

# MasterSeal® M 860

Two component PU/PUA waterproofing membrane, highly elastic, for hand applications

## DESCRIPTION

**MasterSeal M 860** is a two-component, hand applied, self-levelling, elastomeric polyurethane / polyurea hybrid membrane.

## TYPICAL APPLICATIONS

**MasterSeal M 860** is used in a variety of concrete waterproofing applications including balconies, terraces, podium decks and car park decks. It's also used in roofing applications where there is no requirement for a fire retardant coating.

## ADVANTAGES

- monolithic – no laps, welds or seams
- fully bonded
- 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; ( $T_g$  approx.  $-45^{\circ}\text{C}$ )
- can be re-coated after only a few hours

## PACKAGING AND COLORS

**MasterSeal M 860** is supplied in 12kg and 30kg working packs and available in Grey.

## APPLICATION GUIDELINES

### SURFACE PREPARATION

The preparation of the substrate and the use of the appropriate primer are of paramount importance. All surfaces to which **MasterSeal M 860** 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  $1.5 \text{ N/mm}^2$ . 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.

#### Asphalt

In roofing applications, 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 ex-posed (min. quality e.g. AS-IC10). Blisters should be warmed, redressed and a de-bond tape applied over.

#### Bituminous felts

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

**Warning: MasterSeal M 860** 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

Should be sand blasted to SA  $2\frac{1}{2}$  finish prior to application of the primer.

# MasterSeal<sup>®</sup> M 860

## Primer

Substrate	Primer
Bitumen felt	<b>MasterTop P 698</b>
Concrete cementitious / screed	<b>MasterTop P 617</b> or <b>MasterTop P 650</b>
Asphalt screed (mind. AS-IR10)	<b>MasterSeal P 660</b> or <b>MasterTop BC 375 N</b>
Plywood (preliminary tests are recommended)	<b>MasterSeal P 660</b> or <b>MasterTop P 691</b>
GRP / GFK	<b>MasterTop P 691</b>
Iron and Steel	<b>MasterTop P 681</b>
Non-ferrous metals (e.g. aluminum, zinc)	<b>MasterTop P 684</b>
Aged MasterSeal membrane	<b>MasterTop P 691</b>

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

## MIXING

**MasterSeal M 860** 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 submersed 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.

## PLACING / APPLICATION

**MasterSeal M 860** is poured onto the prepared substrate and spread with a notched trowel or spreader (rubber or steel). 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 3K above the dew point both during and for at least 6 hours after application (at 15°C).

## TOP COAT

**MasterSeal M 860** does not have sufficient UV and weather resistance to be used in exposed applications without protection. The recommended topcoat is **MasterSeal TC 258** which can be broadcast with dry silica sand to provide a hard wearing, slip resistant finish. Other top coats may be more suitable for specific applications, consult your local sales office for further details.

## CLEANING

Re-useable tools should be cleaned carefully with a suitable thinner (Xylene / MEK / Acetone).

## COVERAGE / YIELD

The consumption of **MasterSeal M 860** depends on the application. For a 1mm thick film the following quantities are necessary:

**MasterSeal M 860** 1.35 kg/m<sup>2</sup>

## WATCHPOINTS

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 500g/l (Limit: Stage 2, 2010). The VOC content for **MasterSeal M 860** is <500g/l (for the ready to use product).

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## TYPICAL PROPERTIES\*

Properties	Result
Chemical base	PU / PUA hybrid
Mixing ratio	100 : 180 (A:B)
Density	1.35 g/cm <sup>3</sup>
Viscosity	5200 mPas
Working time (30kg unit) @ 10°C	35 min
@ 20°C	25 min
@ 30°C	15 min
Recoating interval @ 10°C	Min 8 h
@ 20°C	Max. 2 days
	Min 5 h
	Max. 1 day
Fully cured @ 10°C	5 days
@ 20°C	4 days
Substrate and ambient temperatures	min. 5°C
	max. 30°C
Permissible relative humidity	max. 80%

## Technical data after curing\*

Properties	Standard	Result
Shore A Hardness after 28 days		75
Tensile strength	DIN 53504	15 N/mm <sup>2</sup>
Elongation	DIN 53504	700%
Tear strength	DIN 53504	21 N/mm <sup>2</sup>

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

## STORAGE AND SHELF LIFE

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

## HEALTH AND SAFETY

In its cured state, **MasterSeal M 860** 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 char-coal 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.


# MasterSeal® M 860

## CE-marking (EN 1504-2)

	
1119	
Master Builders Solutions Deutschland GmbH Donnerschweer Str. 372, D-26123 Oldenburg	
10	
486001	
EN 1504-2: 2004	
Surface protection product – coatings EN 1504-2: ZA.1d, ZA.1e, ZA.1f and ZA.1g	
Abrasion resistance	<3000mg
Permeability to CO <sub>2</sub>	Sd > 50
Permeability to water vapour	Class III
Capillary absorption and permeability to water	< 0.1 kg/(m²xh0,5)
Thermal compatibility after freeze-thaw cycling	NPD
Resistance to severe chemical	Reduction of hardness < 50%
Crack bridging ability	A 4 (-20°C)
Impact resistance	NPD
Adhesion strength by pull off test	≥1.5N/mm²
Reaction to fire	C <sub>fl</sub> – s1
Skid resistance	NPD

NPD = No Performance Determined  
Performance determined in system build up  
**MasterSeal Balcony 1338**

## CE-marking (EN 13813)

	
Master Builders Solutions Deutschland GmbH Donnerschweer Str. 372, D-26123 Oldenburg	
10	
486001	
EN 13813: 2002	
EN 13813: SR-B1,5-AR1-IR4	
Synthetic resin screed for use internally in buildings EN 13813: SR-B1,5-AR1-IR4	
Essential characteristics	Performance
Fire behaviour	Efl
Release of corrosive substances	SR
Water permeability	NPD
Wear resistance	<AR 1
Bond strength	>B 1,5
Impact resistance	>IR 4
Impact sound insulation	NPD
Sound absorption	NPD
Heat insulation	NPD
Chemical resistance	NPD
Slip/Skid resistance	R9, R10
Emissions behaviour	Ü-Z: Z-156.605-685

NPD = No Performance Determined  
Performance determined in system build up  
**MasterSeal Balcony 1338**

® = Registered trademark of the MBCC Group in many countries.

\* Properties listed are based on laboratory controlled tests.

MBS\_CC-UAE/SI\_M860\_02\_16/v1/05\_20

### 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.

**Master Builders Solutions**  
**Construction Chemicals LLC**  
P.O. Box 37127, Dubai, UAE  
Tel: +971 4 8090800  
[www.master-builders-solutions.com/en-ae](http://www.master-builders-solutions.com/en-ae)

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