



The Chemical Company

MASTERSEAL[®] HLM 5000 R

Liquid cold-applied elastomeric waterproofing membrane system

Description

A one-component moisture-curing modified polyurethane. MASTERSEAL HLM[®] 5000 R forms a seamless elastomeric waterproofing membrane for exterior below-grade or between-slab applications.

Where to use MASTERSEAL HLM[®] 5000 R

- Above grade between two-course concrete and within cavity walls
- Exterior below grade on masonry, concrete, and incidental metal
- Parking garages
- Plaza decks and malls
- Fountains and pools
- Balconies and planters
- Bridges and highways
- Below-grade slabs
- Walls and culverts
- Sea walls, dams and reservoirs
- Concrete tanks
- Exterior plywood
- Inverted roof systems
- Wet areas

Features

- Standard and high-build systems
- Waterproofs concrete
- Elastomeric
- Wide service temperature range
- Chemical resistant
- Seamless cold-applied membrane
- Asphalt-modified polyurethane

Benefits

- Specification versatility
- Protects structure from water penetration
- Permits expansion and contraction
- Suitable for all climates
- Resists bacterial attack, and many acids, alkalis, and salts
- Eliminates lapping, seaming, and precutting
- No hot-melt equipment required

Packaging

MASTERSEAL HLM[®] 5000 R is available in 22.5kg pails.

Standards

ASTM C 836

For best performance

MASTERSEAL HLM[®] 5000 R

- Apply MASTERSEAL HLM[®] 5000 R when substrates are dry and air temperatures are between 4°C and 48°C.
- Avoid application when inclement weather is present or imminent.
- Do not apply to reinforcing bars or to wet or contaminated surfaces.
- Protect MASTERSEAL HLM[®] 5000 R coated surfaces from puncture with protection board until required topping or backfill is placed.
- Carefully work material over irregular concrete to avoid pinholes and holidays.
- Do not apply to surfaces treated with curing and parting compounds unless they have been completely removed chemically or mechanically.
- Not intended as an exposed or wearing surface.

MASTERSEAL[®] HLM 5000 R

- Do not use where a solvent odor is objectionable, e.g., near areas where food preparation or processing take place during the application.
- Specify wet or paper curing for concrete to be coated with MASTERSEAL HLM[®] 5000 R; avoid using liquid curing compounds except MASTERKURE 181.
- Before applying MASTERSEAL HLM[®] 5000 R, protect all drains and drain openings.
- Cold temperatures influence viscosity and handling characteristics of MASTERSEAL HLM[®] 5000 R: heat increases and cold decreases the flow. Keep MASTERSEAL HLM[®] 5000 R cool in hot weather and warm in cold weather.
- Do not directly heat containers with flame, stove, hot plate, or oven.
- Patch all voids and deep depressions in substrates with appropriate BASF patching material before applying MASTERSEAL HLM[®] 5000 R.
- Apply asphalt overlay in accordance with asphalt industry and manufacturer's standards.
- The MASTERSEAL HLM[®] 5000 R membrane must be protected from heat, impact, and any other damage that could be caused by an asphalt overlay.

*Typical properties

Density	Approx. 1.30g/cm ³
Solids content	>85%
Shore 00 hardness, ASTM C 836	85
Tensile strength	1.9 MPa
Low temperature bending	-40° C
Tear resistance	12 N/mm
Average elongation, % ASTM D 412	>400
Minimum recovery, %	90
Service temp. range, °C	-40°C to 49°C
Water impermeability 0.3 MPa 30 mins	No permeability
Tack free time	<12 hours
Full cure	<24 hours
Heating extension and compression	<1.0% >-4.0
Bond strength to wet substrate	>0.50Mpa
Aging at maintained elongation	
- Heat aging	No cracks and deformation
- Artificial weathering aging	No cracks and deformation
Heat Treatment	
- Tensile strength retention	80-150
- Elongation at break	> 600
- Low temperature bending	< -35
Alkali Treatment	
- Tensile strength retention	80-150
- Elongation at break	> 600
- Low temperature bending	< -35
Acid Treatment	
- Tensile strength retention	80-150
- Elongation at break	> 600
- Low temperature bending	< -35



The Chemical Company

MASTERSEAL[®] HLM 5000 R

Shelf life

Shelf life of MASTERSEAL HLM[®] 5000 R is 6 months in unopened containers when stored in dry conditions between 4°C and 27°C. During storage, an easily removed skin of MASTERSEAL HLM[®] 5000 R may form, which does not affect performance of the product.

Coverage

1.56kg per m² gives dft 1.2mm minimum

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

How to apply MASTERSEAL HLM[®] 5000 R

Surface preparation

For best results, all concrete deck surfaces should be lightly steel troweled to a fairly smooth finish. New concrete must be properly cured and dry. For extremely porous block, prime and coat with diluted MASTERSEAL HLM[®] 5000 R.

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 R to fill the cavities completely. Air entrapment within voids may cause blisters.

Prestripping: 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 R. 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 2.5 mm on the standard system.

Static joints and cracks:

Joints and cracks less than 1.8 mm should be filled by pre-stripping. Apply material so it both fills and overlaps the joint or crack to a width of 100 mm on each side.

Working or expansion joints:

All joints over 3mm must be sealed with a MASTERFLEX[®] sealant. Any **working joint** less than 3mm should be routed to a minimum of 3mm and filled with a MASTERFLEX[®] sealant. Prevent the waterproofing membrane from adhering to the joint sealant, which could cause sealant or membrane failure, by applying a coat of liquid household carnauba wax over the cured sealant and then prestripping.

Metal:

All metal must be wire brushed or sandblasted to bright metal. Prime with a quality rust-inhibiting metal primer and MASTERFLEX PRIMER 1 before application of MASTERSEAL HLM[®] 5000 R.

Vent, drain pipe, and post penetrations:

Clean metal surfaces to bright metal and prime with a quality rust-inhibiting metal primer followed by MASTERFLEX PRIMER 1. Remove dust, debris, and any other contaminants from voids. Seal with the appropriate MASTERFLEX[®] sealant. Openings exceeding 3mm must first be sealed with MASTERFLEX[®] sealant. Next, prestripe to a minimum width of 100mm on the base slab and continue up the penetration to the height of the top course wearing surface.



The Chemical Company

MASTERSEAL[®] HLM 5000 R

Application

Standard system*

For horizontal applications, simply empty contents of pail and spread immediately to ensure workability. Best results are obtained by marking off 11.28m² areas and evenly spreading the contents of a 20kg unit with a rubber-edged notched squeegee. Repeat the above procedure until the entire surface is covered. The above rate gives a wet film thickness of approx. 1.36mm.

Select the grade of MASTERSEAL HLM[®] 5000 R that best meets individual job requirements. Use MASTERSEAL HLM[®] 5000 R Type II for vertical application, MASTERSEAL HLM[®] 5000 R Type I for spray, roller or squeegee application. Type I can also be used on vertical surfaces. The build up should be done in a number of coats to achieve the desired thickness.

Verify the applied thickness with a wet film gauge as the work progresses.

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 5mm and allowing the water to stand for 24-48 hours. Visually inspect the bottom surface, if possible, to check for any water penetration. If repairs are necessary, the area should be drained and allowed to dry before reapplying MASTERSEAL HLM[®] 5000 R. After re-application, the area should be tested again for membrane integrity.

High-build system*

Apply 1.3mm wet thickness of MASTERSEAL HLM[®] 5000 R, followed by setting reinforcing fabric into the wet material. Overlap all seams a minimum of 50mm.

Allow the first coat to dry overnight and follow with a second 1.3mm wet application of MASTERSEAL HLM[®] 5000 R.

Spray equipment:

For spray equipment recommendations, consult the equipment manufacturer.

Curing

Appreciable properties develop within 24-48 hours at 24°C and 50% relative humidity. MASTERSEAL HLM[®] 5000 R should be protected from traffic before placement of protection board and topping. Install tightly butted protection board (minimum 3mm thick) as soon as possible following cure of MASTERSEAL HLM[®] 5000 R.

Clean up

Clean all tools and equipment immediately after application with CLEANING SOLVENT NO. 2.

Risks

Combustible liquid and vapor. May cause skin, eye and respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation of mouth, throat and stomach with nausea and abdominal pain. Reports associate repeated or prolonged occupational overexposure to solvents with permanent brain, nervous system, liver and kidney damage. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.



The Chemical Company

MASTERSEAL[®] HLM 5000 R

Precautions

KEEP AWAY FROM HEAT, FLAME AND SOURCES OF IGNITION. KEEP OUT OF THE REACH OF CHILDREN. Keep container closed. Use only with adequate ventilation. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Avoid breathing vapors. Use impervious gloves, eye protection. Empty container may contain explosive vapors or hazardous residues. Do not cut or weld on or near empty container. All label warnings must be observed until container is commercially cleaned or reconditioned.

First aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs, or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION. Refer to Material Safety Data Sheet (MSDS) for further information.

10/2007 BASF_CC-UAE revised 03/2010

* Properties listed are based on laboratory controlled tests.

Whilst any information contained herein is true, accurate and represents our best knowledge and experience, no warranty is given or implied with any recommendations made by us, our representatives or distributors, as the conditions of use and the competence of any labour involved in the application are beyond our control.

As all BASF technical datasheets are updated on a regular basis it is the user's responsibility to obtain the most recent issue.

BASF Construction Chemicals UAE LLC

P.O. Box 37127, Dubai, UAE

Tel: +971 4 8090800

Fax: +971 4 8851002

www.basf-cc.ae

