

NUKOTE HT

High Tensile

DESCRIPTION:

NCS has designed Nukote HT as the premium pure Polyurea available for industrial applications, especially those that require slightly higher temperature resistance and higher tensile properties. Nukote HT is a two-component, 100% solids; pure Polyurea that significantly outperforms coatings traditionally used in transmission lines and industrial applications and recommended for use with Cathodic protection systems. Nukote HT has been tested from the Alaska's frozen tundra to Indonesia's tropical jungle and everywhere in between. It can be applied at temperatures ranging from -30 °C to 150 °C. This aromatic Polyurea Elastomer displays good chemical resistance, thermal stability and UV resistance. Nukote HT is also specifically designed for application on NCS automated pipe lathes on steel, cement, GRP, FRP and other substrates in combination with suitable 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 +150°C
- Seamless, resilient, flexible and tough
- Excellent for cold bends , Puncture resistant
- High Impact, tear and abrasion resistant
- Excellent corrosion protection
- Low permeability
- Coated pipes can be transported and installed immediately
- Excellent Cathodic disbondment performance
- Simple inexpensive field joining and repair material
- Resistant to many solvents, acids and alkalis (consult NCSI)

TYPICAL USES:

- Below and above grade pipeline applications
- Fresh or saltwater submersed pipeline application
- Waste water and Effluent transmission lines
- Field jointing and Pipeline repairs
- Steel and concrete Piles, Penstocks, Offshore jackets and platform
- Steel or concrete protection in Power, Paper & pulp mills, Mining and Refineries
- Tank lining , Primary containment and protective coating
- Bunds and Secondary containment

COLORS:

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

PACKAGING:

Nukote HT 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

ISSUE DATE
15/11/2009

NUKOTE COATING SYSTEMS INTERNATIONAL LLC
2250 E TROPICANA AVENUE 19-621
LAS VEGAS, NEVADA 89119
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WWW.MCS-INTL.NET

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| TECHNICAL DATA (All values @25 °C) | |
|---|---|
| Solids by volume | 100% |
| Volatile Organic Compounds | 0 gm/ lit |
| Theoretical coverage@ 1mm | 1m ² / lit |
| Specific Gravity (kg/ litre) | A-1.056, B-1.052 |
| Viscosity at 25°C in cps (ASTM D 412) | A-610, B-310 |
| Shelf life @ 25°C | 12 to 18 Months |
| Tensile strength (ASTM D 412 C) | 23 to 28 MPa |
| Elongation (ASTM D 412) | 350-450 % |
| Hardness ASTM D 2240 | 50 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 | Class 2 |
| 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 |

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COVERAGE:

Nukote HT may be applied at any rate to achieve the desired thickness. Calculation for theoretical coverage at 1mm thickness is 1 liter/m².

MIXING:

Nukote HT 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 HT 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 HT 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, including proper substrate and surface 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 | Diesel Fuel | R |
| Water @ 80 °C | R | Gasoline | RC |
| Hydraulic Fluid | RC | Motor Oil | RC |

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.

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