete equipment thickness ranging from 6" in overhead applications to 9" in vertical applications. Development of decline pathways going underground is critical for movement of machinery, material, and personnel - Metalcrete SC provides a superior wear surface that resists impact and abrasion.

b. Features/Benefits:

- Advanced formulation yields rebound to less than 3%.
- High strength allows for a quick return to service.
- Metallic shotcrete outwears conventional shotcrete mortars by approximately 8 times.
- Formulated with all metallic aggregate for exceptional toughness.
- Provides a thick armoring for superior impact and wear resistance.
- High strength material permits applications with thinner cross-sections.
- Dense surface is essentially impervious due to the use of zero absorption aggregate.
- Low-dust formulation ensures easier workability.

c. Typical Applications: Mine shafts, tunnels, ore transfer, tailing lines, sludge pipelines, sluiceways, towveyors, crusher stations.

d. Limitations: Metalcrete SC should not be used in areas subjected to acids or other chemicals which attack portland cement or iron. De-icing salts will cause surface oxidation and direct application should be avoided.

e. Composition: Metalcrete SC is a blend of specially designed iron aggregate, portland cement, and a proprietary chemical system.

f. Color/Appearance: Metalcrete SC is dark gray in color when given a hard trowel finish and properly cured. Metalcrete SC may be pigmented upon request.

2. Packaging

Metalcrete SC is packaged in 50-lb. (22.7 Kg) moisture-resistant bags, 60 bags per pallet. On larger projects, it is recommended to package Metalcrete SC in bulk bags weighing up to 3,300-lb. (1,497 Kg).

3. Estimating/Coverage

One 50-lb. (22.7-kg) bag of Metalcrete SC when mixed with 0.48 gals. (1.8 liter) of water will yield 0.24 cu. ft. (0.007 cu. m) of topping. One 3,000-lb. (1,362-kg) bulk bag will yield 14.4 cu. ft. (0.42 cu. m). One cubic yard of Metalcrete SC requires 5,625 lbs. (2,557 Kg.).

4. Technical Data

a. Applicable Standards:

- ACI 302, Guide for Concrete Floor and Slab Construction.
- ASTM C 779, Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces.

b. Compressive Strength: ASTM C 109, 2 in. (50 mm) cubes.

<i>Age</i>	<i>Strength</i>
<i>1 day</i>	<i>7,000 psi (48 MPa)</i>
<i>3 days</i>	<i>9,000 psi (62 MPa)</i>
<i>7 days</i>	<i>11,000 psi (76 MPa)</i>
<i>28 days</i>	<i>12,000 psi (83 MPa)</i>

c. Flexural Strength: ASTM C 78, 28 days; 1,875 psi (13 MPa).

d. Wear Resistance: ASTM C 779, Procedure A; 0.012 in. (0.30 mm) at 60 minutes.

5. Directions for Use

(Follow ACI 506 Shotcrete Guidelines)

a. Preparation: Concrete or similar sub-bases should be free of all contaminants or other deleterious materials. Sub-base must be structurally sound.

1. Mill, water blast, shot blast, or chip concrete down to proper elevation to sound concrete and to accommodate topping thickness. Remove all loose material and debris.

2. Clean surface of all dust and dirt with water and compressed air. Make sure all concrete dust is removed from pore structure of concrete surface. Failure to properly clean the surface will prevent proper bond.

b. Placement: Place Metalcrete SC over properly prepared sub-base per instructions of shotcrete equipment manufacturer

c. Finishing: After Metalcrete SC as been applied to the base surface, trowel the Metalcrete SC surface to produce a hard, smooth surface with subsequent finishing operations. Time troweling to prevent blisters.

d. Curing: Apply two coats of Seal N Kure 30 or Metcure 30 as soon as finishing operations are complete. Curing is very important to fully develop topping strength.

e. User Precautions: Metalcrete SC contains portland cement. Use dust masks and/or wear protective gloves during mixing, transporting, and placing of Metalcrete SC.

f. Maintenance: Metalcrete SC is intended to be free of maintenance once properly installed. Metalcrete SC surfaces should be cleaned with standard high alkaline cleaners and power scrubbers.

6. Availability

Metalcrete SC is available from your local distributor or it will be shipped within 5 working days upon receipt of order. Please contact your local Metalcrete representative or call Metalcrete directly for more information.

7. Warranty

Metalcrete SC is manufactured in strict accordance with the quality control standards of Metalcrete Industries. It is guaranteed to perform as indicated on this data sheet when applied by competent applicators.

8. Technical Service

Metalcrete technical service representatives are available to provide on-site assistance with a minimum three day notice.



Metalcrete Industries

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