

DELTA Shield

Hybrid 500



T E C H N I C A L D A T A S H E E T

Two component spray applied general purpose hybrid polyurea protective lining

Description

Hybrid 500 is a spray applied, instant curing flexible membrane formulated from hybrid polyurea technology, that can be built to any thickness in one application.

Hybrid 500 provides a flexible, seamless and hard substrate waterproofing and protection solution. Its instant spray and curing characteristics enable shorter application times compared to traditional glue or weld in place and torch on membranes. Waterproofing integrity around difficult shapes, MEP fittings and multiple substrate types is easily achieved.

Features

- Very high elongation and tensile
- Excellent cost to benefits ratio
- Extremely fast application time
- Tack free in seconds; walk on in minutes
- Rapid return to service
- Seamless Waterproofing and no joints
- Conforms exactly to substrate shapes
- Excellent adhesion to most substrates
- Coat multiple substrates in one go
- No protection boards for back filling
- 100% solids, VOC-free, Solvent free
- Good abrasion resistance
- Good impact resistance
- Excellent thermal stability

Typical uses

- Large scale Waterproofing for Commercial and Industrial facilities
- Waterproofing of high impact areas, plant rooms and trafficable roof decks
- Waterproofing for areas exposed to high wind abrasion
- Underlay waterproofing of water features, pools and ponds
- Under concrete screed Waterproofing of large-scale podium decks
- Bridge, street, and tunnel Waterproofing
- Anti-root sub terrain Waterproofing



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Product information

Processing properties	Data		
Mixing ratio A : B (by volume)	1: 1		
Dry film thickness range [mm] <small>(For project specific DFT recommendations consult with manufacturer)</small>	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: 800 – 1000
Density [g/cm³] @ 25° C	ASTM D-1217	Comp. A: 1.09 – 1.13 Comp. B: 1.02 – 1.05
Tensile strength [N/mm²]	ASTM D-412-16(2021)	≥ 17 ± 2
Elongation at break [%]	ASTM D-412-16(2021)	≥ 550
Hardness [Shore D]	ASTM D-2240-15(2021)	45 ± 5
Tear strength[N/mm]	ASTM D624-00(2020)	≥ 65 ± 5
Crack bridging ability [mm]	EN 1062-1(2004)	19.5 (no sign of crack or loss of adhesion)
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 [g/h.m²]	ASTM E96 / E96M – 16	0.209
Water permeability	DIN 1048-5 / BS EN 12390-8(2019)	Nil

- 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 Hybrid 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

- **Hybrid 500** should be applied in strict accordance with project specific application methodologies recommended by the manufacturer
- **Hybrid 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 **Hybrid 500**, according to manufacturers specifications
- 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 **Hybrid 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

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



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 DELTA Coatings International LLC no warranty of any kind, express or implied is given. The liability of DELTA Coatings International LLC for any claims is limited to the purchase value of the material.

Version 30012025