

EC Duro-Bond PVC Sheet Lining

Description

Duro-Bond PVC Lining is a flexible lining material of extruded plasticized polyvinyl chloride (PVC) specifically developed for corrosion resistance and adhesive bonding to metals, concrete, and FRP. PVC is a thermoplastic resin that is melt flow processible. Duro-Bond PVC sheet lining is available in thicknesses 90 mils (2.3 mm) and 180 mils (4.6 mm).

Uses

Duro-Bond PVC Lining offers resistance to a variety of chemicals including oxidizing acids such as chromic and nitric, and provides excellent abrasion resistance.

Advantages

The elasticity of **Duro-Bond PVC Lining** allows thermal contraction and expansion without cracking and also minimizes the possible damaging effects of mechanical abuse. Because of its flexibility, bonding is obtained without difficulty, even on intricate contours.

Duro-Bond PVC Lining is applied in sheet form with a smooth, polished surface finish, which makes the lining easy to clean and offers good solution flow. In addition, the electrical insulating properties of **Duro-Bond PVC Lining** are of value in many applications involving electrolytic reactions.

Since heating or curing is not required, **Duro-Bond PVC Lining** can be shop or field installed.

Service Temperature

The maximum continuous service temperature for which Duro-Bond PVC Lining is recommended is 160°F (70°C). Corrosion resistant brick sheathing joined with one of the Electro Chemical corrosion resistant cements is used in conjunction with **Duro-Bond PVC Lining** when excessive temperatures are present. A 4" brick sheathing will provide a temperature drop of approximately 50°F, and an 8" brick lining will provide a drop of about 100°F. When carbon brick are used the temperature drop will be somewhat less.

Chemical Resistance

The information listed may be considered as a basis for recommendation, but not as a guarantee, unless sold and installed by Electro Chemical Engineering & Manufacturing Co. For resistance of **Duro-Bond PVC** to chemicals not listed, contact our Engineering Department at:

inquiry@electrochemical.net or 1-800-235-1885.

R = Imited Recommendation NR = Not Recommended	Key to Rating			Coconut Oil	Any	90
Chemical Conc. (%) Temp(°F) Corn Syrup Any 120		mendation		Copper Salts	Any	160
Chemical Conc. (%) Temp(°F) Com Syrup Conc. (%) Temp(°F) Acetic Acid 10 70 Cresylic Acid 50 120 Acetone Any NR Discodium Phosphate Any 150 Allyal Alcohol Any 90 Ether Any 150 Aluminum Hydroxide Any 160 Ethyl Acetate Any NR Aluminum Salts Any 130 Ethyl Acetate Any NR Aluminum Hydroxide Any 130 Ethyl Alcohol Any 100 Armonoia (Liq-Anhydrous) Any 160 Ethylene Glycol Any 100 Ammonium Hydroxide 10 160 Fatty Acids Any 120 Ammonium Hydroxide 28 100 Ferric Salts Any 160 Amyl Alcohol Any 90 Ferricus Salts Any 160 Anilline Hydrochloride Any NR Fluorosilisic Acid Any 160 Ansil	NR = Not Recommend	led			-	Max.
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Carbon Tetrachloride Any NR Mineral Oils Any 120 Castor Oil Any 90 Molasses Any 160 Chlorine Dioxide 15 90 Nickel Salts Any 160 Chlorine Gas (Dry) Any 120 Nitric Acid 10 160 Chlorine Gas (Wet) Any 70-LR Nitric Acid 30 130 Chlorine Water Any 90 Nitric Acid 68 NR Chloracetic Acid Any NR Nitric, HF Acid Mix 15-4 160 Chlorobenzene Any NR Nitric, HF Acid Mix 50-10 70 Chromic Acid 10 160 Nitro Benzene Any NR Chromic Acid 30 130 Nitrous Oxide Any NR Chromic Acid 40 90 Oleic Acid Any 160	Calcium Sulfate	Any	160			
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Chlorine Gas (Wet) Chlorine Water Chloracetic Acid Chlorobenzene Chromic Acid Chromic Acid Any NR Chromic Acid Nitric Acid Nit	Chlorine Dioxide	15	90		-	
Chlorine Water Any 90 Nitric Acid 68 NR Chloracetic Acid Any NR Chlorobenzene Any NR Chromic Acid 10 160 Nitro Benzene Any NR Chromic Acid 30 130 Nitrous Oxide Any NR Chromic Acid 40 90 Oleic Acid Any 160	Chlorine Gas (Dry)	Any	120			
Chloracetic Acid Any NR Nitric, HF Acid Mix 15-4 160 Chlorobenzene Any NR Nitric, HF Acid Mix 50-10 70 Chromic Acid 10 160 Nitro Benzene Any NR Chromic Acid 30 130 Nitrous Oxide Any NR Chromic Acid 40 90 Oleic Acid Any 160	Chlorine Gas (Wet)	Any	70-LR			
ChlorobenzeneAnyNRNitric, HF Acid Mix50-1070Chromic Acid10160Nitro BenzeneAnyNRChromic Acid30130Nitrous OxideAnyNRChromic Acid4090Oleic AcidAny160	Chlorine Water	Any	90			
Chromic Acid 10 160 Nitro Benzene Any NR Chromic Acid 30 130 Nitrous Oxide Any NR Chromic Acid 40 90 Oleic Acid Any 160	Chloracetic Acid	Any	NR	· · · · · · · · · · · · · · · · · · ·		
Chromic Acid 30 130 Nitrous Oxide Any NR Chromic Acid 40 90 Oleic Acid Any 160	Chlorobenzene	Any				
Chromic Acid 40 90 Oleic Acid Any 160	Chromic Acid				-	
	Chromic Acid	30				
Citric Acid 25 120 Oleum Any NR					-	
	Citric Acid	25	120	Oleum	Any	NR

Oxalic Acid	Any	160	1	Sodium Hydroxide	25	130
Ozone	Any	120-LR		Sodium Hydroxide	50	NR
Phosphorous (Yellow)	Any	NR		Socialii Hydroxide	30	Max.
Phosphorous Pentoxide	Any	NR		Chemical	Conc. (%)	Temp(°F)
1 1103p11010u3 1 c11t0xluc	Ally	Max.		Sodium Hypochlorite	16 Cl ₂	70
Chemical Co	nc. (%)			Sodium Nitrate	Any	160
Phosphorous Trichloride	Any	NR		Sodium Sulfide	Any	120
Perchloric Acid	10	120		Sodium Sulfite	Any	160
Perchloric Acid	70	NR		Sodium Thiosulfate	Any	160
Phenol	Any	NR		Stannic Chloride	Any	160
Phosphoric Acid	85	160		Stannous Chloride	25	100
Picric Acid	Any	NR		Stearic Acid	Any	70
Potassium Acid Sulfate	Any	160		Sulfur Dioxide Gas	Any	120
Potassium Bromate	Any	160		Sulfuric Acid	10	160
Potassium Bromide	Any	160		Sulfuric Acid	35	130
Potassium Chlorate	Any	160		Sulfuric Acid	50	100
Potassium Dichromate	50	NR		Sulfuric Acid	80	NR
Potassium Ferricyanide	Any	160		Sulfuric Acid	99	NR
Potassium Fluoride	Any	160		Tannic Acid	Any	120
Potassium Hydroxide	1Ó	160		Tartaric Acid	Any	120
Potassium Hydroxide	50	120		Tetraethyl Lead	Any	NR
Potassium Nitrate	Any	160		Turpentine	Any	70-LR
Potassium Permanganate	1Ó	120		Toluene	Any	NR
Potassium Permanganate	25	NR		Trichloroethylene	Any	NR
Potassium Sulfate	Any	160		Trisodium Phosphate	Any	160
Potassium Sulfide	Any	160		Urea	Any	160
Potassium Thiosulfate	Any	160		Water	Any	160
Propyl Alcohol	Any	120		White Liquor	Any	90
Selenic Acid	Any	70		Zinc Salts	Any	160
Silver Nitrate	Any	160				
Soaps	Any	160		Plating Solutions for:		
Sodium Acid Sulfate	Any	160		Cadmium, Copper, Go		
Sodium Bisulfite	Any	160		Lead, Nickel, Rhodium	•	
Sodium Chlorate	Any	160		Tin and Zinc	Any	160
Sodium Fluoride	Any	160		Chromium	Any	140
Sodium Hydroxide	10	160	1			

Physical Properties

The normal physical properties of the E-CTFE sheeting are shown in the following table:

Chemical characterization	Thermoplastic polymer
Color	Black
Odor	None
Melting point	160°C
Upper Service Temperature	70°C
Density (23°C)	1.42 g/cm3
Tensile Strength (N/mm²)	45 -55
Elongation at Break	20 0%
Solubility in water	Insoluble
Explosion limits	None
Hardness Durometer	D 95
Water absorption	< 0.01
Flammability	V-0
Thermal Expansion Coefficient	7 - 8 x 10 ⁻⁵

23 -150°C (mm/mm/°C)

Application

The installation of a completely homogeneous lining with **Duro-Bond PVC Lining** is carried out in two steps:

- After proper cleaning and priming of the surface to be lined, **Duro-Bond PVC Lining** is cemented onto the surface, using a three part adhesive system, consisting of primers for the substrate and vinyl surfaces and a bonding cement. Tensile strength bonds between the lining and the lined surface in the range of 200 psi and peel values up to 50 lbs. per lineal inch are obtained.
- The butt and corner joints formed between the individual **Duro-Bond PVC Lining** sheets are then sealed by using **Duro-Bond PVC Lining** sealing strips. These sealing strips are heat welded to the seams with a special hot air welding gun, resulting in a homogeneous lining which does not require any vulcanization or other curing.

Method of Testing

All lined surfaces are visually inspected for surface defects. Any special dimensional tolerances required after lining are also checked. All lined areas are then spark tested for pinhole leaks using a dielectric spark tester adjusted to 10,000 volts. The tester is moved constantly and quickly over the lining surface to prevent a burn through.

Repair Procedures

Duro-Bond PVC sheet lining can be shop or field repaired. The repairs to defective or damaged areas in the sheet lining are accomplished by cutting out the faulty area, grinding or grit blasting the substrate surface, preparing a piece of sheet of the same dimension, cementing it into position and subsequently welding the joints as described under Application. The repaired area is then inspected and spark tested to insure lining integrity.

Additional Information

For additional technical or safety information, contact us at 1-800-235-1885, www.electrochemical.net, or inquiry@electrochemical.net.

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The data provided herein falls within the normal range of product properties, but they should not be used to establish specification limits nor used alone as the basis of design. Electro Chemical Engineering & Manufacturing Co. assumes no obligation or liability for any advice furnished by it or for results obtained with respect to these

Electro Chemical Duro-Bond PVC Lining

products. All such data and advice is provided gratis and Buyer assumes sole responsibility for results obtained in reliance thereon.