

MasterSeal[®] M 811

Two component polyurea hybrid, pigmented, elastic, highly reactive, spray applied (machine application) waterproofing membrane with short curing time

DESCRIPTION

MasterSeal M 811 is a two component polyurea hybrid waterproofing membrane. It is high reactive and needs to be applied by special, two component spray equipment (Mixing ratio 100: 100 by volume).

FIELDS OF APPLICATION

MasterSeal M 811 is used in a wide range of waterproofing applications such as car park decks, podium decks, cut and cover tunneling and basement waterproofing. It is also used in some secondary containment applications.

Using the appropriate primer, **MasterSeal M 811** can be applied to most substrates including concrete, steel, bitumen cement screed, glass reinforced polyester, timber etc.

FEATURE & BENEFITS

- fast reacting
- high build capability
- application to vertical surface without runs
- easy application to complicated details
- fast installation
- monolithic – no laps, welds or seams
- fully bonded
- high water vapour permeability – low risk of blistering
- excellent mechanical properties
- excellent crack bridging
- resistant to puncture
- resistant to standing water
- thermoset – does not soften at elevated temperatures
- remains elastic at low temperatures; Tg approx - 45 °C
- solvent free
- **MasterSeal M 811** features high elasticity, excellent tensile strength and elongation and a good wear resistance. This highly reactive waterproofing membrane allows its installation on vertical surfaces without problem. Moreover, this fast-curing membrane can be re-coated within a few hours.

APPROVALS AND CERTIFICATES

- CE marked according EN 1504 part 2.
- CE marked according EN 13813
- Japan NEXCO (Nippon Expressway Company Limited) GRADE 2 certification for bridge deck waterproofing
- China GB/T 23446-2009 Spray polyurea waterproofing coating type I

APPLICATION METHOD

Surface Preparation

The preparation of the substrate and the use of the appropriate primer are of paramount importance. All surfaces to which **MasterSeal M 811** 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 of 1.5 N/mm². 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.

Asphalt (only indoor!)

The asphalt should be cleaned by high pressure water jetting. In mechanically stressed applications the load bearing capacity of the asphalt should be suitable for the intended use and should be shot blasted so that at least 60 % of the surface aggregate is exposed. Blisters should be warmed, re-dressed and a de-bond tape applied over.

Bituminous sheeting

MasterSeal M 811 can be applied on bituminous sheeting if no fire-protection is required. For further details, please consult your local sales office.

Iron / steel

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

Primer

Use the following Use the following guide to select the appropriate primer

MasterSeal[®] M 811

Substrate	Primer
Bitumen felt	MasterSeal P 698
Concrete/cementitious screed	MasterSeal P 770 MasterSeal P 2525 MasterSeal P 658
Asphalt screed (mind. AS- IR10)	MasterTop P 660 or MasterTop BC 375 N
Plywood (preliminary tests are recommended)	MasterTop P 660 or MasterSeal P 691
GRP/GFK	MasterSeal P 691
Iron and steel	MasterSeal P 681
Non-ferrous metals (e.g. aluminium, zinc)	MasterSeal P 684
Aged masterSeal membranes	MasterSeal P 691

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

(b) Mixing

(c) Application

MasterSeal M 811 can only be applied by means of a suitable two component spray machine (high pressure with reverse flow technology). The choice of machine depends to a large extent on the type and size of work contemplated. For advice, please contact BASF Construction Chemicals.

MasterSeal M 811 should only be applied to properly prepared substrates.

MasterSeal M 811 is available with the Part A coloured grey (stir well before use!) and the Part B colourless. This results in a uniform grey colour of the sprayed material thus giving the sprayer a visual control of the quality of the mixing as machine faults become immediately obvious. This can reduce costly clean up time and material wastage. Due to the fast reaction, it is possible to rapidly build thicknesses from 1.0 to > 6 mm. Surrounding areas should be protected from overspray by masking off with e.g. polyethylene sheet or paper. Care should be taken to prevent spray mist being carried by wind by erecting suitable barriers. **MasterSeal M 811** should be applied within the recommended temperature and relative humidity limits. The temperature of the substrate must be at least 3 K above the dew point during the application.

COVERAGE

MasterSeal M 811 is normally applied at 2.0 – 2.5 kg/m². This corresponds to a thickness of approx. 2.0 – 2.5mm. Details require a higher coverage rate up to 4.0 kg/m² or more

Re-coatings intervals

Next layer	Hours min.			Hours max.		
	Temperature			Temperature		
	[°C]			[°C]		
	10	20	30	10	20	30
MasterSeal M 811	immediately			8*	4*	2*
MasterSeal P 691	4	2	2	14 days **		
Wear coat	4	3	2	36*	24*	16*
Topcoat	4	3	2	24*	16*	12*

* If the re-coating times are exceeded or if rain falls or dew forms on the **MasterSeal M 811** then allow to dry thoroughly and apply **MasterSeal P 691** according to manufacturer instructions before proceeding.

** If the re-coating interval exceed 14 days, the **Master Seal M 811** must be lightly abraded, and the dust removed by vacuum cleaning and solvent wipe prior to the application of the **MasterSeal P 691**

TOPCOATS

MasterSeal M 811 does not have sufficient UV and weather resistance to be used in exposed applications without protection. A number of top coat are available including **MasterSeal TC 269** for most standard applications, and **MasterSeal TC 258** or **MasterSeal TC 268** which can be broadcast with dry silica sand to provide a hard wearing, slip resistant finish. Other topcoats may be more suitable for specific applications, consult your local sales office for further details

FINISHING & CLEANING

Re-useable tools should be cleaned carefully with Cleaner 40 or e.g. solvent naphtha

PACKAGING

Part A: 210 kg in 200 l barrels

Part B: 220 kg in 200 l barrels

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COLOUR

MasterSeal M 811 is available in the following colour combination:

Part A grey

Part B unpigmented

STORAGE & SHELF LIFE

Store in original containers under dry conditions at a temperature between 15° – 25° C. Do not expose to direct sunlight. For maximum shelf life under these conditions see "Best before. " label.

WATCH POINTS

This product conforms to the EU directive 2004/42/EG (Deco-Paint directive) and contains less than the maximum allowable VOC limit (Stage 2, 2010)

According to the EU directive 2004/42, the maximum allowable VOC content for the Product Category IIA / j is 500 g/l (Limit: Stage 2, 2010). The VOC content for **MasterSeal M 811** is < 500 g/l (for the ready to use product).

HANDLING/ PRECAUTIONS

In its cured state, **MasterSeal M 811** is physiologically non-hazardous. The following protective measures should be taken when working with this material:

Wear safety gloves, goggles and protective clothing. Avoid contact with the skin and eyes. In case of eye contact, seek medical attention. Avoid inhalation of the fumes. Respiratory protection must be worn when spraying or when in the vicinity of the spraying operation.

When working in well ventilated areas, a combined charcoal filter and particle filter mask (A-P2) should be worn. When working in less well ventilated and in confined spaces, air-fed helmets are to be worn by sprayer and assistant(s) When working with the product do not eat, smoke or work near a naked flame. For additional references to safety-hazard warnings, regulations regarding transport and waste management please refer to the relevant Material Safety Data Sheet. The regulations of the local trade association and/or other authorities, regulating safety and hygiene of workers handling polyurethane and isocyanates must be followed.

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TECHNICAL DATA			
Properties	Standard	Data	Unit
Chemical base	-	Polyurea hybrid	-
Mixing ratio	A: B	100: 100 100: 106	by volume by weight
Component A Component B	-	1.06 1.08	g/cm ³ g/cm ³
Component A Component B	-	1725 1800	mPas mPas
Reaction time (sprayed)	-	10 – 15	sec.
Fully cured at 23 °C	-	2	d
Processing temperature (Flow heater, Hose heater)	Component A Component B	70 – 75 70 – 75	°C °C
Processing pressure	Component A Component B	130 – 180 130 - 180	bar bar
Substrate and ambient temperatures		min. 5 max. 35	°C °C
Permissible relative humidity	-	max. 85	%

* Values are intended as a guide only and need to be defined individually referring to machine used.

TECHNICAL DATA after Curing			
Properties	Standard	Data	Unit
Shore A hardness	--	87	--
Tensile Strength	ASTM D 412	14	N/mm ²
Elongation	ASTM D 412	485	%
Tear Strength	ASTM D 624: 2000e	50	N/mm
Water Vapor Permeability (1.5mm, 25 °C/75 % r.h.)	BS 3177	19	g/(m ² .d)

*The above figures are intended as a guide only and should not be used as a basis for specification.

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CE-MARKING (EN 1504-2)		CE-MARKING (EN 13813)	
			
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Master Builders Solutions Deutschland GmbH Donnerschweer Str. 372, D-26123 Oldenburg		Master Builders Solutions Deutschland GmbH Donnerschweer Str. 372, D-26123 Oldenburg	
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EN 1504-2:2004		EN 13813:2002	
Surface protection product - coatings EN 1504-2: ZA.1d, ZA.1e, ZA.1f and ZA.1g		Synthetic resin screed for use internally in buildings EN 13813: SR-B1,5-AR1-IR4	
Abrasion resistance	≤ 3000 mg	Essential characteristics	Performance
Permeability to CO ₂	Sd > 50	Fire behavior	Efl
Permability to water vapour	Class II	Release of corrosive substances	SR
Capillary absorption and permeability after freeze-thaw cycling	< 0.1 kg/(m ² xh ^{0,5})	Water permeability	NPD
Thermal compatibility after freeze-thaw cycling	≥ 1.5 N/mm ²	Wear resistance	< AR 1
Resistance to severe chemical attack	Reduction of hardness < 50 %	Bond strength	> B 1,5
Crack bridging ability	B 4.2 (-20° C)	Impact resistance	> IR 4
Impact resistance	Class I	Impact sound insulation	NPD
Adhesion strength by pull-off test	≥ 1.5 N/mm ²	Sound absorption	NPD
Reaction to fire	Cfl-s1	Heat insulation	NPD
Skid resistance	Class II	Chemical resistance	NPD
		Slip/Skid resistance	NPD
		Emissions behavior	NPD
NPD = No performance determined. Performance determined in system build up MasterSeal Traffic 2203 .		NPD = No performance determined. Performance determined in system build up MasterSeal Traffic 2203	

® = registered trademark of MBCC Group member in many countries of the world

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability, or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified, or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

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