DELTAShield HP 400

TECHNICAL DATA SHEET

Two component, spray applied, high performance, pure polyurea, protective lining

Description

HP 400 is an instantly curing, spray applied, seamless, and flexible protective pure polyurea.

HP 400 sits at the top of DELTA`s high performance coatings range and is suitable for use in a wide range of demanding applications requiring abrasion, impact and chemical resistance.

HP 400 is an excellent primary and secondary containment membrane providing seamless, instant curing, flexible containment solutions that require a higher performance level than standard waterproofing membranes.

Features

- Can be applied under extreme climatic conditions. Hot or cold or humid
- Good abrasion, impact and chemical resistance for most applications
- Resistant to most standard chemicals, acids, oils, and bleaches
- High elongation at break
- Very good tensile strength
- Suitable for UV exposed applications
- No welded joints or glued seams
- Can be applied across multiple substrates in same application
- Maintains flexibility in the long term
- Rapid, fast curing application time
- Can spray to any thickness in one go
- 100 % solids, VOC-free, zero solvents

Typical uses

- Protection of concrete substrates in water and wastewater treatment plants
- Steel and concrete tank linings subject to corrosion, abrasion and chemical attack
- Waterproofing of areas subject to impact, abrasion, traffic loads, UV exposure
- Sacrificial wear plates and linings in the mining and transport industries
- Secondary containment linings
- Industrial flooring
- Protection of substrates against abrasion and impact

DELTA COATINGS INTERNATIONAL

DELTA COATINGS INTERNATIONAL LLC
P.O.Box 123395, Dubai Investment Park II
Dubai, UAE
Tel: +971 4 8856402 Fax: +971 4 8858869
www.deltacoatings.com

DELTAShield HP 400

TECHNICAL DATA SHEET

Two component, spray applied, high performance, pure polyurea, protective lining

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		

DELTA COATINGS INTERNATIONAL

DELTA COATINGS INTERNATIONAL LLC
P.O.Box 123395, Dubai Investment Park II
Dubai, UAE
Tel: +971 4 8856402 Fax: +971 4 8858869
www.deltacoatings.com

DELTAShield HP 400

TECHNICAL DATA SHEET

Two component, spray applied, high performance, pure polyurea, protective lining

Product information

Physical properties	Data	
Non-volatile content [%]	ASTM D-1259-06(2018)	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-412-16(2021)	≥ 24 ± 2
Elongation at break [%]	ASTM D-412-16(2021)	≥ 450
Hardness [Shore D]	ASTM D-2240-15(2021)	50 ± 5
Tear strength [N/mm]	ASTM D624-00(2020)	85
Crack bridging ability [mm]	EN 1062-7:2004	15 (no sign of cracks or loss of adhesion)
Abrasion resistance [mg]	ASTM D-4060-19	< 0.065 (Wheel CS17 / 1000g / 1000 Cycles)
Pull off strength [N/mm²]	ASTM D-4541	Concrete: ≥ 1,5 Steel: ≥ 6
Water penetration under pressure	DIN 1048-5	Nil
Weathering resistance	ASTM D-714-02(2017)	No cracking, chalking, flaking, wrinkling, blistering
Fire protection classification	ASTM E84–22	Class A

- 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 HP 400 is an aromatic based system and 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

DELTA COATINGS INTERNATIONAL

DELTA COATINGS INTERNATIONAL LLC
P.O.Box 123395, Dubai Investment Park II
Dubai, UAE
Tel: +971 4 8856402 Fax: +971 4 8858869
www.deltacoatings.com

DELTAShield HP 400

TECHNICAL DATA SHEET

Two component, spray applied, high performance, pure polyurea, protective lining

Application notes

- **HP 400** should be applied in strict accordance with project specific application methodologies recommended by the manufacturer
- **HP 400** 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 **HP 400**, 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 **HP 400** 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

- **HP 400** is supplied in 40 or 425 kg sets
  - Component A : 20 or 225 kg
  - Component B : 20 or 200 kg

Version 30012025

DELTA COATINGS INTERNATIONAL

DELTA COATINGS INTERNATIONAL LLC
P.O.Box 123395, Dubai Investment Park II
Dubai, UAE
Tel: +971 4 8856402 Fax: +971 4 8858869
www.deltacoatings.com