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**DESCRIPTION:**

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Nukote SPU Foam is a two-component, rigid polyurethane spray foam that is available in different densities to accommodate a broad range of applications. Nukote SPU foam is environment friendly and contains no ozone depleting chemicals. Low viscosities and 1:1 ratio make it extremely easy to apply using standard, high-pressure, high-temperature application equipment.

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**FEATURES:**

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- Fast reactivity and cure time resulting in almost immediate return-to-service time
- Easy to apply
- Reduced down time
- Exceeds ASTM E 84/UI 790 (A) and ASTM E 108/UL 723 Fire ratings.

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**TYPICAL USES:**

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- Thermal insulation of building walls, roofs, tanks, vessels and pipes
- Roofing systems
- Cold storage
- Restoration of existing concrete structures
- As a closed cell foam

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**COLORS:**

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Clear or neutral. Custom colors, blended to match any RAL number, are available upon request subject to minimum quantity.

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**PACKAGING:**

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100-gallon (380-liter) drum sets, shipped in metal drums of 50 gallons (190 liters) each of side A and side B  
10-gallon (38-liter) kits, shipped in plastic pails of 5 gallons (19 liters) each of side A and side B  
275-gallon (1045 liter) totes.

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**COVERAGE:**

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Nukote SPU Foam may be applied at any rate to achieve the desired thickness. The foam densities, thickness have a linear relation to consumption. Theoretical consumption rate for a 2.5 lbs (40 Kg) density at 2 “ (50 mm ) thickness is 2 kgs /m<sup>2</sup> without any loss factor

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**STORAGE:**

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Six to eight months in factory delivered, unopened drums. Store on pallets and keep away from extreme heat, freezing, and moisture. Storage at higher temperature may alter the reactivity of the product and build up pressure in the storage container.

| <b>TECHNICAL DATA (All values @ 77 °F / 25 °C)</b>   | <b>US</b>                        | <b>Metric</b>                  |
|--|----------------------------------|--------------------------------|
| <b>Spayed –in-place density of 2- 3 lbs.</b>   |                                  |                                |
| Solids by volume (ASTM D2697)  | 100%                             | 100%                           |
| Volatile organic compounds (ASTM D2369)  | 0 lb./gal                        | 0 gm/ lit                      |
| Consumption for 2.5 pound ( 40 kg) density Foam  | 0.40 lbs/ft <sup>2</sup> @ 2inch | 2 kg @50mm /m2                 |
| Specific Gravity of materials (ASTM D792)  | A: 10.35, B: 9.83 lbs./gal       | A: 1.24, B: 1.18 kg/ liter     |
| Viscosity at 77 °F/25 °C in cps ±10% (ASTM D4878)  | A-200-250, B-350-550             | A-200-250, B-350-550           |
| Shelf life @ 77 °F/25 °C   | 06 to 08 Months                  | 06 to 08 Months                |
| Compressive strength (ASTM D 1621)   | 25-60 psi                        | 0.17- 0.45 Mpa                 |
| Dimensional Stability(28 days@160°F/71°C, 100% ambient RH, volume change)  | < 8%                             | < 8%                           |
| Closed cell content (ASTM D1940 )  | 93-98 %                          | 93-98 %                        |
| K Factor Initial/ Aged (ASTM C177)   | 0.12-0.13 /0.14-0.16             | 0.12-0.13/0.14-0.16            |
| Water vapour transmission (ASTM C 355)   | 1.8-1.9 perms                    | 1.8-1.9 perms                  |
| Water absorption (ASTM D 2842)   | 0.017-0.019                      | 0.017-0.019                    |
| Shear strength (ASTM D C 273 )   | 30 - 60 pli                      | 0.21-0.45 Mpa                  |
| Flame spread (E-84/UL 723)   | < 75                             | Meets Class A for Flame spread |
| Flash point (Pensky Martin)  | >200 °F                          | >93 °C                         |
| Insulation Service temperature   | -100 °F to 225 °F                | -73 °C to 107 °C               |
| Wind Uplift (FM-4470)  | I-450                            | I-450                          |
| <b>PROCESSING PROPERTIES ( sprayed under standard test conditions)</b>   |                                  |                                |
| Mix Ratio V/V  | 1:1                              |                                |
| Rise time  | 4 to 7 seconds                   |                                |
| Cream time   | 1 to 2 seconds                   |                                |
| Tack free time ( DFT & Temperature dependent)  | On rise 8 to 15 Seconds          |                                |
| Initial cure time  | 4 hours                          |                                |
| <i>Properties and values are highly dependent on equipment, spray gun, mix chamber temperature, pressure and related parameters. Variations are possible and expected. Above properties are for foam ranging from 2 to 3 lb density. K factor, flame spread ratings vary depending on age and conditions</i> |                                  |                                |

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## **MIXING:**

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Nukote SPU Foam might not be diluted under any circumstance. Use appropriate solvent for purge line and flushing of equipment and if spraying stops for a period of time in excess of the pot life of the material. Thoroughly mix part B resin material with air driven power equipment until a homogeneous mixture and color is obtained.

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## **SURFACE PREPARATION:**

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Surfaces to receive Nukote Foam must be clean and dry, free of dirt, oil, solvent, grease, loose particulates, frost, ice and other foreign matter which could inhibit adhesion. Moisture content and surface conditions of substrate are critical to adhesion of Foam and need to be verified by installing contractor in small test areas before proceeding with full application. The surface should be dry, smooth, and structurally sound.

All primers must be applied per Nukote published technical data sheets and product labels. Plywood, OSB, and lumber shall not have greater than 15% moisture content. Generally a primer is not required for these surfaces. On substrates where the moisture content cannot be determined or exceeds 10%, a suitable primer is recommended. Adhesion spray tests may be performed with insulating foam and the interface line checked upon cure for good cell structure and adhesion. Warming of these surfaces during winter conditions for increase adhesion is recommended. CMU, structural and poured-in-place concrete must have a minimum 28-day cure and moisture content below 10%.

It is recommended to Abrasive blast all steel surfaces to Sa 2.5 with a good anchor profile. Priming is Optional and mandatory in certain cases. Consult NCSI for primer recommendations.

Painted Steel, galvanized steel, and aluminium panels: check surfaces for mill oil used in the manufacturing process and moisture condensate. All oil must be removed and the surface clean and dry before priming. Washed and dry painted steel panels may not require priming. All aluminium and galvanized panels must be primed using Nukote Recommended primers. (Consult NCSI for primers)

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## **APPLICATION:**

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This material must be applied utilizing high-pressure, heated plural component spray proportioning equipment, such as those manufactured by Graco®. The proportioning equipment utilized must be capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis.

The proportioning equipment shall be capable for heating, mixing, and spray application of polyurethane foam and be able to maintain 1:1 metering with a + 2% variance and adequate main heating capacity to deliver heated and pressurized materials up to 140°F (60°C). Heated hose must be able to maintain pre-set temperatures for the full length of the hose. Minimum 2:1 ratio feeder pumps are required to supply stored materials through minimum ½ “(12 mm) supply hoses. Pressurized and heated tanks systems may be used if sized appropriately, to provide adequate flow at maximum operating capacity and temperatures. Spray guns such as **GX-7, GAP Pro Gun and Fusion gun**, are well suited for applications where higher volume is desired. The recommended processing temperatures ‘Part A’ and ‘Part B’ is (100-120°F). These are critical settings to achieve viscosity to allow balanced pressure during spraying. Balanced chemical output pressures are important to produce a good mix. Foam output pressures greater than 14 bar (200 psi) differential indicate either improper chemical temperatures, or worn gun/packing parts... A critical requirement for good spray mixing requires appropriate tip/module sizing to the proportioner and adequate heating capacity.

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**EQUIPMENT CLEAN UP:**

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Cured product may be disposed of without any restrictions. The uncured Isocyanate and resin portions should be mixed together and disposed of in a normal manner. “drip-free” containers should be disposed of according to local environmental laws and ordinances

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**LIMITATIONS:**

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Do not open until ready to use, and store in a sealed container after opening. Adding a nitrogen blanket is strongly recommended for the ‘A’ component when storing after opening. All applications to exterior surfaces should be over coated with a suitable elastomeric top coat. Combustible under many fire conditions. Protect with a UL rated 15 minutes thermal barrier top coat on all applications on interior walls and ceilings

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**WARNING:**

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This product contains Isocyanate and curatives. Refer SDS for further details

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**WARRANTIES AND DISCLAIMERS:**

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*Nukote Coating Systems, LLC has no role in the manufacture of the finished polymer other than to supply its two components. It is vital that the person applying this product understands the product and is fully trained and certified in the use of plural component equipment and application of plural component materials. Nukote Coating Systems International, a Nevada Corporation, warrants only that the two components of this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper mixture and application of the components by the applicator. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Nukote Coating Systems International and executed under seal by a company officer.*