

T-17 Patch Material

MMA Polymer Concrete Fast-set Patching Material

Extends Life of Concrete Structure



Transpo's T-17 methyl methacrylate polymer concrete is a 100% reactive, pre-packaged,

two component solvent-free material system. T-17 is designed for use on new construction and rehabilitation of

bridge decks, expansion joints, bearing pads,

airport runways and other concrete structures.

Features and Advantages

- Wide Application Temperature Range: 14 - 100°F (-10 - 38 °C)
- Fast Setting: 45 min. at 70°F (21 °C) or 90 min. at 14°F (-10°C)
- High Early Strength
- Strong Chemical Bond (no cold joints)
- Chemical Resistant
- UV Light Resistant
- Freeze-Thaw Resistant
- Waterproof
- Easy to Use

Application of T-17 will restore the structural integrity of deteriorated PCC structures. It is easy to handle in all working conditions, requires no special equipment and its rapid curing time assures a quick return to service.



Application Procedure

Transpo's T-17 can be used as a neat mortar for grouting or thin patches (1/2" deep maximum) and can be filled with special aggregate and used for partial or full-depth patching in a single pour for most applications. This system is to be used on horizontal concrete surfaces, on grade, above and below grade, and can be pumped.

A thin coat of T-41s methyl methacrylate primer should be used to seal the existing concrete surface and increase the bond strength of cured T-17 to the portland cement concrete (PCC).

Applications

Because of its high strength, chemical resistance, and rapid cure, T-17 can be used for repairs and rehabilitation of numerous concrete structures including:

- Concrete Bridge and Parking Deck Repair
- Concrete Spall Repair
- Structural Grouting
- Expansion Joint Headers
- Structural Bearing Pads
- Load Transfer Devices



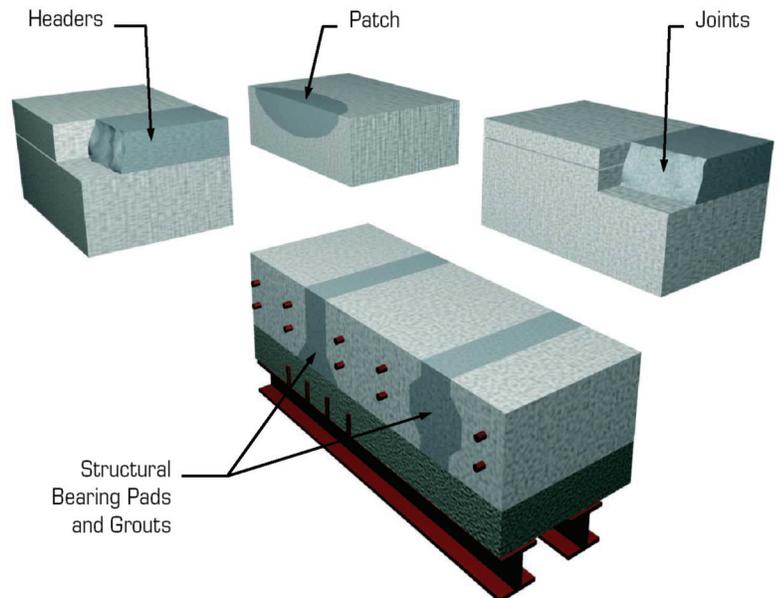
Physical Properties *

Property	Unit Of Measure	Test
<i>T-41s Primer</i>		
Viscosity	40 -60 cps (mPa.s)	Brookfield
Pot Life (@70°F)	8-15 min.	AASHTO T237
Tensile Adhesion***	>250 psi (> 1.7 MPa)	ACI 503R
<i>T-17 Polymer Concrete</i>		
Viscosity	10 -12 cps (mPa.s)	Brookfield
Pot Life (@70°F)	24 min.	AASHTO T237
Compressive Strength**	>2500 psi (> 17 MPa) - 2 hrs 8000 - 9000 psi (55 - 62 MPa) - 24 hrs	ASTM C579Method B ASTM C579Method B
Flexural Strength**	2000-2500 psi (13 -17 MPa)	ASTM D790
Tensile Adhesion***	>250 psi (> 1.7 MPa) - 2hrs	ACI 503R

* To be used as general guidelines only

** No extension, varies with temperature

*** Pull-off Concrete



MMA Polymer Concrete Patching Material T-17

T-17 is a 100% reactive, rapid setting, solvent-free methyl methacrylate (MMA) polymer concrete system that can be used as a repair for partial or full depth patching, grouting, and structural repairs. This system is to be used on horizontal concrete surfaces, on grade, above and below grade.

The polymer concrete consists of a two-component system. The T-17 liquid component consists of a solvent free 100% reactive, low viscosity methyl methacrylate (MMA). The T-17 powder component consists of a prepackaged blend of sand, inert fillers, polymers, and initiators. The material can be applied at a minimum ½” (13mm) thickness. For deeper patching, the T-17 should be extended with a special aggregate.

Application Procedure

Surface Preparation: All surfaces that are to receive T-17 must be thoroughly clean, dry and free of all dirt, grease, rust and other contaminants that might interfere with the proper adhesion of the polymer concrete. All damaged or deteriorated concrete shall be removed using jack-hammers or any other means and cut back to sound concrete. All surfaces must be thoroughly shot-blasted or sandblasted prior to applying T-17.

Priming: Priming is done with T-41s MMA primer using either rollers or brushes at a rate of 0.01gal/ft² (0.4L/m²). The primer resin is mixed with an appropriate amount of powder hardener (BPO) as shown in Table 1. The primer coat must be allowed to cure tack-free before application of the patching material.

Table 1: Mixing Instructions for T41-s Primer

Ambient Temperature °F (°C)	No. of 1oz (30g) Bags of BPO per gal (3.79L) of T41-s Resin
14 – 35 (-10 – 2)	6
36 – 55 (2 – 13)	5
56 – 75 (13 – 24)	4
76 – 104 (24 – 40)	3

T-17 Mixing: For small batches, the material can be mixed in a polyethylene bag that is available upon request. This is done by adding the powder, a pre-measured amount of liquid component to the bag, twisting the top with both hands so as to leave a small air space above the material, holding the bag closed with one hand and using the other to agitate the components in the bag until completely mixed. After powder and liquid are mixed, additional aggregate should be added and repeat mixing procedure.

For larger mixing, a rotary drum mortar mixer may be used. The inside of the mixer should be clean and dry. Add appropriate amount of Transpo T-17 liquid to the mixer, the Transpo T-17 powder component, and mix until uniform consistency. Next, add the additional coarse aggregate and re-mix for another minute. The amount of aggregate and resin added per bag of Transpo T-17 powder depends on the depth of the patch. Refer to Table 2:

Table 2: Mixing Instructions for T-17 per 50 lb (22.7 kg) bag of T-17 Powder

Depth of Patch in (mm)	Amt. Extension	Agg. Size in (mm)	Amt. Agg. lb (kg)	T-17 Liquid gal (L)	Yield ft ³ (m ³)
2 (51) and above	100%	3/4 x 3/8 (19 x 10)	50 (22.7)	0.875 (3.3)	0.72 (0.07)
½ - 2 (13 – 51)	50%	3/8 x 3/16 (10 x 5)	25 (11.3)	0.75 (2.8)	0.56 (0.05)
Less than ½ (13)	0%	-	-	0.625 (2.4)	0.40 (0.03)

Finishing:

Standard concrete finishing tools can be used to place and finish T-17 polymer concrete. Steel trowels, floats, or screeds can be used to obtain a “closed” surface. Do not overwork the materials. Tinning or Broom Finishing is not recommended.

Packaging:

The standard packaging for Transpo T-17 consists of a powder component, coarse aggregate, and a liquid component in the following sizes:

Powder: Available in 50 lb (22.7 kg) bags

Aggregate: Available in 50 lb (22.7 kg) bags

Liquid:

T-17 Liquid	55 Gal Drum	5 Gal Pail
Gross Weight lb (kg)	457 (207)	42.6 (19.3)
Net Weight lb (kg)	420 (191)	38 (17.2)
Nominal Volume gal (L)	54.1 (205)	4.9 (18.5)

Properties*

Property	Unit of Measure	Test
T-41s Primer/Sealer		
Viscosity	40 – 60 cps(mpa-S)	Brookfield
Density	8.16 lb/gal (0.98 g/mL)	ASTM D2849
Pot Life @ 70°F (21°C)	8 – 15 minutes	AASHTO T237
Flash Point	>49°F (>9°C)	ASTM D1310
Solids Content	100%	ASTM D1644
T-17 Resin		
Viscosity	10 – 12 cps(mpa-S)	Brookfield
Density	7.63 lb/gal (0.91 g/mL)	ASTM D2849
Pot Life @ 70°F (21°C)	24 minutes	AASHTO T237
Flash Point	>58°F (>14°C)	ASTM D1310
Solids Content (w/catalyst)	100%	ASTM D1644
T-17 Mortar (No Extension)		
Compressive Strength	8000 – 9000 psi (55 – 62 MPa)	ASTM C579 Method B
Flexural Strength	1800 – 2500 psi (13-17 MPa)	ASTM D790
Linear Shrinkage	<0.2%	DuPont
Tensile Strength	1000 – 1200 psi (6.90-8.25 MPa)	ASTM D638 Type I
Compressive Modulus	1.1-1.2 x 10 ⁶ (7.50-8.50 GPa)	ASTM C579 Method B
Tensile Adhesion (pull-off concrete)	>250 psi (>1.7 MPa)	ACI 503R

* To be used as general guidelines only

Storage

The liquid and powder components can be stored for up to 12 months in original, unopened containers in a cool, dry area at temperatures less than 90°F (32 °C).

Caution

The uncured liquid component is flammable. All appropriate precautions should be taken. After curing, it will not support combustion. It is recommended that all persons involved in mixing and application wear protective clothing such as goggles, rubber boots, rubber gloves. As with all chemicals, read MSDS prior to use.

Warranty

The following warranty is made in lieu of all other warranties, either expressed or implied. This product is manufactured of selected raw materials by skilled technicians. Neither seller nor manufacturer has any knowledge or control concerning the purchaser's use of either product and no warranty is made as to the results of any use. The only obligation of either seller or manufacturer shall be to replace any quantity of this product that proves to be defective. Neither seller nor manufacturer assumes any liability for injury, loss, or damage resulting from use of this product.

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