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SONOLASTIC® NP 1

One-component elastomeric gun-grade polyurethane sealant

Description

A one-component high-performance gun-grade moisture-curing polyurethane sealant designed for a wide range of sealing and caulking applications in active exterior joints. NP 1requires no mixing and typically bonds to many materials without a primer, including concrete and masonry.

Primary uses

Application

- Expansion joints
- Curtain wall construction
- Panel walls
- Precast units
- Aluminum and wood window frames
- Fascia
- Parapets
- Structural components
- Vinyl siding

Location

- Interior and exterior
- Above grade

Substrate

- Concrete
- Masonry
- Aluminum
- Wood

Features

- Ready to use
- Joint movement capability ±25%
- Easy to gun and tool
- Available in cartridges, 591ml ProPaks, and in bulk
- Eleven standard colors
- No primer required for most construction materials
- Weather resistant
- Wide temperature-application range
- Compatible with non-rigid paints
- UL listed
- 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
- Passes 4 hour, 4 inch, fire and hose stream test when used with Ultra Block® or mineral wool
- Meets VOC requirements in all 50 states

Packaging

NP 1 is available in 591 ml ProPak sausage cartridges, 20 sausages to a carton.

Colours

A complete line of standard colours is available on request, including white, off-white, limestone, stone, tan, aluminium grey, hunter green, medium bronze, special bronze, redwood tan, and black. Refer to BASF for availability. For colour availability in bulk packaging, call Customer Service.

BASF
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SONOLASTIC® NP 1

Standards

- Federal Specification TT-S-00230C, Type II, Class A.
- ASTM C 920, Type S, grade NS, Class 25, Use NT, M, A, G and O.
- Corps of Engineers CRD-C-541, Type II, Class A.
- Canadian Specification CAN/CGSB-19.13-M82, Classification MCG-2-25-A-N, CGSB Qualification No. 81026.
- USDA approved for use in meat and poultry areas.
- Underwriters Laboratories Inc. classified (fire resistance only).
- Canadian approval for use in establishments that handle food.
- SWRI validated.
- ISO 11600-F-25LM.

***Typical properties**

Service temperature range	-40°C to 82°C
Expected life	Upto 15 years
Shrinkage	None
Movement capability, % ASTM C719	±25
Tensile strength, psi ASTM D412	350
Ultimate elongation at break, % ASTM D412	800
Rheological (sag in vertical displacement) at 49°C ASTM C639	No sag
Extrudability, 3 seconds, ASTM C603	Passes
Hardness at std. conditions ASTM C661	25-30
Weight loss, after heat ageing, % ASTM C792	<10
Cracking and chalking after heat ageing ASTM C792	None
Tack-free time, hrs., maximum (72 hrs.) ASTM C679	Passes
Stain and colour change (no visible stain) ASTM C510	Passes
Hardness, after heat ageing, max. Shore A:50 ASTM C661	25
Bond durability on glass, aluminium, and concrete ± 25% movement, ASTM C719	Passes
Adhesion* in peel, pli, min, 5 pli. ASTM C 794	30
Adhesion* in peel after UV radiation through glass, min 5 pli. ASTM C794	Passes
Artificial weathering Xenon arc 3000 hours Atlas 6500	No elastomeric property change
Tear strength, pit, ASTM D 1004	50

*Primed for water immersion as indicated in ASTM C 920. Concrete and aluminium primed with 733; glass primed with 766.

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.

BASF
The Chemical Company

SONOLASTIC® NP 1

- NP 1 should not be used for continuous immersion in water. Call Technical Services for recommendations.
- Do not apply over freshly treated wood; treated wood must have weathered for at least 6 months.
- Substrates such as copper, stainless, and galvanized may 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 questionable substrate.
- Do not use as a cap, heel, or toe bead for exterior glazing. Refer to SONOLASTIC® 150 product data sheet.
- 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.
- NP 1 can be painted over provided it is fully cured and clean. When painting over any elastomeric sealant, use a paint that is also elastomeric. (If movement occurs, the paint will also move.)
- Make certain the most current versions of product data sheet and MSDS are being used; call Customer Service (+971-4-8090800) 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.

Directions for use

Joint preparation:

The number of joints and the joint width should be designed for a maximum of ± 25% movement.

The depth of the sealant should be ½ the width of joint. The maximum depth is 13mm and the minimum is 6mm. Refer to the table below.

Joint Width and Sealant Depth

Joint Width in mm	Sealant Depth at midpoint, in mm
6–13	6
13–19	6–10
19-25	10–13
25-38	13

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-sided adhesion.

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 3mm 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. Backer-Rod becomes an integral part of the joint. The sealant does not adhere to it, and no separate bondbreaker is required. Do not prime or puncture the backer-rod.

Surface preparation

Surfaces must be structurally sound, dry, clean, free of dirt, moisture, loose particles, oil, grease,

BASF
The Chemical Company

SONOLASTIC® NP 1

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 paint to bare wood. Any coating that cannot be removed must be tested to verify adhesion of sealant or 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. Aluminium 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
NP 1 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 datasheet on Primer 733 and consult BASF Technical Services for additional information.

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.

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
NP 1 comes ready to use. Apply by professional caulking gun. Do not open cartridges or sausages until preparatory work has been completed.
Fill joints from the deepest point to the surface by holding a properly sized nozzle against the back of the joint.
Dry tooling is recommended. DO NOT use soapy water when tooling. Tooling results in the correct bead shape, a neat joint, and maximum adhesion.

Clean up
Immediately after use, clean equipment with Xylene or Solvent No. 2. Use proper precautions when handling solvents.
Remove cured sealant by cutting with a sharpedged tool.
Remove thin films by abrading.

Curing time
The cure of NP 1 varies with temperature and humidity. The following times assume 24°C, 50% relative humidity, and a joint 13mm by 6mm depth.

- Skins overnight or within 24 hours
- Functional within 3 days
- Full cure in approximately 1 week

Shelf life
Shelf life is 1 year for cartridges and Propaks and 4 months for pails when stored in unopened

BASF
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SONOLASTIC® NP 1

containers under normal conditions. Storing at elevated temperatures will reduce shelf life.

Coverage

Metres per litre
joint width (mm)

Joint depth (mm)	6.4	9.5	12.7	15.9	19.0	22.2	25.4
6.4	24.8	16.5	12.4	9.8			
10				6.6	5.5	4.7	4.1
13					4.1	3.5	3.0

Warning

NP 1 (all colours) 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 OUT OF THE REACH OF CHILDREN. Use only with adequate ventilation Prevent contact with skin, eyes, and clothing. Wash thoroughly after handling. 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 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 effects occur, 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.

VOC content

NP 1 contains 43 g/L less water and exempt solvents.

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* Properties listed are based on laboratory controlled tests.

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