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(Supersedes December 2014)

# FUTURA®-45 EXTENDED

## Rapid-Setting Concrete

### DESCRIPTION

FUTURA-45 EXTENDED is a one-component, shrinkage-compensated, proprietary blend of cements, aggregates, and performance-enhancing chemical additives. This rapid setting concrete is mixed with water onsite and used for large-scale horizontal concrete repairs and form-and-pour vertical applications that require high early-strength gain.

### USES

FUTURA-45 EXTENDED is ideal for interior and exterior horizontal concrete surfaces, such as airport runways, concrete slab replacement, bridge repair, and parking decks.

### FEATURES/BENEFITS

- Temperature usage range from 40° - 90° F (4.4° - 32° C)/Can be used for a wide range of applications.
- Rapid strength gain/Repairs can be opened to traffic in as little as three hours.
- May be top-coated at 24 hours with most standard coating systems.
- Shrinkage compensated/Minimizes cracking and de-bonding.
- Contains no chlorides/Will not promote reinforcing steel corrosion.
- Contains no added gypsum/Excellent resistance to freeze-thaw and wet environments.
- Low permeability/Protects reinforcing steel from future corrosion.
- Economical.
- Flowable/Easy to apply/Saves labor.

### PACKAGING

70 Lb. (31.2 Kg) Bags  
3000 Lb. (1360.8 Kg) Bulk Bags

### COVERAGE

Approximately .53 ft.<sup>3</sup> (0.015 m<sup>3</sup>) per 70 lb. (31.2 kg) bag when mixed with the recommended amount of water.

### SHELF LIFE

Store on pallets in a cool, dry location. Do not store outdoors. Shelf life of properly stored material is one year from date of manufacture when stored in unopened, original packaging.

### SPECIFICATIONS

ASTM C 928-99a "Packaged, Dry, Rapid Hardening Cementitious Materials for Concrete Repair," Classification R1, R2 Rapid Hardening

### TECHNICAL DATA

<b>Working time</b>	Approximately 20 - 30 minutes
<b>Set time (min) at 72° F (22.2° C) ASTM C191</b>	Initial: 20 - 30
	Final: 30 - 40
<b>Application Temperature Range</b>	40° - 90° F (4.4° - 32° C)
<b>Compressive strength - psi (MPa) 3"x 6" cylinders (ASTM C109)</b>	3 hr. 3,500 (24.1)
	1 day 5,000 (34.4)
	28 days 7,500 (51.7)

### APPLICATION

**Surface Preparation ...** Perform surface preparation in accordance with ICRI (International Concrete Repair Institute) Technical Guidelines #310.2-1997: Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays. Mechanically roughen or high-pressure water jet the existing concrete substrate to a minimum concrete surface profile (CSP) of seven or higher, depending on substrate condition. Remove all unsound concrete and provide a profiled, porous surface. The substrate must be structurally sound, dust-free, and free of grease, oil, dirt, curing compounds, release agents, or any other surface or penetrated contaminants that will adversely affect bond. Sanding, grinding, or wire-brushing are not approved surface preparation methods. Saw cut perimeter of repair zone to a depth of 3/4" (19.1 mm). Completely expose all reinforcing steel, ensuring a minimum clearance of 1" (25.4) behind reinforcing steel. Perform reinforcing steel preparation in accordance with ICRI Technical Guidelines #03730. Pre-soak repair zone for a minimum four hours prior to application of FUTURA-45 EXTENDED. Substrate must be saturated, surface dry (SSD) and free of standing water during application of FUTURA-45 EXTENDED.

**CONTINUED ON REVERSE SIDE ...**

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**Mixing** ... Mix only complete bags. Using a suitable sized mortar-type mixer, add 2.5 - 2.7 quarts (2.3 – 2.5 L) of clean water to the mixer per 70 lb. bag of FUTURA-45 EXTENDED. Mix for 3 - 5 minutes until homogenous and lump-free. Do not mix more product than can be mixed, placed, and finished in 45 minutes at 70° F (21.1° C). Do not overmix.

**Placement** ... Apply FUTURA-45 EXTENDED by trowel or screed. Compact FUTURA-45 EXTENDED well against the prepared substrate prior to bulk placement. Ensure complete encapsulation of reinforcing steel. Finish surface by screeding FUTURA-45 EXTENDED to a level surface. For a rough finish, a broom or burlap bag is suitable. Do not re-temper or overwork.

Application Range: 40° - 90° F (4.4° - 32° C)

Follow American Concrete Institute (ACI) 305-R89 "Standard on Hot Weather Concreting" or ACI 306-R88 "Standard on Cold Weather Concreting" when applicable.

For epoxy-based coating systems, wait a minimum of 24 hours at 75° F (23.9° C) prior to coating. Follow application instructions and recommendations of the coating manufacturer. For all other systems, contact the coating manufacturer.

**Curing**... Wet cure for three hours when rapid water loss conditions are present.

## PRECAUTIONS

FUTURA-45 EXTENDED is recommended for concrete repairs only. Not intended to be used as a self-leveling underlayment or topping; FUTURA-45 EXTENDED is designed as a trowel-down repair mortar. Protect from freezing for a minimum of 24 hours. Do not bridge moving cracks. Extend existing control and expansion joints through FUTURA-45 EXTENDED. For large areas with no control, expansion, or construction joints, refer to ACI guidelines. Do not exceed a length-to-width ratio of 2 to 1 for the repair area. Do not add any admixtures. Exceeding liquid requirements shall result in reduced physical properties. Realize that set time will decrease as the product, air, substrate, and mixing liquid temperature increases and will increase as the temperature decreases. Repair areas should be saw cut and slightly undercut to a minimum depth of a 3/4" (19 mm). Do not feather edge. Protect from conditions that may cause early water loss: high winds, low humidity, high temperature, direct sunlight. Early water loss is amplified in thin applications. Failure to follow industry standard practices may result in decreased material performance.

This data sheet provides a summary of the factors, precautions, limitations, and design theories that should be considered when designing a repair application, but is not stand alone or complete; project, environmental, and application specific requirements must be considered before drafting a guide specification, determining suitability, or application of material. The suitability and/or functionality of the product are the direct and sole responsibility of the licensed design professional, applicator, and/or installer of the product. W. R. MEADOWS is not directly or indirectly acting in any manner as the project licensed design professional, such as, but not limited to, a professional engineer, a licensed architect, and/or a consultant.

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### LIMITED WARRANTY

W. R. MEADOWS, INC. warrants at the time and place we make shipment, our material will be of good quality and will conform with our published specifications in force on the date of acceptance of the order. Read complete warranty. Copy furnished upon request.

### Disclaimer

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