DELTAShield HIP 500

TECHNICAL DATA SHEET

Two component spray applied high impact protective lining system

Description

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

HIP 500 displays excellent elongation properties and very high tensile strength giving it the ability to stretch and absorb shock waves whilst still resisting rupturing.

Features

- Instant cure results in increased productivity at the manufacturing stage.
- Very high impact resistance.
- Excellent abrasion and scratch resistance.
- Resistant to most standard chemical, acids, oils, and bleaches.
- Will not crack and pill.
- Can incorporate slip resistance 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 coat
- 100% solids, VOC-free, contains zero solvent

Typical uses

- External body protection of military vehicles.
- Internal body protection of military vehicles.
- Easy to clean, hardwearing, slip resistance 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.

DELTA COATINGS INTERNATIONAL

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Product information

Processing properties	Data		
Mixing ratio A : B (by volume)	1: 1		
Dry film thickness range [mm] (For project specific DFT recommendations consult with manufacturer)	Steel	Minimum: 1	Maximum: indefinite
	Concrete	Minimum: 2	Maximum: indefinite
Tack Free-Time at 20° C [sec.]	10 - 20		
Over coat cycle (without any pre-treatment) [h]	0 – 12		
Curing/loading after [h]	Walkable: 1	Mechanical: 2	Chemical: 12 - 24
Temperature range for application (ambient) [° C]	-10 - +50		
Temperature range for application (substrate) [° C]	-10 - +50		
Material Temperature (Preconditioning) [° C]	25 – 30		
Material Temperature (Spraying) [° C]	65 – 75		
Maximal relative air humidity for application [%]	98		
Dew point limit	Substrate should be 3° C > dew point		
Storage conditions (closed original drums, dry & covered place) [° C]	10 – 30		
Shelf life (unopened and stored correctly) [year]	1		

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Physical properties	Data	
VOC	ASTM D-1259	0%
Solids [%]	ASTM D-2697	100
Viscosity [mPa*s] @ 25° C	ASTM D-4878	Comp. A: 600 – 1000 Comp. B: 600 – 800
Density [g/cm³] @ 25° C	ASTM D-1217	Comp. A: 1.09 – 1.13 Comp. B: 1.01 – **1.05**
Tensile strength [N/mm²]	ASTM D-638-22	≥ 24 ± 2
Elongation at break [%]	ASTM D-638-22	≥ 450
Hardness [Shore D]	ASTM D-2240-15(2021)	50 ± 5
Tear strength[N/mm]	ASTM D624-00(2020)	85
Abrasion resistance [mg]	ASTM D-4060-19	< 5.5 (Wheel CS17 / 1000g / 1000 Cycles)
Pull off strength [N/mm²]	ASTM D-4541	Concrete: ≥ 1,5 Steel: ≥ 6
Water vapor transmission rate [g/m²/24hours]	ASTM E96-22	5 (at 23° C a. 50% relative humidity)

- DELTA recommends in all applications involving chemicals a pretest of the lining's suitability in the customer`s application is conducted. Consult with DELTA Technical Team
- DELTAShield HIP 500 is an aromatic based system & can display color shift under UV light. DELTA recommends the use of DELTAShield TC 100 aliphatic top coat for color stability
- All data depends on site conditions. Ambient temperatures, substrate temperatures and humidity will all influence stated data
- Film thickness and application techniques can also affect the stated data
- Cold temperatures will result in slower curing times and high temperatures will increase reactivity and reduce curing times relative to the stated data

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Application notes

- **HIP 500** should be applied in strict accordance with project specific application methodologies recommended by the manufacturer
- **HIP 500** can only be applied using high pressure heated plural component spray reactors, such as Graco EXP2/3, by professionally trained and approved applicators
- Substrate should be prepared prior to application of **HIP 500** according to manufacturer guidelines
- In ambient temperatures below 15° C chemical drums should be pre-heated using band heaters to 30 – 40° C
- 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 between 65 - 75° C. Adjustments can be made on-site based on environmental conditions, mixing module size and application circumstances
- Hose heaters should be set at 70° C. Adjustments can be made on-site based on environmental conditions, mixing module size and application circumstances

Safety & handling

- All applicators of **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 vapors 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

Technical services

- Detailed technical assistance and further information regarding this system and its relevant application specifications are available from DELTA Technical Services

Packaging

- **HIP 500** is supplied in 40 or 425 kg sets.
  - Component A : 20 or 225 kg
  - Component B : 20 or 200 kg

Version 30012025

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