MasterJoint® PR 689

Pure Polyurea Membrane, Two Components, Flexible, Fast Cure, Spray Applied for Use in Waterproofing Membrane

Material Description

MasterJoint® PR 689 is a solvent free, two component waterproofing membrane. It is highly reactive and can only be applied by special two component hot spray equipment.

Comply with EN 1504-2

Areas of Application

MasterJoint® PR 689 is used in a variety of waterproofing applications, especially where a high degree of chemical and mechanical resistance is required.

- Waste water treatment facility
- Waste water channels.
- Steel and concrete pipes.
- Secondary area of chemical and petrol industry

Additional;

- Terraces and roofs.
- Vertical and horizontal surfaces.
- Internal and external areas.
- Concrete, cement based or steel surfaces.
- Prevent concrete surface against carbonation, chloride-induced corrosion or chemical effects in industrial environments.

Further information please contact to MBT Tech.

Characteristics and Benefits

- Spray delivered and ultra-fast curing: enables easy application to form a monolithic waterproofing membrane on simple and complex surfaces.
  - Application to vertical surface without runs.
  - Easy application to complicated details.
- Rapid curing:
  - Allows early serviceability.
- Continuous membrane: monolithic
  – no laps, welds or seams
- Excellent chemical resistance.
- Waterproof and resistant to standing water.
- Fully bonded to substrate: can be applied to a wide range of substrates with the appropriate primer.
- High water vapor permeability: low risk of blistering.
- High resistance to carbon dioxide diffusion: Protects concrete from rebar corrosion.
- High abrasion and impact resistance: Withstand mechanical traffic.
- High elasticity and crack bridging capability:
  - Remains elastic at low temperatures
  - High durability and protection with reduced cracking due to embrittlement
- Thermoset – does not soften at high temperatures.

Processing Method

(A) Preparation of Substrate

Preparation of the substrate and the use of the appropriate primer are of paramount importance. All surfaces to which MasterJoint® PR 689 is applied should be sound, clean and dry and free from oil or grease, loose particles and any other substances which may impair adhesion. For substrate pre-treatment prior to the primer application see primer technical data sheet.

Concrete and cementitious screed

Concrete and other cementitious substrates must have a minimum pull off strength above 1,5 N/mm^2. Any laitance present on the surface must be removed mechanically. Shot blasting is the preferred method. Release oil and other contaminants which may impair adhesion must be removed prior to the application of the primer.

Iron / steel

Should be sand blasted to a Sa 2 ½ finish prior to application of the primer.

Primer

Use the following guide to select the appropriate primer:

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Substrate	Primer
Concrete	MasterCoat/Joint® PRI604-617- 677- 625
Aged (PU/PUA) waterproofing membrane MasterJoint™	MasterJoint® PRI 691

In some circumstances, other primers may be more appropriate. For further details, please consult your local sales office.

(B) Mixing

Stir well Part A drums before use to homogenize the content. Precondition the membrane components to the correct temperature 65 – 75 °C and 2000 psi pressure prior to application.
MasterJoint® PR 689 shall be applied by spray equipment and check mix ratios are correct at the start of spraying and regularly throughout the spraying procedure.

(C) Processing

MasterJoint® PR 689 can be applied through special two-component spraying machines. MasterJoint® PR 689 system solutions and applications must be applied by Expert Applicator Dealers certified by MBT Teknik Yapı Kimyasalları San. ve Tic. A.Ş. certified by MBT Teknik Yapı Kimyasalları San ve Tic. A.Ş. Specialist Applicator Dealers. The homogeneous gray color of the sprayed material provides the applicator with a quick visual indication of the uniformity of the mix quality and machine mixing errors. This ensures that cleaning costs and material loss are minimized. Completed areas should be protected from re-spraying by marking polyethylene or paper masking tapes. Barriers should be placed at appropriate heights to protect the environment from fine spray material carried by the wind.

Topcoat

MasterJoint® PR 689 can be applied directly in areas not exposed to mechanical influences. It does not have sufficient UV resistance without a protective layer.

Do not apply topcoat over MasterJoint™ PR 689 in areas that will be exposed to aggressive chemicals.

In addition to MasterJoint® TC 259 / 269 for mostly standard applications and MasterJoint® TC 258 / 268, which can be used by roughening with dried silica sand on surfaces that will be exposed to heavy loads such as non-slip properties or vehicle traffic, there are various topcoat products according to the type and purpose of use. For appropriate material usage, please contact MBT Teknik Yapı Kimyasalları San. ve Tic. A.Ş. Technical Service should be consulted.

Consumption

2,0 – 2.5 kg/m².
Details require a higher coverage rate up to 4.0 kg/m² or more.

Point to Consider

- Do not apply in extremely hot, rainy, windy weather or when the ambient and surface temperature is below +10°C or above +30°C.
- Relative humidity should be maximum 90%.
- The working and reaction times of resin-based systems are affected by ambient and ground temperature and relative humidity in the air. At low temperatures, the chemical reaction slows down, which prolongs curing, coating time and working time. At the same time, consumption increases as viscosity increases. High temperatures accelerate the chemical reaction and shorten the above-mentioned times accordingly. The ambience and ground temperature should not fall below the minimum permissible temperature for the material to cure completely. After application, the surface should not be in direct contact with water for 24 hours.
- MasterJoint® PR 689 A and B components are ready-to-use products. Solvents etc. should not be added during application.
- Used packages should be stocked in a way to prevent reuse.

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Cleaning of Tools

After the application all tools should be cleaned with solvent. **MasterJoint® PR 689** can be cleaned with only mechanical abrasion after hardening.

Packaging

MasterJoint® PR 689 Part A: 200 kg drums
MasterJoint® PR 689 Part B: 220 kg drums

Shelf Life

6 months after the production date under appropriate storing conditions. Opened packages have to be stored by tightly sealing the bag/cover and must be used in one week.

Storage

It should be stored in its unopened original package, in a cool (+15°C - +25°C) and dry environment, protected from frost. It should not be exposed to direct sunlight.

Health and Safety

It is dangerous to approach the application sites. During the application, protective apparel, protective gloves, goggles and masks which comply with the Occupational Health and Safety Rules should be used. Due to the irritation effect of the uncured materials, the mixture should not come into contact with skin and eyes; in case of a contact, the affected area should be washed with plenty of water and soap; in case of swallowing, a physician should be consulted immediately. No food or beverages should be brought to the application area. The product should be stored and kept out of reach of children. For detailed information please consult the Material Safety Data Sheet.

Disclaimer

The technical information given in this publication is based on the present state of our best scientific and practical knowledge. **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is only responsible for the quality of the product **MBT Teknik Yapı Kimyasalları Sanayi ve Ticaret A.Ş.** is not responsible for results that may occur because the product is used other than advised and/or out of instructions regarding the place and the method of use. This technical form is valid only till a new version is implemented and nullifies the old ones.

Contact

MBT Teknik Yapı Kimyasalları San. ve Tic. A.Ş.
Eyüp Sultan Mah. Sekmen Cad. Hayy 1000A No:26/8
Sancaktepe, İstanbul
Tel: 0216 561 35 45 www.mbt-tech.tr

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MBT TEKNİK YAPI KİMYASALLARI SAN. VE TİC. A.Ş.

Eyüp Sultan Mah. Sekmen Cad. HAYY 1000A No:26 K:5 D:8, 34885 Sancaktepe, İstanbul, Türkiye

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Masterjoint® PR 689

TS EN 1504-2
Nem kontrolü 2.2, Fiziksel Direnç 5.1, Artan direnç 8.2
Humidity control 2.2, Physical Resistance 5.1, Increased Resistance 8.2

Beton için yüzey koruma sistemleri
Surface protection systems for concrete

Kaplama uygulaması
Coating application

Aşınma Direnci Abrasion Resistance	<3000 mg
CO_2 Geçirgenliği CO_2 Permeability	>50 m
Su Buharı Geçirgenliği Permeability to water vapour	Sınıf I Class I
Kapiler Su Emme ve Su Geçirgenliği Capillary absorption and permeability to water	w<0,1 kg/m².√h
Çarpmaya Direnç Impact Resistance	Sınıf 3 Class 3
Çekip Koparma Deneyi Yoluyla Yapışma Dayanımı Adhesion strength by pull-off test	Çatlak kapatma veya esnek sistemler (trafik yükü ile) ≥ 1,5 N/mm² Crack bridging or/flexible systems (with traffic load)
Yangına Karşı Tepki Reaction To Fire	E
Tehlikeli maddeler Dangerous substances	Güvenlik bilgi formu Safety data sheet

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Technical Properties	
Structure of the Material	Pure Polyurea
Mixing Ratio	100 : 100 (by volume) 100 : 112 (by weight)
Density (20°C) Part A Part B	 1.00g/cm³ 1.11g/cm³
Vizcosity (25°C) Part A Part B	 550 mPas 1000 mPas
Substrate Temperature (Flow heater, Hose heater) Part A Part B	 65-75°C 65-75°C
Processing Pressure Part A Part B	 140-200 bar 140-200 bar
Substrate and ambient temperatures (during application)	Min. 5°C - Max. 35°C
Maximum relative humidity (during application)	≤ 90%
Maximum substrate moisture (during application)	≤ 4%
Reaction time (sprayed)	5-7 seconds
Dry to touch after (20°C)	30 seconds
Ready for pedestrian traffic after (20°C)	1 hours
Fully cured – ready for car traffic after (20°C)	12 hours
Exposure to chemicals after (20°C)	24 hours

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Technical Properties – After Curing	
Density of mixed	Approx. 1,1 g/cm³
Shore D Hardness (ASTM D 2240)	40
Elongation at break (ASTM D 638)	400%
Fire behaviour (EN 13501-1)	E
Capillary water absorption (EN 1062-3)	W<0,1 Kg/m²/h ^{0,5}
Water vapour permeability (SD) (EN ISO 7783-2)	Class I
CO_2 permeability (SD) (EN 1062-6)	>50
Adhesion to concrete (EN 1542)	≥ 1,9 N/mm²
Abrasion Resistance (EN 5470-1)	< 3000 mg
Tensile Strength (DIN 53504)	>17 N/mm
Tear Strength (DIN 53515)	74 N/mm
Impact Resistance (EN ISO 6272/2)	Class III
Service temperature (dry)	-20°C - +130°C
Service temperature (high moisture, but not wet)	0°C - +80°C
Service temperature (wet)	0°C - +55°C
Static crack bridging ability (EN 1062-7)	A5 Class
Dynamic crack bridging ability (EN 1062-7)	B4.2 Class