Jamaica Bridge

- Temporary slab edge replacement in 2010
- Only plan for couple of months until structure replaced
- Planned for replacement in future

Jamaica Bridge

Slab edge replacement

Jamaica Bridge

Slab edge replacement

Upper Lewisburg

Temporary slab edge replacement in 2013

Upper Lewisburg

Slab edge replacement

Upper Lewisburg

Slab edge replacement

Upper Lewisburg

Slab edge replacement

Upper Lewisburg

Slab edge replacement

SR 202 Walk Bridge Repair

202 Walk Bridge Repair

Shoring added

Beams hand dug and concreted in by hand

Chautaqua

Scupper Extensions

Chautaqua Bridge

Scupper Extensions

Chautaqua Bridge

- Material was sheet neoprene, vulcanized bonded into a circular shape.
- D.S. Brown fabricated the neoprene extensions
- Could be done with PVC pipe schedule 40 cheaper

Harshman Bridge

Center joint debris catcher built to sit in the beams

Edge debris catchers were installed using tapcons to the deck

Harshman Bridge

Harshman Bridge

We had a major scour problem in 2012

Harshman Bridge

In order to band-aid the bridge deck together in 2012 until replacement in 2017, we patched and resurfaced with 1-H

Harshman Bridge

We had a contractor install dump rock around all substructures until bridge could be replaced in 2016/17

Third Street Bridge

- Span: 88’-99’6”-110’6”-121’-110’6”-99’6”-88’
- Roadway 56’
- Built 1949

- Bridge to be replaced in 2019

Third Street Bridge

Third Street

Catching debris falling off bridge onto bikeway

Third Street

Made to sit inside the beams and 3” flat stock bent similar to floor clamps to attach

Third Street

Used perforated tarp on end sections to allow drainage to flow thru from the scuppers

Third Street

Third Street

Third Street

Third Street

Used high early concrete with pea gravel aggregate

Third Street

Third Street

Third Street

King Richard Bridge

- 15’ CMP
- Built 1960

- Scour problem

King Richard Bridge

King Richard Bridge

Abandoned bridge causing scour

King Richard Bridge

Scour addressed

Abandoned structure removed

Yankee Culvert

Emergency Wall installed due to washout

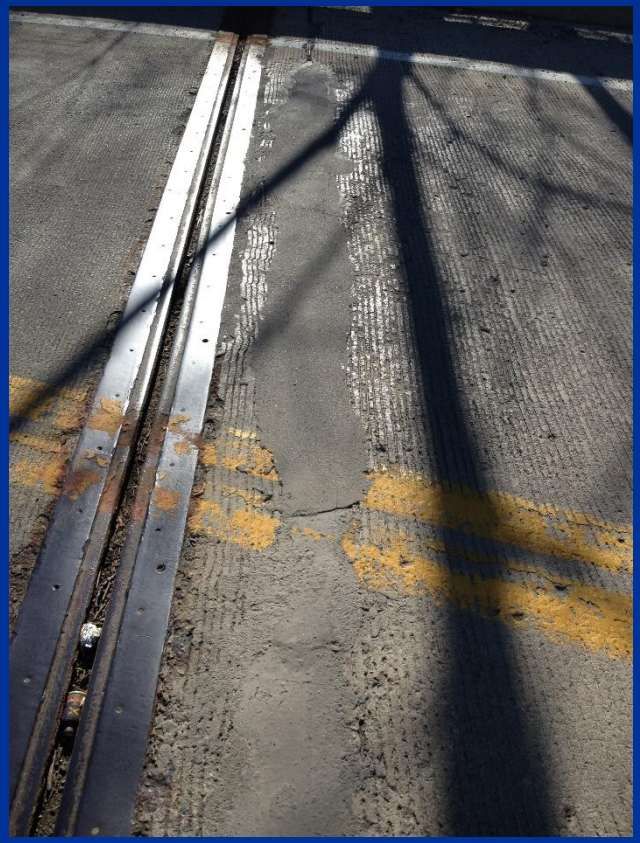
Yankee Culvert

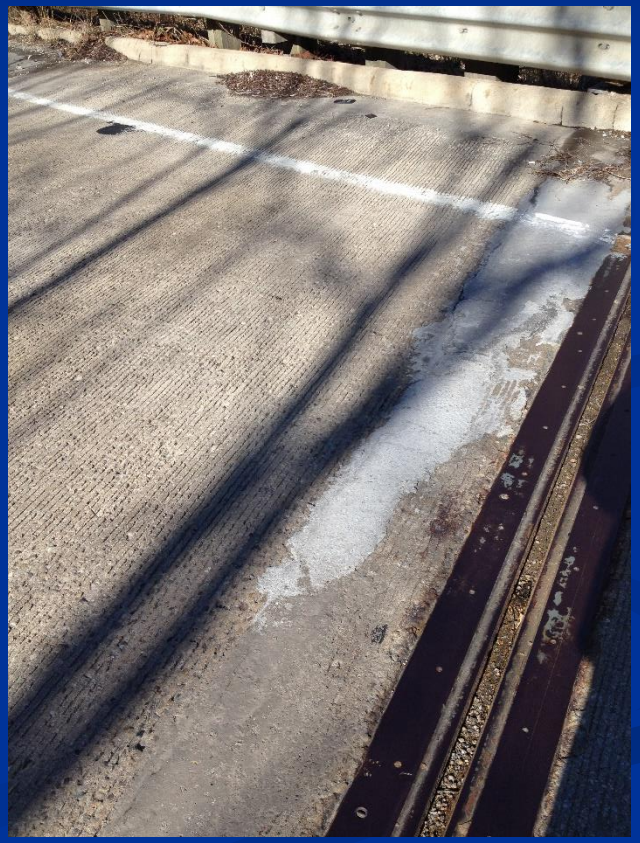
Emergency Wall installed due to washout

Yankee Culvert

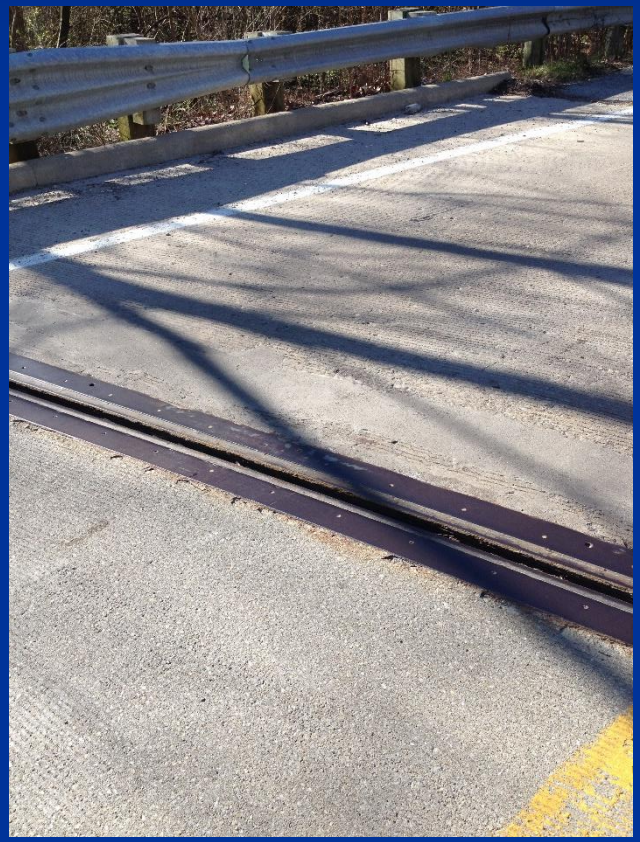
Emergency Wall installed due to washout

General Repairs to Concrete

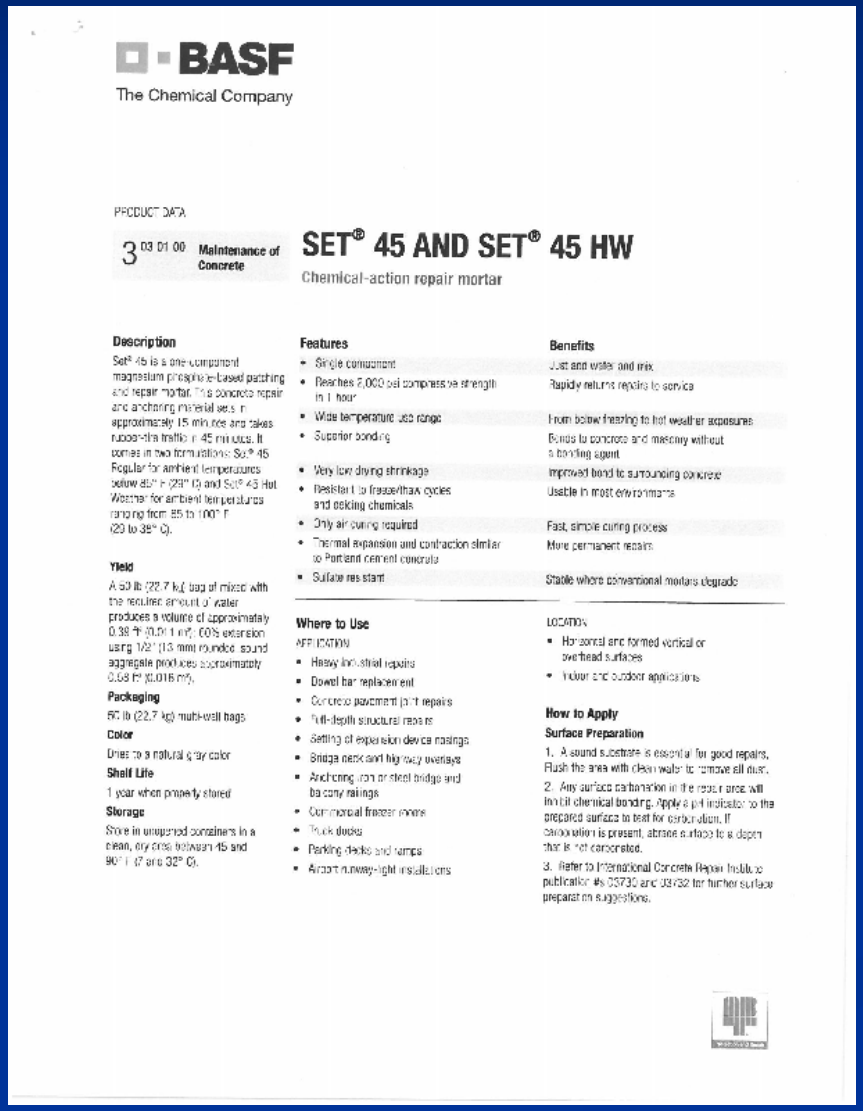




General Repairs to Concrete



General Repairs to Concrete



BASF
The Chemical Company

PRODUCT DATA

3 03 01 00 Maintenance of Concrete

SET® 45 AND SET® 45 HW

Chemical-action repair mortar

Description

Set® 45 is a one-component magnesium phosphate-based patching and repair mortar. This concrete repair and anchoring material sets in approximately 15 minutes and takes rubber-tire traffic in 45 minutes. It comes in two formulations: Set® 45 Regular for ambient temperatures below 85° F (29° C) and Set® 45 Hot Weather for ambient temperatures ranging from 85 to 100° F (29 to 38° C).

Yield

A 50 lb (22.7 kg) bag of mixed with the required amount of water produces a volume of approximately 0.38 ft³ (0.01 m³). 60% extension using 1/2" (13 mm) rounded sound aggregate produces approximately 0.08 ft³ (0.016 m³).

Packaging

50 lb (22.7 kg) multi-wall bags

Color

Dries to a natural gray color

Shelf Life

1 year when properly stored

Storage

Store in unopened containers in a clean, dry area between 45 and 90° F (7 and 32° C).

Features

- Single component
- Reaches 7,000 psi compressive strength in 1 hour
- Wide temperature use range
- Superior bonding
- Very low drying shrinkage
- Resistant to freeze/thaw cycles and deicing chemicals
- Only air curing required
- Thermal expansion and contraction similar to Portland cement concrete
- Sulfate resistant

Benefits

Just add water and mix

Rapidly returns repairs to service

From below freezing to hot weather exposures

Bonds to concrete and masonry without a bonding agent

Improved bond to surrounding concrete

Usable in most environments

Fast, simple curing process

More permanent repairs

Stable where conventional mortars degrade

Where to Use

APPLICATION

- Heavy industrial repairs
- Dowel bar replacement
- Concrete pavement joint repairs
- Full-depth structural repairs
- Setting of expansion device housings
- Bridge deck and highway overlays
- Anchoring iron or steel bridge and balcony railings
- Commercial freezer rooms
- Truck docks
- Parking decks and ramps
- Airport runway-light installations

LOCATION

- Horizontal and formed vertical or overhead surfaces
- Indoor and outdoor applications

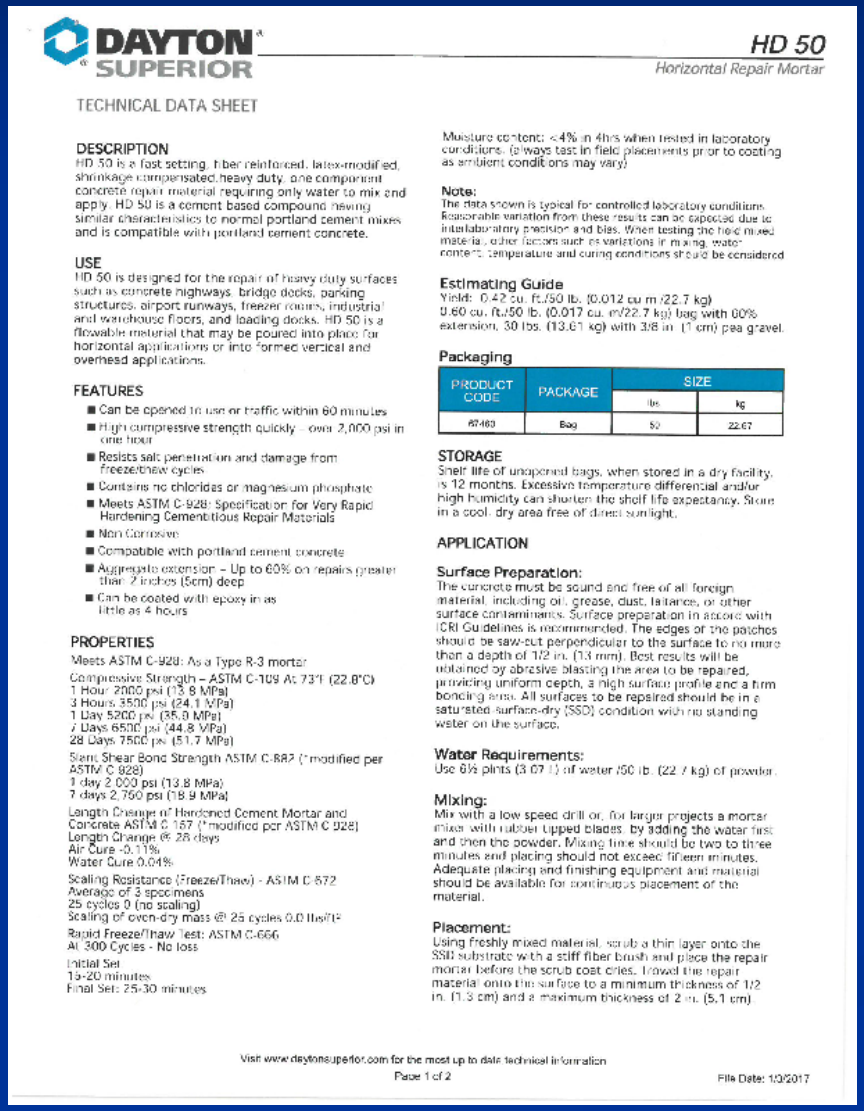
How to Apply

Surface Preparation

1. A sound substrate is essential for good repairs. Flush the area with clean water to remove all dust.
2. Any surface carbonation in the repair area will inhibit chemical bonding. Apply a pH indicator to the prepared surface to test for carbonation. If carbonation is present, abrase surface to a depth that is not carbonated.
3. Refer to International Concrete Repair Institute publication #s 03730 and 03732 for further surface preparation suggestions.

- Used for patches
- Usually not plating it
- Can put traffic on it within a couple of hours
- Do have to work quickly or will end up with cold joints
- Don't want to go very further with it.
- Great for quick small patches

General Repairs to Concrete



DAYTON SUPERIOR

HD 50
Horizontal Repair Mortar

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 casting 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).

Visit www.daytonsuperior.com for the most up to date technical information
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File Date: 1/3/2017

- Similar product

Boulder Ave Flooding

Drywell installed

Boulder Flooding

Drywell installed

Boulder Flooding

Drywell installed

Questions

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