

ELEPHANT ARMOR®

DOT Concrete Repair Mortar



Elephant Armor® DOT Industrial Grade Mortar Technical Data Sheet

DESCRIPTION

Elephant Armor® Mortar - DOT is a single component, cementitious, fiber based, medium to fast setting, zero polymer, repair and overlay Engineered Ductal Mortar (EDM). In addition to a mechanical bond, our fiber creates a fully engaged molecular bond within our patented mortar matrix, providing extremely high tensile and flexural strength. It can be placed with a textured roller (preferred method) or traditional placement tools.

FEATURES / BENEFITS:

- Fiber reinforced: Superior flexural and tensile strength as thin as ¼".
- High ductility, allowing the overlay or repair to 'FLEX' without failure.
- Highly resistant to de-icing salts, freeze/thaw.
- Superior tensile strain capacity over other cement based products for improved crack resistance.
- Superior bond strength to that of other fiber and acrylic based mortars.
- Ideal as a structural underlayment.
- Prevents the propagation of existing cracks through the surface.
- Highly impermeable and abrasion resistant.
- Unparalleled as a stampable overlay.

SHELF LIFE

Up to 3 years in its original unopened package and stored in a humidity controlled environment. (Not exposed to moisture or high humidity.)

PACKAGING

- 10 lb (4.5 kg) plastic pails
- 50 lb (22.7 kg) plastic lined bags

COVERAGE/YIELD

A 50 lb (22.7kg) bag of Elephant Armor® Mortars will yield approximately 0.5 ft³ (0.014 m³) of material.

Applied at the following thicknesses, one 50 lb (22.7 kg) bag of Elephant Armor® Mortar will cover:

- ¼" (6.3 mm) — 22 ft² (2 m²)
- ½" (12.7 mm) — 11 ft² (1 m²)

Note: Coverage rates are approximate

PRIMARY APPLICATIONS

Walkways, curbs, ramps, slabs, spalls, cracks, airports-runways, taxiways and gates, bridges, ICF walls, parking structures, tunnels, dams, industrial plants or anywhere a high strength concrete repair mortar is called for.

Structural monolithic underlayment or overlay for interior and exterior applications.

Mixing

Mix the dry contents prior to adding water. Add approximately 6.0 - 7.0 US quarts (5.7 - 6.6 liters) of water (depending on desired slump). It is mandatory to thoroughly mix with a dual shaft power mixer. (example: ColloMix Xo 55 Duo) Due to our unique product design, this type of mixer is required to ensure sufficient shear capacity needed to properly provide a homogeneous mix. Do not use a drywall paddle blade. While mixing, ensure there is no unhydrated Elephant Armor® on the sides or bottom of the bucket, as this will alter the water/cement ratio. Continue mixing until the mixture is lump free and has achieved the desired consistency (slump) for your application. When mixing our ten pound buckets or a small amount of Elephant Armor® Mortar, a ½" drill or larger, using an egg beater, mortar or Jiffy Bit can be used. Actual mixing time will depend on mixer speed, shear capacity, and desired consistency or flow required.

TECHNICAL INFORMATION – Material Properties @ 75°F (24°C)

All GST material testing properties meet or exceed our published data. Test results are confirmed by third party Independent Laboratories.

Compressive Strength psi ASTM C109

4 hrs	—	4,000 (27.72 MPa)
1 day	—	5,500 (37.92 MPa)
7 days	—	6,500 (44.81 MPa)
28 days	—	7,000 (48.26 MPa)

Split Tensile Strength psi ASTM C 496

28 days	—	600 (4.14 MPa)
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Flexural Performance psi ASTM C 1609

28 days	—	1,600 (11.03 MPa)
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Modulus of Elasticity, ksi ASTM C469

(ASTM C39 for compressive strength)

7 days	—	1,800 psi (12.41 MPa)
28 days	—	2,700 psi (18.62 MPa)

Shrinkage ASTM C 928/ASTM C157

28 days stored in water %	—	0.019
28 days stored in air %	—	0.036

Electrical Indication of Concrete's Ability to Resist

Chloride Ion Penetration ASTM C 1202

321.52 Charge Passed (coulombs)
Very Low Chloride Ion Penetrability

Set Times ASTM C 191

Initial set	—	approx. 50 min
Final set	—	approx. 70 min

Bond Strength psi ASTM C 882

28 days avg	—	2500 (17.24 MPa)
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Water-soluble Chloride (% by mass of concrete) ASTM C1218

50 days	—	0.01391
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Acid-soluble Chloride (% by mass of concrete) ASTM C1152

50 days	—	0.03087
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Coefficient of Thermal Expansion, in/in/°F AASHTO T-336

7 Days	—	775
28 Days	—	4.968 x 10 ⁻⁶

This product is made from the finest raw materials available and manufactured to proven formulation under strict quality control for its intended use. However, results obtained with the use of this product under a variety of conditions may depend on circumstances beyond our control. GST International, Inc. (including the seller thereof) warrants only that its products will be free from defects in materials. GST International, Inc.'s (including the seller thereof) sole obligation, and the purchaser's (including the person using or benefiting from its use) sole and exclusive remedy in the event of a defect covered by the foregoing warranty, shall be, at GST International, Inc.'s discretion, to (a) replace the defective product, or (b) refund to the purchaser the purchase price paid for such defective product. There are no warranties other than the limited express warranty provided above. In no event shall GST International, Inc. (or the seller of its products) be liable for incidental or consequential damages resulting or arising from the use of its products.