SONOLASTIC® NP 2™
Multiple-component high-performance polyurethane sealant

**Description**
NP 2™ is a three-component, highly flexible, nonpriming, high-performance polyurethane sealant. It has been successfully tested for joint movement of plus or minus 50%. Choose from 40 popular stock colors and 470 standard colors.

**Yield**
See page 3 for charts.

**Packaging**
1-1/2 gallon units in 2 gallon (5.67 L) pails
3 gallon unit in 3-1/2 gallon (11.3 L) pails
Available in pretinted colors: Precast Gray and Limestone
1-1/2 gallon units in 2 gallon (5.67 L) pails
3 gallon units in 3-1/2 gallon (11.3 L) pails

**Colors**
40 standard, stocked colors are available. Refer to the Popular Palette for Sealants and Waterproofing. 470 standard (nonstocked) colors are also available, and custom matching can be done upon request. Refer to the Sonneborn® Color Portfolio.

**Shelf Life**
Parts A and B: 1 year when properly stored
Color Packs: 5.5 years

**Storage**
Store in unopened containers in a cool, clean, dry area. Do not open containers until ready for use.

**Features**
- Elastomeric, movement capability of ±50%
- Resistant to weather, airborne pollutants, and chemicals
- Superior adhesion
- NP 2™ accelerator available
- Sonneborn® Color Portfolio available
- Excellent gunability over a broad temperature range
- Nonstaining
- UL listed
- Suitable for water immersion

**Benefits**
- Adds protection against unanticipated movement
- Long-lasting performance on all applications
- Requires no primer on many construction materials
- Use for cold climate applications; speeds initial cure
- Choose from 463 custom colors
- Speeds application
- Use where aesthetics are a primary concern
- Passes 4 hour, 4 inch, fire and hose stream test when used with Ultra Block® or mineral wool
- Documented performance in wet areas

**Where to Use**
**APPLICATION**
- Expansion joints
- Curtain walls
- Panel walls
- Precast units
- Perimeter window caulking
- EIFS
- Tilt-up panel joints
- Vinyl siding
- Wastewater treatment plants
- Dams
- Spillways and storm drains
- Wetwells and manholes
- Parking decks

**LOCATION**
- Horizontal and vertical joints
- Interior and exterior
- Immersed in water

**SUBSTRATE**
- Concrete
- Masonry
- Aluminum
- Marble
- Granite
- Brick
- Stucco
- Limestone
Technical Data

Composition

NP 2™ is a three-component polyurethane product.

Compliances

- ASTM C 920, Type M, Grade NS, Class 25, use NT, T, G*, A, M, O** and I
- Federal Specification TT-S-00227E, Type II, Class A
- Corps of Engineers CRD-C-506
- 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).

* NP2 not recommended for application on glass.
** Refer to substrates in Where to Use.

Typical Properties

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range, ° F (° C)</td>
<td>-40 to 180 (-40 to 82)</td>
</tr>
</tbody>
</table>

Test Data

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>RESULTS</th>
<th>TEST METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile strength, psi (MPa)</td>
<td>160 (1.1)</td>
<td>ASTM D 412</td>
</tr>
<tr>
<td>Ultimate elongation at break, %</td>
<td>280</td>
<td>ASTM D 412</td>
</tr>
<tr>
<td>Stain and color change</td>
<td>Passes</td>
<td>ASTM C 510</td>
</tr>
<tr>
<td>Stain and color change</td>
<td>Passes</td>
<td>ASTM C 510</td>
</tr>
<tr>
<td>Extrusion rate, sec,</td>
<td>6</td>
<td>ASTM C 603</td>
</tr>
<tr>
<td>3 hrs after mixing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rheological (flow), at 120° F (49° C)</td>
<td>Nonsag</td>
<td>ASTM C 639</td>
</tr>
<tr>
<td>Hardness, Shore A</td>
<td>25</td>
<td>ASTM C 661</td>
</tr>
<tr>
<td>At standard conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After heat aging (max Shore A:50)</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Tack-free time, hrs,</td>
<td>&lt; 48 hours</td>
<td>ASTM C 679</td>
</tr>
<tr>
<td>(maximum 72 hrs)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond durability*, %,</td>
<td>±25</td>
<td>ASTM C 719</td>
</tr>
<tr>
<td>on glass, aluminum, and concrete</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight loss, after heat aging, %</td>
<td>4.7</td>
<td>ASTM C 792</td>
</tr>
<tr>
<td>Cracking and chalking, after heat aging</td>
<td>None</td>
<td>ASTM C 792</td>
</tr>
<tr>
<td>Artificial weathering,</td>
<td>Passes</td>
<td>ASTM C 793</td>
</tr>
<tr>
<td>Xenon arc, 250 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artificial weathering,</td>
<td>No surface cracking</td>
<td>ASTM G 26</td>
</tr>
<tr>
<td>Xenon arc, 2,000 hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesion in peel, on glass,</td>
<td>&gt; 10</td>
<td>ASTM C 794</td>
</tr>
<tr>
<td>aluminum, and concrete*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesion in peel*, after UV radiation through glass, pli</td>
<td>&gt; 10</td>
<td>ASTM C 794</td>
</tr>
<tr>
<td>Water immersion, *22° F (50° C)</td>
<td>Passes 10 weeks with movement cycle</td>
<td>ASTM C 1247</td>
</tr>
</tbody>
</table>

* Primed 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.

How to Apply

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 one-half the width of the joint. The maximum depth is 1/2" (13 mm) and the minimum is 1/4" (6 mm)
3. In deep joints, the sealant depth must be controlled by Closed-Cell Backer-Rod or Soft Backer-Rod (see Form No. 1026342). Where the joint depth does not permit the use of backer-rod, a bondbreaker (polyethylene strip) must be used to prevent three-sided adhesion. For horizontal joints, use Closed Cell Backer Rod.

Joint Width and Sealant Depth

<table>
<thead>
<tr>
<th>JOINT WIDTH, IN (MM)</th>
<th>SEALANT DEPTH AT MIDPOINT, IN (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 – 1/2 (6 – 13)</td>
<td>1/4 (6)</td>
</tr>
<tr>
<td>1 – 1-1/2 (25 – 38)</td>
<td>1/2 (13)</td>
</tr>
</tbody>
</table>

TABLE 1

* Refer to Table 1 on next page.
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, water-proofings, 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 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
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 product data sheet on Primer 733 or 766 (Form No. 1017962), and consult Technical Service 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 2”. 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.

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.

<table>
<thead>
<tr>
<th>JOINT DEPTH (INCHES)</th>
<th>1/4</th>
<th>3/8</th>
<th>1/2</th>
<th>5/8</th>
<th>3/4</th>
<th>7/8</th>
<th>1</th>
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</thead>
<tbody>
<tr>
<td>1/4</td>
<td>308</td>
<td>205</td>
<td>154</td>
<td>122</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>82</td>
<td>68</td>
<td>58</td>
</tr>
<tr>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51</td>
<td>44</td>
<td>38</td>
</tr>
</tbody>
</table>

Yield
LINEAR FEET PER GALLON*

<table>
<thead>
<tr>
<th>JOINT DEPTH (INCHES)</th>
<th>1/4</th>
<th>3/8</th>
<th>1/2</th>
<th>5/8</th>
<th>3/4</th>
<th>7/8</th>
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<tr>
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<td>205</td>
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<tr>
<td>3/8</td>
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<td></td>
<td>82</td>
<td>68</td>
<td>58</td>
</tr>
<tr>
<td>1/2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51</td>
<td>44</td>
<td>38</td>
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METERS PER LITER

<table>
<thead>
<tr>
<th>JOINT DEPTH (MM)</th>
<th>6</th>
<th>10</th>
<th>13</th>
<th>16</th>
<th>19</th>
<th>22</th>
<th>25</th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>24.8</td>
<td>16.5</td>
<td>12.4</td>
<td>9.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.6</td>
<td>5.5</td>
<td>4.7</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.1</td>
<td>3.5</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Working Times, hours

<table>
<thead>
<tr>
<th></th>
<th>Standard conditions 73° F (23° C), 50% rh</th>
<th>Higher temperature 96° F (35° C), 5 – 90% rh</th>
<th>Colder temperature 40° F (4° C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No accelerator</td>
<td>2 – 3</td>
<td>1 – 2</td>
<td>4 – 6</td>
</tr>
<tr>
<td>1 accelerator</td>
<td>1 – 2</td>
<td>&lt; 1</td>
<td>2 – 3</td>
</tr>
<tr>
<td>2 accelerators</td>
<td>&lt; 1</td>
<td></td>
<td>1.5 – 2.5</td>
</tr>
</tbody>
</table>
4. 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.

5. 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.

6. 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.

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

**Application**

1. Except when unusual job conditions dictate the use of knife or spatula, apply NP 2™ by professional bulk gun loaded at the jobsite. Fill joints 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. Best practices dictate 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.

4. 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. Allow 14 days cure at 70°F (23°C) prior to water immersion. 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.

**For Best Performance**

- 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.

- 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 or uncured Sonolastic® 150 with VLM Technology or 150 Tint Base.

- 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 apply to freshly treated wood; treated wood must have weathered for at least 6 months.

- Do not use in swimming pools, or on 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 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.

- When NP 2™ is to be used in areas subject to continuous water immersion, cure for 14 days at 70°F (23°C). Allow longer cure times at lower temperatures. Always use Primer 733.
Health and Safety

NP 2™ PART A

Warning
NP 2™ Part A contains Stoddard solvent, solvent naphtha (petroleum), light aromatic, 1, 2, 4 trimethyl benzene, silica crystalline quartz and toluenediisocyanate mix.

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 which are known to the state of California as known to cause cancer, birth defects, or other reproductive harm.

VOC Content
0.54 lbs/gal, less water and exempt solvents.

NP 2™ PART B

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

NP 2™ ACCELERATOR

Caution
NP 2™ Accelerator contains 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 lbs/gal or 0 g/L, 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 BASF leading 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, BASF makes no warranty or guarantee, express or implied, including warranties of fitness for a particular purpose or merchantability respecting its products, and BASF 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. BASF makes no further warranty or guarantee, express or implied, including the implied warranties of fitness for a particular purpose or merchantability, and BASF shall not be responsible for consequential, indirect or incidental damages (including loss of profits of any kind). BASF reserves the right to make any changes according to technological progress or further developments. It is the customer’s responsibility and obligation to carefully inspect and test any incoming goods. Performance of the products described herein should be verified by testing and carried out only by qualified experts. It is the sole responsibility of the customer to carry out and arrange for any such testing. Reference to trade names used by other companies is neither a recommendation, nor an endorsement of any product and does not imply that similar products could not be used.

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