



P-TUFF® NS1

100% Solids Joint Sealant for Horizontal and Vertical Applications

1.01 DESCRIPTION

P-Tuff® NS1 is a high-performance interior or exterior joint sealant for use in both moving and non-moving joint applications. **P-Tuff® NS1** provides a long lasting weather tight seal to a variety of building substrates. Please use the correct product grade that complies with VOC regulations as per federal, state, county and city regulations/codes at the place of installation of product.

1.02 USES

- Parking Garage Joints
- Paving and Expansion Joints
- Pre-Cast Concrete
- Ramps
- Tilt-Up Floors & Walls

1.03 FEATURES

- 100% Solids
- Applies Vertically as well as Overhead
- Bonds to Damp Masonry
- Durable Long Lasting Seal
- Excellent Weathering Properties
- Fast Skinning – Resists Dirt Pickup on Construction Sites
- Gun Grade
- Hybrid – Bonds to a Variety of Substrates without Priming
- No Mixing
- No Shrinkage
- No Solvents or Odor
- Non-Sag /Non Slump
- Safe to Use Indoors and in Confined Spaces
- Single Component
- Unique Polymer
- Water Curable

1.04 TECHNICAL DATA

ASTM C920, Type S, Grade NS, Class 25, use NT, T, M, G, A, and O
 Federal Specification TT-S-00230-C Type II, Class A
 Corps of Engineers CRD-C-541, Type II, Class A
 Canadian Standards Board CAN 19, 13-M82

1.05 PACKAGING

10.1 oz (299 ml) Cartridges: 24 per case, 60 cases per pallet
 20 oz (591 ml) Sausages: 12 per case, 45 cases per pallet
 30 oz (887 ml) Sausages: 12 per case, 45 cases per pallet
 2 gallon (7.56 liters): pails

1.06 COLOR

Black, Dark Bronze, Limestone, Stone, Tan, Gray and White

Custom colors are available upon request. Minimum quantity required and additional costs may apply.

1.07 COVERAGE

Install all joint applications per ASTM and SWRI recommendations and guidelines. Joints shall be designed with a depth to width ratio of 1:2 (joint depth one-half the width). It is recommended that the joint shall be no less than 1/4" wide by 1/4" deep (6 mm x 6 mm). The maximum depth of sealant shall be 1/2" (13 mm). Control the depth of the sealant by using a backer rod that is 25% larger than the joint opening at standard temperature. Prevention of three-sided adhesion is necessary.

1.08 JOINT PREPARATION

Joints should be cleaned, dry, and free from all contamination including dirt, oils, grease, tar, wax, rust and any other substance that may inhibit the sealant's performance.

Joint Width inches (mm)	Joint Depth inches (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 - 2 (25-50)	1/2 (13)

1.09 JOINT DESIGN

Where the joint configuration will not permit a backer rod, it is recommended that an alternative bond breaker be used.

Prevention of three-point adhesion is necessary through the use of a backer rod or bond breaker tape to ensure proper joint movement and a long lasting weather-proof seal.

1.10 METAL

Prepare all metal in a manner to ensure maximum adhesion. Remove all rust, scale and residue. Remove films, coatings and oils with an appropriate solvent such as alcohol. It is recommended that Kynar-coated substrates be tested for adhesion prior to starting the project.

1.11 CONCRETE

Concrete and masonry substrates shall be fully cured and dry prior to the application of the sealant. Remove any contamination by mechanical abrasion, sand blasting or power washing.

1.12 WOOD

Wood shall be clean, sound and dry prior to sealant application. Treated wood shall be allowed to weather for six 6 months. Coatings and paint shall be removed (or tested for compatibility) to ensure a proper bond.

1.13 PRIMING

In most instances **P-Tuff® NS1** will not require a primer. However, certain applications or substrates, such as Kynar-coated metal, may require a primer to ensure a long lasting bond and weatherproof seal. It is the user's responsibility to determine the need for a primer. It is recommended that, where-ever pro-longed immersion is anticipated, a primer be used for best performance.

1.14 APPLICATION

P-Tuff® NS1 is a one component, ready-to-use material that requires no mixing. **P-Tuff® NS1** may be water cured by hand or drill mixing 4 ounces of water/gallon for faster curing (approximately 2 hours). It is recommended that a quality caulking gun be used to ensure ease of application. Apply when temperatures are above 40°F (4.4°C). When all the joint preparation is complete, cut the plastic nozzle at a 45-degree angle to approximately the size of the joint opening. Begin gunning to fill the joint from the bottom to the surface, ensuring there are no voids or air pockets. Dry tooling is recommended to create a strong mechanical bond against the joint faces.

Do not use **P-Tuff® NS1** in temperatures below 40°F (4.4°C). It can be painted after 24 hours. **P-Tuff® NS1** can be used in vertical or overhead working conditions.

1.15 FINISHING

Wet sealant can be removed using a solvent such as alcohol, or soap and water. Cured **P-Tuff® NS1** can be removed by abrading or scraping the substrate. Equipment should be cleaned with an environmentally-safe solvent, as permitted under local regulations, immediately after use.

1.16 CURING

P-Tuff® NS1 typically skins over within 15-45 minutes and cures through in 3 to 7 days depending upon temperature, humidity and thickness. Water curing is the preferred method when caulking in low temperatures. Lower temperatures and humidity prolong cure time. Higher temperatures accelerate cure time.

1.17 STORAGE AND SHELF LIFE

Store in original, unopened containers in a cool, dry area at a temperature between 60-95°F (15-35°C). Protect unopened containers from heat and direct sunlight. Elevated temperatures will reduce shelf life. **P-Tuff® NS1** has a shelf life of one year from the date of manufacture; when stored indoors at a temperature between 60-95°F (15-35°C) and in the original factory sealed containers.

1.18 LIMITATIONS

- Allow treated wood to "cure" for six months prior to application per APA guidelines. Do not use in areas subject to continuous immersion without a primer.
- Avoid prolonged contact with skin. Uncured adhesive irritates eyes. In case of contact with eyes, immediately flush with water. Call a physician.
- Horizontal applications will require tooling. Do not store in elevated temperatures. **P-Tuff® NS1** will not freeze during storage. To ensure easy gunning, bring to room temperature before application.
- In areas of prolonged chemical expo-sure contact Technical Ser-

PHYSICALS (Based on draw down films)	
Specific Gravity (Depending on Color)	1.60 ± 0.1
Viscosity (Brookfield RVT, TF Spindle, 4RPM, 73°F [23°F])	>1,000,000 cps
Odor	Mild Ester Smell
Service Temperature, Continuous Service	-40°F to 200°F (-40 to 93.3°C)
Low Temperature Flex	-10°F(-23.3°C) pas 1/4" Mandrel
Slump (Sag), ASTM C-697	Zero Slum
Hardness, ASTM D-2240 Shore A	30 ± 3
Shear Strength, ASTM D-1002	150 ± 15 psi (1.03 ± 0.1 mPa)
Tack-free Time, ASTM C-679	40-50 minutes
Elongation, ASTM D-412	300% -400%
Solids by Weight, ASTM D 1644	100%
Solids by Volume, ASTM D 2697	100%
Tensile Strength, ASTM D 2370	350 psi (2.41 MPa)
Skin Time, ASTM C 679	30 min
Flash Point, ASTM D 56	None
VOC EPA 24	8 gms/l <1.5%
Shrinkage, after 14 days	No Measurable Shrinkage
Thermal Compatibility to Concrete	Good

**Compressive strength was checked on composite of silica sand (12 mesh, 6.5 Moh's minimum hardness) and 18 to 20% of P-Tuff® CR in a 4" x 8" cylinder.

vices for recommendations. Do not allow uncured **TuffSealant™ NS1** to come into contact with uncured silicone sealants.

- Read and ensure that the most up-to-date SDS and technical guidelines are being followed. Proper use and application are the responsibility of the applicator.
- **TuffSealant™ NS1** should not be used in direct contact with single component, moisture-cured-urethane coatings without use of an epoxy primer. Sealant shall be cured for 3-5 days prior to any direct coating.

READ SDS PRIOR TO USING PRODUCT. FOR PROFESSIONAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.MADE IN THE USA.



Please read all information in the General & Safety Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. PSI Products are for "Professional Use Only" and preferably applied by professionals who have prior experience with PSI Products or have undergone training in application of PSI Products. Published technical data and instructions are subject to change without notice. Contact your local PSI representative or visit our website for current technical data, instructions, and project specific recommendations.

LIMITED WARRANTY

PSI warrants its products to be free of manufacturing defects and that they will meet PSI current published physical and chemical properties. Seller's sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties by PSI of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. PSI shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. PSI shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. PSI reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and PSI makes no claim that these tests or any other tests, accurately represent all environments.

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