

Application Guide for MasterSeal 930 Sealing System

IMPORTANT READ THIS FIRST

MB Solutions Australia Pty Ltd does not warrant the performance characteristics of this product unless the instructions of this document and other related MB Solutions Australia Pty Ltd documents are adhered to in all respects.

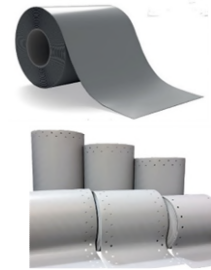


General

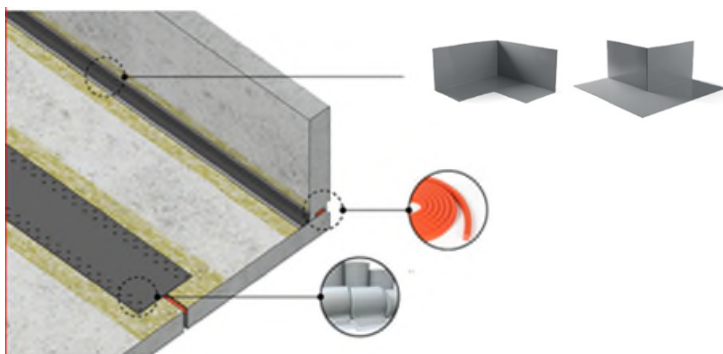
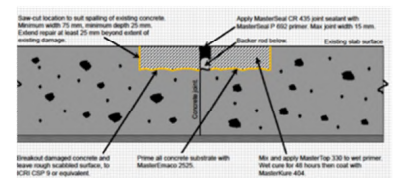
This application guide applies to the MB Solutions Australia Ltd Sealing FPO tape system, known as MasterSeal 930. This application guide shall be read in conjunction with all project specifications (including drawings), by others, and the current material technical data sheets (TDS) and safety data sheets (SDS).

Products:

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| MasterSeal 930 tape : Flexible Polyolefin (FPO) tape Supplied in: 20m rolls | |
| MasterSeal 930 | 1mm and 2mm thickness in a range of widths between 100mm and 1000mm upon request- Plain or perforated options available. |
| MasterBrace 1444 | Two pack, thixotropic epoxy adhesive |
| MasterBrace 1446 | |



| OTHER products to compliment MasterSeal 930 System | | |
|--|--|------------------------------|
| MasterSeal CR 195 | One component, moisture curing, thixotropic aliphatic polyurethane sealant | For joints up to 50mm joints |
| MasterSeal CR 435 | Two component, chemically curing, hybrid polyurea sealant | For Horizontal joints |
| MasterSeal 910 | Hydroswellung waterbars for joints | For cold joints |
| MasterTop 330 | Cementitious Iron Aggregate Filled Mortar | For slab joint repairs |
| MasterEmaco Range | Repair mortars | For concrete repairs |



Application Requirements: All work shall be carried out by adequately trained and skilled sub-contractors, under appropriate supervision.

Safety: Always ensure the appropriate use of adequate PPE (gloves, goggles, long sleeves etc) and comply with all other safety related requirements when applying Master Builders materials.

Quality Systems: The applicator shall operate under a fully compliant quality system, to ensure the on-site quality of applied material. The applicator shall keep fully documented work records for all works undertaken.

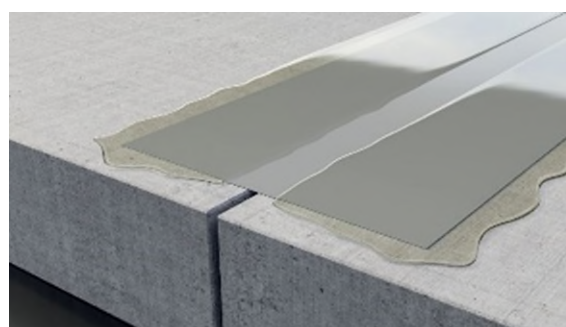
Quality Control: If after application and/or testing, any applied material is deemed as unsatisfactory by the specifying consulting engineer and/or MB Solutions Australia Ltd, it may need to be rectified at the applicator's cost.

Weather: No product application work is to be carried out in temperatures below 5°C or above 35°C, unless special precautions are taken.

Continuity of Process: All applications shall be done in continuous operations.

Uses

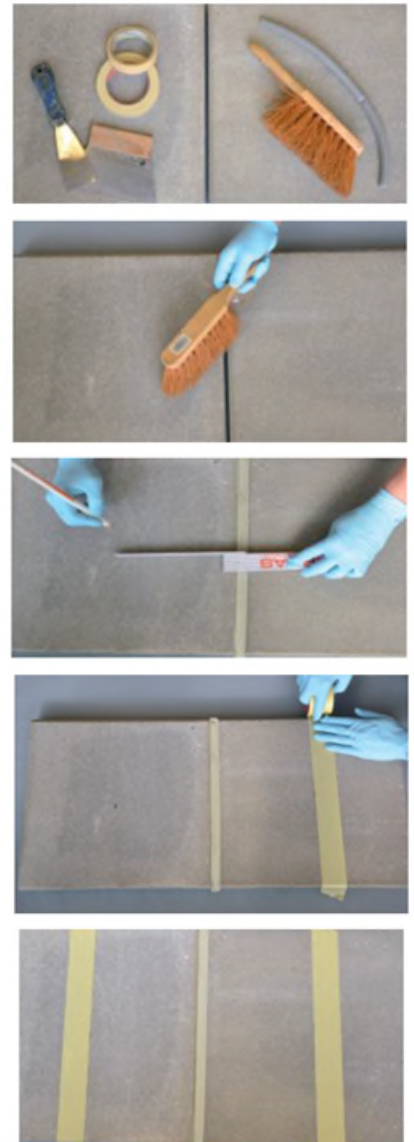
- **MasterSeal 930** is intended for use on wide movement joints requiring waterproof sealing.
- **MasterSeal 930** joint sealing system consists of two products - **MasterSeal 930** tape and **MasterBrace 1446** or **1444** epoxy which are used to adhere this to the substrate and to seal between the tapes.
- **MasterSeal 930** tape is a highly elastic FPO tape, rot-proof and chemically resistant sealing tape. **MasterBrace 1446** or **1444** are two-part epoxy compound, which establish a strong bond to various types of substrate.
- **MasterSeal 930** is suitable for use with both potable and non-potable water and for vertical and horizontal joints.



Part A - Preparation

AI. Concrete Substrate

- Concrete substrate shall be of at least 28 days old. A tensile bond strength of the substrate of > 1.5 MPa is required. A Tensile Pull-Off Test should be done prior to work proceeding and to verify the contractor's chosen preparation procedures.
- All cement laitance must be removed prior to application. The surface layer of the concrete shall be removed to expose small particles of sound aggregate such that the minimum roughness or surface profile to be achieved is CSP 3, as per ICRI (International Concrete Repair Institute) Technical Guideline No. 310.2R-2013. The optimum mean surface roughness or profile is 0.5 – 1.0 mm and must expose soundly bonded aggregate with a surface presenting like 60-grit sandpaper.
- The surface shall not be roughened excessively, or in a manner that will create unnecessary damage to the substrate concrete. Ideal surface preparation methods are grit blasting, shot peening or grinding. Any additional water must be avoided. Dirt, oil, grease, and other contaminants must be removed. Immediately prior to the application of the MasterSeal 930 system including epoxy primer, levelling mortar and/or adhesive, the surface must be cleaned with a brush or a vacuum cleaner to remove all loose particles and dust. Ensure the substrate has properly cured and the concrete is profile free, no ridges or troughs, etc. Mechanically remove efflorescence before proceeding.
- The substrates shall be free of laitance, loose or friable materials, debris and all contaminants by mechanical means preferably by captive shot blasting with handheld diamond grinders for edge work to achieve CSP 3 finish.
- Bag up blowholes, especially on vertical surfaces, and carry out any necessary repairs in good time prior to application of adhesive. "Bagging up" should be carried out using a suitable **MasterEmaco** repair mortar or **MasterBrace** epoxy adhesives.
- To vertical surfaces, all form release agent must be removed prior to applying any adhesive.
- Apply a masking tape on top of the joint / crack (masking tape = twice the width of the joint)
- Ensure adequate masking off the outside edges of the joint and that joint is clear of any debris. This masking allows the joint edge to be regular and clean to make the joint look neater. The distance to the joint should be approx. once the full size of the tape.

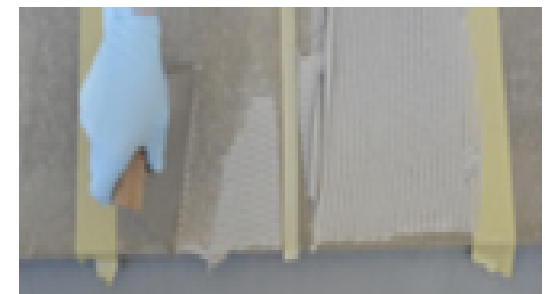


A2. Applying adhesive (first layer)

- Apply **MasterBrace 1446** or **1444** as the first layer of adhesive.
- Before mixing, pre-condition both A and B components to a temperature of approximately 15 to 25°C.
- Scrape the entire contents of Part B into the container of Part A.
- Do not mix by hand. Mix with a mechanical drill and paddle at a very low speed (ca. 300rpm) for at least 3 minutes until there is a homogeneous grey colour.
- Scrape the sides and the bottom of the container several times to ensure complete mixing.
- Keep the mixer blades submerged in the mixing bucket to reduce introducing air bubbles.
- Do not work of the original container.
- After proper mixing to a homogeneous consistency place the mixed Parts A and B into a fresh container and mix for another minute.
- Apply a coat of **MasterBrace 1446** or **1444** to the prepared substrate by spreading with a trowel or paint scraper at the minimum thickness of 1-2mm for 1mm thick **MasterSeal 930** or 2-3mm for the 2mm thick **MasterSeal 930**.
- Finish of the adhesive to a smooth layer to remove air bubbles and have a flat surface to apply the **MasterSeal 930** tape.
- Do not fill the joint with adhesive or allow the adhesive to bridge the joint
- The adhesive should extend 30-50mm past the point where the tape will finish on either side of the joint.
- Do not allow the adhesive to set before applying the **MasterSeal 930**.

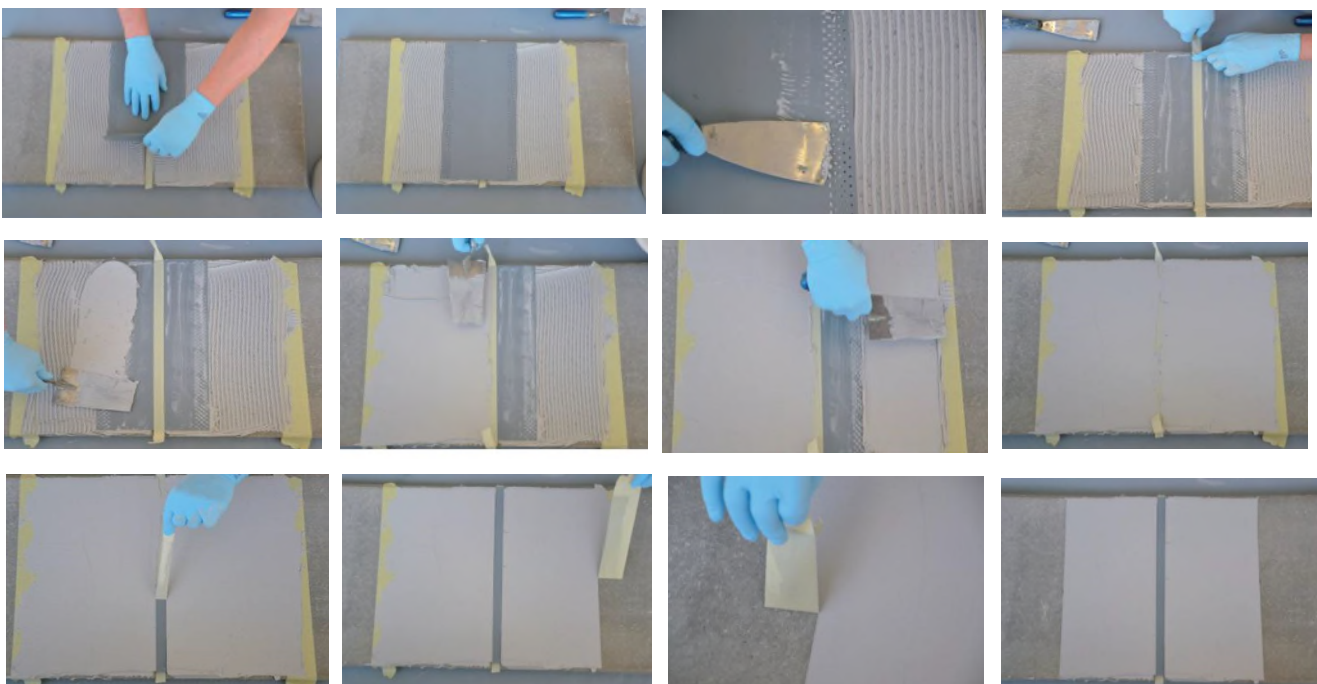
A2. Priming metal surfaces

- Remove dust, debris, and other contaminants from vent, drainpipe, and post penetrations; reglets; and other metal surfaces.
- Clean surfaces to bright metal and prime with **MasterBrace 1446** or **1444** or use **MasterEmaco 2525** and apply the adhesive whilst the **MasterEmaco 2525** is still tacky.

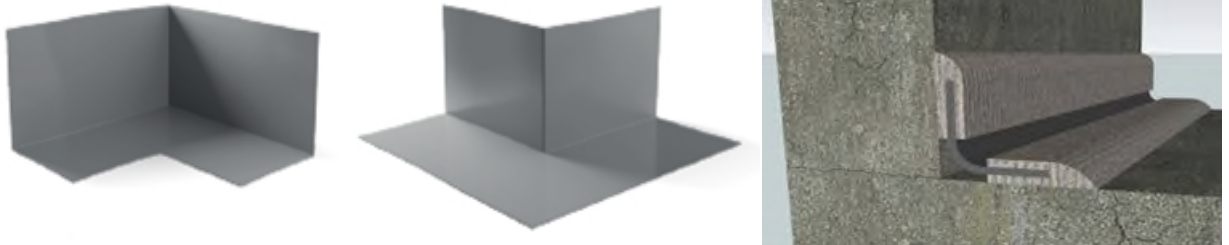


A3. Application of the MasterSeal 930 Tape

- The **MasterSeal 930** tape should be kept clean prior to application and if it has become contaminated with dust or debris then it should be cleaned with a rag wet with solvent (**MasterSeal 955** is suitable) to remove the dirt etc.
- It is good practice to apply some masking tape to delineate the edge of the adhesive on the **MasterSeal 930** so that the centre of the tape is free from adhesive (other than at joints using the adhesive).
- Starting at the top of the joint apply the **MasterSeal 930** tape to the adhesive and use a rubber roller to push the **MasterSeal 930** properly into the adhesive.
- Whilst the first layer of adhesive is still wet and the joints have been welded or joined with adhesive you need to encapsulate the edge of the **MasterSeal 930** with more of the **MasterBrace 1446** or **1444**.
- Cover the tape applying the second layer of adhesive. To guarantee a good adhesion with the surface the adhesive should exceed the tape by a full width of the Flex tape = up to the two lateral masking tapes.
- The adhesive should be applied and then smoothed off to give a smooth finish with no tape showing through the adhesive.
- It is also good practice to remove the masking tape once the final layer is applied than to wait until the adhesive has cured which will require mechanical removal.
- Allow the final layer to cure until it is hard (usually overnight) before putting the structure back into service.



- The **MasterSeal 930** is flexible enough to bend at floor wall junctions. It is advisable at corner and floor junctions to not try to bend the tape in three directions so finish the wall-wall corner at the wall floor joint level.



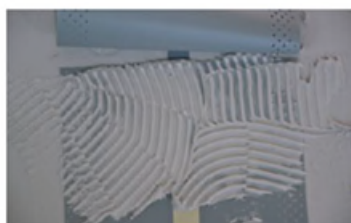
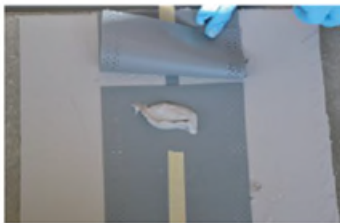
- It is advisable to do the floor joints, then the floor wall joints and finally the wall-wall joints to minimise the stress of the tape.



A4. Connecting the tapes

A4.1 Using Epoxy Adhesive

- To join the tapes the application of the **MasterBrace 1446** or **1444** in a 1-2mm layer to the first tape in a section about 100mm long and when applying the second tape to push this into the adhesive at the join.
- The top piece of **MasterSeal 930** should be pushed into the adhesive and lower tape with a rubber roller.
- Leaving the **MasterSeal 930** overlap with a weight on it whilst the adhesive cures is advised for all joins.
- This should be done for all joins of the tape.



A4.2 Joining new to old

- New tapes can be joined to old tapes using either method however the old tape should be lightly abraded with fine sandpaper to ensure there is a clean surface.
- The abraded surface should be cleaned with **MasterSeal 955** to ensure it is ready to accept either heat or adhesive.



A4.3 Using heat

- Ensure surface for application is dry, free from dust, debris and all other contaminants which may inhibit adhesion between the two tapes.
- Lightly abrade the surface to ensure an open surface to heat and weld the tapes.
- Ensure there is an overlap of 50 to 100mm between the two tapes to be joined.
- Using a heat gun with suitable output around 270°C for a 1 mm thick tape or 360°C for the 2mm thick tape. Suitable welders are made by Leister.
- Heat between the overlaps until the MasterSeal 930 becomes pliable and then using a rubber roller roll the two sides together. A weight can be used to hold the pieces together whilst it cools.
- After allowing the join to cool before you test it for adhesion.

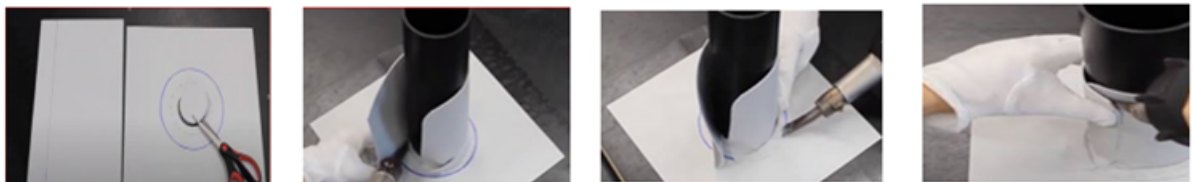
NOTES:

- By warming up the membrane, it can be stretched over slight irregularities of the substrate. The same method can be used in case or corners, cavities, pipe crossing.



A5. Pipe Penetrations

- Cut a suitably sized square as well as a sleeve section; and roughen the overlapping areas.
- Then prepare the tape; pre-heat the tape and pull the preheated tape over the pipe.
- Pull the tape square completely down to the concrete substrate.
- Apply **MasterBrace 1444** as primer for adhesion of tape to steel pipes and then put the sleeve around the pipe and weld the sleeve onto the bottom section around the pipe; weld the seams vertically together. If the pipe is galvanised that will need to be removed and if its black iron no need to go to the same degree of preparation, just a clean-up and remove any surface rust etc.



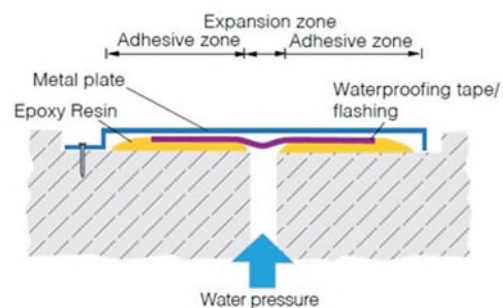
A6. Temperature considerations

- The **MasterSeal 930** can be applied down to around 5°C and up to 35°C.
- As the epoxy-based adhesives slow their cure rate below 15°C longer times should be given before return to service.
- At low temperatures welding is the preferred as the bond is not affected by the curing of the adhesive.

NOTES

- **MasterSeal 930** and the adhesives **MasterBrace 1444** are suitable for contact with potable water and have been tested to conform to AS 4020:2018.
- Masking tape should be removed whilst the adhesive is still soft.
- **MasterSeal 930** is not suitable for vehicle traffic and should be protected with a suitable cover plate system
- **MasterSeal 930** should be installed when the joint is at its widest to reduce the stress on the curing adhesive.
- If this is not possible then a weight (like a dowel) should be used to create a dip in the **MasterSeal 930** or have a backer rod sitting proud to create a bulge.
- In case of higher water pressure > 1.5 bar up to 3 bars or negative pressure, protect the joint with a metal plate.

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| FINAL REPORT | | | |
| Report ID : 201110 | | | |
| Report Information | | | |
| Sponsoring Organisation : 01700000 - WB Solutions Australia Pty Ltd | | | |
| Account : 100007 - WB Solutions Australia Pty Ltd | | | |
| AWQC Reference : 100007-2020-CSP-6 - Post Test MasterSeal 930 | | | |
| Project Reference : PT-4286 | | | |
| Product Designation : MasterSeal 930 Joint Sealing Tape - Grey | | | |
| Composition of Product : Highly Elastic Tape (Grey) - No further information provided by submitting organisation. | | | |
| Product Manufacturer : WB Solutions Australia Pty Ltd, Victoria, AUSTRALIA | | | |
| Use of Product : In Contact Sealing Tape | | | |
| Sample Selection : As provided by the submitting organisation. | | | |
| Testing Requested : AS/NZS 4020 TESTING OF PRODUCTS FOR USE IN CONTACT WITH DRINKING WATER | | | |
| Product Type : Composite | | | |
| Samples : Samples were prepared and controlled as described in Appendix A of AS/NZS 4020:2018 | | | |
| Extracts : Extracts were prepared as described in Appendix Clause C, D, E, F, G, H, S, R. | | | |
| Project Completion Date : 23-Dec-2020 | | | |
| Project Comment : The results presented herein demonstrate compliance of MasterSeal 930 Joint Sealing Tape - Grey to AS/NZS 4020 when exposed at area to volume ratios up to 10000 mm ² , at 20°C ± 2°C. | | | |
| <p>PLEASE NOTE THAT THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL.</p> <p>THE RESULTS STATED IN THIS REPORT RELATE TO THE SAMPLE OF THE PRODUCT SUBMITTED FOR TESTING AND CHANGES IN THE MATERIAL FORMULATION, PROCESS OF MANUFACTURE, THE METHOD OF APPLICATION, USE OF THE SURFACE AREA TO VOLUME, MADE IN THE USE, COULD AFFECT THE PERFORMANCE OF THE PRODUCT FOR USE IN CONTACT WITH DRINKING WATER.</p> | | | |
| <p>Michael Casson APPROVED SIGNATORY</p> | | | |
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| SALPT_Final_20180917 | | Page 1 of 12 | |



Disclaimer

Application Guide for MasterSeal 930 V4 102023

STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this MB Solutions Australia Pty Ltd 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 and for ensuring that the application and use of the product is in accordance with the manufacturer's guidelines and recommendations.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by MB Solutions Australia Pty Ltd either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not MB Solutions Australia Pty Ltd, are responsible for carrying out procedures appropriate to a specific application.

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