POLY-TUFF SYSTEMS INTERNATIONAL
HIGHWAY DIVISION

TuffJoint™ PF-UV

Pre-Formed Closed-Cell, Low Density, Cross-Linked EVA/PE Foam Joint Seal

1.01 DESCRIPTION

TuffJoint™ PF-UV is a pre-formed, closed cell, low density, cross linked, EVA/PE (Ethyl Vinyl Acetate-Polyethylene) foam joint seal. It is an expansion joint seal for use in bridge decks, commercial buildings, parking decks, water treatment facilities, and other industrial applications. TuffJoint™ PF-UV contains a HALS (Hindered Amine Light Stabilizer - UV inhibitor) which provides increased performance to Ultra Violet light than other foam products containing carbon black. 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

- Bridges/Highways/Tunnels/Airport Runways
- Cast-In-Place Joints
- Commercial Buildings
- Expansion Joints
- Gaskets
- Industrial Facilities
- Seismic Joints
- Seismic Retrofit
- Tanks/Pools
- Water Treatment Facilities

1.03 FEATURES

- Contains No Carbon Black Pigments
- Custom Fit to any Configuration
- Hydrostatic Pressure Resistant
- No Maintenance Required
- Noise Suppression
- Superior Chemical Resistance
- UV Protection
- Withstands Size And Directional Changes of Joints

1.04 TECHNICAL DATA

Meets ASTM 1056 Type 2, Class B, Grade 2 & AASHTO T-42-84 Modified

1.05 PACKAGING

TuffJoint™ PF-UV is custom fabricated to your specific order.

1.06 COLOR

Beige

1.07 MOVEMENT CAPABILITY

TuffJoint™ PF-UV is capable of functioning in 60% compression and 30% tension movement range. **TuffJoint™ PF-UV** can handle up to 50% ± total horizontal or vertical shear movement.

1.08 SIZING GUIDELINES

TuffJoint™ PF-UV is typically sized at a minimum of 25% larger than the joint opening. The amount of compression will vary due to seasonality, temperature and designed movement of the joint. Please contact your local sales representative for assistance.

1.09 ENGINEERED SURFACE PROTECTION

The joint material shall have E.S.P. (Engineered Surface Protection) grooves along the bond surfaces at a distance of no less than 1/4" and no more than 1/2" apart (6 mm – 13 mm). The grooves are approximately 1/8" deep x 1/8" (3 mm x 3 mm) wide and run the entire length of the joint, increasing the bond surface for enhanced bond performance.

1.10 PERFORMANCE INSTALLATION ENHANCEMENT

For joint openings exceeding 3" (7.62 cm) in width and depth, Performance Installation Enhancement or P.I.E. is recommended. When P.I.E. is added to the joint material, an additional inch of depth is added for beveling. This bevel creates a natural trapezoidal shaped product that is easier to install.

1.11 PREPARATION

Brush blast all concrete surfaces in direct contact with the joint seal. Concrete surfaces should be clean, free of all contaminants and latent build up. Blow dirt or debris from the joint openings and joint surfaces with oil-free compressed air. Steel surfaces must be cleaned to SSPC 10 or better. Ensure that all moisture is removed from steel surfaces prior to applying the bonding agent. Use of a propane wand is acceptable.

Seal Installation: The manufacturer's published installation procedures shall be followed at all times. Mask the areas adjacent to the joint opening. Use approximately 12" (30 cm) of plastic sheeting and tape along edges to keep the surrounding areas clean. Be sure that the tape does not actually go into the joint opening but back approximately 1/8" (3 mm) from the joint edge.

1.12 APPLICATION

Lay out the **TuffJoint™ PF-UV** material next to the joint opening to check for appropriate length and width. Heat welds and other directional changes should be cut and made. All welds should be allowed to cool before mixing the adhesive.

Begin mixing the **TuffJoint™ JA** epoxy adhesive following the manufacturer's specified mixing procedures. Start at one end or at an intersection or corner. Apply the epoxy adhesive to both sides of the concrete substrate surfaces.

Apply enough **TuffJoint™ JA** adhesive to coat the substrate to an approximate thickness of 40 mils (1 mm). Apply the epoxy bonder on both surfaces working in the direction ahead of the joint material, not

more than 20' (6 m) ahead.

Next, apply the **TuffJoint™ JA** epoxy adhesive to the grooved sides of the joint material. Apply enough to coat and fill the grooves on the joint material, approximately 40 mils (1 mm) thick. Install the coated material at the curb, intersection, or corner, where the epoxy was initially applied on the substrate.

The joint material should be recessed 1/8" (3 mm) below the joint edge and should not protrude above the joint edge.

Continue in the same direction as the **TuffJoint™ JA** epoxy was initially applied. DO NOT push at an angle or pull the material, as this will stretch the material and is unacceptable.

Clean the epoxy left on the surface of the material as soon as it is pushed into the desired depth. DO NOT allow the epoxy to cure on the exposed surface of the foam before removing it. Use a clean trowel or a putty knife tilted at an angle opposite the direction of movement. DO NOT allow any epoxy bonder near any area to be cut and welded until the weld is completed otherwise the weld will not hold. Once the joint is installed and cleaned, remove the tape from the joint edges before the epoxy cures.

Allow the bonder to set, approximately 20 minutes, at 77°F (25°C), before traffic is allowed onto the joint. Slightly longer time is required during cooler weather.

When a continuous joint cannot be finished, the epoxy bonder on the substrate and on the joint material must end evenly. Install the joint past the epoxied surface at least 6-12" (15-30 cm) dry, or without epoxy. This can be pulled out later to be re-welded and the installation continued.

1.13 JOINT MATERIAL LIMITATIONS

Directional Changes: For all directional changes in the joint material, heat welding must be performed. This is done by placing the **TuffJoint™ JA** ends against a Teflon coated heating iron at 350°F (176°C) for 10–20 seconds. The ends are then placed firmly together and fusion bonded. If heat welding is not an option: Vertical turns - the maximum angle the joint material can sustain without heat welding is 115°. Horizontal turns - the maximum angle the joint material can sustain without heat welding is 135°F (57.22°C). Heat welds will add to the aesthetics of an installation and are suggested for horizontal 90° turns.

Joint Variations: If a joint opening is not uniform, please contact your sales representative for assistance.

Skews: **TuffJoint™ PF-UV** with H.A.L.S. does not have skew limitations.

Operational Temperature Range: The physical and chemical properties of TuffJoint™ PF-UV are not altered significantly within the recommended temperature range of -94-160°F (-70-71°C).

Maximum Joint Opening: When the expansion joint is subjected to pedestrian or vehicular traffic, the following limitations apply:

Vehicular Traffic: Maximum Joint Opening of 4" (9.2 cm) without a cover plate.

Pedestrian Traffic: Maximum Join Opening of 4" (9.2 cm) without a cover plate.

1.14 MANUFACTURING TOLERANCES

TuffJoint™ PF-UV will be manufactured in accordance with the contract, or plan, to within a tolerance of ± 5% depth and ± 2% width.

1.15 CLEANUP

Tools and Equipment: Clean with PSI's Solvent 100 or other solvents.

1.16 STORAGE AND SHELF LIFE

Store in a horizontal position to prevent moisture accumulation on the drum head. The material should be stored between 40–95°F (4°–35°C) in a cool, dry area away from direct sunlight. The shelf life of properly stored is 24 months from the date of manufacture. An excessive temperature differential and/or high humidity can shorten the shelf life expectancy.

1.17 LIMITATIONS

The material is sized based on anticipated movement & season of installation.

The material must be installed under compression. Compression amount can vary between 15% and 35% depending on the temperature at the time of installation.

The bonding surface of the substrate must be mechanically abraded. Sandblasting is preferred.

DO NOT place at temperatures below 40°F (5°C) unless special provisions are followed. Avoid hazards by following all precautions found in the Safety Data Sheets (SDS), product labels, and technical literature.

Concrete should be the approximate texture of 100 grit sandpaper.

Steel should be cleaned to SPCC 10 or near white metal. All moisture should be removed from steel prior to installation.

Contact CCP for installation instructions when bonding to specialty steels such as stainless or galvanized.

1.18 CAUTION

Do not dilute. Wear protective gloves and goggles. Avoid prolonged skin contact.

READ SDS PRIOR TO USING PRODUCT. KEEP OUT OF THE REACH OF CHILDREN.

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TECHNICAL DATA SHEET
SECTION 9.1

1.19 PHYSICALS		
Compression Set	ASTM D3575 Suffix B	2 hr Recovery 10% 24 hr Recovery 9%
Compression Deflection 25%	ASTM D3575 Suffix B	9 psi (0.006 MPa)
Elongation	ASTM D3575 Suffix T	185-275%
Density	ASTM D3575 Suffix W	2.7 – 3.4 lbs/cuft
Water Absorption	ASTM D3575 Suffix L	.02 lbs/sqft avg.
Weatherability	ASTM G154 3000 Hrs HH-F-341a	No chalking, flaking, blistering, checking, or cracking No degradation
Tensile	ASTM D3575 Suffix T	92 – 140 psi (640 – 950 KPa)
Tear Resistance	ASTM D624	10 – 20 lbs/in (1.79 – 3.57 kgs/cm)
Thermal Stability	ASTM D3575 Suffix S	5.9% Max
Recovery	ASTM D3575	98.9%

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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