MET-TOP E

High-Strength Emery Aggregate Floor Topping

1. Product Description

a. Basic Use: Met-Top E is a screedable, high strength emery aggregate based topping intended for use where heavy impact, gouging and abrasion are primary floor service conditions. This product is usually applied as a bonded topping over properly prepared existing concrete at a 2 inch (50.8 mm) thickness. Met-Top E can be placed up to 6 inches (152.4 mm) thick.

b. Features/Benefits:

- Provides a thick high-build armoring for excellent gouge, impact and wear resistance.
- High strength for extra toughness.
- Natural aggregate will not produce unsightly rusting or staining.
- Densifies the floor surface for better resistance to water, fluid, and oil penetration.
- Hard, non-dusting surface for faster and easier maintenance.
- Outwears all conventional dry shake hardeners.
- Excellent resistance to dragging, scraping point loads.

c. Typical Applications: Solid waste tipping floors, MRF's, steel processing plants, loading docks, dumpster pads, automotive facilities and bulldozer traffic.

d. Limitations: Met-Top E should not be used in areas subjected to acids or other chemicals which attack portland cement.

e. Composition: Met-Top E is a blend of specially designed emery aggregate, natural aggregate, portland cement, and a proprietary chemical system.

f. Color/Appearance: Met-Top E is gray in color when hard troweled and properly cured.

2. Packaging

Met-Top E is supplied in 50-lb. (22.7 kg) units. On large placements, mixing in ready mix trucks is recommended by using 3,000-lb. (1,364 Kg) bulk bags.

3. Estimating/Coverage

One 50-lb. (22.7 Kg) unit of Met-Top E when mixed with 0.45 gal. (1.7 liters) of water will yield 0.33 cu. ft. (0.010 cu. m) of topping.

Thickness	*Material Needed*	*Coverage/50-lb. (22.7 Kg) unit*
1 in. (25.4 mm)	*12.5 psf (61.0 Kg/sq. m)*	*4.0 sq. ft. (0.37 sq. m)*
2 in. (51 mm)	*25.0 psf (122.1 Kg/sq. m)*	*2.0 sq. ft. (0.19 sq. m)*
3 in. (76 mm)	*37.5 psf (183.1 Kg/sq. m)*	*1.33 sq. ft. (0.12 sq. m)*

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.

Age	*Strength*
1 day	*4,000 psi (27.6 MPa)*
3 days	*8,750 psi (60.3 MPa)*
7 days	*10,250 psi (70.7 MPa)*
28 days	*13,000 psi (90.0 MPa)*

c. Flexural Strength: ASTM C 78; 28 Days, 1,300 psi (9.0 MPa).

d. Wear Resistance: ASTM C 779, Procedure A; 0.024 in. (0.610 mm) at 60 minutes.

Note: Results are typical for controlled laboratory settings and methods. Field performance may vary slightly due to jobsite conditions. Specification to change without notice.

5. Directions for Use

(Follow basic ACI 302 Guidelines)

a. Application Over Existing Concrete

1. Mill, water blast, shot blast, or chip concrete down to proper elevation to sound concrete and to accommodate topping thickness. A CSP 9 is the ideal surface profile to bond to. Remove all loose material and debris.

2. Clean floor 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. Use a wet vacuum for hard to clean areas. Allow concrete surface to dry.

3. Saw cut the perimeter of the repair area and key into the base concrete. Installing perimeter anchors is a good method to increase the mechanical bond between the base concrete and the topping material.

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b. General Guidelines on Bond Coats:

1. Metco Low-Mod Epoxy is applied to the dry base concrete using stiff brooms, squeegees, and rollers at an application rate of approximately 30 - 60 square feet per mixed gallon depending on the texture of the base concrete. Avoid ponding in low lying areas. While the epoxy bond coat is wet, quartz aggregate is broadcasted into the surface until refusal. After the epoxy has cured (the next day), remove all unbonded aggregate from the surface using a combination of blowers and vacuums. Once all unbonded aggregate is removed, the surface is ready to receive the Met-Top E high-strength concrete topping.

2. Alternatively, installers may elect to use a cement slurry bond coat. The correct mix ratio for the cement slurry bond coat is 94-lbs. (42.6 Kg) of portland cement to 7-gals. (26.5 liters) of Acrylpave. When mixed in this proportion, the yield is approximately 400 square feet (37.2 square meters) of bonding agent depending on the profile of the base concrete. Contact your local Metalcrete Industries representative for more information.

c. Mixing: Mix Met-Top E in a mortar mixer using 0.45 gallons (1.7 liters) of water per 50-lb. bag. Several bags can be mixed at one time depending on the size of mixer. Add the water first and follow with dry powder. Hold back 10% of water and mix material stiff if lumping starts to occur. Add remaining water and mix for 2 to 3 minutes. A 5 inch (127 mm) to 6 inch (152 mm) slump should be achieved and minor water adjustments are permissible to achieve this slump. When mixing 3,000-lb. bulk bags, approximately 27-gallons of water are required per bulk bag. An electronic water flow meter should be utilized to ensure proper mixing.

d. Placement: It's imperative to maintain a clean bond surface for proper bond to the base substrate. Place Met-Top E directly over the primed surface. A backpack vibrator helps consolidate the mixed topping material and reduces entrapped air. Strike off or power screed into place using a roller screed or vibratory truss screed. Power screeding is preferred to achieve maximum consolidation and density. Bullfloat surface of topping. Use Waterhold evaporation retardant to prevent moisture loss while waiting for topping to set.

e. Finishing: When the topping will support a man and finishing machine, float surface (with float shoes on trowel blades) to consolidate surface and fill any imperfections. Trowel surface to produce a hard, smooth surface with subsequent finishing operations. Time troweling to prevent blisters.

f. Curing: Apply two coats of Seal N Kure 30 (roller preferred) as soon as finishing operations are complete. Curing is very important to fully develop topping strength.

g. Joints: Control or construction joints in the base slab should be brought up through the topping. Saw cut above base slab joints the full depth of the topping. Fill with Jointfill 302 epoxy after a minimum 3 month wait (according to ACI 302, Section 4.10). Use Vulcanox urethane at isolation and expansion joints.

h. User Precautions: Met-Top E contains portland cement. Use dust masks and/or wear protective gloves during mixing, transporting, and placing of Met-Top E. Read all SDS thoroughly prior to handling material.

i. Maintenance: Met-Top E is intended to be free of maintenance once properly installed. Met-Top E floors should be cleaned with standard high alkaline floor cleaners and power scrubbers. Additional applications of Seal N Kure 30 at project turnover or at other intervals once the floor is in use are optional, but not mandatory. Tipping floors should be inspected for any needed maintenance at intervals not exceeding six months.

6. Availability

Due to the specific nature of this product, Met-Top E is generally manufactured on a project by project basis. Please contact your local Metalcrete Industries representative or call Metalcrete Industries directly for more information.

7. Warranty

Met-Top E 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 Industries technical service representatives are available to provide on-site assistance with a minimum three day notice.