

# JET PATCH

## PRODUCT DESCRIPTION

Jet Patch is Portland Cement blend of specialty aggregates and admixtures providing a rapid setting, high strength, durable concrete repair for use on airport runways, taxiways, concrete floors, highway pavements, bridge decks and other applications requiring early resumption of traffic or use. Jet Patch is formulated to meet the requirements of ASTM C928 Packaged, Dry, Rapid Hardening Cementitious Material for Concrete Repair.

Jet Patch is pre-mixed, requiring only the addition of potable water. This unique mortar provides outstanding results and enables the project to be completed more rapidly than with conventional patching & repair materials.

## GENERAL USES

Jet Patch is excellent for all types of concrete repair applications: bridge decks, concrete pavements, concrete joints, airport runways and taxiways, industrial floors, loading docks, general concrete, pre-stressed and precast. Jet Patch is specifically designed for those applications requiring very rapid strength gain.

## FEATURES

- High early strength
- Low permeability
- Flowable
- Sulfate resistant
- Self compacting
- Freeze thaw resistant
- Use neat for repair from 1/2" to 3".
- Thermal expansion & contraction similar to concrete

## STANDARDS

- ASTM C928

## INSTRUCTIONS FOR USE

**Surface Preparation:** The base slab on which the Jet Patch is to be placed should be clean and soaked with clean water, (SSD) Surface Saturated Dry. Just prior to placement, the water should be removed and the surface dried with clean rags or compressed air, free of oil and other lubricants and leaving only a damp film.

All concrete surfaces to come in contact with Jet Patch should be sound, free of grease, oil laitance and other debris. Feathering is not recommended.

All concrete of poor quality that is in contact with reinforcing steel should be removed. Remove rust from exposed reinforcing steel by brushing or sandblasting prior to repairing with Jet Patch. Have all necessary tools and materials as near work areas as possible to permit rapid and continuous placement of Jet Patch.

Refer to International Concrete Institute publication #03730 and #03730 for further surface preparation suggestions.

**Mixing:** Prior to mixing the first batch of Jet Patch, wash out mixer and determine the number of bags to be mixed at one time. Mix only the amount of Jet Patch that can be placed in approximately 10 minutes. Put into the mixer all of the required water, 12% to 12.75% of water per batch then add the Jet Patch slowly into the operating mixer. Mix the Jet Patch 2 to 3 minutes, to uniform consistency. *Do not use more water than indicated. The excess amount of water may cause bleeding, segregation and loss of structural properties of the product.*

**Mixing One Bag Batches:** Mechanical mixing of small batches: It is recommended that no less than one bag be mixed at a time. Obtain a clean 5 gallon bucket or suitable container for mixing. Using a marked pitcher or beaker, carefully measure the water required, 12% (6.0 lb; 2.7kg; 5.75 pints) to 12.75% (6.4 lb; 2.9 kg; 6.15pints). Add the pre measured water to the large container.

Slow pour Jet Patch into the container while mixing with a low rpm, high torque electric drill. The actual mixing device shall have paddles or impellers capable of thoroughly blending stiff mortar. (Epoxy compound mixers have been found suitable.) Care should be exercised not to form a downward-flowing vortex, as this can cause entrapment of air, resulting in a porous surface.

**Hand Mixing of Small Batches:** Place small quantity of water into a container, add Jet Patch and mix by hand using a spoon or paddle, until desired consistency is achieved.

**Mixing with Pea Gravel:** For repairing depths of 1/2" to 3", Jet Patch should be used as packaged. For depths of more than 3", it is recommended that 3/8" pea gravel or pea stone be added to the Jet Patch. Due to the nature of Jet Patch, the addition of 3/8" aggregate as specified below does not substantially affect performance or consistency, but will result in yield increase of approximately 40%. Follow basic mixing procedures for large batches as modified below:

Choose a clean (free of organic material) well-graded 3/8" aggregate. Soak in clean water for approximately 24 hours prior to mixing with Jet Patch.

Drain off excess water prior to mixing. The total mixing water for the batch shall be reduced by the amount of free water found in the aggregate.

Follow mixing procedures for large batches. After all water has been added and Jet Patch has come to uniform consistency, add approximately one 5 gallon bucket of 3/8" (1 cm) aggregate for every two 50 lb bags of Jet Patch (up to 50 lb) of aggregate per 50 lb bag of Jet Patch.

Continue to mix until the aggregate is thoroughly dispersed throughout the Jet Patch.

**Application:** Place the material immediately into thoroughly dampened area, at depths of not less than 1/2". Place from one side to the other, working material into sides and bottom of repair area to assist in satisfactory bonding.

# JET PATCH

**TYPICAL PERFORMANCE DATA 82° AT 50% RH**  
**6 PINTS (6.25 LB; 2.85 KG) OF WATER PER 50 LB BAG OF JET PATCH**

HARDENED PROPERTIES OF JET PATCH							
Set Time ASTM C266	Properties	Method ASTM	1 hour PSI	3 hours PSI	1 day PSI	7 days PSI	28 days PSI
initial - 25 min. final - 34 min.	Compressive Strength	C109	3000	4165	5860	7155	8500
	Split Tensile Strength	C496	30	--	45	--	51
Flow ACTM C928: 100%	Flexural Strength	C348	800	--	900	--	400
Durability ASTM C672 25 cycles visual rating 0 (none)	Slant Shear Bond	C1042	750	1200	1400	2000	2400
ASTM C928 *1 hour strength tested after final set 3000 PSI	Drying Shrinkage	C157	--	--	--	--	0.03%

Test results are averages obtained under laboratory conditions. Expect reasonable variations. All test were performed with neat material (no aggregate).

#### Typical Compressive Strengths ASTM C109 (PSI)

	72°F	82°F	92°F
<b>1 hour</b>	2925	3000	3385
<b>3 hour</b>	3295	4165	4895
<b>1 day</b>	5560	5860	5270
<b>7 day</b>	7243	7155	6293
<b>28 day</b>	8500	8500	8500

Screed and level to proper elevation of existing concrete. Excessive trowelling is not required. Under no circumstances should Jet Patch be retempered, using water or other additives.

#### Hot Weather Conditions: Consult ACI305 Standards

Mixing and Placing Procedures:

Precondition Jet Patch to approximately 70°F.

Store Jet Patch bags in a cool, shaded (preferably indoor) location until time of use.

Use mixing water as close to 70°F as possible.

Be sure areas to be repaired have been thoroughly saturated with water prior to repairing. Just prior to placing the Jet Patch, remove standing water with compressed air, leaving only a (SSD) Saturated Surface Dry condition.

Locate mortar mixer in a shaded area as close to the patching site as possible. Prior to mixing, cool mixer with the chilled water.

As soon as Jet Patch has reached final set, apply soaked bur-lap or pond-exposed surfaces to inhibit rapid evaporation conditions due to high ambient temperature. When using this technique, delay application of cure/seal compound for 24 hours after final set or until surface has reached suitable moisture content for application.

**Yield:** .43 cu. ft. **Coverage:** 12.5 sq. ft. @ 1/2"

#### PACKAGING

- 50 lb bags
- 50 lb pails

#### LIMITATIONS/WARNING

Not recommended for placing below 35°F. Maximum 3" per layer (neat). Do not re-temper after initial set. Must be placed with 12 minutes after mixing.

Refer to material safety data sheet prior to use.

Avoid direct contact with skin and eyes. Product contains Portland Cement. May cause irritation and possibly cement burns. Wash exposed skin area promptly with water. In case of eye contact, flood eyes repeatedly with water and call physician. Do not take internally. Harmful if ingested. Keep product out of reach of children.

Proper application is the responsibility of the user. Field visits by ATC personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Color variations are not indicators of abnormal product performance.