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Technical Data Guide

MASTER® BUILDERS SOLUTIONS

7 | 07 92 00 Joint Sealants

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MasterSeal® NP 1™

One-component, acoustic/sound damping, elastomeric, gun-grade polyurethane sealant

FORMERLY SONOLASTIC® NP 1™

PACKAGING
– 300 ml (10.1 fl oz) cartridges, 30 cartridges per carton and 12 cartridges per carton
– 590 ml (20 fl oz) ProPaks, 20 per carton

COLORS
White, Off-White, Limestone, Stone, Tan, Aluminum Gray, Medium Bronze, Special Bronze, Redwood Tan, Black And Gray

For color availability in bulk packaging, call Customer Service.

YIELD
See page 3 for charts

STORAGE
Store in original, unopened containers away from heat and direct sunlight. Storing at elevated temperatures will reduce the shelf life.

SHELF LIFE
Cartridges and ProPaks:
1 year when properly stored.

VOC CONTENT
35g/L less water and exempt solvents

DESCRIPTION
MasterSeal NP 1 is a one-component, high-performance, non-priming, gun-grade, elastomeric polyurethane sealant. It requires no mixing and typically requires no priming to bond to many materials, including concrete and masonry.

Used as an acoustical sealant, MasterSeal NP 1 reduces sound transmission in partition systems to support high STC values by sealing spaces around cut-outs and at perimeters of partitions. The sealant cures to a tough rubber to form a long-lasting acoustical seal.

PRODUCT HIGHLIGHTS
- One-component formula requires no mixing, helping to reduce labor costs
- Joint movement capability ±35% provides excellent flexibility for keeping moving joints weathertight
- Easy to gun and tool, speeding up application and making neater joints
- Available in ProPaks, reducing jobsite waste, lowering disposal costs
- 12 standard colors to match a wide variety of common substrates
- No primer required for most construction materials lowering installation costs
- Weather resistant for long-lasting weathertight seals
- Wide temperature application range makes MasterSeal NP 1 suitable for all climates
- Compatible with non-rigid coatings and can be painted
- Superior holding power for long-lasting roof tile installation
- UL listed; Passes 4–hour, 4–inch, fire and hose stream test when used with Ultra Block or mineral wool
- Suitable for water immersion with documented performance in wet areas
- Meets VOC requirements in all 50 states
- Can adhere to green concrete up to 72 hours after pour
- Can be used as acoustic sealant to increase system STC value
- Minimizes sound transfer and supports high STC ratings

APPLICATIONS
- Interior and exterior
- Above and below grade
- Immersed in water
- Expansion joints
- Panel walls
- Precast units
- Aluminum and wood window frames
- Roofing
- Fascia
- Parapets
- Vinyl siding
- Store front assemblies

SUBSTRATES
- Concrete
- Masonry
- Aluminum
- Wood
- Clay & concrete roof tiles
- Stucco
- Natural stone

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Technical Data

Composition

MasterSeal NP 1 is a one-component moisture-curing polyurethane.

Compliances

- ASTM C 920, Type S, Grade NS, Class 35, Use NT, M, A, T, O* and I
- Federal Specification TT-S- 00230C, Type II, Class A
- Corps of Engineers CRD-C- 541, Type II, Class A
- Canadian Specification CAN/CGSB-19.13-M87, Classification MCG-2-25-A-N, No. 81026
- CFI accepted
- Underwriters Laboratories Inc.® classified (fire resistance only)
- ISO 11600-F-25LM
- STC (sound transmission class)

* Refer to substrates in Where to Use.

Typical Properties

PROPERTY	VALUE
Service temperature range, °F (°C)	-40 to 180 (-40 to 82)
Shrinkage	None

Test Data

PROPERTY	RESULTS	TEST METHOD
Movement capability, %	±35	ASTM C 719
Tensile strength, psi (MPa)	350 (2.4)	ASTM D 412
Tear strength, pli	50	ASTM D 1004
Ultimate elongation at break, %	800	ASTM D 412
Rheological, (sag in vertical displacement) at 120 °F (49 °C)	No sag	ASTM C 639
Extrudability, 3 seconds	Passes	ASTM C 603
Hardness, Shore A		ASTM C 661
At standard conditions	25 – 30	
After heat aging (max Shore A: 50)	25	
Weight loss, after heat aging, %	3	ASTM C 792
Cracking and chalking, after heat aging	None	ASTM C 792
Tack-free time, hrs, (maximum 72 hrs)	Passes	ASTM C 679
Stain and color change	Passes	ASTM C 510
Adhesion* in peel, pli (min. 5 pli)	30	ASTM C 794
Adhesion* in peel after UV radiation through glass (min. 5 pli)	Passes	ASTM C 794
Artificial weathering, Xenon arc, 250 hours	Passes	ASTM C 793
Artificial weathering, Xenon arc, 3,000 hours	No surface cracking	ASTM G 26
Water immersion, 122 °F (50 °C)	Passes 10 weeks with movement cycling	ASTM C 1247
Sound Transmission Class STC (dB)	44	ASTM E 90

*Primed for water immersion dictated by ASTM C 920. Concrete and aluminum primed with P 173.
Test results are typical values obtained under laboratory conditions. Reasonable variations can be expected.

TABLE 1
Joint Width and Sealant Depth

JOINT WIDTH, IN (MM)	SEALANT DEPTH AT MIDPOINT, IN (MM)
¼–½ (6–13)	¼ (6)
½–¾ (13–19)	¼–⅜ (6–10)
¾–1 (19–25)	⅜–½ (10–13)
1–1½ (25–38)	½ (13)

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Yield

LINEAR FEET PER GALLON*

JOINT DEPTH, (INCHES)	JOINT WIDTH (INCHES)									
	¼	⅜	½	⅝	¾	⅞	1	1½	2	3
¼	308	205	154	122	–	–	–	–	–	–
⅜	–	–	–	82	68	58	51	–	–	–
½	–	–	–	–	51	44	38	26	19	12

METERS PER LITER

JOINT DEPTH, (MM)	JOINT WIDTH (MM)									
	6	10	13	16	19	22	25	38	50	75
6	24.8	16.5	12.4	9.8	–	–	–	–	–	–
10	–	–	–	6.6	5.5	4.7	4.1	–	–	–
13	–	–	–	–	4.1	3.5	3.0	2.2	1.5	0.7

HOW TO APPLY

JOINT PREPARATION

1. The product may be used in sealant joints designed in accordance with SWR Institute's Sealants - The Professional's Guide.
2. In optimal conditions, the depth of the sealant should be ½ the width of the joint. The sealant joint depth (measured at the center) should always fall between the maximum depth of ½" and the minimum depth of ¼". Refer to Table 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-point bonding.
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 ⅛" (3 mm) 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. Do not prime or puncture the backer-rod.

SURFACE PREPARATION

Substrates must be structurally sound, fully cured, dry, and clean. Substrates should always be free of the following: dirt, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing or curing and parting compounds, membrane materials and sealant residue.

CONCRETE, STONE AND OTHER MASONRY

Clean by grinding, sandblasting or wire brushing to expose a sound surface free of contamination and laitance.

WOOD

New and weathered wood must be clean, dry and sound. Scrape away loose paint to bare wood. Any coatings on wood must be tested to verify adhesion of sealant or to determine an appropriate primer.

METAL

Remove scale, rust and loose coatings from metal to expose a bright white surface. Any coatings on metal must be tested to verify adhesion of sealant or to determine an appropriate primer.

PRIMING

1. MasterSeal NP 1 is 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 173 or MasterSeal P 176, and consult Technical Service for additional information.
2. For immersion applications, MasterSeal P 173 must be used.
3. For green concrete applications, MasterSeal P 173 must be used.
4. 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.
5. Allow primer to dry before applying MasterSeal NP 1. Depending on temperature and humidity, primer will be tack-free in 15–120 minutes. Priming and sealing must be done on the same day.

APPLICATION

1. MasterSeal NP 1 comes ready to use. Apply using professional grade caulking gun. Do not open cartridges, ProPaks or pails until preparatory work has been completed.
2. Fill joints from the deepest point to the surface by holding an appropriately sized nozzle against the back of the joint.

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3. Dry tooling is recommended. Proper tooling results in the correct bead shape, neat joints, and optimal adhesion.
4. For roof tile applications apply a bead of MasterSeal NP 1 sufficient in size to make a bond between two tiles on the upper surface of the down slope tile. Install the upslope tile and press into the sealant bead to ensure good contact between the sealant and both tiles.

CURING TIME

The cure of MasterSeal NP 1 varies with temperature and humidity. The following times assume 75 °F (24 °C), 50% relative humidity, and a joint ½" width by ¼" depth (13 by 6 mm).
– Skins: overnight or within 24 hours
– Full cure: approximately 1 week
– Immersion service: 21 days

CLEAN UP

1. Immediately after use, clean equipment with MasterSeal 990 or xylene. Use proper precautions when handling solvents.
2. Remove cured sealant by cutting with a sharp-edged tool.
3. Remove thin films by abrading.

FOR BEST PERFORMANCE

- Do not allow uncured MasterSeal NP 1 to come into contact with alcohol-based materials or solvents.
- Do not apply polyurethane sealants in the vicinity of uncured silicone sealants or uncured MasterSeal NP 150™.
- MasterSeal NP 1 should not come in contact with oil-based caulking, uncured silicone sealants, polysulfides, or fillers impregnated with oil, asphalt or tar.
- Protect unopened containers from heat and direct sunlight.
- In cool or cold weather, store container at room temperature for at least 24 hours before using.
- When MasterSealNP 1 is to be used in areas subject to continuous water immersion, cure for 21 days at 70 °F (23 °C) and 50% relative humidity. Allow longer cure times at lower temperatures and humidities. Always use MasterSeal P 173.
- Do not apply over freshly treated wood; treated wood must have weathered for at least 6 months.
- Do not use in swimming pools or other submerged conditions where the sealant will be exposed to strong oxidizers. Avoid submerged conditions where water temperatures will exceed 120 °F (50 °C).
- Substrates such as copper, stainless steel and galvanized steel typically require the use of a primer; MasterSeal P 173 or MasterSeal P 176 is acceptable. For Kynar 500 based coatings, use P 173 only. An adhesion test is recommended for any other questionable substrate.
- MasterSeal NP 1 is an aromatic urethane, as such it may discolor over time with UV exposure. Where maintaining a true white appearance is critical, use MasterSeal NP 150 or MasterSeal CR 195 sealants.
- MasterSeal NP 1 can be applied below freezing temperatures only if substrates are completely dry, free of moisture and clean. Contact Technical Service for more information.
- Lower temperatures and humidities will extend curing times.
- 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.
- Proper application is the responsibility of the user. Field visits by Master Builders Solutions personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.
- Not for use in glazing applications. Do not apply on glass and plastic glazing panels.
- In green concrete applications, sealing joints in concrete prior to 72 hours after concrete placement will impact the ability of sealant to gain adhesion. MasterSeal P 173 should be used as a primer in all green concrete applications. It is always recommended to conduct a mock up when applying NP 1 to green concrete.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.com/en-us, e-mailing your request to mbsbscst@mbcc-group.com or calling 1(800)433-9517. Use only as directed.

IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.

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