

PRODUCT DATA

7 07 92 00 **Joint Sealants**

SONOLASTIC® NP 1™

One-component, elastomeric, gun-grade polyurethane sealant

Description

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

Yield

See page 3 for charts.

Packaging

300 ml (10.1 fl oz) cartridges, 30 cartridges per carton
20 fl oz (590 ml) ProPaks, 20 per carton

For color availability in bulk packaging, call Customer Service.

Color

White, off-white, limestone, anodized aluminum, stone, tan, aluminum gray, precast gray, medium bronze, special bronze, redwood tan, ash brown and black.

Shelf Life

Cartridges and ProPaks: 1 year when properly stored.

Storage

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

Features

- Ready to use
- Joint movement capability $\pm 35\%$
- Easy to gun and tool
- Available in cartridges, 20 ounce ProPaks, and in bulk
- Twelve standard colors
- No primer required for most construction materials
- Weather resistant
- Wide temperature-application range
- Compatible with nonrigid coatings
- Superior holding power
- UL listed
- Suitable for water immersion
- Low VOC content

Benefits

- Requires no mixing; reduces labor costs
- Provides excellent flexibility for keeping moving joints tight
- Speeds application and makes neater joints
- Reduces jobsite waste, lowers disposal costs
- Matches common substrates
- Lowers installation costs
- Produces long-lasting weather-tight seals
- Suitable for all climates
- May be painted
- Long-lasting roof tile installation
- Passes 4 hour, 4 inch, fire and hose stream test when used with Ultra Block® or mineral wool
- Documented performance in wet areas
- Meets VOC requirements in all 50 states

Where to Use

APPLICATION

- Expansion joints
- Curtain wall construction
- Panel walls
- Precast units
- Aluminum and wood window frames
- Roofing
- Fascia
- Parapets
- Structural components
- Vinyl siding
- Wastewater treatment plants
- Dams
- Spillways and storm drains
- Wetwells and manholes

LOCATION

- Interior and exterior
- Above and below grade
- Immersed in water

SUBSTRATE

- Concrete
- Masonry
- Aluminum
- Wood
- Clay & concrete roof tiles

Technical Data

Composition

Sonolastic® NP 1™ is a one-component moisture-curing polyurethane.

Compliances

- ASTM C 920, Type S, Grade NS, Class 35, Use NT, M, A, G*, 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
- USDA compliant for use in meat and poultry areas
- Underwriters Laboratories Inc.® classified (fire resistance only)
- Canadian approval for use in establishments that handle food
- SWR Institute validated
- ISO 11600-F-25LM

* NP1 not recommended for application on glass.

** 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 METHODS |
|--|--|--------------|
| 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 (no visible stain) | ASTM C 510 |
| Bond durability,* on glass, aluminum, and concrete | Passes ±35% movement | ASTM C 719 |
| 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 |

*Primer for water immersion dictated by ASTM C 920. Concrete and aluminum primed with 733; glass primed with 766.

Test results are typical values obtained under laboratory conditions. Reasonable variations can be expected.

Yield

LINEAR FEET PER GALLON*

| JOINT DEPTH (INCHES) | JOINT WIDTH (INCHES) | | | | | | |
|-------------------------|----------------------|-----|-----|-----|-----|-----|----|
| | 1/4 | 3/8 | 1/2 | 5/8 | 3/4 | 7/8 | 1 |
| 1/4 | 308 | 205 | 154 | 122 | – | – | – |
| 3/8 | – | – | – | 82 | 68 | 58 | 51 |
| 1/2 | – | – | – | – | 51 | 44 | 38 |

*One gallon equals approximately 12 cartridges or 6 ProPaks

METERS PER LITER

| JOINT DEPTH (MM) | JOINT WIDTH (MM) | | | | | | |
|---------------------|------------------|------|------|-----|-----|-----|-----|
| | 6 | 10 | 13 | 16 | 19 | 22 | 25 |
| 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 |

How to Apply

Joint Preparation

1. The number of joints and the joint width should be designed for a maximum of $\pm 35\%$ movement.
2. The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 1/2" (13 mm) and the minimum is 1/4" (6 mm). 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 bondbreaker (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 1/8" (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 bondbreaker is required. Do not prime or puncture the backer-rod.

TABLE 1

Joint Width and Sealant Depth

| JOINT WIDTH, AT MIDPOINT, IN (MM) | SEALANT DEPTH IN (MM) |
|--------------------------------------|-----------------------|
| 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) |

Surface Preparation

Surfaces must be structurally sound, fully cured, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing or curing and parting 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.

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 to determine an appropriate primer.

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. Aluminum window frames are frequently coated with a clear lacquer that must be removed before the application of NP 1™. 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.

Priming

1. NP 1™ is generally considered a nonpriming 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 Primer 733 or 766, and consult Technical Services for additional information.
2. For immersion applications, Primer 733 must be used.
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 overapply.
4. Allow primer to dry before applying 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 work day.

Application

1. NP 1™ comes ready to use. Apply by professional caulking gun. Do not open cartridges, sausages, or pails until preparatory work has been completed.
2. Fill joints from the deepest point to the surface by holding a properly sized nozzle against the back of the joint.
3. Dry tooling is recommended. DO NOT use soapy water when tooling. Tooling results in the correct bead shape, a neat joint, and maximum adhesion.
4. For roof tile applications apply a bead of Sonolastic® NP 1™ sufficient to make a bond between two tiles on the upper surface of the down slope tile. Install the upslope tile & press into the sealant bead to ensure good contact between the sealant and both tiles.

Clean Up

1. Immediately after use, clean equipment with Reducer 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.

Curing Time

The cure of NP 1™ varies with temperature and humidity. The following times assume 75° F (24° C), 50% relative humidity, and a joint 1/2" width by 1/4" depth (13 by 6 mm).

Skins: overnight or within 24 hours

Functional: within 3 days

Full cure: approximately 1 week

Immersion service: 21 days

For Best Performance

- Do not allow uncured 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 Sonolastic® 150 or 150 Tint Base.
- 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 sunshine.
- In cool or cold weather, store container at room temperature for at least 24 hours before using.
- When NP 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 Primer 733.
- Do not use in swimming pool 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).
- Do not apply over freshly treated wood; treated wood must have weathered for at least 6 months.

- Substrates such as copper, stainless, and galvanized typically require the use of a primer; Primer 733 or 766 is acceptable. For Kynar 500 based coatings use Primer 733 only. An adhesion test is recommended for any other questionable substrate.
- UV exposure may cause white NP 1™ to discolor. This does not affect sealant performance; where maintaining a true white appearance is critical, use Ultra or Sonolastic® 150 sealants.
- 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.
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (1-800-433-9517) to verify the most current versions.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

Health and Safety

NP 1™

Warning

NP 1™ contains Stoddard solvent and crystalline quartz silica.

Risks

May cause skin, eye or respiratory irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Ingestion may cause irritation. Reports associate repeated or prolonged occupational overexposure to solvents with permanent brain, nervous system, liver and kidney damage.

INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

Keep container closed. Use only with adequate ventilation. Prevent contact with skin, eyes and clothing. Wash thoroughly after handling. Avoid breathing vapors. DO NOT take internally. Use impervious gloves, eye protection and if the TLV is exceeded or used in a poorly ventilated area, use NIOSH/MSHA approved respiratory protection in accordance with applicable Federal, state and local regulations.

First Aid

In case of eye contact, flush thoroughly with water for at least 15 minutes. SEEK IMMEDIATE MEDICAL ATTENTION. In case of skin contact, wash affected areas with soap and water. If irritation persists, SEEK MEDICAL ATTENTION. Remove and wash contaminated clothing. If inhalation causes physical discomfort, remove to fresh air. If discomfort persists or any breathing difficulty occurs or if swallowed, SEEK IMMEDIATE MEDICAL ATTENTION.

Refer to Material Safety Data Sheet (MSDS) for further information.

Proposition 65

This product contains materials listed by the State of California as known to cause cancer, birth defects and other reproductive harm.

VOC Content

NP 1™ contains 35g/L or 0.29 lbs/gal, less water and exempt solvents.

**For medical emergencies only,
call ChemTrec (1-800-424-9300)**

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