



# MasterSeal® Roof systems

Solutions for all your  
roofing needs





## Master Builders Solutions

The Master Builders Solutions brand brings all of its expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures. Master Builders Solutions is built on the experience gained from more than a century in the construction industry.

The know-how and experience of a global community of construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges. We collaborate across areas of expertise and regions and draw on the experience gained from countless construction projects worldwide. We leverage global Master Builders Solutions technologies, as well as our in-depth knowledge of local building needs, to develop innovations that help make you more successful and drive sustainable construction.

The comprehensive portfolio under the Master Builders Solutions brand encompasses concrete admixtures, cement additives, chemical solutions for underground construction, waterproofing solutions, sealants, concrete repair and protection solutions, performance grouts, performance flooring solutions.

Working with some of the major builders and building owners, Master Builders Solutions can provide individual tailored solutions to meet the waterproofing needs of the customers. The resulting range of waterproofing systems reduce the risk of water ingress during installation and refurbishment as well as giving long lived systems.



MasterSeal® Roof Systems use proprietary polyurethane and polyurea hybrid materials to create elastomeric durable fully bonded membrane systems. In use globally for more than 20 years and constantly improved to meet the needs of the industry, MasterSeal Roof systems are at the forefront of roofing solutions. More than 15 million square meters of MasterSeal roofing has been applied globally in the last 10 years. Suitable for all climatic

conditions faced across Asia from severe winters in Mongolia to the tropics of Singapore and to the searing heat of the Australian outback. Liquid applied by both spray and hand application the systems are seamless and able to conform to the most intricate of profiles. Systems are available for roof overlays on a wide variety of substrates, trafficked podiums and inverted or covered membrane roofs.

| Features of MasterSeal Roofing systems | Benefits  |
|--|---|
| Fast setting                           | Immediate waterproof protection after 1 minute  |
| Spray applied                          | Fast installation up to 700m <sup>2</sup> per day   |
| Spray applied / fast setting           | Able to waterproof vertical surfaces without running  |
| Seamless                               | No joints for water to penetrate  |
| Range of slip resistances              | Suitable for ramps and flat areas   |
| Separate wear coat                     | Engineered separate wear coat to take the turning forces and protect the membrane from damage   |
| Solvent free                           | Low odor allowing installation on occupied buildings  |
| Trafficable                            | Suitable for car and light truck traffic  |
| Fully bonded                           | No place for water to track if punctured  |
| Repairable                             | Easy repair of damaged areas with compatible hand applied materials   |
| Onsite quality check                   | Test using holiday tester before top coat application eliminates need for water ponding test. Thickness and adhesion can also be tested on site giving peace of mind to owner |

The MasterSeal Roof systems comprise of mostly three layers - a primer, the elastomeric membrane and the UV resistant top coat. In cases of significant traffic load, an additional wear coat can be added to become the MasterSeal Traffic systems.



### Priming

As with all building operations, if the preparation of the substrate is poor, then problems will arise in the future. The cleaning and preparation of the substrate to which the MasterSeal Roof system is applied must leave a sound base for the application.

MasterSeal Roof systems can be applied to a variety of substrates from new reinforced concrete to plywood, PVC, colourbond steel, copper, other metals, stone, tiles (glazed and terracotta), brick, polystyrene and concrete that has had bitumen and other materials applied.

The MasterSeal primer range includes primers for new concrete, tiles, metal, old bitumen membranes or bitumen contaminated concrete. These have been formulated on both epoxy and polyurethane bases to ensure that the MasterSeal Roof systems can fully bond to the chosen substrate.

### Membrane application

The MasterSeal Roof systems spray and hand applied elastomeric waterproofing membranes are a real alternative to conventional waterproofing methods provided by bituminous sheet membranes and polymer sheet membranes.

These liquid applied non-solvent membranes conform to all irregular surfaces without laps, welds, or seams, forming a seamless membrane with no weak points for water ingress.

The spray technology of MasterSeal® Roof systems has evolved and now both the traditional and 1:1 mix ratio materials are available. Allowing faster installation on complex substrates than hand applied and elimination of changing materials when moving from horizontal to vertical application makes this the choice for larger areas and complex substrates. The spray applied membranes set in just 30 seconds to form a solid, impervious,

monolithic elastomeric membrane and is unaffected by rain after only one minute. As with the hand applied system, it is seamless and has the unique benefit of conforming to all irregular surfaces removing the need for laps and pre-formed sections needed with sheet membranes. This makes detailing work using MasterSeal Roof membranes up to 20 times faster than traditional sheet methods.

### Insulation

Many refurbishments and new builds now incorporate insulation in the roof build up. MasterSeal Roof systems can accommodate insulation applied directly to the roof and subsequently waterproofed or insulation placed over the waterproofing. The MasterSeal Roof membranes and primers are compatible with polyurethane foam insulation and the various grades of expanded polystyrene (EPS). Specific build ups can be created with the designer to achieve the insulation and waterproofing outcome desired.

### Top coating

The final stage of the MasterSeal Roof systems is the protection of the membrane from degradation by UV and weathering which would over time reduce the ability of the membrane to cope with the thermal movements of the roof. The top coats job is to protect the membrane and as such it needs to be maintained to ensure that the membrane can work for many years. The life of the top coat is determined by the environmental conditions and the harsher they are, the more often the top coat needs to be maintained. The selection of the top coat is related to the use of the roof (foot traffic thus requiring non-skid), the aesthetics required (colour, texture) and additional attributes like solar reflectivity. The MasterSeal Roof systems incorporates a range of top coats to provide these attributes. No top coat is generally required if the membrane is to be covered by a roof garden or pavers but the membrane should not be left exposed to the elements for extended periods without a protective top coat.



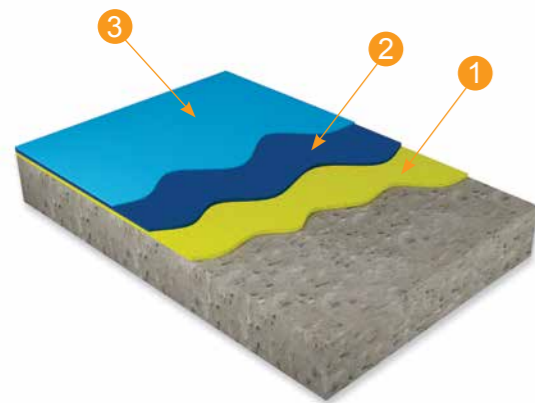





## MasterSeal Roof systems

There are two MasterSeal Roof systems within which there are a number of variants in terms of materials used and the type of membrane used.

### MasterSeal Roof 3000

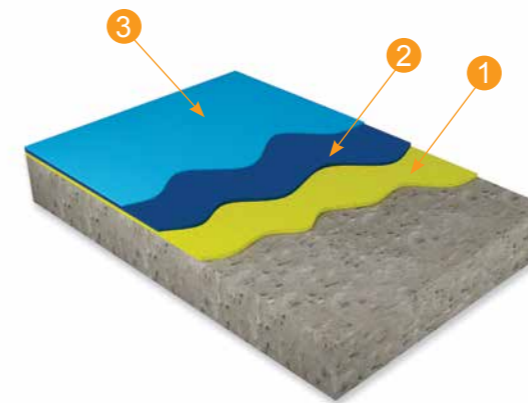
- **Hand applied** – applied by notched squeegee and roller
- **Flexible** – ideal in confined spaces or where access is limited
- **Economic** – smaller areas up to 250 m<sup>2</sup> can be coated more economically and no need for application machinery
- **Elastomeric** – will stretch and contract with the movement of roof
- Not suitable for roof gardens – can be used for light traffic podiums or balconies.






|   |   |                |   |
|---|---|----------------|---|
|  | 1 | Primer         | MasterEmaco P 2525, MasterSeal P 2525 or MasterSeal P 1640  |
|   |   | Sand broadcast | Oven dried silica sand, size 0.3 - 0.8mm uniformly applied, not in excess   |
|  | 2 | Membrane       | MasterSeal 640 bodycoat solvented moisture cured elastomeric polyurethane<br>MasterSeal M 200 solvented moisture cured elastomeric polyurethane |
|  | 3 | Top coat       | MasterSeal TC 240, MasterSeal TC 225, pigmented, PU, single component, contains solvent, highly elastic, UV and weather resistant               |

### MasterSeal Roof 3500

- Cold applied – no hot works, no fire risk
- **Fast** – up to 20 times faster than traditional roofing methods
- **Economic** – faster and less labour intensive detailing work required
- **Seamless detailing** – no laps, welds or seams to seal providing simple effective waterproofing of difficult detailing situations
- Spray or hand application- choice depends on size and complexity of the roof.
- Optional top coat – if used on inverted roofs or roof garden where no top coat required.



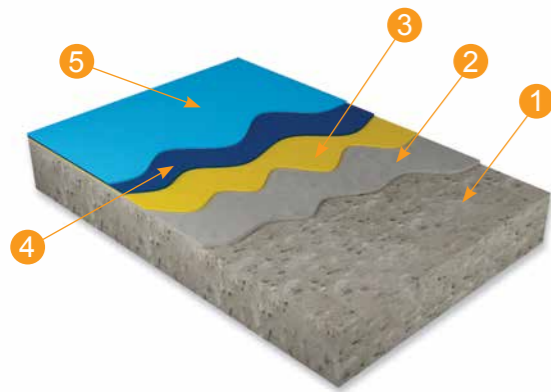
|   |   |                |   |
|---|---|----------------|---|
|    | 1 | Primer         | MasterEmaco P 2525 or MasterSeal P 2525   |
|   |   | Sand broadcast | Oven dried silica sand, size 0.3 - 0.8mm uniformly applied, not in excess   |
|  | 2 | Membrane       | MasterSeal M 800 / 820 pigmented, PU / PUR, 2 component, solvent free, spray applied<br>MasterSeal M 860 / 860 Thix, pigmented, PU / PUR, 2 component, solvent free, hand applied |
|  | 3 | Top coat       | MasterSeal TC 258 / 259 / 225, pigmented, PU, single component, contains solvent, highly elastic, UV and weather resistant  |








## MasterSeal Roof 3000 / 3500

For new or existing concrete decks

The MasterSeal Roof 3000 / 3500 systems are both suitable for the application to new or well prepared existing concrete roofs. The choice will depend on size, aggressiveness of the climate and the criticality of the waterproofing installation. The priming will be similar and the main difference is that the MasterSeal Roof 3000 uses single pack moisture cured membrane and top coat and is not suitable for constant contact with water such as would be found in a roof garden.



| Concrete roofs  |                               | Purpose                                      |
|---|-------------------------------|--|
|    | 1 Concrete substrate          | New or well prepared concrete substrate      |
|    | 2 Screed to fall if necessary | Screed to fall if necessary                  |
|  | 3 Primer                      | Suitable epoxy primer                        |
|  | 4 Membrane                    | Single pack or two pack elastomeric membrane |
|  | 5 UV stable top coat          | UV stable top coat to protect the membrane.  |

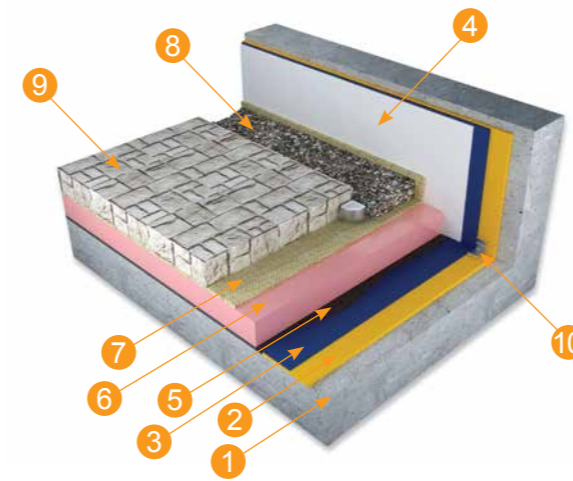


## MasterSeal Roof 3500

For concrete decks with paving, ballast or roof garden

MasterSeal Roof 3500 system is ideal for inverted roof applications. As the membrane is protected and does not rot or degrade, it will last the 'design life of the roof' as assessed by the British Board of Agreement (BBA).

The membrane is fully bonded to the concrete deck ensuring water cannot track under its surface and is lap free. The system requires no falls as the drainage board provides the drainage of water and its straight forward build up reduces installation time. If the spray applied systems are used, up to 700 m<sup>2</sup> per day may be achieved allowing the insulation and ballasting to be applied earlier in the project creating a watertight structure enabling follow on trades earlier access to the roof.



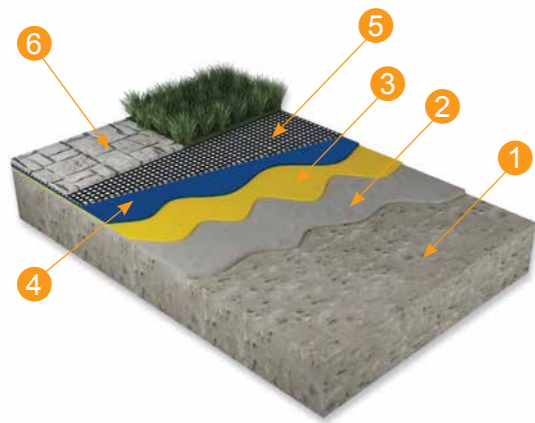
| Typical inverted roof specification including insulation                              | Purpose   |
|---|---|
|  | 1 Concrete substrate  |
|  | 2 Primer<br>Suitable primer for concrete substrate  |
|  | 3 Membrane<br>Elastomeric hand or spray applied membrane                                    |
|  | 4 UV top coat on any exposed areas<br>Top coat only necessary on exposed areas              |
|  | 5 Drainage layer<br>Drainage board to collect water and dirt it to drain                    |
|  | 6 Insulation layer<br>Expanded polystyrene insulation board or polyurethane foam insulation |
|  | 7 Filter fabric<br>Geotextile fabric to stop ballast clogging with dirt                     |
|  | 8 Final finish<br>Ballast or paving   |
|  | 9 Final finish<br>Pavers, bricks or tiles   |
|  | 10 Render application<br>Metal stop bead  |



# MasterSeal Roof 3500

For roof garden, podiums and paved areas

The utilization of available land especially in cities has seen an increase in the building of underground car parks as part of condominium developments, with the space on top devoted to gardens or other recreation areas or service roads. Office complexes now incorporate open podium areas and often roof gardens to create a more pleasant environment for the workers. The MasterSeal Roof systems are suitable for the construction of roof gardens or light traffic podiums and the MasterSeal Traffic system has systems for roadways that allow direct contact of vehicle and the waterproofing system.



| Podium deck roof garden | Purpose  |
|-------------------------|--|
| 1 Concrete substrate    |  |
| 2 Screed to fall        | If falls to drain are inadequate apply a screed to create them |
| 3 Primer                | Suitable primer for concrete                                   |
| 4 Membrane              | Elastomeric spray or hand applied membrane                     |
| 5 Drainage layer        | Geotextile fabric with drainage layer to draw away the water   |
| 6 Pavers or garden      | Pavers on sand bedding or soil on gravel for gardens           |



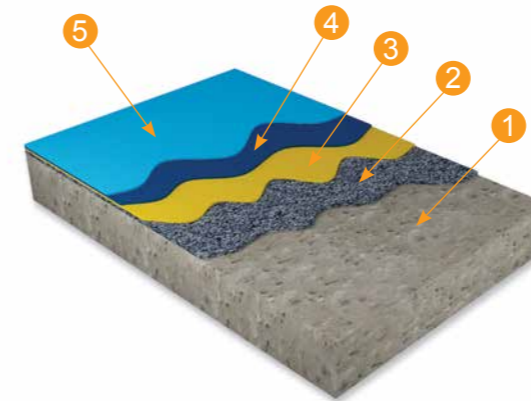
# MasterSeal Roof 3000 / 3500

For existing roof membranes renovation

MasterSeal Roof 3000 / 3500 is a very cost effective overlay solution for the reinstatement of the waterproofing of defective existing roofs currently covered in mastic asphalt, bituminous membranes, polymer membranes, fiber cement, or aged metal roofing and old polyurethane membranes.

Each type of roof brings with it a host of waterproofing challenges and only after an inspection and determination of the failure mode can we recommend a renovation method. Master Builders Solutions personnel are trained to understand the various modes of failures and the suitability of using a membrane overlaid as a suitable repair solution rather than replacement.

In order to treat and prepare each roof for the reinstatement of the waterproofing, Master Builders Solutions has a range of primers and preparation coats, which have been specially designed to ensure the membrane bonds well.



| Reinstatement over existing membrane | Purpose   |
|--------------------------------------|---|
| 1 Concrete substrate                 | Could be concrete or substrate like metal, fire cement old membrane etc   |
| 2 Surface to apply membrane to       | Bitumen mastic, sheet, PVC, painted metal, weathered polyurethane membrane. Additional measures may be required such as mechanical fixings, partial removal etc |
| 3 Suitable primer                    | Primer to adhere to specific substrate  |
| 4 New membrane                       | New elastomeric membrane  |
| 5 UV protective top coat             | UV protective layer   |



## Quick guide to your roofing solutions

| Podium deck                             | Spray applied system  | Hand applied system    |
|---|---|------------------------|
| 1 Screed to falls                       | Optional  |                        |
| 2 Preparation coat / primer             | MasterTop primers and preparation coats as recommended by Master Builders Solutions |                        |
| 3 Waterproof membrane                   | MasterSeal M 800 / 820  | MasterSeal M 860 / 200 |
| 4 Drainage layer with geotextile filter | Drainage board  |                        |
| 5 Paved surfacing sharp sand bedding    | Brick pavement green roof   |                        |

| Typical inverted roof specification          | Spray applied system  | Hand applied system    |
|--|---|------------------------|
| 1 Deck                                       | MasterTop primers and preparation coats as recommended by Master Builders Solutions |                        |
| 2 Preparation coat / primer                  |   |                        |
| 3 Waterproof membrane                        | MasterSeal M 800 / 820  | MasterSeal M 860 / 200 |
| 4 UV protective top coat on exposed membrane |   |                        |
| 5 Drainage layer                             | Drainage board  |                        |
| 6 Insulation                                 | Extruded polystyrene  |                        |
| 7 Filter fabric                              | Geotextile  |                        |
| 8 Ballast layer                              | Ballast / paving  |                        |

| Typical overlay roof specifications    | Spray applied system   | Hand applied system    |
|--|--|------------------------|
| 1 Deck                                 | Master Builders Solutions is able to provide a survey of the existing roof to assess suitability for refurbishment |                        |
| 2 Mastic asphalt / bituminous membrane | Prepare and clean  |                        |
| 3 Primer                               | Consult Master Builders Solutions technical services   |                        |
| 4 Waterproof membrane                  | MasterSeal M 800 / 820   | MasterSeal M 860 / 200 |
| 5 Top coat                             | MasterSeal TC 248 / 249 / 225  |                        |





## Connecting partners for better answers

Continuous innovation and tailor-made solutions ensure customers using Master Builders Solutions are more successful. We operate across the Asia Pacific region, with more than 80% of our products produced within the region. The corporate culture of Master Builders Solutions is focused upon innovations, customers and safety. Master Builders Solutions has been rated among the top employers in many countries throughout the region because we ensure workplace safety, support the communities in which we are

located, and strive to utilize and produce safe and environmentally appropriate technologies. Master Builders Solutions offers a wide range of building construction products, concentrating on performance flooring solutions, repair and protection solutions, precision grouting solutions and waterproofing solutions. Our internationally connected technical experts and our local sales force combine forces to ensure that solutions are tailored to meet local conditions.



## Product selector

|                      | New roofs        |                         | Existing roofs   |                         | Podiums              |                         |
|----------------------|------------------|-------------------------|------------------|-------------------------|----------------------|-------------------------|
|                      | Exposed concrete | Exposed other materials | Exposed concrete | Exposed other materials | Exposed foot traffic | Exposed vehicle traffic |
| MasterSeal Roof 3000 |                  | ●                       |                  | ●                       | ●                    | ●                       |
| MasterSeal Roof 3500 | ●                | ●                       | ●                | ●                       | ●                    |                         |



## Project references



**MasterSeal Roof 3000**  
Roof garden on private home, Switzerland



**MasterSeal Roof 3500**  
Maritime Museum, Western Australia



**MasterSeal Roof 3500**  
Brigade condominium, India



**MasterSeal Roof 3500**  
Grand Lisboa, Macau



**MasterSeal Roof 3500**  
VivoCity, Singapore



**MasterSeal Roof 3500**  
National Mosque Kuala Lumpur, Malaysia





# Master Builders Solutions for the Construction Industry

**MasterAir®**

Complete solutions for air entrained concrete

**MasterBrace®**

Solutions for concrete strengthening

**MasterCast®**

Solutions for the manufactured concrete product industry

**MasterCem®**

Solutions for cement manufacture

**MasterEmaco®**

Solutions for concrete repair

**MasterFinish®**

Solutions for formwork treatment and surface improvement

**MasterFlow®**

Solutions for precision grouting

**MasterFiber®**

Comprehensive solutions for fiber reinforced concrete

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Solutions for high performance concrete

**MasterInject®**

Solutions for concrete injection

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Solutions for enhanced durability

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Advanced rheology control for concrete

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