



IPATOP HES

A High Early Strength Concrete Repair Mortar For Horizontal Applications

IPATOP HES – Product Data Sheet

High Early Strength Concrete Repair Mortar

Description:

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

Uses:

IPATOP HES is ideal for the repair of horizontal concrete surfaces where high early strength gain is required. Specific applications include the repair and reinstatement of bridge decks, parking decks, industrial floors, expansion joint nosing, airport runways, commercial freezer rooms, etc.

Advantages:

- ◆ High early strength minimizes down time. Structures can be opened to vehicular traffic in as little as one hour.
- ◆ Shrinkage compensated in both the plastic and hardened states
- ◆ Excellent adhesion
- ◆ Coefficient of expansion similar to concrete
- ◆ Excellent resistance to deicing chemicals
- ◆ Excellent freeze-thaw resistance
- ◆ Economical – can be extended up to 100% by weight with aggregate

TECHNICAL DATA

Physical Properties:

Compressive Strength (ASTM C 109)	1 hour	3000 psi (20.7 MPa)
	2 hour	4000 psi (27.6 MPa)
	1 day	7500 psi (51.7 MPa)
	28 day	10,000 psi (69.0 MPa)

Flexural Strength (ASTM C 78)	1 day	790 psi (5.4 MPa)
	28 day	1080 psi (7.4 MPa)

Slant Shear Bond Strength (ASTM C 882) (no epoxy at bond interface)	1 day	1880 psi (13.0 MPa)
	28 day	2500 psi (17.2 MPa)

Length Change (ASTM C 157)		<u>Air Cure</u>	<u>Wet Cure</u>
	3 day	- 0.01%	+ 0.02%
	7 day	- 0.01%	+ 0.02 %
	28 day	- 0.03%	+ 0.02%

Set Time (ASTM C 191)	Initial –	15 minutes
	Final –	27 minutes

Color: Concrete Gray

IPA SYSTEMS, INC.
 QUALITY PRODUCTS FOR THE
 CONCRETE/MASONRY REPAIR
 INDUSTRY

2745 North Amber Street
 Philadelphia, PA. 19134

Phone: 800-523-3834

Fax: 215-425-6234

info@ipasystems.com

Visit Our Website!

www.ipasystems.com

IPATOP HES Product Data Sheet Page 2 of 2

Packaging: 50 lb. bag (22.7 kg)
Yield: Approximately 0.5 cubic feet (0.01 cubic meter) per 50 lb. (22.7 kg) bag
Shelf Life: Six months in unopened bag. Requires dry storage

Surface Preparation:

Concrete substrate should be structurally sound. Loose or deteriorated concrete should be removed. Saw cut the edges of the repair area to a minimum depth of at least 1/2-inch (12.7 mm) to avoid feather edging and to provide a square edge. Remove all concrete necessary to ensure that a minimum depth of at least 1/2-inch (12.7 mm) is achieved through out the entire patch area. Remove all unsound or contaminated concrete. Surface to be repaired must be cleaned of any film, scale, loose material, oils, grease and any other foreign material that will prohibit bond. Surface preparation may be accomplished by accepted water blast, mechanical or chemical methods. Ensure that an adequate mechanical key is achieved upon completion of surface preparation. Expose fully any corroded steel in the repair area to 100% of its circumference and remove all loose scale or corrosion deposits. Substrate must be saturated surface damp prior to application of **IPATOP HES**.

Mixing Instructions:

Place 5.5 pints (2.6 L) 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 2 to 3 minutes. Depending on ambient temperatures, up to 1 additional pint (0.5 L) of mixing water may be used per 50 lb. bag (22.7 kg) 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 the 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 texture. A maximum of 15 minutes should be allowed to mix, place, and finish **IPATOP HES** at normal temperatures.

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 a fine mist of water, wet burlap, secured polyethylene sheeting or white pigmented curing compound.

Clean-up:

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

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 on the type and condition of aggregate and the amount added. Consult the Engineering Department at IPA Systems, Inc. for recommendations concerning aggregate suitability and the proper amount to add.

Limitations:

Do not install **IPATOP HES** unless substrate and air temperature is at least 40°F (4.4°C) and rising for the next 48 hours. Do not apply to a frozen surface. Care must be taken to insure proper concrete practices are used in preparation, mixing, placing and curing.

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 areas 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 DRAWINGS 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, salespersons 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.