



DELTAShield HIP 500

TWO COMPONENT SPRAY APPLIED HIGH IMPACT PROTECTIVE LINING.

DESCRIPTION

DELTAShield HIP 500 is an instant curing, spray applied, seamless, and flexible high impact, highly abrasion resistant, protective coating specifically formulated to enhance military vehicles and equipment.

DELTAShield HIP 500 will not crack or peel and can withstand heavy impact and abrasion making it the ideal long-term military vehicle coating.

DELTAShield HIP 500 can be supplied in a range of base military colours and camouflage added later at the customer's request. **DELTAShield HIP 500** is easy to clean and requires no maintenance.

TYPICAL USES

- ✓ External body protection of military vehicles.
- ✓ Internal body protection of military vehicles.
- ✓ Easy to clean, hard wearing, slip resistant flooring for internal floors of military vehicles.
- ✓ Enhancement of composite ballistic panels.
- ✓ Protection of external body accessories – push bars, tow bars, side steps.
- ✓ Protection of fiberglass rear doors on both vehicles and aircraft.
- ✓ Abrasion and corrosion protection of tool boxes.

FEATURES

- ✓ Instant cure results in increased productivity at the manufacturing stage.
- ✓ Very high impact resistance.
- ✓ Excellent abrasion and scratch resistance.
- ✓ Resistant to most standard chemicals, acids, oils, and bleaches.
- ✓ Will not crack or peel.
- ✓ Can incorporate slip resistant surface finishes.
- ✓ Remains flexible and impact absorbing under a wide range of climatic conditions from very cold to very hot.
- ✓ Can be built to any thickness in one application. Does NOT require multiple coats
- ✓ 100 % solids, VOC-free, contains zero solvents



PRODUCT INFORMATION

<u>Processing properties</u>	<u>Data</u>		
Mixing ratio of Comp. A to Comp. B	1:1 by volume		
Material consumption [kg/m ² /1mm]	Approx. 1 – 1.1		
Dry film thickness range [mm] For project specific DFT recommendations consult with manufacturer.	Steel Minimum: 1	Maximum: indefinite	
Recommended thickness [mm]	Minimum: 1mm on steel	Max: unlimited.	
Tack Free-Time at 20°C [sec.]	10 – 20		
Over coat window [h]	0 – 10 hours (without additional prep and priming)		
Temperature range for application (substrate) [°C]	-5 to +50		
Curing/loading after [h]	Handling: 0.25	Mechanical: 2	
Material Temperature (Preconditioning) [°C]	25 – 30		
Material Temperature (Spraying) [°C]	65 - 75		
Maximal relative air humidity for application [%]	98		
Pay attention to the dew point limit	Substrate 3C greater than Dew point		

Physical properties

Data

Chemical Base	-	100% Pure Polyurea Technology	
VOC-content	DIN EN ISO 11890-1 / ASTM D-1259	0%	
Solids content	DIN EN 827 / ASTM D-2697	100%	
Viscosity [mPa*s] @ 25°C	DIN EN ISO 2884-2 / ASTM D-4878	Comp. A: 600 – 800	
Density [g/cm ³] @ 20°C	DIN EN ISO 2811-1 / ASTM D-1217	Comp. A: 1,09 – 1,13	Comp. B: 600 – 1.350
Density [g/cm ³]	EN ISO 1183 / ASTM D-792	1,02 ± 0,02	Comp. B: 0,98 – 1,02
Tensile strength [MPa]	ISO 37-2005 / ASTM D-638	≥ 19	
Modul [MPa]	ISO 37-2005 / ASTM D-638	100% Elongation: ≥ 8	
Elongation at break [%]	ISO 37-2005 / ASTM D-638	250	
Hardness [Shore D]	ISO 868-2003 / ASTM D-2240	40 ± 5	
Rebound resilience [%]	ISO 4662 / ASTM	≥ 30	
Tear growth resistance[N/mm]	ISO 34-1 method A	≥ 14	
Volume abrasion [mm ³]	DIN ISO 4649	≤ 200	
Taber Abrasion [mg]	ASTM D-4060	< 6 (Wheel CS17 / 1.000g / 1000 Cycles) < 70 (Wheel H18 / 1.000g / 1000 Cycles)	
Pull off strength [N/mm ²]	DIN EN ISO 4624 / ASTM D-4541	Steel: ≥ 6	



PHYSICAL PROPERTIES	DATA	
Impact Resistance [J/mm]	DIN EN 10290-2004 Class: A	23° C: 10 -5° C: 8,0
Surface resistance [Ohm]	DIN IEC 60167	≥ 1,0*10 ¹¹
Volume resistance [Ohm]	DIN IEC 60093	≥ 1,0*10 ¹¹
Storage conditions [°C]	DIN EN 12701	10 – 30 (in closed original drums, stored at dry and well-ventilated place; beware of freezing)
Shelf life	-	Approximately 12 months unopened and stored correctly

DeltaShield HIP 500 is an aromatic based system and can display colour shift under UV light. This colour shift will not negatively affect the products physical performance.

APPLICATION NOTES

- **DeltaShield HIP 500** can only be applied using high pressure heated plural component spray equipment by trained and approved applicators.
- In ambient temperatures below 15C chemical drums should be pre-heated using band heaters to 30 – 40C.
- The B-side component should be thoroughly power stirred prior to the commencement of spraying and periodically during the spraying process to ensure there is no settling out of the B-side chemical components.
- The Pigment is always mixed into the B-side using a power stirrer.
- Both the A-side and B-side drums should be fitted with desiccant dryers.
- Compressed air supply should be supplied via an air dryer.
- Primary heaters should be set at between 65-75C. Adjustments can be made on-site based on environmental conditions, mixing module size and application circumstances.
- Hose heaters should be set at 70C. Adjustments can be made on-site based on environmental conditions, mixing module size and application circumstances.

SAFETY AND HANDLING

- All applicators of **DeltaShield HIP 500** should be trained and approved by the manufacturer.
- Spray applicators should wear appropriate PPE including approved breathing equipment, eye wear, Nylex or similar light weight spray suit and appropriate covered footwear.
- Avoid breathing in vapours during spraying or when handling chemicals.
- Avoid eye and skin contact.
- Store chemical drums in a cool dry environment. Avoid storing chemicals for long periods in direct sunlight.
- Do not store chemicals next to food stuffs.
- Ensure chemical drums are kept tightly sealed and avoid ingress of air and moisture.

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own investigations and testing, the suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. Due to the large number of variables that can affect the product and the application process that are out of the control of VIP-DELTA Coatings International LLC no warranty of any kind, express or implied is given. The liability of VIP-DELTA Coatings International LLC for any claims is limited to the purchase value of the material. **Version 190812**