Application Guide for MasterSeal Sealants

MasterSeal CR 195

Joint Design

- The number of joints and the joint width should be designed for a maximum of ±25% movement.
- In joints up to 12mm in width, ratio of width to depth is 1:1. In joints exceeding 12mm in width, ratio of width to depth is 2:1.
- Maximum joint width for MasterSeal CR 195 should be ~40mm.
- Sealant depth must be controlled by closed cell backer rod or soft open cell backer rod. Where the joint depth does not permit the use of backer rod, a bond-breaker (polyethylene strip) must be used to prevent three-point bonding.
- To maintain the recommended sealant depth, install backer rod by compressing into channel without stretching it lengthwise. Backer rod should be about 3mm larger in diameter than the width of the joint to allow for compression. Soft open cell backer rod should be approximately 25% larger in diameter than the joint width. Backer rod becomes an integral part of the joint. The sealant does not adhere to it, and no separate bond-breaker is required. Do not prime or puncture the backer rod.
- Use only the correct backer rod size. The use of multiple smaller backer rods or the use of part width or cut down backer rods, will lead to premature joint failure with incorrect sealant thicknesses and excessive joint widths.
- Depth of backer rod needs to take account of meniscus on sealant and compression of rod for correct thickness of sealant, which is measured in the middle of the joint.

Width of Joint	Thickness of sealant	Depth of meniscus	Depth of backer rod
5	5	2	7
10	10	3	13
12	12	3	15
15	10	3	13
20	10	5	15

- If joint width varies by more than 2mm choose a sealant depth aligned to the largest width.

Surface Preparation

- Surfaces must be structurally sound, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and bond breaking compounds, and membrane materials.
- Concrete, Stone and other masonry.
- Clean by grinding, sandblasting, or wire brushing to expose a sound surface free of contamination and laitance.
  - For previously sealed joints, remove all old material by mechanical means. If joint surfaces have absorbed silicone oils as the previous sealant was a silicone, remove sufficient concrete to ensure a clean surface.
  - A test area should be checked to ensure that the adhesion will be acceptable or the priming system chosen is sufficient.

  - Wood
    - New and weatherproof wood must be clean and sound.
    - Abrade away paint to bare wood to ensure good adhesion.
    - Any coating that cannot be removed must be tested to verify adhesion or to determine an appropriate primer.

  - Metal
    - Remove scale, rust and coatings from metal to expose a bright white surface.
    - Metals such as copper and brass are often protected with a clear lacquer and this should be removed mechanically before application of primer or sealant
    - Remove protective coatings as well as any chemical residue or film.
    - Aluminium window frames are frequently coated with a clear lacquer that must be removed before the application of MasterSeal sealant, preferably by wiping the window frames with a clean cloth moistened with methyl ethyl ketone (MEK). Remove any other protective coatings or finishes that could interfere with adhesion by mechanical means if necessary.
    - Powder coatings that are typical on aluminium window frames will generally require priming with MasterSeal P 692. When a protective coating has been specified on metal, contact Master Builders Solutions Technical Representative before applying MasterSeal sealant.

Priming

- MasterSeal CR 195 is generally considered a non-priming sealants, but special circumstances or substrates (e.g. certain protective coatings on aluminium) may require a primer.
- MasterSeal CR 195, when subject to constant immersion in water, may require a primer. It is the user's responsibility to check the adhesion of the cured sealant on typical test joints at the project site if it is suspected surfaces are contaminated. (Refer to Technical Data Sheet on primer MasterSeal P 692).
- Apply primer full strength with a brush or clean cloth. A light, uniform coating is sufficient for most surfaces, porous surfaces require a somewhat heavier although not excessive coat.
- Allow primer to tack off before applying MasterSeal sealants. Depending on temperature and humidity, primer will be tack free in 15 to 120 minutes.
- Priming and sealing must be done on the same work day.

Application

- Sealant gun should be clean and the plunger move easily along the barrel.
- The catch plate should release easily so the pressure on the sealant can be released as required.
- Cut nozzle at a 30-45 degree angle to allow easy filling of the joint.
- Nozzle should be approximately 3mm smaller in diameter than the width of the joint to allow the nozzle to be placed in the joint.
- The sausage can be opened with just a 25mm vertical cut at the top of the sausage. Removal of the tip is not necessary and can be messy.
- Using the above method when the sausage is exhausted the empty skin can be extruded into the rubbish without handling keeping the operator and the gun cleaner.
- Taping the sides of the joint reduces the mess needed to be cleaned up and will give a cleaner joint after curing.
- Apply the sealant when the temperature is constant or rising. This will put less stress on the sealant when it skins and can avoid splits in the surface caused by the joint. The rising temperature will close the joint up putting less stress on the uncured sealant.
- Cure rate is approximately 1mm per day for the MasterSeal CR 195. Protect the sealants from extreme conditions in the first 2-3 days if possible.
- Tooling with a slightly convex tool like a round ended spatula will create an even meniscus which will enhance the ability of the sealant to cope with the movement. Soapy water and or solvents do not enhance the tooling and may make the sealants more prone to dust pick up.
- The nozzle can be reused if cleaned at the end of the day's work or if allowed to cure and the cured material pulled out.

Figure 1 - Tools you will need.

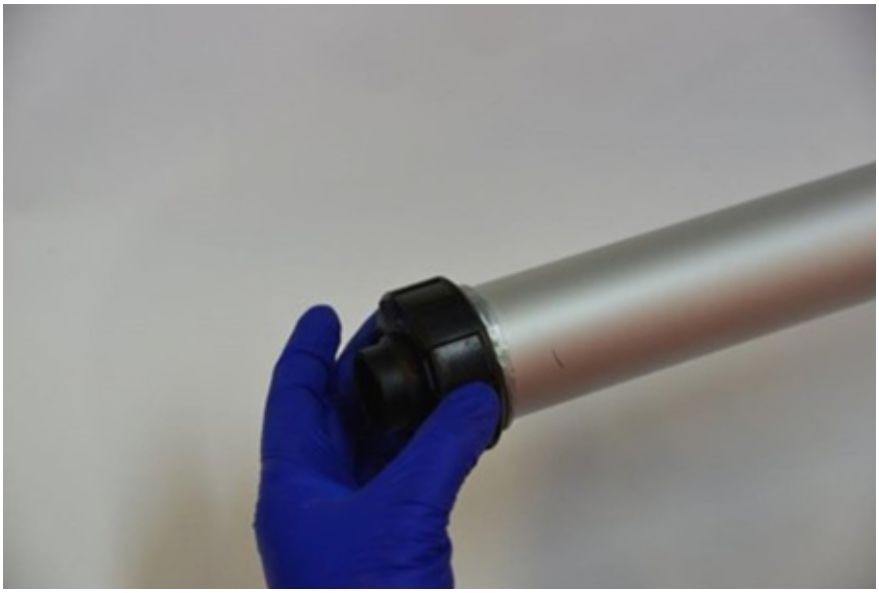

Figure 2 - Remove end cap from sealant gun by screwing it off.

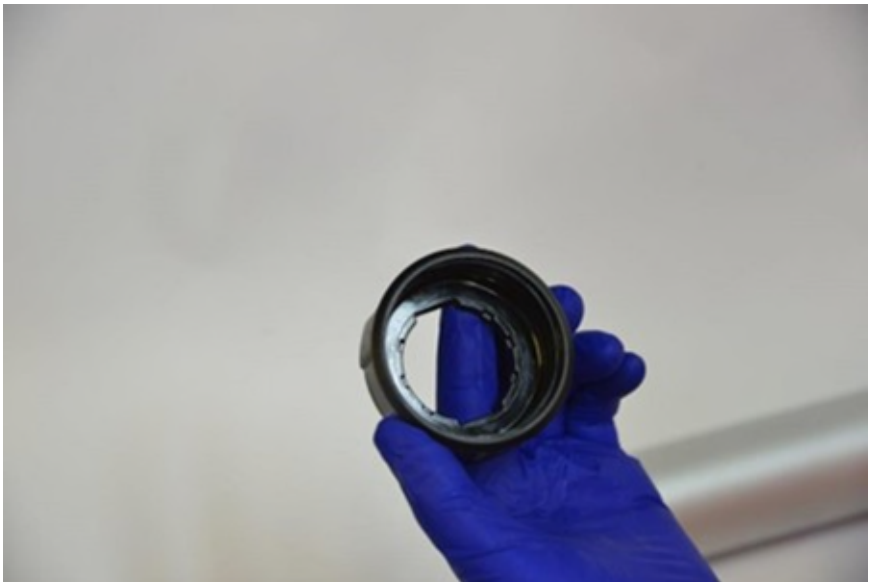

Figure 3 - Remove centre of cap if universal nozzle is to be used.

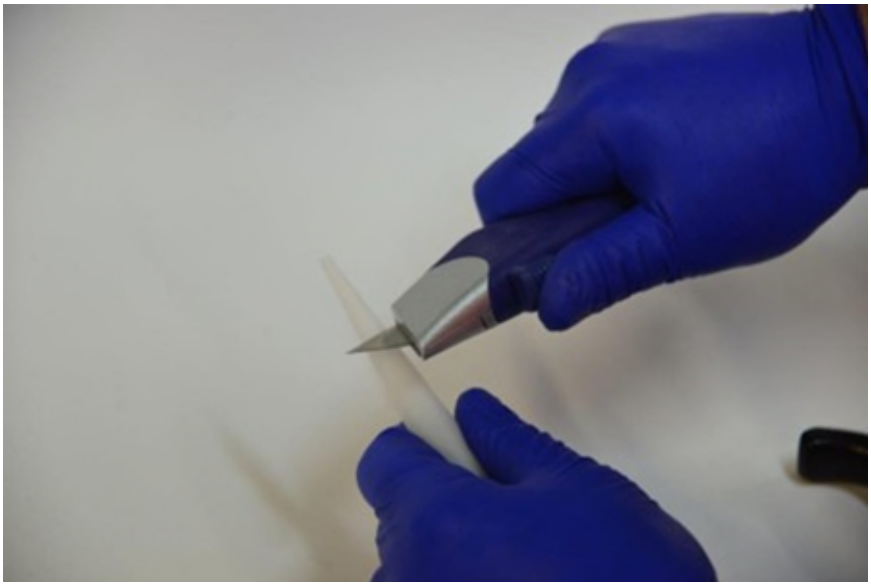

Figure 4 - Cut nozzle to 2-3 mm less than the width of the joint and at an approximate 45 degree angle.

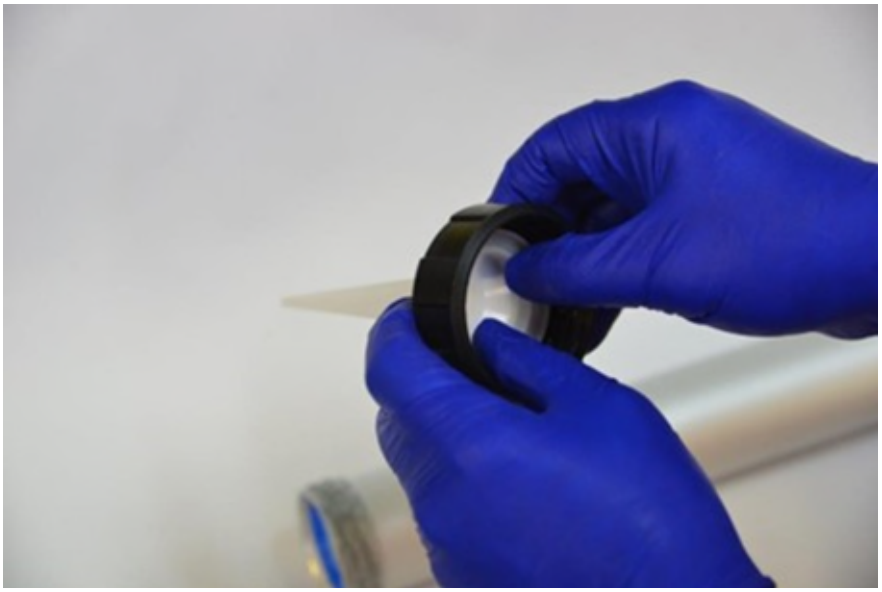

Figure 5 - Insert universal nozzle into cap and ensure it has snapped into place.

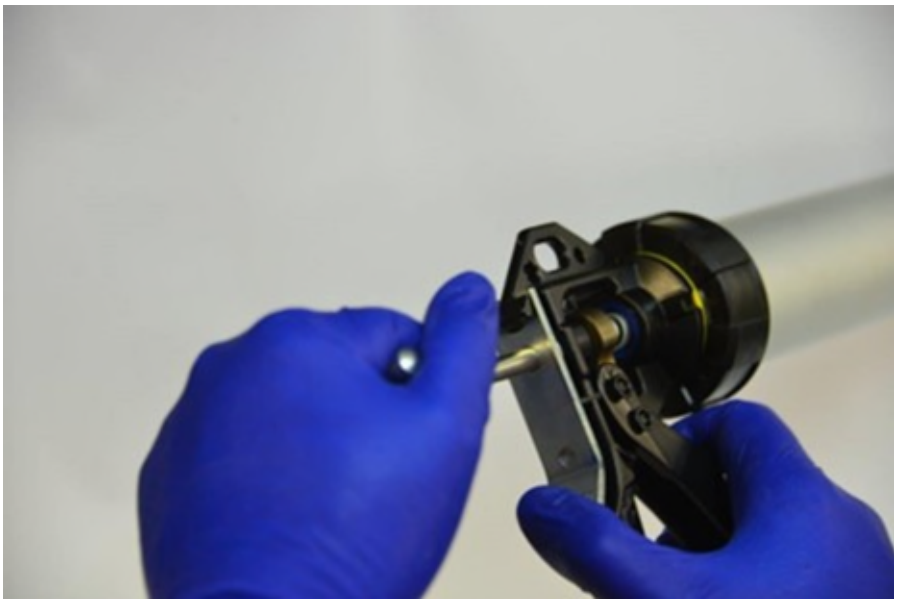

Figure 6 - Push on the catch plate to release the plunger and pull back to bring plunger back to the trigger end of the gun.

Figure 7 - Insert sausage into the gun until only the top is sticking out.

Figure 8 - Cut a vertical slit in the sausage about 25mm long. It is not necessary to remove the top of the sausage for the sealant to be extruded properly.

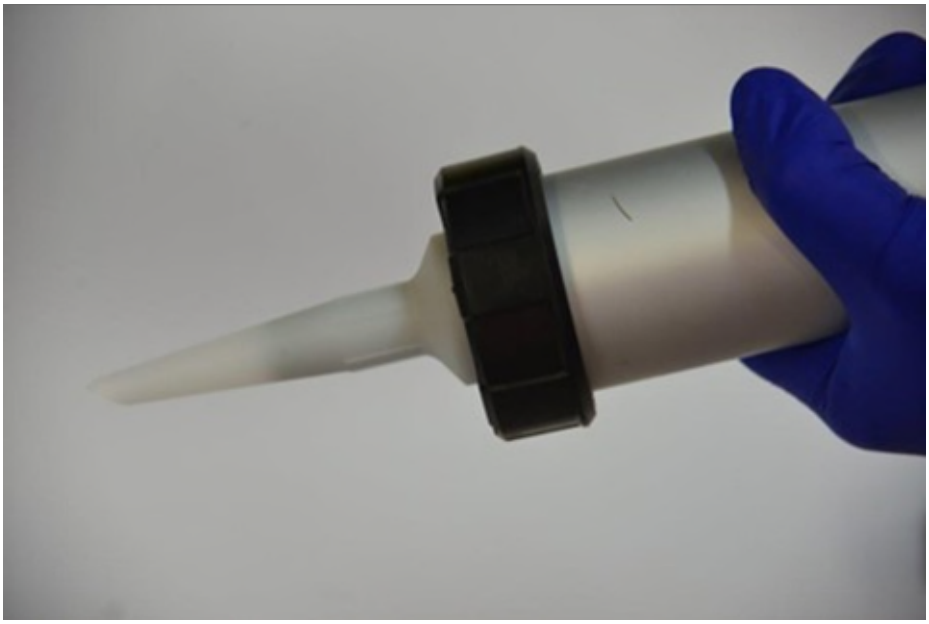

Figure 9 - Screw on the cap and begin to squeeze the trigger until the sealant is visible in the nozzle. To stop the extrusion push on the catch plate to release the pressure.

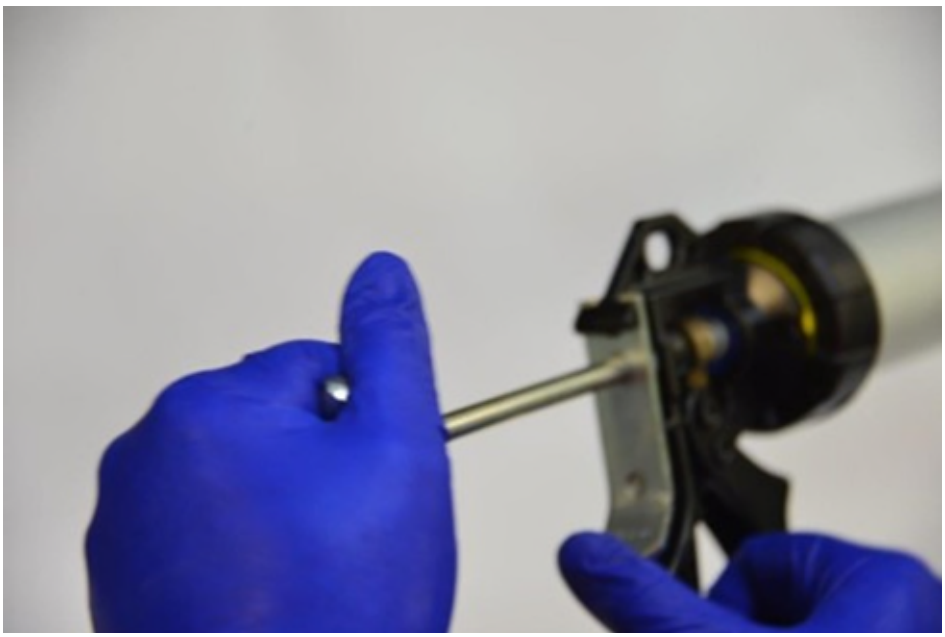

Figure 10 - It may be necessary to pull back on the plunger to stop the flow.

Figure 11 - Insert the nozzle into the prepared joint and with the nozzle just touching the backer rod squeeze out the sealant allowing it to extrude around the nozzle and draw the nozzle back along the joint whilst gently continually extruding the sealant.

Figure 12 - After filling the joint tool off to create a smooth concave surface and ensure the sealant is filling the joint.

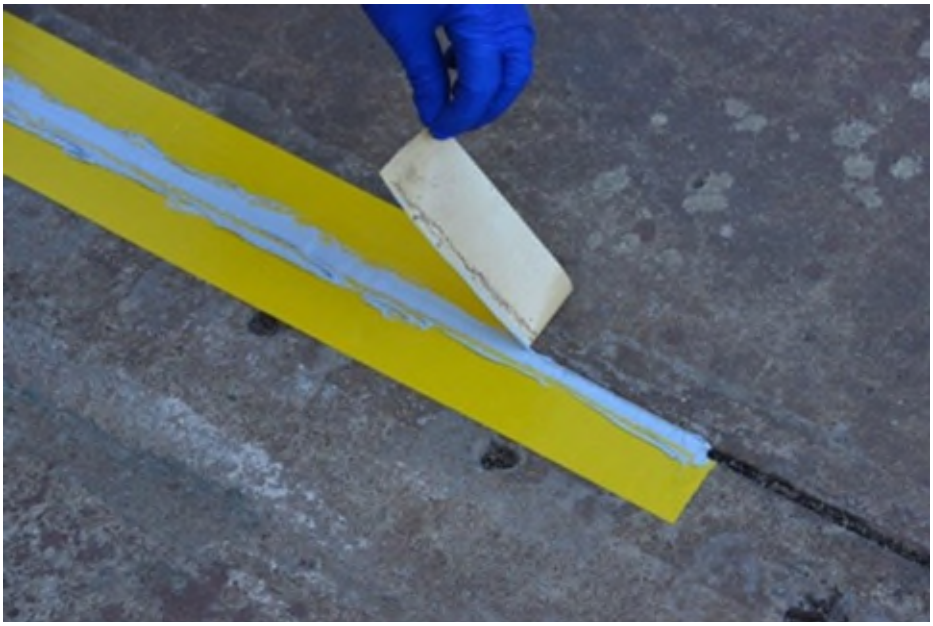

Figure 13 - Remove the protective tape from the sides of the joint before the sealant skins.

Figure 14 - Leave joint to cure and it is best to apply the sealant when the temperature is constant or rising.

Disclaimer

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.

MB Solutions Australia Pty Ltd	MB Solutions New Zealand Ltd	Emergency Advice:
ABN 69 634 934 419 11 Stanton Road Seven Hills NSW 2147 **Freecall: 1300 227 300** www.master-builders-solutions.com/en-au	45C William Pickering Drive Albany, Auckland New Zealand **Freecall: 0800 334 877**	1300 954 583 within Australia (24hr) 0800 001 607 within New Zealand