

Sonneborn®**Sealant
Systems****SONOLASTIC®
NP 2™****Multiple-component high-performance
polyurethane sealant****Where to Use NP 2™**

- Concrete
- Masonry
- Aluminum
- Marble
- Granite
- Brick
- Stucco
- Limestone
- Expansion wall joints
- Curtain walls
- Panel walls
- Precast units
- Perimeter window caulking
- Exterior insulation walls
- Tilt-up panel joints
- Vinyl siding
- Interior and exterior
- Parking decks

Features

- Elastomeric, movement capability of $\pm 50\%$...
- Superior adhesion...
- Resistant to weather, airborne pollutants, and chemicals...
- NP 2™ accelerator available...
- Excellent gunability over a broad temperature range...
- Rainbow of Colors® fandeck available...
- Nonstaining...
- UL listed...

Benefits

- Added protection against unanticipated movement
- No primer on many construction materials
- Long-lasting performance on all applications
- Use for cold climate applications, speeds initial cure
- Speeds application
- 463 custom colors possible
- Use where aesthetics are a primary concern
- Passes 4 hour 4 inch fire and hose stream test when used with Ultra Block®

How to Apply NP 2™

Joint Preparation

- 1 The number of joints and the joint width should be designed for a maximum of ±25% 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. (Refer to Form Nos. 1017927 and 1017923.) 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 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.

Surface Preparation

Surfaces must be structurally sound, fully cured, dry, clean, free of dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofings, 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 deter-

Joint width (inches)	Joint width (mm)	Sealant depth at midpoint (inches)	Sealant depth at midpoint (mm)
1/4 to 1/2	6 - 13	1/4	6
1/2 to 3/4	13 - 19	1/4 to 3/8	6 - 10
3/4 to 1	19 - 25	3/8 to 1/2	10 - 13
1 to 2	25 - 51	1/2	13

mine an appropriate primer. Remove any other protective coatings or finishes that could interfere with adhesion.

Priming

- 1 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 Technical Data Guide on Primer 733 or 766 (Form No. 1017962), and consult Technical Services for additional information.
- 2 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.
- 3 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

- 1 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 Sonolastic® color pigment into Part A.

- 2 **1-1/2 gallon (5.67 L) unit:** Transfer entire contents of Part B to Part A container using a spatula or a margin trowel.

- 3 It is imperative that Part B be mixed thoroughly with Part A. Before adding Sonolastic® 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.

- 4 Transfer the entire contents of the Sonolastic® 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.

- 5 **3 gallon (11.37 L) unit:** Use 2 Part B and 2 Sonolastic® pigment containers for each Part A container. Mix as instructed under 1-1/2 gallon (5.7 L) unit.

- 6 The pot life of mixed NP 2™ is influenced by temperature. See Table 2 for specific data. NP 2™ accelerator or extender may be added to adjust the initial cure rate.

Application

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

- 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, dry tool. DO NOT use water or soapy water to tool. Avoid overtooling of sealant.

- 3 Field experience recommends that all caulking and sealing be done when temperatures are above 40°F (4°C) to avoid application to moisture-laden surfaces. Moisture on substrates will adversely affect adhesion.

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.

Clean Up

Immediately after use and before sealant has cured, clean equipment with Reducer 990 or xylene. Cured sealant may be removed by cutting with a sharp-edged tool; thin films by abrading.

Curing

- 1 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.
- 2 The initial cure rate of NP 2™ can be adjusted for seasonal and geographic climactic conditions. See Table 2 for use of accelerator and extender.

	Standard conditions (73°F or 23°C, 50% relative humidity)	Higher temp. (95°F or 35°C, 75% to 90% relative humidity)	Colder temperatures (40°F or 4°C)
No accelerator/extender	2 - 3	1 - 2	4 - 6
1 accelerator	1 - 2	<1	2 - 3
2 accelerators	<1	-	1.5 - 2.5
1 extender	3 - 4	2 - 3	-
2 extenders	4 - 5.5	3 - 4	-

For Best Performance

- Do not allow uncured NP 2™ to come into contact with alcohol-based materials or solvents.
- Do not apply polyurethane sealants in the vicinity of uncured silicone sealants.
- NP 2™ should not come in contact with oil-based caulking, silicone sealants, polysulfides, or fillers impregnated with oil, asphalt, or tar.
- Do not apply epoxy-based coatings in the vicinity of uncured NP 2™.
- Do not open containers until ready for use.
- Units are premeasured; do not use partial units.
- NP 2™ may yellow in the presence of unvented artificial heat; this is a surface phenomenon that does not affect sealant performance.
- NP 2™ should not be used for continuous immersion in water. Call Technical Services for recommendations.
- Substrates such as copper, stainless, and galvanized typically require the use of a primer; Primers 733 or 766 are acceptable. For Kynar coating use Primer 733 only. An adhesion test is recommended for any other questionable substrate.
- Do not use as a cap, heel, or toe bead for exterior glazing. Refer to Sonolastic® 150 data guide (Form No. 1017910).
- Use only color packs designed for use with NP 2™.
- Make certain the most current version of this data guide is being used; call Customer Service (1-800-433-9517) to verify the most current version.
- Proper application is the responsibility of the user. Field visits by ChemReX® personnel are for the purpose of making technical recommendations only and are not for supervising or providing quality control on the jobsite.

Technical Data

Compliances

- 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, T., 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 compliant for use in meat and poultry areas
- Underwriters Laboratories Inc.® classified (fire resistance only).

Typical Properties

Property	Result
Service temperature range, °F (°C)	-40 to 180 (-40 to 82)
Expected life	Up to 15 years
Shrinkage	None

Test Data

Property	Value*	Test Method
Tensile strength, psi (MPa)	150 (1.0)	ASTM D 412
Ultimate elongation at break, %	300	ASTM D 412
Stain and color change (no visible stain)	Passes	ASTM C 510
Extrusion rate, seconds	Passes	ASTM C 603
3 hrs. after mixing	6	
Rheological (flow) at 120°F (49°C)	Non sag	ASTM C 639
Hardness at standard conditions, shore A	25	ASTM C 661
Hardness after heat aging (maximum Shore A 50)	22	ASTM C 661
Tack-free time, hrs., (maximum 72 hrs.)	< 48 hours	ASTM C 679
Bond durability*, %, on glass, aluminum, and concrete	± 25	ASTM C 719
Weight loss after heat aging, %	4.7	ASTM C 792
Cracking and chalking after heat aging	None	ASTM C 792
Artificial weathering	Passes	ASTM C 793
Xenon arc, 250 hours		
Artificial weathering	No surface cracking	ASTM G 26
Xenon arc, 2,000 hours		
Adhesion in peel on glass, aluminum, and concrete*, pli	>10	ASTM C 794
Adhesion in peel * after UV radiation through glass	>10	ASTM C 794

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

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

Order Information

Packaging

- NP 2™
- 1-1/2 gallon unit in 2 gallon pail (5.67 liters)
 - 3 gallon unit in 3-1/2 gallon pail (11.3 liters)
- Available in pretinted colors:
Precast Gray, Limestone
- 1-1/2 gallon unit in 2 gallon pail (5.67 liters)
 - 3 gallon unit in 3-1/2 gallon pail (11.3 liters)

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

Colors

- 40 standard, stocked colors are available. Refer to the Rainbow of Colors® popular palette, Form No. 1017994.
- 463 standard (nonstocked) colors are also available, and custom matching can be done upon request. Refer to the Rainbow of Colors® fandeck.

Coverage

Joint Depth (inches)	Linear Feet per Gallon						
	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

Joint Depth (mm)	Meters per Liter						
	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

Warning

NP 2™ Part A contains mineral spirits, calcium carbonate, toluene diisocyanate, 1, 2, 4 trimethyl benzene, naphtha-light aromatic, titanium dioxide, crystalline silica

Risks

May cause skin and eye irritation. May cause dermatitis and allergic responses. Potential skin and/or respiratory sensitizer. Inhalation may cause irritation and intoxication with headaches, dizziness and nausea. Ingestion may cause irritation. Reports associate repeated or prolonged occupational overexposure to solvents with damage to brain, nervous system, liver or kidneys. INTENTIONAL MISUSE BY DELIBERATELY INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin, eyes and clothing. Wash thoroughly after handling. Use only with adequate ventilation. Keep container closed when not in use. 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. Empty container may contain hazardous residues. All label warnings must be observed until container is commercially cleaned or reconditioned.

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, or other reproductive harm.

VOC Content

53 - 80 g/L or 0.44 - 0.67 lbs/gal less water and exempt solvents.

Warning

NP 2 Part B contains toluene diisocyanate mix

Risks

May cause skin, eye, or respiratory irritation. May cause dermatitis and allergic reactions. Potential skin and respiratory sensitizer. Ingestion may cause irritation.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with skin, eyes, and clothing. Wash thoroughly after handling. DO NOT take internally. Ingestion may cause irritation. Use only with adequate ventilation. Inhalation may cause irritation. Keep container closed. Use impervious gloves, eye protection, and if the TLV is exceeded or if 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 which are known to the state of California as known to cause cancer, birth defects, or other reproductive harm.

VOC Content

8.09 g/L or 0.07 lbs. per gallon, less water and exempt solvents.

Warning

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

Risks

May cause skin, eye or respiratory irritation. May be absorbed through the skin. May cause dermatitis and allergic reactions. Ingestion may cause irritation. Repeated or prolonged absorption may affect the kidneys.

Precautions

KEEP OUT OF THE REACH OF CHILDREN. Prevent contact with

skin, eyes and clothing. Wash thoroughly after handling. DO NOT take internally. Use only with adequate ventilation. Inhalation may cause irritation. Keep container closed. 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 does not knowingly contain materials which are known to the state of California as known to cause cancer, birth defects, or other reproductive harm.

VOC Content

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

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

Limited Warranty Notice

Every reasonable effort is made to apply ChemRex® exacting standards both in the manufacture of our products and in the information which we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, CHEMREX® MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and CHEMREX® shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the ChemRex® Technical Manager.



Sonneborn®

ChemRex®

Corporate Office:

889 Valley Park Drive; Shakopee, MN 55379

Customer Service: 1/800/433-9517

Technical Services: 1/800/ChemRex (1/800/243-6739)

Web Site: www.chemrex.com