

Hybron[®]- W90

A hybrid polyurea/polyurethane with very high hardness

PRODUCT DESCRIPTION

Hybron-W90 is a 100% solids solvent free polyurea hybrid spray elastomer with outstanding abrasion resistance. It is free of solvents or partially soluble diluents

INTENDED

USES

- Protecting steel assets in extreme environments
- Protecting steel pylons and casings in marine environments
- Low cost, high performance alternative to pure polyurea
- Suitable for protective coatings, tank lining, jointing, anti-abrasion, anti-corrosion and chemical resistance

FEATURES

- High hardness, yet retains permanent elasticity
- Will not crack, peel or flake
- Superior adhesion to steel
- Superior corrosion resistance
- High resistant to chemicals and solvents
- Application is not affected by temperature or moisture
- This product may be sprayed to thicknesses exceeding 1 mm per pass and cures to become rain insensitive within minutes of application
- High abrasion resistance

PRODUCT DATA

Volume Solids	100%
Theoretical Coverage	1.5 L / sqm @ 1500 microns (1.5 mm) DFT
Finish	Pigmented
Colour	Black
Gloss	Semi-Gloss
Mixing Ratio	1:1 by volume
Gel Time	8 Seconds
Typical Thickness	Up to 1500 microns for heavy-duty protection
Cleaner	Reactor Flush or Swell
Flash Point	>149°C
VOC	0 Grams/Litre
Specific Gravity	1.07

CURE&RECOAT

Substrate Temp	Tacked	Hard Dry	Full Cure	Walk on Time Note 1
25°C	60 Sec	48 Hrs	7 Days	24 Hrs

Note 1: Handle with care during this period. Remove masking or wire trim tape within minutes of gelling

Topcoating Hybron – W90 with itself:

Substrate Temperature	Maximum Recoat Time
5°C to 45°C	60 minutes

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ENGINEERING DATA

Property	Method	Results
Hardness	ASTM D 2249-91 Shore A	90
	ASTM D 2249-91 Shore D	50
Elongation at 24°C	ASTM D412-92	>400%
Water Absorption	AS 3558.1	<2%
Abrasion Resistance	ASTM C501-84, H18 wheel 1000 rev. with 1000g weight	170mg
	CS17 Wheel	10mg
Tensile Strength	ASTM D412-92	21 MPA
Tear Strength	ASTM D 624-86	79 N/mm
Water Vapour Transmission	E96-05(B)	5.9g / (24h.m ²)

LIMITATIONS

- Hybron – W90 will change colour over time, with lighter colours changing more than darker colours. This does not affect the long-term physical performance of the lining. If a colour change is not acceptable or for aesthetic reasons, a colour-fast topcoat should be applied. The use of Colourtuff - C85 aliphatic polyurea may also be considered
- Hybron – W90 will only achieve its full physical properties if applied by an experienced operator using properly functioning, plural-component, spray equipment
- Product requires up to 14 days to develop full physical properties and adhesion. Pull-off or other adhesion testing might not produce accurate results during this period

SURFACE PREP

Concrete

The concrete surface preparation must be conducted under the SSPC-SP13/NACE No. 6 surface preparation standard for concrete. This standard covers the preparation of concrete surfaces before the application of protective coating or lining systems

The concrete should be at least 28 days old. Ensure that the moisture content of the concrete is less than 7% before applying any coatings. A moisture test as outlined in ASTM D4263 can be used to confirm the moisture content

1. Remove all oil, grease and release agents in the concrete. Ensure that any laitance or other invisible contaminants have been removed. Be especially careful with concrete surfaces that have been in contact with form ply or moulds that may contain release agents. These release agents commonly contain heavy hydrocarbon waxes or silicones that can adversely affect the adhesion.
Contaminant may also be present below the surface as it may have penetrated the concrete. This can be the case in food processing facilities for example. Depending on the depth of the contaminant this may require solvent and /or hot water high pressure cleaning.
Prepare the concrete surface to a clean, dry finish through ensuring that the water and air used in the decontamination of the concrete is clean
2. Fill bug holes with PU sealant, Aralox FL150 mixed with Patchfill or other approved filler material
3. Restore exposed aggregate surfaces back to the original profile by rendering with a mixture of Aralox – FL150 and Renderfill (a proprietary blend of clean, dry sand)
4. Remove high spots and protrusions, radius sharp edges and corners. Cove internal 90 degree angles with 45 degree, 20mm flat chamfer
5. Prepare the concrete surface in accordance with SSPC-SP13/NACE 6. Smooth, shiny concrete must be roughened to a profile similar to 80 grit sandpaper or CSP 2 - 5 or as documented in the coating system specification. Surface preparation methods employed can be vapour abrasive blasting, dry abrasive blasting, hydro blasting, mechanical scabbling or diamond grinding. Acid etching is not an acceptable surface preparation method

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Steel

1. Remove all rust, mill scale, oil and any previously applied coatings back to bare clean steel using abrasive blast. Welds should have slag and spatter fully removed
2. Blast clean to SA 2.5 - AS 1627.9 and a blast profile of 50 to 100 microns

APPLICATION

Equipment

Proportioning pump:	Graco Reactor E10hp or E-XP2 or similar heated, high-pressure, plural component
Gun:	Graco Fusion-AP or similar, impingement mix, airless
Pressure of material at gun:	>2100 psi minimum while spraying
Temperature of material at gun:	65°C

Environment

Relative humidity:	The relative humidity must be less than 85%
Dew point:	The substrate temperature must be at least 3°C higher than the dew point temperature
Substrate Temperature:	The substrate temperature must be a minimum of 2°C
Application Temperature:	Minimum recommended material temperature is 0°C Maximum recommended substrate temperature is 50°C

Mixing

Stir Part B at medium speed, without entrapping air, using a Graco Twistork drum stirrer for about 10 minutes immediately prior to use, then reduce speed to slow during the spraying. For smaller containers use a mechanically powered, flat paddle stirrer

Thinning

Hybron – W90 should never be thinned. Viscosity is controlled using heat

Cleanup

Reactor Flush may be used for general clean-up of equipment and to flush the plural pumps and hoses. To remove cured polyurea and overspray from metal parts soak in SWELL. Use separate soak containers for part A and part B components. The use of plastic soak containers with removable baskets and clip-on lids makes the job easier. Replace the SWELL regularly as soon as it starts turning cloudy and dirty.

NOTE: NEVER USE SWELL TO CLEAN PAINTED SURFACES AS IT WILL STRIP THE PAINT. NEVER USE SWELL TO FLUSH PUMPS AND HOSES. DO NOT ALLOW SWELL TO COME INTO CONTACT WITH THE OUTSIDE PROTECTIVE POLYURETHANE COVER OF HOSES

COMPATIBILITY

Primers

Aralox - FL150
Civilox - LV110
Civilox - HB200

Topcoats

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Typical Systems

Substrate	Environment	Substrate Prep	Coat	System	DFT
Concrete	Rooftop	Vapour Abrasive Blast	1 st Coat 2 nd Coat	Aralox – FL150 Hybron – W90	(200μ) 3000μ
Concrete	Flooring (High abrasion resistance)	Vapour Abrasive Blast	1 st Coat 2 nd Coat	Aralox – FL150 Hybron – W90	(200μ) 5000μ
Steel	General protection	Blast SA 2.5	1 st Coat 2 nd Coat	Civilox HB200 Hybron – W90	125μ 1500μ

STORAGE & HANDLING

Store in dry, shaded conditions away from sources of heat and in the original properly sealed containers. Protect from heat and frost. Protect contents from moisture. Do not allow water to pond on top of drums.

A shelf life of 12 months minimum is typical with unopened containers if stored at ambient conditions at 25°C. If either component is opened and partially used, it should be purged with nitrogen or desiccated air and resealed.

If crystallisation occurs, heat the material to 70°C whilst agitating to melt it. On no account should the materials be heated above 70°C. Storage temperatures above 40°C are not recommended since they can accelerate the formation of insoluble solids and increase the viscosity

PACK SIZE

425Kg (400L) Kits

225Kg of Hybron – W90 Part A in a 200L Container

200Kg of Hybron – W90 Part B in a 200L Container

HEALTH & SAFETY

Hybron – W90 is for professional use only.

This product contains isocyanates and may require the use of air feed hoods.

This product should not be used without consulting the Safety Datasheet (SDS) as published on the Liquimix website.

Observe all health and safety as well as environmental legislation

DISCLAIMER

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