BASF
The Chemical Company

SONOLASTIC® NP 2

Multiple-component high-performance polyurethane sealant

Description

A three component gun-grade polyurethane sealant that produces a flexible long lasting seal. NP 2 bonds to most common construction materials without a primer. It has been successfully tested for a joint movement of plus or minus 50% in accordance with ASTM C 719. A total of 455 standard colours available (not ex-stock). Custom colour matching is also available.

Where to use NP 2

- Concrete
- Masonry
- Aluminum
- Glass
- Marble
- Granite
- Brick
- Stucco
- Stone
- Expansion wall joints
- Curtain walls
- Panel walls
- Precast units
- Perimeter window caulking
- Exterior insulation walls
- Tilt-up panel joints
- Vinyl siding
- Interior and exterior
- In water immersion applications

Features

- Elastomeric, movement capability of ±50%
- Extraordinary adhesion
- Resistant to weather, airborne pollutants and chemicals
- NP 2 accelerator available for cold weather
- Excellent gunability over a broad temperature range
- Rainbow of Colours book available
- Nonstaining
- UL listed

Benefits

- Withstands modern joint design parameters
- No primer on many construction materials
- Long-lasting performance on all applications
- Speeds application
- Over 455 custom colours possible
- Use where aesthetics are a primary concern
- Passes 4 hour 4 inch fire and hose stream test when used with Ultra Block.

Packaging

NP 2 is available in 5.67 litre units.

Colours

Refer to your nearest BASF office for availability of standard colours.
455 standard (non-stocked) colours are also available, and custom matching can be done upon request. Refer to the Rainbow of Colours book.

Standards

- Federal Specification TT-S-00227E, Type II, Class A
- Corps of Engineers CRD-C-506
- ASTM C 920, Type M, Grade NS, Class 25, use NT, G, A, M, and O
- Canadian Standards Board CAN/CGSB-19.24-M90, Classification MCG-2-40-A-N, No. 81029
- Canadian approval for use in establishments that handle food.
- USDA approval for use in meat and poultry areas

BASF
The Chemical Company

SONOLASTIC® NP 2

- Underwriters Laboratories Inc. classified (fire resistance only).
- SWRI validated

***Typical properties**

Tensile strength, psi ASTM D412	150
Ultimate elongation at break, % ASTM D412	300
Stain and colour change (no visible stain) ASTM C510	Passes
Extrusion rate, seconds,	Passes
3 hours after mixing ASTM C603	6
Rheological (flow) at 49°C, ASTM C639	No sag
Hardness at standard conditions Shore A, ASTM C661	25
Hardness after heat ageing (maximum Shore A 50), ASTM C661	22
Tack-free time, hrs., maximum (72 hrs.) ASTM C679	<48 hours
100% modulus, psi, ASTD D412	60
Bond durability*, on glass, aluminium, and concrete, ASTM C719	± 25%
Weight loss after heat ageing	4.7%
Service temperature range	-40 to 82°C
Cracking and chalking after heat ageing, ASTM C792	None
Artificial weathering, ASTM C793 Xenon arc after 250 hours	Passes
Artificial weathering Xenon arc after 2,000 hours	No surface cracking
Adhesion in peel, pli, min, 5 pli. ASTM C 794	>10
Adhesion in peel after UV radiation through glass, min 5 pli, ASTM C794	>10

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

Test results area averages obtained under laboratory conditions. Reasonable variations can be expected.

For best performance

- Do not open containers until ready for use.
- Units are premeasured; do not use partial units.
- NP 2 should not come in contact with oil-base caulking, silicone sealants, polysulphides, or fillers impregnated with oil, asphalt, or tar.
- NP 2 may yellow in the presence of unvented artificial heat; this is a surface phenomenon that does not affect sealant performance.
- When NP 2 is to be used in areas subject to continuous water, cure for 14 days at 23°C. Allow longer cure times at lower temperatures. Always use Primer 733.
- Do not allow uncured sealants to come into contact with alcohol-based materials or solvents.
- Do not apply epoxy-based coatings in the vicinity of uncured NP 2.
- Do not apply polyurethane sealants in the vicinity of uncured silicone sealants.
- Substrates such as copper, stainless, and galvanized steel typically require the use of primer; Primers 733. An adhesion test is recommended for any other questionable substrate.
- Make certain the most current version of this data guide is being used; call Customer Service (04-8090800) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only, and are not to supervise or provide quality control on the job site.

Directions for use

Joint preparation

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

BASF
The Chemical Company

SONOLASTIC® NP 2

The depth of the sealant should be 1/2 the width of the joint. The maximum depth is 13 mm and the minimum is 6 mm.
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.

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 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, fully cured, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, 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. Aluminum window frames are frequently coated with a clear lacquer that must be removed before the application of 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.

Priming
NP 2 is generally considered a non-priming sealant, but special circumstances or substrates (e.g., certain protective coatings on aluminum) 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 Technical Data Guide on Primer 733, and consult BASF Technical Services for additional information.
Apply primer at 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 2. 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.

Mixing
NP 2 is a three component system and must be thoroughly mixed before use. The oversize Part A container allows for the addition and mixing of Part B and color pigment into Part A.

Transfer entire contents of Part B to Part A container using a spatula or similar.

BASF
The Chemical Company

SONOLASTIC® NP 2

It is imperative that Part B be mixed thoroughly with Part A. Before adding pigment, scrape sides of container to ensure complete mixing of Parts A and B.

With a slow-speed drill and a sealant mixing paddle, mix 4 - 6 minutes. The paddle blade must be kept below the surface of the sealant to avoid whipping air into the sealant. Transfer the entire contents of the pigment can into the mixed Part A and B. Use a spatula or knife to remove all the pigment from the container. Continue mixing with a slow-speed (500-600 rpm) drill and slotted paddle until color is uniform. During the process, the sides and bottom of the container must be scraped several times to obtain a complete mix.

The pot life of mixed NP 2 is influenced by temperature. See Table 1 for specific data. NP 2 accelerator may be added to shorten the initial cure rate.

Application
Except when unusual job conditions dictate the use of knife or spatula, NP 2 is applied by professional bulk gun loaded at the job site. Joints should be filled from the bottom up to the exterior face by holding a properly sized nozzle against the joint bottom.

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, dry tool or dampen tool with SOLVENT NO. 2. DO NOT use water or soapy water to tool. Avoid overtooling of sealant.

Field experience recommends that all caulking and sealing be done when temperatures are above 4°C to avoid application to moisture-laden surfaces. Moisture on substrates will adversely affect adhesion. Application may proceed as low as -6°C if there is certainty that substrates are completely dry, free of moisture, and clean as described under Surface Preparation.

Horizontal surfaces:
Use BASF self-leveling or slope-grade sealants SL 1 or SL 2. Priming is required on all horizontal applications. For joints subject to puncture by high heels or umbrella points, a stiff or high density backing material is required; cork or rigid non-impregnated cane-fiber joint fillers are suitable. Do not use open cell backer-rods on horizontal applications.

Clean up
Immediately after use and before sealant has cured, clean equipment with SOLVENT NO. 2 or Xylene. Cured sealant may be removed by cutting with a sharp-edged tool thin films by abrading.

Curing
NP 2 cures by a chemically controlled reaction. Initial cure is within 24 hours, and complete cure takes approximately 7 days. Cure rates are dependent on temperature and humidity. The initial cure rate of NP 2 can be adjusted for seasonal and geographic climactic conditions. See Table 1 for use of accelerator.

How to apply NP 2
Do not open containers until ready for use. Units are premeasured; do not use partial units. NP 2 should not come in contact with oil-base caulking, silicone sealants, polysulphides, or fillers impregnated with oil, asphalt, or tar. NP 2 may yellow in the presence of unvented artificial heat; this is a surface phenomenon that does not affect sealant performance. Call BASF Technical Services for recommendations. Do not allow

BASF
The Chemical Company

SONOLASTIC® NP 2

uncured sealants to come into contact with alcohol-based materials or solvents. Do not apply epoxy-based coatings in the vicinity of uncured NP 2. Do not apply polyurethane sealants in the vicinity of uncured silicone sealants. Substrates such as copper, stainless, and galvanized typically require the use of primer; Primers 733. An adhesion test is recommended for any other questionable substrate. Make certain the most current version of this data guide is being used; call Customer Service (04-8090800) to verify the most current version. Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only, and are not to supervise or provide quality control on the job site.

Working Times, hours

	(23°C)50% relative humidity Standard conditions	(35°C) 75% to 90% relative humidity Higher temp.	Colder temp. (4°C)
No accelerator	6 - 8	3.5 - 4.5	8 - 9
1 accelerator	2 - 3	1 - 1.5	3.5 - 4
2 accelerators	1 - 1.5	Less than 1	2 - 2.5

Shelf life

Shelf life is 1 year when stored in unopened containers under normal conditions.

Coverage

Table 3

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			
9.5				6.6	5.5	4.7	4.1
12.7					4.1	3.5	3.0

Warnings

NP 2 (all colours) contain mineral spirits, aluminium sulphate, calcium oxide, talc, titanium dioxide, calcium carbonate, silicon dioxide.

NP 2 Part B contains toluene diisocyanate mix.

NP 2 Accelerator contains mineral oil, 2-ethylhexanoic acid.

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.

BASF
The Chemical Company

SONOLASTIC® NP 2

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 2 (all colours) contains 53 g/L or 0.44 lbs. per gallon, less water and exempt solvents.

NP 2 Part B 8.09 g/L or 0.07 lbs. per gallon less water and exempt solvents.

NP 2 Accelerator 0 g/L or 0 lbs per gallon less water and exempt solvents.

Note

Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local BASF representative.

BASF reserves the right to have the true cause of any difficulty determined by accepted test methods.

Quality and care

All products originating from BASF's Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001 and OHSAS 18001.

04/2000 BASF_CC-UAE revised 02/2011

BASF Construction Chemicals UAE LLC
P.O. Box 37127, Dubai, UAE
Tel: +971 4 8090800 Fax: +971 4 8851002
www.basf-cc.ae