



IPA SYSTEMS

# IPATOP HES

Rapid Setting-High Strength-Cement Based Mortar



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## QUALITY PRODUCTS FOR THE CONCRETE /MASONRY REPAIR INDUSTRY

**Description**

IPATOP HES is a one component cementitious, shrinkage compensated cement based mortar for horizontal concrete surfaces. It is designed for use where high early strength gain is required to minimize downtime.

**Where to Use**

IPATOP HES is ideal for the horizontal concrete repairs where high early strength gain is required for a fast project turnover. Applications include: interior / exterior Structural concrete repairs, bridge decks, parking decks, industrial floors, airport runways

**Advantages**

- ◆ Made in the America
- ◆ Open to vehicular traffic in as little as one hour
- ◆ Shrinkage compensated in both the plastic and hardened states
- ◆ Coefficient of expansion similar to concrete
- ◆ Resistant to deicing chemicals
- ◆ Excellent freeze-thaw resistance
- ◆ Just add water
- ◆ Economical-can be extended up to 100% by weight with aggregate

**Coverage**

Yield is 0.5 cubic feet (0.01 cubic meter) per 50 lb. (22.7kg)

**Packaging**

50lb (22.7 kg) multi-wall bag, 56 Bags/pallet,  
Shelf life: 6 months in unopened bag. Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F before using.

**Technical Data**

<b>Compressive Strength (ASTM C 109)</b>	<b>1 hour</b>	<b>3000 psi</b>	<b>(20.7 MPa)</b>
	<b>2 hour</b>	<b>4000 psi</b>	<b>(27.6 MPa)</b>
	<b>1 day</b>	<b>7500 psi</b>	<b>(51.7 MPa)</b>
	<b>28 day</b>	<b>10,000 psi</b>	<b>(69.0 MPa)</b>
<b>Flexural Strength (ASTM C 78)</b>	<b>1 day</b>	<b>790 psi</b>	<b>(5.4 MPa)</b>
	<b>28 day</b>	<b>1080 psi</b>	<b>(7.4 MPa)</b>
<b>Slant Shear Bond Strength (ASTM C 882) (no epoxy at bond interface)</b>	<b>1 day</b>	<b>1880 psi</b>	<b>(13.0 MPa)</b>
	<b>28 day</b>	<b>2500 psi</b>	<b>(17.2 MPa)</b>
<b>Length Change (ASTM C 157)</b>		<u><b>Air Cure</b></u>	<u><b>Wet Cure</b></u>
	<b>3 day</b>	<b>-0.01%</b>	<b>+0.02%</b>
	<b>7 day</b>	<b>-0.01%</b>	<b>+0.02%</b>
	<b>28 day</b>	<b>-0.03%</b>	<b>+0.02%</b>
<b>Set Time (ASTM C 191)</b>	<b>Initial—</b>	<b>15 minutes</b>	
	<b>Final—</b>	<b>27 minutes</b>	
<b>Color: Concrete Gray</b>			

**Surface Prep**

Concrete substrate should be structurally sound and fully cured. Surface must be clean free of oils, grease and any other contaminants that will prohibit bond. Saw cut the perimeter of the area being repaired to a minimum depth of 1/2-inch (12.7 mm) to avoid feather edges. Remove all concrete necessary to ensure that a minimum depth of 1/2-inch (12.7mm) is achieved throughout the entire repair area. Within the repair area, all visible corroded steel must be completely exposed, cleaned and prepared in accordance with ICRI Technical Guideline No.03730 " Guide for Surface Preparation for Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion." The concrete surface should be saturated surface dry (SSD) with potable water before the placing of material.

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### Mixing

Place 5.5 pints (2.6L) of potable water in mixing vessel. Using a forced action mixer ( Jiffy® mixer or mortar mixer) slowly start adding IPATOP HES powder to mixing vessel and mix for 3 minutes until a uniform mix. Depending on ambient temperatures, up to 1 additional pint (0.5L) of mixing water may be used per 50 lb. bag (22.7kg) of IPATOP HES

### Application

**IPATOP HES** should be applied by trowel or screed. When applying mortar to the substrate, tamp or trowel on both horizontal and vertical surfaces to ensure good compaction of the mortar into the patch. It may be necessary to compact a layer of mortar into the repair area before completely filling void. Finish the material level to the existing concrete . Seal the edges by troweling the material toward the perimeter of the patch area. IPATOP HES may be broom finished to obtain a skid-resistant surface. A maximum of 15 minutes should be allowed to mix, place, and finish IPATOP HES at normal temperatures.

**Aggregate Extension:** IPATOP HES may be extended up to 100% by weight with clean well graded pea gravel depending on the thickness of the repair area. The performance of IPATOP HES is dependent in the type and condition of aggregate and the amount added. Contact our technical department at IPA Systems, Inc for recommendations concerning aggregate suitability and the proper amount to add.

**Curing:** IPATOP HES is a fast setting cement-based repair mortar. Proper curing is extremely important. Curing of the repair shall be done in accordance with ACI's Standard Practice for curing concrete. Acceptable curing options include wet curing and a curing compound conforming to ASTM -C-309.

### Limitations

- ◆ Minimum material, surface and ambient temperature must be 40°F (4.4°C) and rising
- ◆ Minimum application: 1/2 Inch
- ◆ Do not apply to a frozen surface.

### Clean-up

Clean up must be done immediately due to the high bonding characteristics of IPATOP HES. Clean equipment with water.

### Caution

#### **FOR INDUSTRIAL USE ONLY:**

Freshly mixed cement, mortar, grout, or concrete may cause minor skin irritation. Avoid direct contact where possible and wash exposed skin area promptly with water. If any of the cementitious material gets into the eyes, rinse immediately and repeatedly with water. If irritation persists, obtain medical assistance.

### Warranty

This product is warranted and guaranteed to be of good quality. Manufacturer, as its sole and exclusive liability hereunder, will replace material if proved defective. This warranty and guarantee are expressly in lieu of all others, express or implied, including any implied warranty of merchantability or fitness for a particular purpose and may not be extended by representatives or any persons, written sales information, or drawing in any manner whatsoever. While the manufacturer recommends uses for the product based on tests believed reliable, no warranties, express or implied, or guarantee can be given as to particular methods of use or application, nor can performance be warranted, expressly or impliedly, or guaranteed under special conditions. Distributors, salesperson or company representatives are not authorized to extend or vary any warranties or guarantees beyond those outlined herein nor may the manufacturer's or seller's limitation of liability be waived or altered in any manner whatsoever.

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