

METZ 93PU-TG

POLYURETHANE FLOORING SYSTEM



DESCRIPTION:

Metz 93PU-TG is a 100% solids flooring system based on polyurethane and concrete technologies which offers a combination of toughness, abrasion and impact resistance, plus chemical and temperature resistance unequalled by other resin-based flooring systems such as epoxies and polyesters. Metz 93PU-VG is the accompanying formulation used for vertical surfaces.

FEATURES AND BENEFITS:

- **Chemical Resistance**
Excellent resistance to a wide range of acids, alkalis, solvents, oils and fats. Refer Metz Chemical Resistance Chart.
- **Abrasion Resistance**
Resists wear from heavy traffic and physical abuse.
- **Impact Resistance**
Resilient. Absorbs impact and does not shatter like most epoxy and polyester systems.
- **Temperature Resistance**
Withstands temperatures to 130°C. Can be steam-cleaned.
- **Non-tainting**
Does not give off objectionable odours during application or curing. Components not dangerous for transport or storage.
- **Low Expansion Co-efficient**
Co-efficient of thermal expansion much lower than other resin-based systems such as epoxies and polyesters. Its thermal co-efficient of expansion is much closer to that of Portland cement based concrete than those of epoxies and polyesters.

RECOMMENDED:

As a flooring system for -

- Chemical plants
- Food processing plants
- Breweries and soft drink plants
- Pharmaceutical plants
- Confectionery plants
- Dairies and milk products processing

NOT RECOMMENDED:

For thickness above 15mm. Refer Metz 10 or Metz 10EN epoxy concretes.

PHYSICAL PROPERTIES: (Typical Values)

	METZ 93PU-TG	METZ 93PU-VG
Density g/cm ³	2.15 - 2.25	2.05-2.15
Compressive Strength, MPa	80	50
Adhesion to concrete (ASTM C1583)	>1.5MPa (concrete failure)	>1.5MPa (concrete failure)
Maximum service temperature °C	130	130
Flexural Strength, MPa	20	17
Tensile Strength, MPa	10	10
Modulus of Elasticity, MPa	1520	1240
Coefficient of thermal expansion, per °C	23 x 10 ⁻⁶	

COVERAGE: Theoretical quantities (allow for wastage and substrate irregularities).

METZ 93PU-TG	16 kgs per sq.metre at 7mm thickness
METZ 93PU-VG	13 kgs per sq.metre at 6mm thickness

Metz 93PU-TG is an industrial finish, not an architectural finish and therefore the cured surface may contain surface imperfections. Steam cleaning and sunlight may cause changes to surface colour.



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INSTRUCTIONS FOR USE

1. Temperature of Working Area

For optimum results, maintain a temperature of 10° - 30°C on air and substrate. Metz 93PU-TG components should be maintained at a temperature of 15° - 25°C.

At temperatures below 15°C, the application becomes more difficult and curing is retarded.

At temperatures above 30°C, the working time decreases.

Application in direct sunlight or rising surface temperature may result in blistering of the topping due to expansion of entrapped air or moisture in the substrate.

2. Surface Preparation

Concrete on grade should utilise a waterproof barrier beneath the slab.

(i) New Concrete

New concrete should have attained a compressive strength of 20 MPa minimum and be at least 14 days old. Surface must be free from laitance, form oils and curing compounds. Abrasive blast or high-pressure water blast to remove laitance and provide uniform, textured surface. Surface moisture content should be less than 5%. Contact Metz for details of testing equipment.

(ii) Old Concrete

Concrete must be sound and dry. Remove laitance, old paints, protective coatings and attacked or deteriorated concrete.

All surfaces must be clean, dry and free from oil, grease, water and other contaminants which may inhibit bond.

Chemically clean surface to remove any contaminants. Abrasive blast or high-pressure water blast to remove laitance and provide uniform, textured surface.

All structural cracks should be repaired and all slopes established prior to topping. Consult Metz for details. All prepared surfaces must be allowed to dry prior to application of Metz 93PU-TG.

(iii) Edge Detail

Wherever an exposed edge of the material occurs (e.g. in doorways) an anchoring groove at least 9mm deep should be cut in the substrate. Consult Metz for full details.

3. Mixing: Proper mixing is essential for a successful installation.

(i) Mixing Equipment

The correct mixing equipment is essential. The use of incorrect equipment can result in blistering of the coating. A forced action planetary mixer is required. Consult Metz for details. Use equipment and procedures that minimise the entrapment of air in the mix. A timer should be fitted to ensure consistent mixing times.

(ii) Mixing Proportions

a) METZ 93PU-TG	By Weight	By Volume
Liquid	1.0	1.3 litres
Hardener	1.9	2.1 litres
Powder	14.4	20 kg (1 bag)

b) METZ 93PU-VG	By Weight	By Volume
Liquid	1.0	0.7 litres
Hardener	1.9	1.13 litres
Powder	13.8	10 kg (1 bag)

Note: The powder is an active ingredient in the mixture and its proportion cannot be adjusted to suit conditions.

(iii) Mixing Procedure - Ensure Metz 93PU components are at a temperature of 15 - 25°C.

Mixing times and procedures are critical and must be

carefully controlled. Mix the liquid and hardener together in the correct proportions for 10 seconds only. Begin adding powder immediately. Add powder gradually. Material must be thoroughly wetted out and uniform in consistency. In colder conditions a longer mixing time is required.

As a guide, mixing time after addition of powder should be 4 - 5 minutes at 15°C, 3 - 4 minutes at 20°C and 2½ - 3 minutes at 25°C. Do not mix for less than 2½ minutes.

The mixed material temperature should not exceed 28°C.

Complete mixing is essential.

Any material which has begun to set must be discarded. Do not add any solvent, additive or adulterant to any component, or to the mixed material.

Do not use residual material from the sides or bottom of the mixing container.

(iv) Pot Life at 20°C

METZ 93PU-TG and
METZ 93PU-VG 30 minutes

Note: Increase in temperature will decrease pot life, as will leaving mixed material in a large mass. Spread out material in a thin layer as soon as possible after mixing.

(v) Clean Up

Mixing equipment, tools etc. can be cleaned with Metz Cleaner, xylene, acetone or M.E.K. prior to initial set of cement.

4. Installation

Material should be placed immediately after mixing. Do not let mixed material remain in mixer.

Apply Metz 93PU-TG at 7 - 9mm thickness, and Metz 93PU-VG at 6mm thickness. Screed Metz 93PU-TG roughly to levels, then finish with steel floats.

For Metz 93PU-VG, for best results, apply and finish with steel trowel.

Finishing must be completed within 30 minutes of mixing at 20°C.

Metz 93PU-TG can also be applied by using a screed box and power trowel. Consult Metz for details.

5. Setting/Curing

Initial Set, at 20°C: 24 hours

Full Cure, at 20°C: 7 days

Do not allow water, chemicals or direct sunlight on the material surface for a minimum of 24 hours. For harsh chemical or physical environments, cure for a minimum of 72 hours prior to exposure. If temperature is below 20°C, a longer curing period will be required.

6. Storage

Store materials between 5° and 30°C and protect from moisture.

If these conditions followed, shelf life is min 6 months for all items.

7. Safety Precautions

Use chemical goggles, PVC gloves and barrier cream when handling components or mixed material. Avoid contact with skin and eyes.

Avoid breathing dust. Ensure adequate ventilation.

For full safety precautions refer to the Materials Safety Data Sheets for all components.

Always ensure you have the latest data sheet version, refer www.metz.net.au

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