



# B-TUFF® MMA OVERLAY

## Methyl Methacrylate Overlay System

**1.01 DESCRIPTION**

**B-Tuff® MMA Overlay** is a rapid setting, high strength methyl methacrylate (MMA) based system formulated as a single or multilayer, hi-friction, skid-resistant overlay and traffic wearing surface for roads and bridges. providing minimal closure times. TuffDeck MMA Overlay will add less than 3-4 pounds of dead load per square foot of surface area which is an important consideration for rehabilitation of older structures.

**1.02 USES**

- Any horizontal concrete surface
- Concrete Bridges decks
- Parking Garages
- Piers and Wharfs
- Roadways and Ramps
- Slabs and Sidewalks
- Steel Orthotropic Bridge Decks

**1.03 FEATURES**

- Compatible with other PSI MMA systems
- Excellent bond – high strength and durability
- Freeze thaw resistant
- Highly elastic
- Protects against water and salt ion intrusion
- Rapid curing (1 hour)
- Resistant to weathering, aging and UV exposure
- Steel & Concrete compatible
- Waterproof
- Wide application temperature range: 14°F to 90°F (-10°C to 40°C)

**1.04 TECHNICAL DATA**

Complies with DOT regulations as Resin Solution, UN 1866, Class 3, PG II

**1.05 COLOR**

Clear

**1.06 PACKAGING**

Powder Activator: 50 lb (22.7 kg) bags

Aggregate: 80 lb (36.3 kg) bags

Liquid:

	55 Gallon Steel Drums	5 Gallon Pail
<b>B-Tuff® MMA Primer</b>		
Gross Weight (lbs)	437	40
Net Weight (lbs)	396	36
Nominal volume (gal)	48.3	4.42
<b>B-Tuff® MMA Bodycoat</b>		
Gross Weight (lbs)	477	46
Net Weight (lbs)	440	42
Nominal volume (gal)	52.3	5
<b>B-Tuff® MMA Topcoat</b>		
Gross Weight (lbs)	478	44
Net Weight (lbs)	441	40
Nominal volume (gal)	54.6	5

**1.07 COVERAGE**

**B-Tuff® MMA Primer:** 100 sqft/gallon (2.5 sqm/liter) depending on porosity of substrate.

**B-Tuff® MMA Bodycoat:** Unit 1.5 gallons (5.7 liters) Liquid 1-30 lb (0.45-13.6 kg) bag Filler.

**B-Tuff® MMA Topcoat:** Approximately 80 sqft/gallon (2 sqm/liter).

**B-Tuff® MMA #8 Aggregate:** 1.5 lbs/sqft (7.3 kg/sqm).

**Powder Activator:** See Mixing charts for the appropriate products

**1.08 PREPARATION**

Surface must be dry for 24 hours and just prior to application cracks should be cleaned with dry high pressure compressed air. or damp, but free of standing water and frost. Surface should be sound with no loose materials. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Using dust free equipment, shot blast, blast clean, or use other approved mechanical means to provide an open roughened texture. Patch or repair deck delamination, spalls and cracks with **P-Tuff® SP** polymer concrete, or other approved PSI repair product and allow to cure.

**1.09 MIXING**

**B-Tuff® MMA Primer:** Mix enough material for a 5 to 10 min application, using either the PSI's **RapidPail Mixer** or a low-speed (400-600 rpm) drill using the PSI's **Jiffy Paddle** utilizing the PSI's **Easy Stand**. Mix 1 gallon (3.8 liters) (or multiples of one gallon – maximum 5 gallons (19 liters) with **B-Tuff® MMA Activator** per mixing chart below. Mix thoroughly for 30 – 60 seconds, and apply immediately.

TEMPERATURE	VOLUME (OUNCES)	WEIGHT %
40°F (4°C)	11	6
50° (10°C)	9	5
60° (16°C)	7	4
70°F (21°C)	5	3
80°F (27°C)	3	2
90°F (32°C)	2	1
* Please consult PSI Technical Services for applications outside this temperature range.		

**B-Tuff® MMA Bodycoat:** Mixed in 5 gallon pails with a mixing blade or in concrete drum mixers. Measure out no more than 1.5 gallons of **B-Tuff® MMA Bodycoat** resin component per 30 lbs bag of **B-Tuff® MMA Bodycoat** filler component. Add **B-Tuff® MMA Bodycoat** resin component to container first followed by **MMA Bodycoat** filler component and mix to obtain a slurry consistency. Then add the appropriate amount of powder activator per the chart below and mix thoroughly for 30 – 60 seconds.

TEMPERATURE	VOLUME (OUNCES)	WEIGHT %
40°F (4°C)	16	4.8
50° (10°C)	13	3.9
60° (16°C)	10	3
70°F (21°C)	7	2.1
80°F (27°C)	5	1.5
90°F (32°C)	3	0.9

\* Please consult PSI Technical Services for applications outside this temperature range.

**B-Tuff® MMA Topcoat:** Mix 1 gallon (3.8 liters) (or multiples of one gallon – maximum 5 gallons) with appropriate amount of powder activator per mixing chart below. Mix thoroughly for 30 – 60 seconds, using the PSI's **RapidPail** Mixer or a low-speed (400-600 rpm) drill using the PSI's **Jiffy Paddle** utilizing the PSI's **Easy Stand**.

TEMPERATURE	VOLUME (OUNCES)	WEIGHT %
40°F (4°C)	11	6
50° (10°C)	9	5
60° (16°C)	7	4
70°F (21°C)	5	3
80°F (27°C)	3	2
90°F (32°C)	2	1

\* Please consult PSI Technical Services for applications outside this temperature range.

## APPLICATION

### 2.01 APPLICATION

**Priming:** Immediately after mixing **B-Tuff® MMA Primer**, pour onto the concrete surface and distribute with heavy nap, solvent-grade roller, brush or squeegee at approximately 100 sqft/gal (2.5 sqm/liter) leaving a uniform glaze on the surface. Avoid puddling. Re-prime any areas indicating high surface absorption of the primer. Allow to cure, approximately 1 hour.

**Optional:** If primer is to be left over night, light broadcast 30 mesh sand into the wet, uncured primer at a rate of up to 4 lbs/100 sqft. (1.8 kgs/9.3 sqm).

**Body Coat:** After priming, apply the **B-Tuff® MMA Bodycoat** slurry immediately after mixing by pouring directly onto the primed and cured deck surface, and distribute by means of steel gauge rake to desired thickness, normally 3/16", at the rate of approximately 20-24 sqft (1.9-2.2 sqm) per unit.

## PHYSICAL PROPERTIES AT 77°F ( 25°C) RESIN AND HARDENER

Compressive Modulus, ASTM D695	2,500 psi (18 MPa)
Tensile Strength, ASTM D531	2,800 psi (19 MPa)
Flexural Strength D790	1,600 psi (11 MPa)
Coefficient of thermal expansion (ASTM D 531)	6.2 x 10 <sup>-5</sup> /°F
Tensile Adhesion (ACI 503R)	>250 psi
Water Absorption (ASTM D 570)	0.1 %/24 hrs.

**Wearing Course Aggregate:** Broadcast to rejection, approximately 1.5 lbs/sqft (7.3 kg/sqm), **B-Tuff® MMA #8 Aggregate** or specified wearing course aggregate into the fresh, uncured **B-Tuff® MMA Bodycoat**. Aggregate should be thrown into the air and allowed to "rain" down into slurry to avoid rippling. Allow to cure, approximately one hour, and then completely remove excess aggregate.

**Topcoat: B-Tuff® MMA Topcoat:** is applied to the freshly swept wearing course using heavy nap (3/4" or 1.95cm) rollers at a rate of 80 sqft/gal (2 sqm/liters).

### For Best Performance:

- Application temperature range of substrate is between 14 and 104° F (-10 and 40° C).
- Curing problems may occur if material is applied less than the recommended thickness.

## 2.02 CURING

**B-Tuff® MMA Primer:** 1 Hour

**B-Tuff® MMA Bodycoat:** 1 Hour

**B-Tuff® MMA Topcoat:** 1 Hour

## 2.03 CLEAN UP

Tools and Equipment: Clean with water or PSI's **Solvent 100™**, acetone, ethyl acetate or similar solvents. Cured material can only be removed mechanically.

## 2.04 STORAGE AND SHELF LIFE

The material should be stored between 40–95°F (4–35°C) in a cool, dry area away from direct sunlight. The shelf life of properly stored, unopened containers is 12 months from date of manufacture. An excessive temperature differential and/or high humidity can shorten the shelf life expectancy.

## 2.05 LIMITATIONS

- Avoid prolonged skin contact.
- Do not dilute.
- Wear protective gloves and goggles.

## 2.08 CAUTION

Keep container tightly closed. Not for internal consumption. For industrial use only. Flammable.

**READ SDS PRIOR TO USING PRODUCT. FOR PROFESSIONAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. MADE IN THE USA.**



Please read all information in the General & Safety Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. PSI Products are for "Professional Use Only" and preferably applied by professionals who have prior experience with the PSI Products or have undergone training in application of PSI Products. Published technical data and instructions are subject to change without notice. Contact your local PSI representative or visit our website for current technical data, instructions, and project specific recommendations.

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