
DESCRIPTION:

NUKOTE MI PPB is a specialized, high performance polyurea hybrid coating designed and developed to protect armored vehicles and structures exposed to explosions and ballistic impacts. It is a great choice when increased tensile strength is needed. Nukote MI PPB is a two-component, 100% solids, hybrid polyurea with flex modulus properties that outperform other coatings used in ballistic and blast mitigation applications. This aromatic polyurea hybrid elastomer displays good resistance to a broad range of chemicals including hydrogen sulfide, methane, excellent thermal stability.

FEATURES:

- 100% solids with zero VOC
- Fast reactivity and cure time resulting in almost immediate return-to-service time
- Performs in constant temperatures from -40° F to 250° F (-40° C to 120° C)
- Retains physical properties on weathering
- Improves ballistic limit of construction materials
- Delays Fracturing of steel
- Increases energy absorption of steel
- Contains fragmentation
- Seamless, resilient, flexible and tough
- Good corrosion protection
- Excellent corrosion protection, abrasion resistance thermal Stability
- Buoyancy neutral

TYPICAL USES:

- Often used as a composite with other Nukote products in blast and ballistic mitigation
- Armoring of light personnel vehicles
- Armoring of attack vehicles for both ballistic and blast mitigation
- Military facilities and bunkers where exposure to ballistics and blasts is possible
- Government facilities and bunkers where exposure to ballistics and blasts is possible
- Industrial and civil facilities where protection from blasts is a high priority
- Public transportation stations and facilities where exposure to blasts prior to security checks is probable

COLORS:

Standard medium grey, green, tan, black. Custom colors, blended to match most RAL numbers, are available upon request subject to minimum order quantity.

PACKAGING:

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

COVERAGE:

Nukote MI PPB may be applied at any rate to achieve the desired thickness.
Calculation for theoretical coverage: 40 ft²/gal @ 40 mils (1 m²/liter @ 1 mm).

TECHNICAL DATA (All values @ 77 °F / 25 °C)	US	Metric
Solids by volume (ASTM D2697)	100%	100%
Volatile organic compounds (ASTM D2369)	0 lb/gal	0 gm/l
Theoretical coverage	40 ft ² /gal @ 40 mils	1 m ² /l @ 1 mm
Specific Gravity of materials (ASTM D792)	A:10.3, B:10.1 lb/gal	A:1.23, B:1.21 kg/l
Viscosity at 77 °F /25 °C in cP ±10% (ASTM D4878)	A 100±20	A 100±20
	B 2,000±500	B 2,000±500
Shelf life @ 77 °F /25 °C	12 months	12 months
Tensile strength (ASTM D412-C)	8,000±500 psi	55±3 MPa
Elongation (ASTM D412-C)	7 to 12±2%	7 to 12±2%
Hardness (ASTM D2240)	85±2 Shore D	85±2 Shore D
Flexural Strength	14,000 psi	99 MPa
Flexural Modulus	477,000 psi	3,300 MPa
1% Secant Modulus	737,000 psi	5,000 MPa
2% Secant Modulus	629,000 psi	4,300 MPa
Water absorption - 24 hours (ASTM D570)	< 0.5%	< 0.5%
100% Elastic Modulus (ASTM D638)	59,500 psi	410 MPa
Rupture Modulus (ASTM D638)	111,700 psi	770 MPa
Flash point Pensky Martin	> 200 °F	> 93 °C
Service temperature (Dry)	-20 °F to 200 °F	-30 °C to 90 °C
PROCESSING PROPERTIES (Under standard lab conditions)		
Mix Ratio V/V	1:1	
Gel time @ 160 °F /70 °C	15 to 20 seconds	
Tack free time@ 160 °F /70 °C	60 to 90 Seconds	
(DFT & Temperature dependent)		
Post cure time	24 hours	
<i>(The above properties and values are dependent on equipment settings, spray gun, mix chamber temperature, pressure and related parameters and variations are possible and expected). The above values are as per NCSI Standard lab practices & methodology at various film thickness)</i>		

STORAGE:

Twelve 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.

MIXING:

Nukote MI PPB shall not be diluted under any circumstance. Thoroughly mix Nukote MI PPB Part B resin material with air driven power equipment until a homogeneous mixture and color is obtained, usually accomplished through the dedicated spray equipment.

SURFACE PREPARATION:

Metal:

All surfaces shall be clean and free from contamination. The surface shall be assessed and treated in accordance with ISO 8504, Abrasive blast the surface to minimum NACE-2/SSPC SP-10Sa 2.5, as per ISO 8501-1, for a visual assessment of surface cleanliness with an anchor profile of 3 to 4 mils (75 to 100 microns). Soluble salts must be removed to an acceptable level depending prior to application of MI PPB.

Concrete:

The surface shall be dry, smooth, structurally sound and 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 voids. Use a good quality epoxy filler or mortar for blow hole filling, skim coat or repairs. Prime, fill imperfections in the substrate surface to limit out-gassing. All concrete surfaces at or below grade level shall be tested for moisture. On-grade or below-grade concrete surfaces shall have a moisture barrier installed to protect them from moisture transmission. The surface preparation shall meet and conform to Joint NACE 6/SSPC-SP 13 standards and achieve a surface profile of CSP 3 to CSP 6 as per ICRI Guideline No.03732 for optimum performance.

Refer to NCSI surface preparation manual for detailed procedures for different types of substrates.

APPLICATION:

This material must be applied utilizing high-pressure, heated plural component spray proportioning equipment, similar 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 shall be abrasive blasted. Concrete substrates should be allowed to cure a minimum of 30 days. On concrete, Nukote 300P 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. Recommended DFTs are a function of the project performance specifications, please contact a Nukote technician for assistance developing project and application specifications. 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 hazardous materials restrictions. The uncured Isocyanate and resin portions shall be mixed together and disposed of in accordance with local regulations. A “drip-free” container shall 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 to any opened containers is recommended strongly prior to storage.

WARNING:

This product contains isocyanate and curatives.

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.