DESCRIPTION:

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.

Nukote SPU Foam systems are light density spray polyurethane insulations designed to be fluid-applied to construction surfaces to effect a permanent, monolithic and dimensionally stable thermal insulation.

FEATURES:

- Fast reactivity and cure time resulting in almost immediate return-to-service time
- Easy to apply
- Reduced down time
- Has been independently tested and evaluated by ICC and determined to meet the following building codes: IBC, IRC and IECC. Additionally, meets the "Standard Test Methods for Fire Tests of Roof Coverings" and exceeds ASTM E84/UL 790 (A) and ASTM E108/UL 723 fire ratings.
- Complies with the California State Fire Marshall

TYPICAL USES:

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

COLORS:

Clear or neutral.

Side A, dark brown. Side B Amber/ brown.

PACKAGING:

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

COVERAGE:

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 /m2 without any loss factor

STORAGE:

Six months in factory delivered, unopened drums. Store on pallets between 50-75 ºF (10-24 ºC) 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.

TECHNICAL DATA **(All values @ 77 ºF / 25 ºC)**	**Density**		
	2.0	3.0	6.0
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 ^{2} @ 2inch 2 kg @50mm /m2	
Specific Gravity of materials (ASTM D792)	A: 1.24, B: 1.18 kg/ liter A:10.35, B: 9.85lbs./gal	A: 1.24, B: 1.18 kg/ liter A:10.35, B: 9.85lbs./gal	A: 1.24, B: 1.17 kg/ liter A:10.35, B: 9.76lbs./gal
Viscosity at 77 ºF /25 ºC in cps ±10% (ASTM D4878)	A-200, B-350	A-200, B-625	A-200, B-900
Shelf life @ 77 ºF /25 ºC		06 months	
Sprayed-in-place density (ASTM D1622)	2.0	3.0	6.0
Compressive strength (ASTM D 1621)	26 psi 0.18 MPa	50-60 psi 0.3-0.4 MPa	120 psi 0.83 MPa
Tensile strength (ASTM D1623)	45 psi 0.3 MPa	90 psi 0.6 MPa	130 psi 0.9 MPa
Dimensional Stability (28 days@160ºF /71°C, 100% ambient RH, volume change)		< 8%	
K Factor Initial/ Aged (ASTM C518)	0.15	0.16	0.16
Water vapor transmission (ASTM C 355)	1.9 perms	1.8 perms	1.8 perms
Water absorption (ASTM D 2842)	0.019	0.017	0.017
Shear strength (ASTM D273)	35 psi 0.2 MPa	50-60 psi 0.3-0.4 MPa	90 psi 0.62 MPa
Closed cell content (ASTM D1940)	93%	98%	98%

Flame spread (ASTM E84/UL 723)	< 25	< 75	< 75
Flammability roof deck construction (ASTM E108/UL 790)		NFPA Class A UBC Class 1	
Wind Uplift (FM-4470)		>I-450	
PROCESSING PROPERTIES (sprayed under standard test conditions)			
Mix Ratio V/V		1:1	
Cream time – Hand Mix @ 72 ºF		4-6 seconds	
Cream time – Sprayed *		1-2 seconds	
Rise time – Hand Mix @ 72 ºF		15-22 seconds	
Rise time – Sprayed *		4-7 seconds	
Tack free time		On Rise	
**** Nominal 1" thickness sprayed through proportioner with: preheat set at 120°F, hose heat set to maintain120°F at the spray gun. Reaction times are influenced by mix efficiency of the spray gun, temperature of the components, ambient conditions and thickness of the foamed mass.***			

MIXING:

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.

SURFACE PREPARATION:

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 10% 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. Galvanized and stainless-steel surfaces should be treated with an appropriate wash primer prior to the application of Nukote SPU Foam. 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)

Nukote SPU Foam systems may be applied to surfaces with temperatures as low as 50 ºF. in most instances.

APPLICATION:

Nukote SPU Foam systems are a sophisticated plural component building product which should be applied only by trained and manufacturer-approved insulation experts familiar with the properties of this material.

Nukote SPU Foam systems are specifically designed as insulation for construction applications where the end use ambient temperature range will be maintained between -100 ºF and 225 ºF. When considering any other use for this product, consult NCSI for specific application recommendations.

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 'Side A' and 'Side 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.

Nukote SPU Foam systems should be deposited in uniform passes ranging from 1/2" to 1" maximum. Pass thicknesses will vary as a function of substrate temperature, ambient air temperature and machine output. If sprayed in multiple passes, sufficient cooling off time must be allowed. Nukote SPU Foam systems bond best to themselves when the previous pass is still warm (above 70 ºF). Nukote SPU Foam performs best when coated the same day of application, however it may be left exposed for up to 24 hours. If Nukote SPU Foam is exposed for a period greater than 24 hours, please contact NCSI for recommendations.

CLIMATIC CONDITIONS: No spraying should be done when moisture is present in the form of rain, dew or relative humidity greater than 80%, or when there is wind in excess of 15 m.p.h.

PROTECTIVE COATING: Nukote SPU Foam, when applied to exterior weathering surfaces, must be top coated with an approved elastomeric coating. All coatings shall be applied in accordance with NCSI instructions.

FIRE AND THERMAL BARRIER: Nukote SPU Foam polyurethane insulation systems are combustible under many fire conditions. A fire and thermal protection have a UL rated 15-minute finish rating should be used to cover all Nukote SPU Foam systems used on interior wall or ceiling applications.

EQUIPMENT CLEAN UP:

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

LIMITATIONS:

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

WARNING:

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

WARRANTIES AND DISCLAIMERS:

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.