

## **NUKOTE ST** *Standard*

### **DESCRIPTION:**

NUKOTE ST<sup>®</sup> is NCSI's multipurpose standard Polyurea and is designed for general purpose use. Consequently, it has been developed to perform well for anticorrosion and waterproofing applications on steel, concrete, and many other substrates. It is a two-component, 100% solids, pure Polyurea that significantly reduces the moisture problems that commonly cause pin holing and blistering in most polyurethane or polyurethane-hybrid systems. This aromatic Polyurea Elastomer displays good chemical resistance, thermal stability and UV resistance. Nukote ST can be textured easily for anti-skid purposes. The product shows very good moisture permeation resistance. ST exhibits excellent adhesion to most substrates with use of a suitable Nukote primer.

### **FEATURES**

- 100% Solids with zero VOC
- Fast reactivity and cure time resulting in almost immediate return-to-service time
- Can be applied in temperatures from -30°C and upwards
- Perform in constant temperatures from -30°C to +120°C
- Retains physical properties at -30°C to +120°C
- Excellent elongation properties
- Seamless, resilient, flexible and tough
- Excellent corrosion protection
- Impact, tear and abrasion resistant
- Resistant to many solvents, acids and alkalis (consult NCSI)
- Low permeability waterproofing membrane

### **TYPICAL USES:**

- Marine environments
- Airports
- Food and Chemical processing plants
- Dairies & Live stock facilities
- Oil & Gas, petroleum industries
- Cold storage facilities
- Landfill containment
- Primary & Secondary containment
- Water, waste water and industrial effluent treatment plants
- Power and Desalination Plants

### **COLORS:**

Standard medium grey only, custom colors, blended to match any RAL number, are available upon request subject to minimum quantity.

### **PACKAGING:**

Nukote ST is available in 380 liter sets shipped in metal drums of 190 liters each of Side A and side B or 38 liter kits shipped in plastic pails of 19 liters of side A and 19 liters of side B, or 2090 tote sets shipped in hardened plastic-metal reinforced UN approved totes of 1045 liters each of side A and side B.

PDS

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TECHNICAL DATA (All values @25 °C)	
Solids by volume	100%
Volatile Organic Compounds	0 gm/ lit
Theoretical coverage@ 1mm	1m <sup>2</sup> / lit
Specific Gravity (kg/ litre)	A-1.056, B-1.052
Viscosity at 25°C in cps (ASTM D 412)	A-260, B-380
Shelf life @ 25°C	12 to 18 Months
Tensile strength ( ASTM D 412 C )	18 to 23 MPa
Elongation (ASTM D 412)	350-450 %
Hardness ASTM D 2240	45 to 55 Shore D
Flexibility (2mm mandrel ASTM 1737)	Pass
Water Vapour Permeability ASTM E 96	0.00036 perm-in
Water Absorption -24 hours (ASTM D 471)	< 0.5%
Crack Bridging @-25°C (ASTM C 836) , 25 cycles	Pass
Tear strength (Die C ASTM 624) (KN/m)	75 to 80
Impact Resistance	> 20 J
Fire Rating , Flame Spread -ASTM E 108	Class 2, Class A for Roof coverings
Flash point Pensky Martin	>93°C
Service temperature (Dry)	-30°C to 120°C
Abrasion Resistance (ASTM D 4060)	<15mg loss Taber CS 17 wheel 1Kg/1000 rev
PROCESSING PROPERTIES (Under standard lab conditions)	
Mix Ratio V/V	1:1
Gel time	6 to 20 seconds
Tack free time ( DFT & Temperature dependant)	30 to 45 Seconds
Post cure time	24 hours
<i>(The above properties and values are highly dependent on equipment, spray gun, temperature, pressure and related parameters and slight variations are possible). The above values are as per NCSI Standard lab practices &amp; methodology)</i>	

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### **COVERAGE:**

Nukote ST may be applied at any rate to achieve the desired thickness. Calculation for theoretical coverage at 1mm thickness is 1 liter/m<sup>2</sup>.

### **MIXING:**

Nukote ST 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 Nukote ST part B resin material with air driven power equipment until a homogeneous mixture and color is obtained.

### **SURFACE PREPARATION:**

#### **Concrete:**

The surface of a concrete subfloor should be dry, smooth, and structurally sound. It should also be free of depression, scale, or foreign deposits of any kind. Remove all curing compounds. Abrasive blast, sweep blast or water blast to remove all laitance and expose all voids. Use a good quality epoxy filler / mortar for blow hole filling, skim coat or repairs. All concrete subfloors on or below grade level should be tested for moisture. On-grade or below-grade concrete floors should have a moisture barrier installed to protect from ground moisture.

#### **Metal:**

All surfaces should be clean and free from contamination. The surface should be assessed and treated in accordance with ISO 8504. Abrasive blast the surface to minimum SA 2.5, as per ISO 8501-1, for a visual assessment of surface cleanliness with an anchor profile of 75 -100 microns.

**Refer to NCSI surface preparation manual for more details.**

### **APPLICATION:**

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

For optimum performance, the substrate should be abrasive blasted. Concrete substrates should be allowed to cure a minimum of 30 days. On concrete, Nukote ST should always be applied over a suitable primer for maximum adhesion. Please review your specific project with Nukote technicians. For all submersed applications, a primer is absolutely essential, after proper preparation. Recommended DFTs are a function of the project, please contact a Nukote technician. On horizontal surface applications, a texture “stipple” coat can be applied for non-skid purposes, after reaching the initial desired film thickness.

### **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.

### **STORAGE:**

Twelve to eighteen months in factory delivered, unopened drums. Keep away from extreme heat, freezing, and moisture. The use of drum heaters is encouraged to reduce material viscosity at low temperatures.

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### LIMITATIONS:

Do not open until ready to use, and store in a sealed container after opening. Adding a nitrogen blanket is strongly recommended for use on the 'A' component for storage after opening.

### WARNING:

This product contains Isocyanate and curatives.

### CHEMICAL RESISTANCE:

Each Nukote product formulation has varying levels of resistance to specific chemicals. Please review the chemical immersion test data included in the Nukote Test Book for general resistance to specific chemicals at specific concentration levels. Chemical concentrations are complex and when combined with temperatures above ambient levels this complexity increases exponentially. Contact Nukote Technical Personnel for specific recommendations for chemical resistance prior to specifying these products in this application type. Consult with NCSI for more details on product and chemical resistance. The following chart is the results of Polyurea immersed in chemicals and tested as per ASTM D 3912.

Chemicals	Resistance	Chemicals	Resistance
Hydrochloric acid upto 10%	R	Ammonium Hydroxide 20%	R
Sulphuric Acid 15%	R	Ammonium Hydroxide 50%	RC
Phosphoric Acid 10%	R	Pottasium Hydroxide 10%	R
Acetic Acid 10%	R	Pottasium Hydroxide 20%	RC
Sea water	R	Sodium Hydroxide 10%	R
Water @ 80 °C	R	Diesel Fuel, Gasoline (unleaded)	R
Hydrogen Sulphide (gas)	R	Motor Oil, Brake Oil	RC
Sodium Hydroxide-50%	RC	Hydraulic Oil	R

**R- Resistant, RC – Slight surface change,discolouration with no loss of hardness.**

### WARRANTIES AND DISCLAIMERS:

*Nukote Coating Systems International, a Nevada, USA Corporation warrants 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. Nukote Coating Systems has no role in the application of the finished polymer other than to manufacture and 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. 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.*