

# MasterSeal M 686

2-C-Polyurea waterproofing membrane, highly elastic, rapid curing, for manual applications

## DESCRIPTION

MasterSeal M 686 is a rapid curing two-component, hand applied, slightly thixotropic, elastomeric polyurea membrane with high chemical and mechanical resistance.

## FIELDS OF APPLICATION

MasterSeal M 686 is used in a variety of concrete waterproofing applications including containment, waste water plants, roofing, balconies etc.

## FEATURES AND BENEFITS

- monolithic – no laps, welds or seams
- fully bonded
- excellent mechanical properties
- excellent crack bridging capability
- resistant to puncture
- resistant to standing water
- thermoset – do not soften at high temperature
- remain elastic at low temperatures
- (Tg approx. – 45 °C)
- can be recoated after a few hours
- can accept light foot traffic after 4 hours @ 20°C

## APPLICATION METHOD

### (a) Surface Preparation

The preparation of the substrate and the use of the appropriate primer are of paramount importance. All surfaces to which MasterSeal M 686 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 screeds

Concrete and other cementitious substrates must have a minimum pull off strength of 1.5 N/mm<sup>2</sup>. Any laitance present on the surface must be removed mechanically. Shot blasting or scabbling is the preferred method.

Release oil and other contaminants which may impair adhesion must be removed prior to application of the primer.

#### Bitumen felts

Blisters should be opened, dried out and repaired. Major cracks should be repaired and taped with de-bond tape.

**Warning:** MasterSeal M 686 will not bond to black APP modified bitumen felts nor is a suitable primer available.

#### Plywood

All joints should be flush and taped prior to the application of the primer. All fittings must be flush with or sunk lower than the surface.

#### Iron and steel

Iron and steel should be sand blasted to Sa 1/2 finish prior to application of the primer.

#### Primer

Use the following guide to select the appropriate primer:

Substrate	Primer
Bitumen felt	MasterSeal P 698
Concrete/cementitious screed	MasterSeal P 770 or MasterTop P 622
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

MasterSeal M 686 is supplied in working packs which are pre-packaged in the exact ratio. Before mixing, precondition both the A and B components to a temperature of approximately 15 to 25 °C.

Pour the entire contents of Part A into the container of Part B. DO NOT MIX BY HAND. Mix with a mechanical drill and paddle at a low speed (approx. 300 rpm) for at least 3 minutes. Scrape the sides and the bottom of the container several times to ensure complete mixing. Keep the mixer bladed fully submerged in the coating to avoid introducing air bubbles. DO NOT WORK OUT OF THE ORIGINAL CONTAINER. After proper mixing to a homogeneous consistency, pour the mixed Parts A and B into a clean container and mix for a further minute.

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## (c) Application

MasterSeal M 686 is poured onto the prepared substrate and spread with a notched trowel or spreader (rubber or steel). The build to vertical applications can be improved by the addition of approximately 2% by weight of MasterTop Tix 9 to the mixed product (see separate data sheet). After the application the material needs to be treated by spike roller to achieve a smooth and regular surface. The curing time of the material is influenced by the ambient, material and substrate temperatures. At low temperatures, the chemical reactions are slowed down, this lengthens the pot-life, open time and curing times. High temperatures speed up the chemical reactions thus the time frames mentioned above are shortened accordingly. To fully cure, the material, substrate and application temperatures should not fall below the minimum recommended. The temperature of the substrate must be at least 3 K above the dew point both during and for at least 6 hours after application (at 15 °C).

## COVERAGE

The consumption of MasterSeal M 686 depends on the application. Recommended standard layer thickness is approx. 2 mm.

MasterSeal M 686      1.37 kg / m<sup>2</sup> / mm

## TOPCOATS

MasterSeal M 686 has sufficient UV and weather resistance to be used in exposed applications without protection for the intended use. Anti-slip to floor or an aggregated finish to vertical upstands can be obtained by fully blinding the "wet" surface with MasterTop F5 filler. Consult a Master Builders Solutions UK Ltd technical representative for further details. Due to reduced light stability a colour change (yellowing) needs to be considered. In case of demand for long term colour stability a number of top coats are available including MasterSeal TC 269 for smooth surfaces and MasterSeal TC 268 for broadcasted applications.

## FINISHING AND CLEANING

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

## PACKAGING

MasterSeal M 686 is supplied in 12 kg working packs.

## COLOUR

MasterSeal M 686 is available in grey.

## 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 686 is < 500 g/l (for the ready to use product).

## HANDLING / PRECAUTIONS

In its cured state, MasterSeal M 686 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 fumes. 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 regarding safety and hygiene of workers handling polyurethanes and isocyanates must be observed.

## CONTACT DETAILS

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Technical data*				
Properties		Standard	Data	Unit
Chemical base:		-	Polyurea resin	-
Mixing ratio (by weight)		A : B	100 : 20	-
Density (@ 20°C):	Part A		1,42	g/cm <sup>3</sup>
	Part B	-	1,23	g/cm <sup>3</sup>
	mixed		1,37	g/cm <sup>3</sup>
Viscosity (@ 23°C):	Part A		9000	mPas
	Part B	-	2000	mPas
	mixed		6300	mPas
Working time (12 kg unit)	at 10 °C		35	min
	at 20 °C	-	20	min
	at 30 °C		15	min
Tack-free interval	at 10 °C		240	min
	at 20 °C	-	150	min
	at 30 °C		120	min
Re-coating interval	at 10 °C		min. 8	h
	at 20 °C	-	min. 5	h
	at 30 °C		min. 3	h
Open to pedestrian traffic	at 10 °C		min. 48	h
	at 20 °C	-	min. 24	h
	at 30 °C		min. 12	h
Fully cured (chemically resistant)	at 10 °C		7	d
	at 20 °C	-	5	d
	at 30 °C		3	d
Substrate and ambient temperatures		-	min. 2	°C
			max. 30	°C
Permissible relative humidity		-	max. 85	%

## Technical data after curing\*


Properties		Standard	Data	Unit
Shore-A-hardness		after 28 days	90	-
Tensile strength		DIN 53504	6	N/mm <sup>2</sup>
Elongation		DIN 53504	200	%
Tear strength		DIN 53515	-	N/mm <sup>2</sup>

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

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## CE-MARKING (EN 1504-2)

	
1119	
BASF Coatings GmbH Donnerschweer Str. 372, D-26123 Oldenburg	
17	
468601	
EN 1504-2:2004	
Surface protection product - coatings EN 1504-2: ZA.1d, ZA.1e, ZA.1f and ZA.1g	
Abrasion resistance	≤ 3000 mg
Permeability to CO <sub>2</sub>	Sd > 50
Permeability to water vapour	Class II
Capillary absorption and permeability to water	< 0.1 kg/(m <sup>2</sup> xh <sup>0.5</sup> )
Thermal compatibility after freeze-thaw cycling	NPD
Resistance to severe chemical attack	Reduction of hardness < 50 %
Crack bridging ability	A 5 (-10° C) B 4.1 (-10 °C)
Impact resistance	Class I
Adhesion strength by pull-off test	≥ 1.5 N/mm <sup>2</sup>
Reaction to fire	E <sub>fl</sub>
Skid resistance	NPD

NPD = No performance determined. Performance determined in system build up **MasterSeal 6686**.



We create chemistry

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## Health and Safety

\*For full information on Health and Safety matters regarding this product the relevant Health and Safety Data Sheet should be consulted.

The following general comments apply to all products.

As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs, (which may also be tainted with vapour until the product is fully cured and dried). Treat splashes to eyes and skin immediately. If accidentally ingested, seek medical attention. Keep away from children and animals. Reseal containers after use.

## Solvent Based Products

Use in well ventilated areas; avoid inhaling. Suitable respiratory equipment may be needed, eg when spraying. Can cause skin, eye irritation. Wear protective eye shields and gloves during use. Do not smoke or allow sparks or naked lights when stored or in use.

## Resin Products

Can cause irritation, dermatitis or allergic reaction. Use protective equipment particularly for skin and eyes. Use only in well ventilated areas.

## Spillage

Chemical products can cause damage; clean spillage immediately.

## DISCLAIMER

"BASF Construction Chemicals (UK) Ltd" (the Company) endeavours to ensure that advice and information given in Product Data Sheets, Method Statements and Material Safety Data Sheets (all known as Product Literature) is accurate and correct. However, the Company has no control over the selection of its products for particular applications. It is important that any prospective customer, user or specifier, satisfies him/her-self that the product is suitable for the specific application. In this process, due regard should be taken of the nature and composition of the background/base and the ambient conditions both at the time of laying/applying/installing the material and when the completed work is to be brought into use.

Accordingly, no liability will be accepted by the Company for the selection, by others, of a product, which is inappropriate to a particular application.

Products are sold subject to the Company's standard conditions of sale and all customers, users and specifiers, should ensure that they examine the Company's latest Product Literature.