

TECHNICAL DATA SHEET

DESCRIPTION

HD 50 is a fast setting, fiber reinforced, latex-modified, shrinkage compensated, heavy duty, one component concrete repair material requiring only water to mix and apply. HD 50 is a cement based compound having similar characteristics to normal portland cement mixes and is compatible with portland cement concrete.

USE

HD 50 is designed for the repair of heavy duty surfaces such as concrete highways, bridge decks, parking structures, airport runways, freezer rooms, industrial and warehouse floors, and loading docks. HD 50 is a flowable material that may be poured into place for horizontal applications or into formed vertical and overhead applications.

FEATURES

- Can be opened to use or traffic within 60 minutes
- High compressive strength quickly – over 2,000 psi in one hour
- Resists salt penetration and damage from freeze/thaw cycles
- Contains no chlorides or magnesium phosphate
- Meets ASTM C-928; Specification for Very Rapid Hardening Cementitious Repair Materials
- Non Corrosive
- Compatible with portland cement concrete
- Aggregate extension – Up to 60% on repairs greater than 2 inches (5cm) deep
- Can be coated with epoxy in as little as 4 hours

PROPERTIES

Meets ASTM C-928: As a Type R-3 mortar

Compressive Strength – ASTM C-109 At 73°F (22.8°C)
 1 Hour 2000 psi (13.8 MPa)
 3 Hours 3500 psi (24.1 MPa)
 1 Day 5200 psi (35.9 MPa)
 7 Days 6500 psi (44.8 MPa)
 28 Days 7500 psi (51.7 MPa)

Slant Shear Bond Strength ASTM C-882 (*modified per ASTM C 928)
 1 day 2,000 psi (13.8 MPa)
 7 days 2,750 psi (18.9 MPa)

Length Change of Hardened Cement Mortar and Concrete ASTM C 157 (*modified per ASTM C 928)
 Length Change @ 28 days
 Air Cure -0.11%
 Water Cure 0.04%

Scaling Resistance (Freeze/Thaw) - ASTM C-672
 Average of 3 specimens
 25 cycles 0 (no scaling)
 Scaling of oven-dry mass @ 25 cycles 0.0 lbs/ft²

Rapid Freeze/Thaw Test: ASTM C-666
 At 300 Cycles - No loss

Initial Set
 15-20 minutes
 Final Set: 25-30 minutes

Moisture content: <4% in 4hrs when tested in laboratory conditions. (always test in field placements prior to coating as ambient conditions may vary)

Note:

The data shown is typical for controlled laboratory conditions. Reasonable variation from these results can be expected due to interlaboratory precision and bias. When testing the field mixed material, other factors such as variations in mixing, water content, temperature and curing conditions should be considered.

Estimating Guide

Yield: 0.42 cu. ft./50 lb. (0.012 cu m /22.7 kg)
 0.60 cu. ft./50 lb. (0.017 cu. m/22.7 kg) bag with 60% extension, 30 lbs. (13.61 kg) with 3/8 in. (1 cm) pea gravel.

Packaging

PRODUCT CODE	PACKAGE	SIZE	
		lbs.	kg
67460	Bag	50	22.67

STORAGE

Shelf life of unopened bags, when stored in a dry facility, is 12 months. Excessive temperature differential and/or high humidity can shorten the shelf life expectancy. Store in a cool, dry area free of direct sunlight.

APPLICATION

Surface Preparation:

The concrete must be sound and free of all foreign material, including oil, grease, dust, laitance, or other surface contaminants. Surface preparation in accord with ICRI Guidelines is recommended. The edges of the patches should be saw-cut perpendicular to the surface to no more than a depth of 1/2 in. (13 mm). Best results will be obtained by abrasive blasting the area to be repaired, providing uniform depth, a high surface profile and a firm bonding area. All surfaces to be repaired should be in a saturated-surface-dry (SSD) condition with no standing water on the surface.

Water Requirements:

Use 6½ pints (3.07 L) of water /50 lb. (22.7 kg) of powder.

Mixing:

Mix with a low speed drill or, for larger projects a mortar mixer with rubber tipped blades, by adding the water first and then the powder. Mixing time should be two to three minutes and placing should not exceed fifteen minutes. Adequate placing and finishing equipment and material should be available for continuous placement of the material.

Placement:

Using freshly mixed material, scrub a thin layer onto the SSD substrate with a stiff fiber brush and place the repair mortar before the scrub coat dries. Trowel the repair material onto the surface to a minimum thickness of 1/2 in. (1.3 cm) and a maximum thickness of 2 in. (5.1 cm).

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For repairs over 2 in. (5 cm) up to 6 in. (15 cm) deep, the material should be extended 60% by weight with clean, SSD, pea gravel with an approximate size of 3/8 in. (9.5 mm) and conforming to the requirements of ASTM C 33. For deeper applications, please contact Chemical Technical Services.

CLEAN UP

Clean tools and equipment immediately with water. Hardened material will require mechanical removal.

CURING

Water cure for a minimum of 1 hour or apply a Dayton Superior ASTM C309 water-based curing compound to the repaired area immediately after placement.

LIMITATIONS

FOR PROFESSIONAL USE ONLY

Prior to coating, moisture content must be measured and comply with the coating manufacturer's requirements. Any and all curing material must be removed from the HD50 prior to coating. When testing the field mixed material, other factors such as variations in mixing, water content, temperature and curing conditions should be considered. When using less than one bag always drymix the full bag prior to each use. DO NOT apply at temperatures below 40°F (5°C) without following the cold weather concreting procedures outlined in ACI 306. For application in temperatures below 45°F (4°C), best results will be obtained by warming the material and mix water as well as the substrate. Colder temperatures will extend the setting time and warmer temperatures will reduce the setting time. DO NOT featheredge. Do not re-temper the mixed material or use admixtures. Do not use for resurfacing or topping large floor areas. Mixing equipment should be cleaned with water frequently and prior to material hardening.

PRECAUTIONS

READ SDS PRIOR TO USING PRODUCT

- Product contains Crystalline Silica and Portland Cement – Avoid breathing dust – Silica may cause serious lung problems
- Use with adequate ventilation
- Wear protective clothing, gloves and eye protection (goggles, safety glasses and/or face shield)
- Keep out of the reach of children
- Do not take internally
- In case of ingestion, seek medical help immediately
- May cause skin irritation upon contact, especially prolonged or repeated. If skin contact occurs, wash immediately with soap and water and seek medical help as needed.
- If eye contact occurs, flush immediately with clean water and seek medical help as needed
- Dispose of waste material in accordance with federal, state and local requirements

MANUFACTURER

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WARRANTY

Dayton Superior Corporation ("Dayton") warrants for 12 months from the date of manufacture or for the duration of the published product shelf life, whichever is less, that at the time of shipment by Dayton, the product is free of manufacturing defects and conforms to Dayton's product properties in force on the date of acceptance by Dayton of the order. Dayton shall only be liable under this warranty if the product has been applied, used, and stored in accordance with Dayton's instructions, especially surface preparation and installation, in force on the date of acceptance by Dayton of the order. The purchaser must examine the product when received and promptly notify Dayton in writing of any non-conformity before the product is used and no later than 30 days after such non-conformity is first discovered. If Dayton, in its sole discretion, determines that the product breached the above warranty, it will, in its sole discretion, replace the non-conforming product, refund the purchase price or issue a credit in the amount of the purchase price. This is the sole and exclusive remedy for breach of this warranty. Only a Dayton officer is authorized to modify this warranty. The information in this data sheet supersedes all other sales information received by the customer during the sales process. **THE FOREGOING WARRANTY SHALL BE EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER WARRANTIES OTHERWISE ARISING BY OPERATION OF LAW, COURSE OF DEALING, CUSTOM, TRADE OR OTHERWISE.**

Dayton shall not be liable in contract or in tort (including, without limitation, negligence, strict liability or otherwise) for loss of sales, revenues or profits; cost of capital or funds; business interruption or cost of downtime, loss of use, damage to or loss of use of other property (real or personal); failure to realize expected savings; frustration of economic or business expectations; claims by third parties (other than for bodily injury), or economic losses of any kind; or for any special, incidental, indirect, consequential, punitive or exemplary damages arising in any way out of the performance of, or failure to perform, its obligations under any contract for sale of product, even if Dayton could foresee or has been advised of the possibility of such damages. The Parties expressly agree that these limitations on damages are allocations of risk constituting, in part, the consideration for this contract, and also that such limitations shall survive the determination of any court of competent jurisdiction that any remedy provided in these terms or available at law fails of its essential purpose.