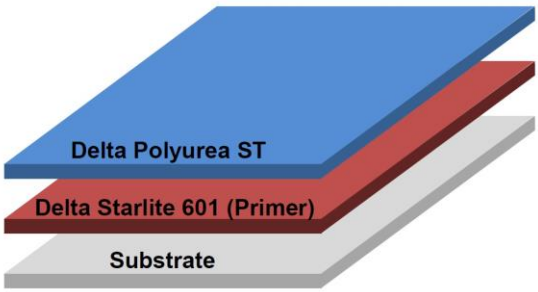
DELTA POLYUREA ST

Aromatic Polyurea Elastomer

DESCRIPTION

A two-component, 100% solids, multi-purpose pure Polyurea designed for general purpose. It has excellent performance in anti-corrosion and waterproofing applications on steel, concrete and other substrates.

SYSTEM DESIGN



BENEFITS

- ❖ 100% solids with zero VOC.
- ❖ Excellent elongation properties.
- ❖ Good chemical resistance.
- ❖ Seamless, resilient, flexible, will not crack.
- ❖ Impact, tear and abrasion resistant.
- ❖ Excellent corrosion protection.
- ❖ Low permeability.
- ❖ Fast reactivity and cure time with no catalysts.
- ❖ Applicable in temperatures from -30°C to 70°C.
- ❖ Almost immediate return-to-service time.
- ❖ Can incorporate anti-slip finish.
- ❖ **Suitable for use in contact with potable water**

SS 375: 2001

USES

- ❖ Areas where a tough, flexible, hardwearing, chemical resistant waterproofing membrane is required.
- ❖ Areas where a durable, high chemical resistant, corrosion protection coating is required.
- ❖ Typical applications include:
  - Marine environments
  - Food processing plants
  - Cold storage facilities
  - Landfill containment
  - Secondary containment
  - Water and wastewater treatment
  - Industrial and manufacturing facilities
  - Airports
  - Chemical plants
  - Livestock facilities
  - Warehouse floors
  - Power plants
  - Tank linings

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FINISH

Low sheen

COLOUR

Standard medium grey. Custom colours (blended to match any RAL number) are available upon request.

SURFACE PREPARATION

Substrates to be coated must be structurally sound, clean and free from any contamination.

Concrete – Surface preparation by captive shot blasting, scarifying or diamond disc grinding.

Steel – Surface preparation by wire brush, hydro or sand blasting to minimum SA 2.5 standard, or as per required.

APPLICATION

Applied utilising high pressure, heated plural component spray proportioning equipment that is capable of supplying correct pressure and heat for the appropriate hose length on a consistent basis. Applied in a cross directional method. Concrete substrates should be allowed to cure for a minimum of 30 days.

For concrete substrate:

- Primer coat of Delta Starlite 601 @ 0.11 lit/m².
- Spray on finishing coat of Delta Polyurea ST @ 1.5lit/m² (average 1.5mm thick).

TECHNICAL AND APPLICATION DATA

Solids by Volume	100%
Volatile Organic Compound	0g/l
Tensile Strength @ 25°C ASTM D-412	15 to 20N/mm²
Elongation @ 25°C ASTM D-412	375% to 425%
Hardness (Shore D) ASTM D-2240	40 to 50
Flexibility 3mm mandrel ASTM D-1737	Pass
Tear Strength Die C ASTM D-624	75 to 80kN/m
Fire Rating UBC	Class 2
Flash Point Pensky-Martin	>93°C
Service Temperature Range – Dry	-30°C – 120°C
Abrasion Resistance ASTM D-4060 Taber CS17 1000mg/1000rev	<15mg loss
Test for Use in Contact with Potable Water SS 375: 2001	Pass
Chemical Resistance	See list attached

Specific Gravity	A : 1.12, B : 1.04
Viscosity (cps) @ 25°C	A : 650 to 750 B : 650 to 750
Gel Time (Adjustable)	6 to 20secs
Tack Free Time (125µ)	30 to 45secs

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Post Cure Time	24 Hours
Volume Ratio (A : B)	1 to 1
Block Temperature	60°C to 70°C
Hose Temperature (A and B)	60°C to 70°C
Constant Pressure	136 Bar

Recommended dry film thickness	1.5mm
No. of coats	1
No. of components	2

Test Report using SS 375: 2001 Standard for Use in Contact with Potable Water:

Test / Materials	MDOD (mg/l)	Requirements of SS 375 : Part 1 : Specification (MDOD, mg/l)
Negative reference	0.21	0.0 ± 0.6
Positive reference	5.60	7.5 ± 2.5
Test product (Single sample)	0.88	< 1.69

Test	Sample	Requirements of SS 375 : Part 1 : Specification (Maximum admissible level)
Colour (Hazen units)	Less than 5	5
Turbidity (FNU)	0.1	0.5

Metal	Sample 1	Sample 2	Requirements of SS 375 : Part 1 : Specification (Maximum allowable concentration)
Aluminium, Al µg/l	< 20	< 20	200
Antimony, Sb µg/l	< 0.5	< 0.5	5
Arsenic As µg/l	< 1.0	< 1.0	10
Barium, Ba µg/l	< 100	< 100	700
Cadmium, Cd µg/l	< 0.5	< 0.5	3
Chromium, Cr µg/l	< 5.0	< 5.0	50
Iron, Fe µg/l	< 20	< 20	200
Lead, Pb µg/l	< 1.0	< 1.0	10
Manganese, Mn µg/l	< 5.0	< 5.0	50
Mercury, Hg µg/l	< 0.1	< 0.1	1
Nickel, Ni µg/l	< 2.0	< 2.0	20
Selenium, Se µg/l	< 1.0	< 1.0	10
Silver, Ag µg/l	< 1.0	< 1.0	10

MAINTENANCE

Remove chemical spillage immediately, regular washing or water jetting.

STORAGE CONDITIONS AND SHELF LIFE

All components of Delta Polyurea ST have a shelf life of 12 months in original unopened packing, stored in dry enclosed place without exposing to direct sunlight and at temperature between 15°C to 35°C, protected from frost.

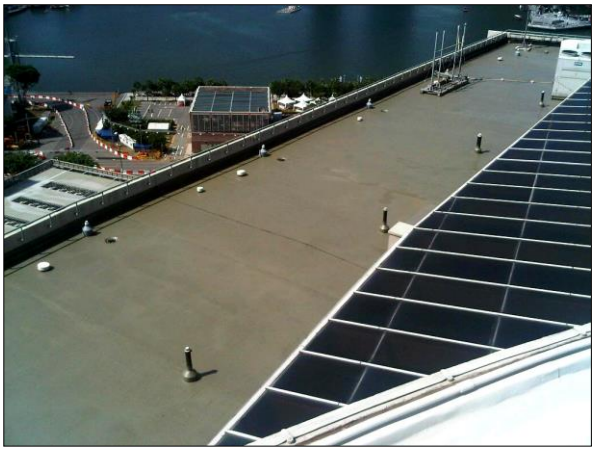
PACKAGING

380 litre set.

Comprises of: Part A – 190 litres
Part B – 190 litres

SAFETY

Product contains isocyanates and curatives. Do not take internally. May irritate eyes and skin. Ensure adequate ventilation and avoid inhaling vapours. Always use with suitable personal protective equipment.



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Chemical Resistance List

Test Method	ASTM-3908 Modified (100 Day Immersion)
Sample Description	500mm x 500 mm carbon steel plate- SA 2.5 surface profile
Test Description	Samples coated to 1000µ (1.0 mm) DFT cured for 24 hours at 24ºC

Results Key	0% - 2% Change	=	R	Recommended No Effect
	2% - 5% Change	=	C	Recommended Slight Effect
	6% - 15% Change	=	RC	Recommended Conditional
	16% + Change	=	F	Failure Not Recommended

S/No	Chemicals	Start Mass (grams)	End Mass (grams)	Percent of Change	Result	Comments
1	1,1,1-Trichlorethane	135	146.2	7.66%	RC	Swelling and blisters, visible damage
2	Acetic Acid	135	136	0.74%	R	No efftect
3	Acetone	135	141.9	4.86%	R	Some swelling, no visible damage
4	Ammonium Hydroxide (20%)	135	135.6	0.44%	R	No efftect
5	Antifreeze/Water (50:50)	135	141.1	4.32%	C	Some swelling, no visible damage
6	Benzene	135	146.3	7.72%	RC	Some swelling, no visible damage
7	Brake Fluid (Dot 3)	135	141.6	4.66%	C	Little swelling, no visible damage
8	Brine-Salt Water (180g/L) Seawater	135	135.9	0.66%	R	No efftect
9	Brine-Salt Water (310g/L) Sat. Sol	135	135.8	0.59%	R	No efftect
10	Citric Acid (50%)	135	135.2	0.88%	R	No efftect
11	Clorox (10% in water)	135	135.3	0.22%	R	Discoloration
12	Copper Chromate Arsenic (4%)	135	135.4	0.30%	R	No efftect
13	Diesel Fuel (Kerr-McGee)	135	138.2	2.32%	C	Discoloration
14	Hydraulic Fluid	135	135.2	0.15%	R	No efftect
15	Hydrocholoric Acid (10%)	135	134.1	-0.67%	R	No efftect
16	Hydrofluoric Acid (10%)	135	F	Failure	F	Cracking, Bubbles, Disintegration
17	Isopropyl Alcohol	135	136.6	1.17%	R	No efftect
18	Lactic Acid (50%)	135	135.3	0.22%	R	No efftect
19	Liquid Nitrogen Fertilizer (28-0-0)	135	135.6	0.44%	R	No efftect
20	Liquid Urea Fertilizer	135	137	1.46%	R	No efftect
21	Methanol	135	137	1.46%	R	No efftect
22	Methyl Ethyl Ketone (MEK)	135	144.2	6.38%	RC	Little swelling, no visible damage
23	Methyl Tertiary Butyl Ether (MTBE)	135	144.2	13.96%	RC	Some swelling, no visible damage
24	Methylene Chloride	135	F	Failure	F	Swelling and blisters, visible damage
25	Methyl-N-Amyl Ketone (M.A.K.)	135	142.5	5.26%	RC	Some swelling, no visible damage
26	Mineral Spirits	135	136.8	1.32%	R	No effect
27	Motor Oil (Pennzoil 10 w 30)	135	135.9	0.66%	R	Discoloration
28	Muriatic Acid (17.1%)	135	136.2	0.88%	R	No effect
29	Muriatic Acid (31.45%)	135	F	Failure	F	48 Hours Contact OK

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30	NaCl / Water (10%)	135	135.2	0.15%	R	No effect
31	Nitric Acid (20%)	135	F	Failure	F	Swelling and blisters, visible damage
32	Nitric Acid (50%)	135	F	Failure	F	Swelling and blisters, visible damage
33	Phosphoric Acid (10%)	135	135.8	0.59%	R	No effect
34	Phosphoric Acid (50%)	135	F	Failure	F	Swelling and blisters, visible damage
35	PM Acetate	135	136.2	0.88%	R	No effect
36	Potassium Hydroxide (10%)	135	135.7	0.52%	R	No effect
37	Potassium Hydroxide (20%)	135	136.9	1.39%	R	Discolouration
38	Propylene Carbonate (Jeffsol PC)	135	137.7	1.96%	R	No effect
39	Skydrol	135	144.5	6.57%	RC	Little swelling, no visible damage
40	Sodium Bicarbonate-Solid	135	135.1	0.07%	R	No effect
41	Sodium Hydroxide (25%)	135	135.4	0.30%	R	No effect
42	Sodium Hydroxide (50%)	135	135.5	0.37%	R	Discolouration
43	Sodium Hypochlorite (Sat. Solution)	135	136.9	1.39%	R	Discolouration
44	Sour Brine (120,000ppm H2S)	135	135.8	0.59%	R	No effect
45	Sour Condensate	135	F	Failure	F	Short term exposure acceptable
46	Sour Crude (120,000ppm H2S)	135	137.2	1.60%	R	No effect
47	Stearic Acid (50%)	135	138.5	2.53%	C	Some swelling, no visible damage
48	Sugar/Water (10%)	135	135.2	0.15%	R	No effect
49	Sulphuric Acid (22%)	135	133.7	-0.97%	R	No effect
50	Sulphuric Acid (50%)	135	F	Failure	F	Cracking, Blisters, Discolouration
51	Sulphuric Acid (98%)	135	F	Failure	F	Cracking, Blisters, Discolouration
52	Toluene	135	136	0.74%	R	Some swelling, no visible damage
53	Trisodium Phosphate (TSP)	135	136	0.74%	R	No effect
54	Unleaded Gasoline (5% Methanol)	135	135.9	0.66%	R	No effect
55	Unleaded Gasoline (5% MTBE)	135	137.7	1.96%	R	No effect
56	Unleaded Gasoline (Texaco)	135	136.1	0.81%	R	No effect
57	Vingear/Water (5:95)	135	135.9	0.66%	R	No effect
58	Wastewater - Storm. Water. Pond-SOC	135	135.3	0.22%	R	No effect
59	Wastewater - Anaerobic Digester - AC	135	136	0.74%	R	No effect
60	Wastewater - API Seperators MO	135	136.3	0.95%	C	Little swelling, no visible damage
61	Wastewater - Clarifier - FSO	135	135.1	0.07%	R	No effect
62	Wastewater - Clariflocculator FSO	135	135.1	0.07%	R	No effect
63	Wastewater - Equalization Basin - AC	135	135.1	0.07%	R	No effect
64	Wastewater - Rapid Charcoal Filters - FSO	135	135.2	0.15%	R	No effect
65	Water (Tap) (25ºC)	135	135.1	0.07%	R	No effect
66	Water (Tap) (82ºC)	135	135.3	0.22%	R	No effect
67	Xylene	135	148.3	8.97%	RC	Some swelling, no visible damage

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