

Application Procedure: MasterSeal NP 2

This procedure covers the preparation and application of **MasterSeal NP 2**, a three-component, highly flexible, non-priming, high-performance polyurethane sealant.

Note: **MasterSeal NP 2** is also available in two-component pre-tinted colors.

1. JOINT PREPARATION:

- 1.1. The number of joints and the joint width should be designed for a maximum of 50% movement.
- 1.2. The depth of the sealant should be one-half the width of the joint. The maximum depth is 13 mm (1/2") and the minimum is 6 mm (1/4"). Maximum recommended joint width is 75mm (3"). Refer to Table 1.

Table 1: Joint Width and Sealant Depth

JOINT WIDTH (MM)	SEALANT DEPTH (MM) AT MIDPOINT
1/4 - 1/2 (6 - 13)	1/4 (6)
1/2 - 3/4 (13 - 19)	1/4 - 3/8 (6 - 10)
3/4 - 1 (19 - 25)	3/8 - 1/2 (10 - 13)
1 - 1-1/2 (25 - 38)	1/2 (13)
>1-1/2 (25 - 38)	Please consult technical services

- 1.3. In deep joints, the sealant depth must be controlled by Closed-Cell Backer-Rod or Soft 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-sided adhesion. For horizontal joints, use Closed Cell Backer Rod.
- 1.4. To maintain the recommended sealant depth, install backer-rod by compressing and rolling it into the joint channel without stretching it lengthwise. Closed-Cell Backer-Rod should be about 3 mm (1/8") larger in diameter than the width of the joint to allow for compression. Soft Backer-Rod should be approximately 25% larger in diameter than the joint width. The sealant does not adhere to it, and no separate bond breaker is required.
- 1.5. Do not use multiple twisted backer rod.
- 1.6. Do not prime or puncture the backer-rod.

2. SURFACE PREPARATION:

- 2.1. CONCRETE, STONE, AND OTHER MASONRY - Clean by grinding, sandblasting, or wire brushing to expose a sound surface free of contamination and laitance.

- 2.2. WOOD - New and weathered wood must be clean and sound. Scrape away loose paint to bare wood. Any coating that cannot be removed must be tested to verify adhesion of sealant or determine an appropriate primer.
- 2.3. METAL - Remove scale, rust, and coatings from metal to expose a bright white surface. 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 NP 2**.

Any coating that cannot be removed must be tested to verify adhesion of sealant or determine an appropriate primer. Remove any other protective coatings or finishes that could interfere with adhesion.

3. PRIMING:

- 3.1. **MasterSeal NP 2** is generally considered a non-priming sealant, but special circumstances or substrates 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 before and during application. Refer to product data sheet on **MasterSeal P 101** and consult Technical Service for additional information.
- 3.2. For immersion applications, **MasterSeal P 101** must be used.
- 3.3. Apply primer full strength with a brush or clean cloth. A light, uniform coating is sufficient for most surfaces. Porous surfaces require more primer; however, do not over apply.
- 3.4. Allow primer to dry before applying **MasterSeal NP 2**. Depending on temperature and humidity, primer will be tack free in 15 – 120 minutes. Priming and sealing must be done on the same workday.

4. MIXING:

- 4.1. Thoroughly mix **MasterSeal NP 2** three-component system before use. The oversize PTA container allows for the addition and mixing of PTB. Transfer the entire contents of PTB to PTA container using a spatula or a margin trowel. It is imperative that PTB shall be mixed thoroughly with PTA. Before adding **MasterSeal 900** pigment, scrape the sides of container to ensure complete mixing of PTA and PTB.
- 4.2. Transfer the entire contents of the **MasterSeal 900** pigment can into the mixed PTA and PTB. Use a spatula or knife to remove all the pigment from the container.
- 4.3. In case of two-component system, mix content of PTB to PTA container. Since the product is pre-tinted, **MasterSeal 900** pigment is not used.
- 4.4. Mix with a slow-speed drill and a sealant mixing paddle for 4 – 6 minutes. The paddle blade must be kept below the surface of the sealant to avoid whipping air into the sealant.
- 4.5. Continue mixing with a slow-speed (500 – 600 rpm) drill and slotted paddle until color is uniform.
- 4.6. The pot life of mixed **MasterSeal NP 2** is influenced by temperature.

5. APPLICATION:

- 5.1. Except when unusual job conditions dictate the use of knife or spatula, apply **MasterSeal NP 2** by professional bulk gun loaded at the jobsite. Fill joints from the bottom up to the exterior face by holding a properly sized nozzle against the joint bottom.
- 5.2. Proper tooling ensures the correct bead configuration and a neat joint. Equally important, it ensures maximum adhesion to the sides of the joint. For best results.
- 5.3. Best practices dictate that all caulking and sealing be done when temperatures are above 40°F (4°C) to avoid application to moisture-laden surfaces.
- 5.4. Moisture on substrates will adversely affect adhesion.
- 5.5. Application may proceed as low as 20°F (-6°C) if there is certainty that substrates are completely dry, free of moisture, and clean as described under Surface Preparation.

6. CLEAN UP:

- 6.1. Immediately after use and before sealant has cured, clean equipment with a suitable thinner (Xylene / MEK / Acetone).
- 6.2. Cured sealant may be removed by cutting with a sharp-edged tool; thin films by abrading.

7. CURING:

- 7.1. **MasterSeal NP 2** cures by a chemically controlled reaction. Initial cure is within 24 hours, and complete cure takes approximately 7 days. Allow 14 days cure at 70°F (23°C) prior to water immersion.
- 7.2. Cure rates are dependent on temperature and humidity.

8. FOR BEST PERFORMANCE:

- 8.1. Pursuant to accepted industry standards and practices, using rigid paints and/or coatings over flexible sealants can result in a loss of adhesion of the applied paint and/or coating, due to the potential movement of the sealant. However, should painting and/or coating be desired it is required that the applicator of the paint and/or coating conduct on-site testing to determine compatibility and adhesion.
- 8.2. Do not allow uncured **MasterSeal NP 2** to come into contact with alcohol-based materials or solvents.
- 8.3. Do not apply polyurethane sealants in the vicinity of uncured silicone sealants or uncured **MasterSeal NP 2 with VLM Technology** or **150 Tint Base**.
- 8.4. **MasterSeal NP 2** should not come in contact with oil-based caulking, silicone sealants, polysulfides or fillers impregnated with oil, asphalt, or tar.
- 8.5. Do not apply epoxy-based coatings in the vicinity of uncured **MasterSeal NP 2**.

- 8.6. Do not apply to freshly treated wood; treated wood must have weathered for at least 6 months.
- 8.7. Do not open containers until ready for use.
- 8.8. Units are premeasured; do not use partial units.
- 8.9. **MasterSeal NP 2** may yellow in the presence of unvented artificial heat; this is a surface phenomenon that does not affect sealant performance.
- 8.10. When **MasterSeal NP 2** is to be used in areas subject to continuous water immersion, cure for 14 days at 70°F (23°C). Allow longer cure times at lower temperatures. Always use **MasterSeal P 101**.
- 8.11. Do not use in swimming pools, or on other submerged conditions where the sealant will be exposed to strong oxidizers. Avoid submerged conditions where water temperatures will exceed 120°F (50°C).
- 8.12. Horizontal joints subject to traffic or intermittent ponding of water require the use of primer. Call Technical Service for details.
- 8.13. Substrates such as copper, stainless, and galvanized typically require the use of a primer; An adhesion test is recommended for any other questionable substrate.
- 8.14. Do not use as a cap, heel or toe bead for exterior glazing.
- 8.15. Use only color packs designed for use with **MasterSeal NP 2**.
- 8.16. Make certain the most current versions of product data sheet and MSDS are being used; call customer service to verify the most current version.
- 8.17. Proper application is the responsibility of the user. Field visits by Master Builder 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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