

# MasterSeal<sup>®</sup> HLM 5000

## Liquid cold-applied elastomeric waterproofing membrane system

### DESCRIPTION

**MasterSeal HLM 5000** is a one-component, moisture-curing, bitumen-modified polyurethane elastomeric waterproofing membrane for exterior below-grade or between-slab applications.

It is available in these grades:

**MasterSeal HLM 5000 SL** (self-levelling/squeegee)

**MasterSeal HLM 5000 R** (roller)

**MasterSeal HLM 5000** is a bitumen modified polyurethane.

### PRODUCT HIGHLIGHTS

- Available in standard and high-build systems
- Waterproofing membrane to prevent water penetration
- Elastomeric accommodates expansion and contraction
- Wide service-temperature range, making **MasterSeal HLM 5000** suitable for all climates
- Chemical resistance to bacterial attack, select acids, alkalis and salts
- Seamless cold-applied membrane eliminates lapping, seaming and precutting
- Does not require hot-melt equipment

### TYPICAL APPLICATIONS

- Concrete
- Plywood (exterior)
- Exterior below grade (on masonry, concrete, and incidental metal)
- Above grade (between two-course concrete and within cavity walls)
- Parking garages and concrete tanks
- Plaza decks and malls
- Fountains and pools
- Balconies and planters
- Below-grade slabs
- Walls and culverts
- Sea walls, dams and reservoirs

### COMPLIANCES

- ASTM C 836
- National standard of Canada 37.58 - M86 developed by CGSB

### PACKAGING

**MasterSeal HLM 5000 SL:**

18.95 litre (21.999kg) pails

**MasterSeal HLM 5000 R:**

18.95 litre (23.814kg) pails

### TYPICAL PROPERTIES\*

Property	Value
Minimum recovery	90%
Swelling in water (3 days at room temperature)	Nil
Service temp Min	-40°C
Max	49°C

### COVERAGE / YIELD

Approx. 0.6-0.7m<sup>2</sup> / litre at 1.4-1.7mm wet thickness (1.1-1.4mm dry thickness)

Coverage may vary with the application technique used. Actual coverage rate and mil thickness depend on finish and porosity of the substrate.

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## TEST DATA

### MasterSeal HLM 5000 (self-levelling grade)

Property	Standard system
Shore 00 hardness, ASTM C836	85
Tensile strength ASTM D412	1.0MPa
Average elongation ASTM D412	600%
100% modulus ASTM D412	0.6MPa
Moisture vapor permeability, dry perms ASTM E96	0.1
Crack bridging test: ASTM C836 cycled 10 times per 24 hours at -9°C	Passed 1/16 inch No loss of bond or cracking exhibited
Extensibility after heat aging ASTM C836	No cracking
Adhesion in peel, (1 lb./inch min.) ASTM C836	5
Weight loss (20% max) ASTM C836	16%
Viscosity, poise Brookfield	
<b>MasterSeal HLM 5000 SL</b>	125
<b>MasterSeal HLM 5000 R</b>	800

Results shown are typical but are not intended as performance criteria for on-site installed material.

\*Tested in direction of greatest elongation of fabric.

## APPLICATION GUIDELINES

### SURFACE PREPARATION

- For best results, all concrete deck surfaces should be lightly steel trowelled to a flat, uniform surface. A light broom finish is acceptable. New concrete must be properly water cured at least 14 days. Membrane curing compounds must be mechanically removed.
- For extremely porous block: Prime with a coat of **MasterSeal HLM 5000** diluted up to 25% with a suitable thinner (Xylene / MEK / Acetone).
- Remove dust, dirt and other contaminants just before or during application. Surfaces must be dry at the time of application.
- Air-void pockmarks or honeycombs must be opened up to allow **MasterSeal HLM 5000** to fill the cavities completely. Air entrapment within voids may cause blisters. Extreme cases may require additional repair.

### PRESTRIPING

- Before applying the final membrane, all joints, cracks and openings around protrusions must be sealed by caulking or prestripping (a

preliminary coating of **MasterSeal HLM 5000** applied with a trowel or stiff-bristled brush).

Allow to dry overnight before applying final membrane.

- When the final membrane is applied, the overall thickness over joints and cracks, at coves and around penetrations should be approximately 2.5mm on the standard system.

### STATIC JOINTS AND CRACKS

Joints and cracks less than 1.5mm should be filled by prestripping. Apply material so it both fills and overlaps the joint or crack to a width of 100mm on each side.

### WORKING OR EXPANSION JOINTS

All joints over 3mm must be sealed with a Master Builders Solutions urethane sealant.

Any working joint less than 3mm should be routed to a minimum of 6mm and filled with a sealant. Prevent the waterproofing membrane from adhering to the joint sealant, which could cause sealant or membrane failure, by applying a coat of wax or bond breaker tape over the cured sealant and then prestripping.

## PLACING / APPLICATION

A test application is always recommended before proceeding with entire application.

NOTE: Finish coat must be applied in a pinhole-free, continuous membrane for waterproofing integrity.

### STANDARD SYSTEM

- Select the grade of **MasterSeal HLM 5000** that best meets individual job requirements. Use **MasterSeal HLM 5000 R** for roller application or **MasterSeal HLM 5000 SL** for squeegee application.
- For horizontal applications, empty contents of pail and spread immediately to ensure workability. Best results are obtained by marking off approx. 11m<sup>2</sup> for 1.7mm wft or 13.5m<sup>2</sup> for 1.4mm wft areas and evenly spreading the contents of a 18.95 litre unit with a rubber-edged notched squeegee. Repeat the above procedure until the entire surface is covered.
- For vertical applications, apply by roller at the rate of 0.6-0.7m<sup>2</sup>/litre at 1.4-1.7mm wft.

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4. Verify the applied thickness with a wet mil gauge as the work progresses.
5. The integrity of the cured membrane on a horizontal surface may be verified by damming the entire area and flooding with water to a minimum depth of 51mm and allowing the water to stand for 24-48 hours. Visually inspect the bottom surface to check for any water penetration. If repairs are necessary, the area should be drained and allowed to dry before reapplying **MasterSeal HLM 5000**. After reapplication, the area should be tested again for membrane integrity.

## HIGH-BUILD SYSTEM

Concrete application: Apply approx. 1.5mm of **MasterSeal HLM 5000**, followed by setting reinforcing fabric into the wet material. Overlap all seams a minimum of 76mm. Additional material may be required to properly embed the reinforcing fabric where it overlaps. Allow the first coat to cure overnight and follow with a second approx. 1.5mm application of **MasterSeal HLM 5000**.

## CURING

Appreciable properties develop within 24-48 hours at 24°C and 50% relative humidity. Protect **MasterSeal HLM 5000** from traffic during curing.

## DRAINAGE AND PROTECTION

1. For protection during backfill and where hydrostatic pressure is anticipated, use the appropriate Drain Board System for installation instructions.
2. For protection during backfill only, install protection board as soon as possible following cure of **MasterSeal HLM 5000**.

## CLEANING

Clean all tools and equipment immediately after application with a suitable thinner (Xylene / MEK / Acetone).

## FOR BEST PERFORMANCE

- Apply **MasterSeal HLM 5000** when substrates are dry and air temperatures are 4 to 32°C; for

application at temperatures below 4°C, consult Technical Services.

- Temperatures influence viscosity and handling characteristics of **MasterSeal HLM 5000**: heat increases and cold decreases the flow. Keep **MasterSeal HLM 5000** cool in hot weather and warm in cold weather.
- Avoid application when inclement weather is present or imminent.
- Do not apply to reinforcing bars or to wet or contaminated surfaces.
- Do not directly heat containers with flame, stove, hot plate or oven.
- Patch all voids and deep depressions in substrates with appropriate patching material before applying **MasterSeal HLM 5000**.
- Before applying **MasterSeal HLM 5000**, dam all drains and drain openings.
- Carefully work material over irregular concrete to avoid pinholes and holidays.
- Protect **MasterSeal HLM 5000** coated surfaces from puncture with protection board until required topping or backfill is placed.
- Not intended as an exposed or wearing surface.
- Do not use where a solvent odour is objectionable, e.g., near areas where food preparation or processing occur during the application.
- Specify wet or paper curing for concrete to be coated with **MasterSeal HLM 5000**; avoid using liquid curing compounds.
- In horizontal applications concrete must be slopped to drain to avoid ponding water on the surface of **MasterSeal HLM 5000**
- When using drainage mat directly over **MasterSeal HLM 5000**, a layer of 0.15mm polyethylene sheeting should be used between the **MasterSeal HLM 5000** and the drainage mat.

## GENERAL

- Proper application is the responsibility of the user. Field visits by Master Builders Solutions personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

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## STORAGE AND SHELF LIFE

Store in unopened containers in clean, dry conditions at 4 to 27°C.

During storage, an easily removed skin of **MasterSeal HLM 5000** may form, which does not affect performance of the product.

**MasterSeal HLM 5000** has a shelf life of 12 months for pails.

## VOC CONTENT

- **MasterSeal HLM 5000 SL:** 183 g/L
- **MasterSeal HLM 5000 R:** 180 g/L

## HEALTH, SAFETY AND ENVIRONMENT

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. Use only as directed.

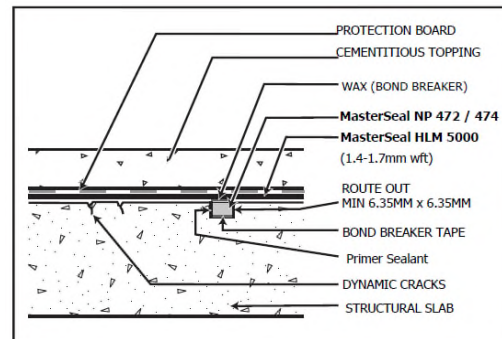
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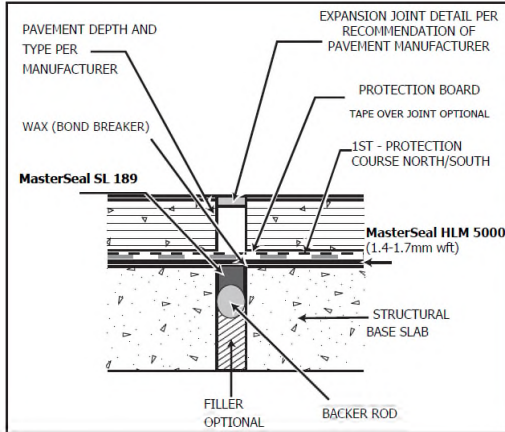
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## DETAIL DRAWINGS

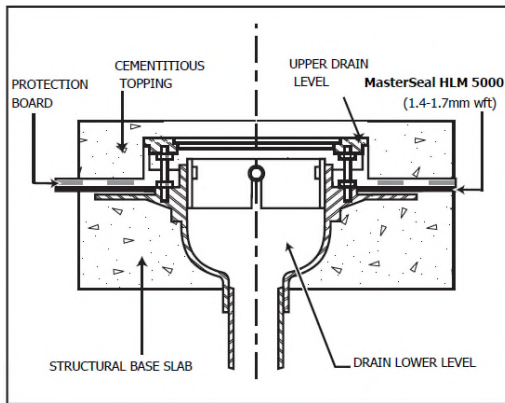


**Dynamic Crack Detail**

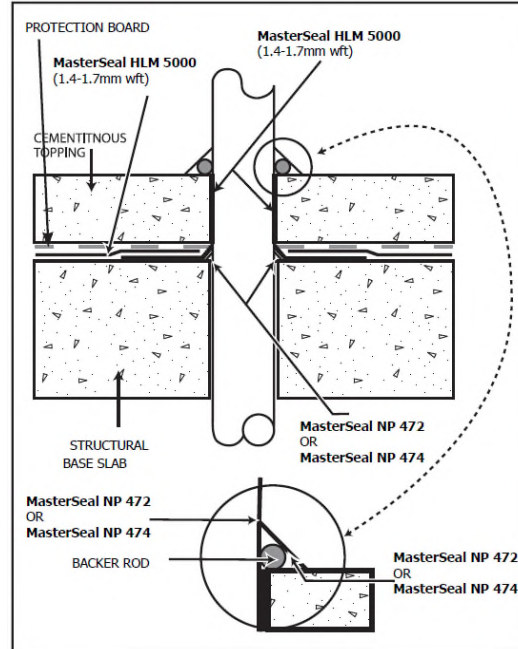
# MasterSeal<sup>®</sup> HLM 5000



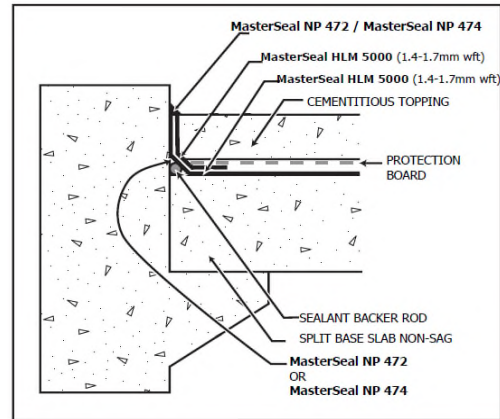
**Asphalt Pavement Topping / Expansion Joint**



**Waterproofing at Bi-Level Drain**

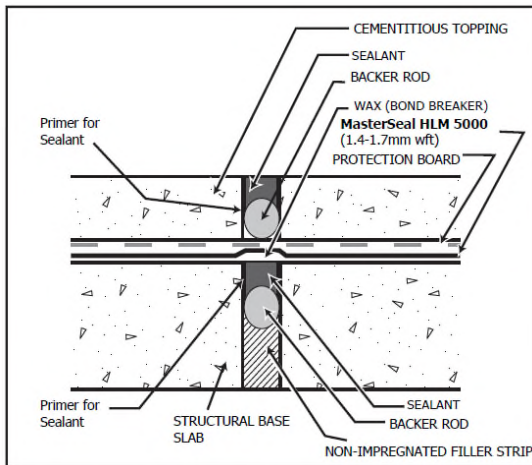


**Vent / Drain / Pipe / Post Penetration Detail**

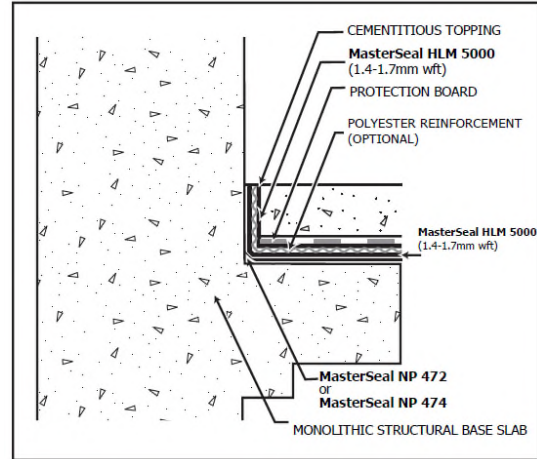


**Split Slab with Cant Detail**

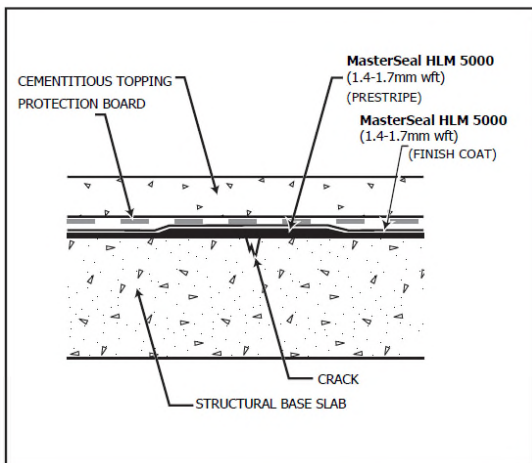
# MasterSeal® HLM 5000



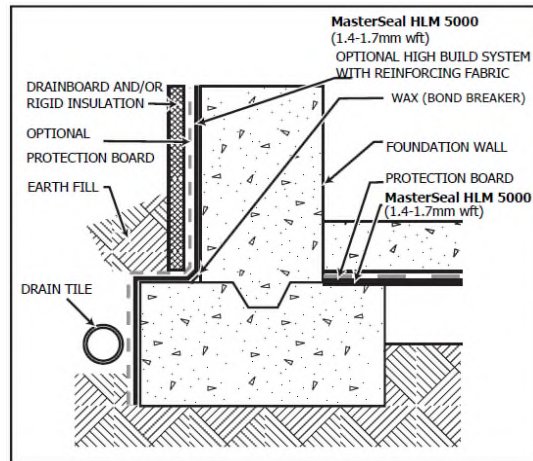
**Expansion Joint Detail**



**Inside Corner Detail (Static)**



**Static Crack / Prestripe Detail**



**Waterproofing Foundation Walls**

MBS\_CC-UAE/HLM\_5000\_04\_00/v3/02\_16

**STATEMENT OF RESPONSIBILITY**

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**NOTE**

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**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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