

POWERCRETE[®] POWERSHIELD XT

Product Information

Product description: Powercrete[®] Powershield XT is a bi-axial woven glass-fiber outer wrap which is pre-impregnated with a solvent free moisture cure polyurethane resin. Powershield XT is used as a rigid mechanical abrasion and impact resistant layer over pipeline steel surfaces protected by a primary layer of corrosion prevention coatings. The material can be applied in various thicknesses depending on the mechanical resistance required according to the client specification. Powershield XT is supplied in rolls and is packed in vacuum sealed pouches to prevent premature curing of the resin. Powershield XT will cure by reaction with water or moisture to form a hard shell with a smooth surface which is resistant to mechanical damage, chemicals and weather influences. If exposed in above ground applications, it is recommended to apply an UV reflective top coating to prevent discoloration.

Features:

- Excellent abrasion, impact and indentation resistance
- Wide temperature range during application and while in service
- High performance in cold, hot, wet and chemically aggressive environments
- Fast and complete cure
- Pre-impregnated, no field mixing required

Benefits:

- Fast and easy to apply
- Wide temperature range during application and while in service
- High performance in cold, hot, wet and chemically aggressive environments
- Fast and complete cure
- Pre-impregnated, no field mixing required

Application examples

Soil-to-air transitions of pipelines: Rigid mechanical protection of corrosion preventing coating systems on risers against soil shear, mechanical impacts and indentations.

Field applied coatings: Rigid mechanical protection of corrosion preventing coating systems on pipeline girth welds against soil shear, abrasion, mechanical impact and indentations such as in aggressive backfill and directional drilling operations.

Pipe saddles: Rigid mechanical protection of corrosion preventing coating systems on pipe saddles against indentations and abrasion by movements of the pipeline.

Pipelines and fittings: Rigid mechanical protection of corrosion preventing coating systems on pipeline sections, bends, tees, valves and flanges against soil shear, abrasion, mechanical impact and indentations.

General Product Information

Colour	Grey
Dry Film Thickness	12 mils (0.30mm.) per layer
Working Time	20-30 minutes after opening of pouch
Curing Time	Dry to Touch: 1-4 hours (depending on temp.) Final Cure: 24 hours at 25°C (75°F).
Temperature Ranges	Application: >5°C (>41°F). Service: Up to 120°C (248°F).
Heat Distortion Temperature	204°C (400°F) ASTM D648
Tensile Strength	241 MPa (35000psi)
Tensile Modulus	17 GPa (2.5 x 10 ⁶ psi)
Chemical Resistance	Acetone, MEK, Toluene, Gasoline, Ethyl Alcohol and many others. Contact us for exposure to other chemicals.

Application Instruction: Job Preparation

Tools and Equipment	Scissors, safety knife, measuring tape, spray bottle filled with water (when not applied immersed), compression foil and puncture roller.
Ambient Conditions	Ambient temperature should be >5°C (>41°F).
Substrate	The substrate should be cleaned from foreign matter. A wet substrate is allowed.
Product Temperature	Temperature of Powershield XT should be above 5°C (41°F). With high temperatures, the rolls of Powershield XT may be cooled down to prolong working time. Put the unopened material pouches in iced water for 15 minutes to reduce product temperature.
Opening Pouches	The pouches of Powershield XT rolls should be opened one at a time just prior to application. Once a pouch is opened, the curing reaction with moisture present in air or water will start immediately. A roll of Powershield XT should be applied within its working time, including wrapping of the compression film and film perforation.
Calculation of Material Consumption	It is recommended to apply a minimum of 2 layers of Powershield XT onto the object by spiral wrapping with an overlap of 50%. Furthermore it is recommended to start and end wrapping with two full circumferential wraps perpendicular to the tubular shaped object. Also, when wrapping direction along the object is reversed in application of multiple plies of material, two full circumferential wraps must be applied at the point of reverse.

Application Safety

General	Read the Product Data Sheet and follow the precaution statements on the Safety Data Sheet. Personnel who will come into contact with the product must be using appropriate personal protective equipment. Follow national safety guidelines.
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Application Instruction: Application

General	Open the pouches just prior to application as moisture from air or water will initiate the resin curing. Do not cover large surfaces at once, since Powershield XT needs to be compressed immediately after application with compression film within its working time. Powershield XT should be applied to the substrate with some tension by pulling the roll of material.
Wetting of Substrate	Prior to application of Powershield XT the substrate should be wetted by water spraying.
Start of Wrapping	Start wrapping of Powershield XT with two circumferential wraps perpendicular to the object and at least 100mm. (4") next to the boundary of the corrosion preventing coating.
Water Spraying	After application of each ply of Powershield XT, water should be sprayed all over the just applied layer.
Spiral Wrapping	Continue with spiral application of Powershield XT to create 50% overlap on the underlying layer of Powershield XT. Continue wrapping until at least 100mm. (4") of Powershield XT has been applied next to the corrosion prevention coating.

Application of Consecutive Rolls	When more than one roll of Powershield XT is needed to cover the substrate area, first determine whether the whole application can be completed within the working time of the first roll applied. If not, application of the previous roll should be finished first by covering it with compression film and puncturing it. Leave sufficient width of Powershield XT uncovered and start application of the next roll here with an overlap of at least 100mm. (4").
End of Wrapping	Finish wrapping of Powershield XT with two circumferential wraps perpendicular to the object and at least 100mm. (4") next to the boundary of corrosion preventing coating.
Compression	Apply compression foil by wrapping it spirally over the Powershield XT (same wrapping direction) and also next to the area covered. Use sufficient tension while applying it in order to shrink it to the surface. The boundaries of applied Powershield XT should be tapered towards the object by appropriate wrapping of compression foil in this area.
Perforating	The compression foil should be perforated immediately after application with the puncture roller. Use only slight pressure while perforating and avoid perforating of the Powershield XT. The soft resin may then partially pour out of the perforation.

Shelflife	1 year when stored according to indicated conditions. Do not use product if product is hardened.
Topcoating	Recommended in case of exposure to direct sunlight. Contact us for appropriate type of coating.

Additional Information	
Documentation	Application instructions and other documentation can be obtained by contacting our head office, from our local distributor or by sending email to info@sealforlife.com
Certified staff	Application of the described coating system should be carried out and inspected by certified personnel.

Post Application Instruction	
Visual Inspection	Powershield XT should look smooth, should be tightly jointed to the substrate and should not show voids or gaps.
Underground Installation	Installation in a ditch and burying is possible after completion of curing. The areas coated with Powershield XT should be handled with care and should not be exposed to excessive impacts and heavy loads, e.g. from supports. Lifting equipment etc.
Back Filling	Backfill and compact with clean sand and fill material without sharp stones or hard lumps of soil.
Application of Topcoating	Application of Topcoating is possible after completion of curing. The surface of Powershield XT should be sanded prior to application

General Order Information	
Product	Powercrete[®] Powershield XT <u>Product dimensions and contents:</u> 4" x 30ft. 6" x 60ft. 8" x 60ft.
Packaging	Individually packed in hermetically sealed vacuum foil pouch.
Handling	Handle with care. Keep away from moisture. Open pouches only prior to application. See Safety Data Sheets for precautionary safety and health measures.
Storage	Keep in cool, dry, ventilated place and in sealed non-punctured pouches. Store boxes upright. Storage temperature 15 up to max. 32°C (59 up to 90°F)