

**STRONGWELL®**

# **CORROSION RESISTANCE GUIDE**

## **INDUSTRIAL PRODUCTS**



Strongwell Partner in Norway



The cover photo shows severe, short-term corrosive effects of 37% sulfuric acid on various materials. All bar samples originally measured 6" long x 1/4" thick x 1/2" wide. Products depicted from left to right are carbon steel, EXTREN® Series 625, aluminum and EXTREN® Series 525. The steel base has deteriorated significantly below the solution line and incurred atmospheric corrosion. The aluminum also deteriorated and developed corrosive aluminum sulfite deposits. Both EXTREN® samples were not affected by the sulfuric acid solution.

# Strongwell *Corrosion Resistance Guide*

The Resin Selection Guide for Strongwell Industrial Product Lines:

**EXTREN** ®  
FIBERGLASS STRUCTURAL SHAPES

**DURA DEK**®  
HIGH STRENGTH GRATING

**DURA GRATE**®  
MOLDED FIBERGLASS GRATING

**DURA GRID**®  
CUSTOM FIBERGLASS GRIDS AND GRATING

**FIBRE BOLT**®  
FIBERGLASS STUD AND NUT SYSTEM

**DURA SHIELD**®  
FIBERGLASS FOAM CORE BUILDING PANELS

**FIBERGLASS STRUCTURES**  
CUSTOM ENGINEERING AND FABRICATION

**SAF RAIL**™  
FIBERGLASS HANDRAIL SYSTEM

**SAF PLATE**®  
FIBERGLASS GRITTED PLATE

**SAF PLANK**®  
FIBERGLASS PLANK SYSTEM

**COMPOSOLITE**®  
FIBERGLASS BUILDING PANEL SYSTEM

*NOTE: Information in this Corrosion Guide is specifically intended for the products manufactured by Strongwell and may have little correspondence to other pultruded or molded products.*

*\*COMPOSOLITE® is a registered trademark of Maunsell Structural Plastics, Ltd. and used by Strongwell Corporation pursuant to license.*



# How To Use This Guide

Strongwell believes the information and recommendations herein to be accurate and reliable. Any questionable application should be preceded by a small sample or prototype evaluation in the actual chemical environment. Corrosive conditions not specifically discussed in this guide (including lower concentrations than those tested) should be referenced to Strongwell's Customer Service Department for an evaluation of the individual situation.

The specific recommendations in this Corrosion Guide are for immersion applications where good fabrication procedures have been followed. The pH of the solution can be used as an approximate indication of corrosion performance. A pH > 7.0 is caustic and will typically require a vinyl ester composite for immersion applications.

## Special Considerations:

- DURAGRATE® - Corrosion resistance data for polyester resins is applicable only to the PP, premium (isophthalic) polyester resin system. The general purpose orthothalic

polyester resin system (GP) is only recommended for corrosion situations such as salt water or mild wastewater and is not listed in this guide. Other corrosion chemicals will be reviewed individually for GP resin.

- DURASHIELD® - The cut ends must be sealed with an epoxy system for polyester and a vinyl ester system for the vinyl ester DURASHIELD® such that there is no possibility of chemical intrusion.
- Fiberglass Structures - The standard components of Strongwell FIBERGLASS STRUCTURES are shown in this *Corrosion Resistance Guide*. Fabrication procedures similar to those in Strongwell's *EXTREN® Fabrication and Repair Manual* should be followed to obtain the corrosion resistance stated in this guide.
- Concrete - Polyester resin is acceptable when pultruded FRP shapes are used as a stay in place (SIP) form. For concrete installations where long-term structural integrity is required, vinyl ester resin should be used.
- A spill/splash application can be considered separately if the spill/splash can be neutralized within one (1) hour.

The following definitions will aid readers using this Guide:

R.T.	Room Temperature ( $\leq 100^{\circ}\text{F}$ )
TP	Thermoplastic
R	Resistant
NR	Not Resistant
C	Concern (Indicates data is inconclusive. Customer is advised to confirm the corrosion resistance in their applications with pre-shipment sample.)
EXTREN® 500/525	Isophthalic Polyester
EXTREN® 625	Vinyl Ester
DURAGRATE®	
VE	Vinyl Ester
PP	Isophthalic Polyester (Premium Polyester)
GP	Orthothalic Polyester (General Purpose)*
	*Not referred to in this Corrosion Resistance Guide

Note: Temperature data is not necessarily the maximum service temperature; it is the upper temperature at which a resin has been tested, used or evaluated. Other temperatures can be reviewed separately.

CHEMICAL ENVIRONMENT	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ 150°F
	<b>A</b>			
Acetic Acid 0-25%	R	R	R	R
Acetic Acid 25-50%	R	R	R	NR
Acetic Anhydride	NR	NR	NR	NR
Acetone	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR
Alcohol, Butyl	R	NR	NR	NR
Alcohol, Ethyl 10%	R	120	NR	NR
Alcohol, Ethyl 100%	NR	NR	NR	NR
Alcohol, Isopropyl 10%	R	150	NR	NR
Alcohol, Isopropyl 100%	R	NR	NR	NR
Alcohol, Methyl 10%	R	NR	NR	NR
Alcohol, Methyl 100%	NR	NR	NR	NR
Alcohol, Methyl Isobutyl	R	120	NR	NR
Alcohol, Secondary Butyl	R	150	NR	NR
Alum	R	120	R	R
Aluminum Chloride	R	120	R	NR
Aluminum Hydroxide 5%	R	120	NR	NR
Aluminum Nitrate	R	120	R	NR
Aluminum Potassium Sulfate	R	120	R	NR
Ammonia, Aqueous 0-10%	R	NR	NR	NR
Ammonia, Gas	R	NR	NR	NR
Ammonium Bicarbonate	R	120	R	NR
Ammonium Bisulfite	R	120	R	NR
Ammonium Carbonate 10%	R	120	NR	NR
Ammonium Citrate	R	120	R	NR
Ammonium Hydroxide 5%	R	120	NR	NR
Ammonium Hydroxide 10%	R	120	NR	NR
Ammonium Hydroxide 20%	R	NR	NR	NR
Ammonium Nitrate	R	R	R	R
Ammonium Persulfate	R	120	NR	NR
Ammonium Phosphate	R	120	NR	NR
Ammonium Sulfate	R	R	R	R
Arsenious Acid	R	R	R	NR
<b>B</b>				
Barium Acetate	R	R	NR	NR
Barium Carbonate	R	R	R	NR
Barium Chloride	R	R	R	120
Barium Hydroxide	R	120	NR	NR
Barium Sulfate	R	R	R	R
Barium Sulfide	R	R	NR	NR
Beer	R	120	R	NR
Benzene	NR	NR	NR	NR
5% Benzene in Kerosene	R	NR	NR	NR
Benzene Sulfonic Acid 30%	R	R	NR	NR

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM	FIBREBOLT® SYSTEM	VINYL ESTER	VINYL ESTER	PREMIUM ISOPHTHALIC POLYESTER	PREMIUM ISOPHTHALIC POLYESTER
	R.T. (≤ 100°F)	150°F	R.T. (≤ 100°F)	160°F	R.T. (≤100°F)	150°F
<b>A</b> Acetic Acid 0-25%	R	R	R	R	R	125
Acetic Acid 25-50%	R	R	R	R	R	NR
Acetic Anhydride	NR	NR	NR	NR	NR	NR
Acetone	NR	NR	NR	NR	NR	NR
Acrylonitrile	NR	NR	NR	NR	NR	NR
Alcohol, Butyl	R	NR	R	NR	NR	NR
Alcohol, Ethyl 10%	R	150	R	120	NR	NR
Alcohol, Ethyl 100%	NR	NR	NR	NR	NR	NR
Alcohol, Isopropyl 10%	R	150	R	150	NR	NR
Alcohol, Isopropyl 100%	R	NR	R	NR	NR	NR
Alcohol, Methyl 10%	R	NR	R	NR	NR	NR
Alcohol, Methyl 100%	NR	NR	NR	NR	NR	NR
Alcohol, Methyl Isobutyl	R	120	R	120	NR	NR
Alcohol, Secondary Butyl	R	150	R	150	NR	NR
Alum	R	120	R	120	NR	NR
Aluminum Chloride	R	120	R	120	R	NR
Aluminum Hydroxide 5%	R	120	R	120	NR	NR
Aluminum Nitrate	R	120	R	120	NR	NR
Aluminum Potassium Sulfate	R	120	R	120	NR	NR
Ammonia, Aqueous 0-10%	R	NR	R	NR	NR	NR
Ammonia, Gas	R	NR	R	NR	NR	NR
Ammonium Bicarbonate	R	120	R	120	R	NR
Ammonium Bisulfite	R	NR	R	120	R	NR
Ammonium Carbonate 10%	R	NR	R	120	NR	NR
Ammonium Citrate	R	120	R	120	R	NR
Ammonium Hydroxide 5%	R	NR	R	120	NR	NR
Ammonium Hydroxide 10%	R	NR	R	120	NR	NR
Ammonium Hydroxide 20%	R	NR	R	NR	NR	NR
Ammonium Nitrate	R	R	R	R	R	R
Ammonium Persulfate	R	NR	R	120	NR	NR
Ammonium Phosphate	R	120	R	120	NR	NR
Ammonium Sulfate	R	R	R	R	R	R
Arsenious Acid	R	R	R	R	R	NR
<b>B</b> Barium Acetate	R	120	R	R	NR	NR
Barium Carbonate	R	R	R	R	R	NR
Barium Chloride	R	R	R	R	R	120
Barium Hydroxide	R	NR	R	120	NR	NR
Barium Sulfate	R	R	R	R	R	R
Barium Sulfide	R	120	R	R	NR	NR
Beer	R	120	R	120	R	NR
Benzene	NR	NR	NR	NR	NR	NR
5% Benzene in Kerosene	R	NR	R	NR	NR	NR
Benzene Sulfonic Acid 30%	R	R	R	R	NR	NR

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
160°F

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
150°F

**CHEMICAL  
ENVIRONMENT**

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F
<b>B</b> Benzoic Acid	R	R	R	NR
O-Benzoyl Benzoic Acid	R	R	NR	NR
Benzyl Alcohol	R	NR	NR	NR
Benzyl Chloride	NR	NR	NR	NR
Brass Plating Solution: 3% Copper Cyanide 6% Sodium Cyanide 1% Zinc Cyanide 3% Sodium Carbonate	R	120	NR	NR
Butyl Acetate	NR	NR	NR	NR
Butylene Glycol	R	R	R	R
Butyric Acid 0-50%	R	R	R	NR
<b>C</b> Cadmium Chloride	R	R	R	NR
Cadmium Cyanide Plating Solution: 3% Cadmium Oxide, 6% Sodium Cyanide 1% Caustic Soda	R	120	NR	NR
Calcium Bisulfite	R	R	R	R
Calcium Chlorate	R	R	R	R
Calcium Chloride	R	R	R	R
Calcium Hydroxide	R	R	NR	NR
Calcium Hypochlorite	R	120	NR	NR
Calcium Nitrate	R	R	R	R
Calcium Sulfate	R	R	R	R
Calcium Sulfite	R	R	R	R
Caprylic Acid	R	R	R	NR
Carbon Dioxide	R	R	R	R
Carbon Disulfide	NR	NR	NR	NR
Carbon Monoxide	R	R	R	R
Carbon Tetrachloride	NR	NR	NR	NR
Carbonic Acid	R	R	R	NR
Carbon Methyl Cellulose	R	120	NR	NR
Castor Oil	R	R	R	R
Chlorinated Wax	R	R	NR	NR
Chlorine Dioxide/Air	R	R	NR	NR
Chlorine Dioxide, Wet Gas	R	R	NR	NR
Chlorine, Dry Gas	R	R	NR	NR
Chlorine, Wet Gas	R	R	NR	NR
Chlorine, Liquid	NR	NR	NR	NR
Chlorine, Swimming Pool (pH 7 to <8)	R	R	R	R
Chlorine, Water	R	120	NR	NR
Chloroacetic Acid 0-50%	R	NR	NR	NR



**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM	FIBREBOLT® SYSTEM	VINYL ESTER	VINYL ESTER	PREMIUM ISOPHTHALIC POLYESTER	PREMIUM ISOPHTHALIC POLYESTER
	R.T. (≤ 100°F)	150°F	R.T. (≤ 100°F)	160°F	R.T. (≤100°F)	150°F
<b>B</b> Benzoic Acid	R	R	R	R	R	NR
O-Benzoyl Benzoic Acid	R	R	R	R	NR	NR
Benzyl Alcohol	R	NR	R	NR	NR	NR
Benzyl Chloride	NR	NR	NR	NR	NR	NR
Brass Plating Solution: 3% Copper Cyanide 6% Sodium Cyanide 1% Zinc Cyanide 3% Sodium Carbonate	R	R	R	R	NR	NR
Butyl Acetate	NR	NR	NR	NR	NR	NR
Butylene Glycol	R	R	R	R	R	R
Butyric Acid 0-50%	R	R	R	R	R	NR
<b>C</b> Cadmium Chloride	R	R	R	R	R	NR
Cadmium Cyanide Plating Solution: 3% Cadmium Oxide, 6% Sodium Cyanide 1% Caustic Soda	R	120	R	120	NR	NR
Calcium Bisulfite	R	R	R	R	R	R
Calcium Chlorate	R	R	R	R	R	R
Calcium Chloride	R	R	R	R	R	R
Calcium Hydroxide	NR	NR	NR	NR	NR	NR
Calcium Hypochlorite	C	C	R	120	NR	NR
Calcium Nitrate	R	R	R	R	R	R
Calcium Sulfate	R	R	R	R	R	R
Calcium Sulfite	R	R	R	R	R	R
Caprylic Acid	R	R	R	R	R	NR
Carbon Dioxide	R	R	R	R	R	R
Carbon Disulfide	NR	NR	NR	NR	NR	NR
Carbon Monoxide	R	R	R	R	R	R
Carbon Tetrachloride	NR	NR	NR	NR	NR	NR
Carbonic Acid	R	R	R	R	R	120
Carbon Methyl Cellulose	R	120	R	120	NR	NR
Castor Oil	R	R	R	R	R	R
Chlorinated Wax	R	120	R	R	NR	NR
Chlorine Dioxide/Air	R	120	R	R	NR	NR
Chlorine Dioxide, Wet Gas	R	NR	R	R	NR	NR
Chlorine, Dry Gas	R	NR	R	R	NR	NR
Chlorine, Wet Gas	R	NR	R	R	NR	NR
Chlorine, Liquid	NR	NR	NR	NR	NR	NR
Chlorine, Swimming Pool (pH 7 to <8)	R	NR	R	R	R	R
Chlorine, Water	R	NR	R	NR	NR	NR
Chloroacetic Acid 0-50%	R	NR	R	NR	NR	NR

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
160°F

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
150°F

**CHEMICAL  
ENVIRONMENT**

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F
<b>C</b> Chlorobenzene	NR	NR	NR	NR
Chloroform	NR	NR	NR	NR
Chlorosulfonic Acid	NR	NR	NR	NR
Chromic Acid	NR	NR	NR	NR
Chromium Sulfate	R	R	R	R
Citric Acid	R	R	R	R
Coconut Oil	R	R	R	NR
Concrete	R	R	NR	NR
Copper Chloride	R	R	R	R
Copper Cyanide	R	R	R	NR
Copper Fluoride	R	R	NR	NR
Copper Nitrate	R	R	R	R
Copper Plating Solution: Copper Cyanide 10.5% Copper 4% Copper Cyanide 6% Rochelle Salts	R	R	NR	NR
Copper Brite Plating: Caustic Cyanide	R	120	NR	NR
Copper Plating Solution: 45% Copper Fluoborate 19% Copper Sulfate 8% Sulfuric Acid	R	R	NR	NR
Copper Matte Dipping Bath: 30% Ferric Chloride 19% Hydrochloric Acid	R	120	NR	NR
Copper Pickling Bath: 10% Ferric Sulfate 10% Sulfuric Acid	R	R	NR	NR
Copper Sulfate	R	R	R	R
Corn Oil	R	R	R	R
Corn Starch-Slurry	R	R	R	R
Corn Sugar	R	R	R	R
Cottonseed Oil	R	R	R	NR
Crude Oil, Sour	R	R	R	NR
Crude Oil, Sweet	R	R	R	NR
Cyclohexane	R	120	NR	NR
<b>D</b> Detergents, Sulfonated	R	R	R	NR
Di-Ammonium Phosphate	R	R	NR	NR
Dibromophenol	NR	NR	NR	NR
Dibutyl Ether	R	NR	NR	NR
Dichloro Benzene	NR	NR	NR	NR
Dichloroethylene	NR	NR	NR	NR

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM		VINYL ESTER		PREMIUM ISOPHTHALIC POLYESTER	
	R.T. (≤ 100°F)	150°F	R.T. (≤ 100°F)	160°F	R.T. (≤100°F)	150°F
<b>C</b> Chlorobenzene	NR	NR	NR	NR	NR	NR
Chloroform	NR	NR	NR	NR	NR	NR
Chlorosulfonic Acid	NR	NR	NR	NR	NR	NR
Chromic Acid	NR	NR	NR	NR	NR	NR
Chromium Sulfate	R	R	R	R	R	R
Citric Acid	R	R	R	R	R	R
Coconut Oil	R	R	R	R	R	NR
Concrete	NR	NR	R	R	NR	NR
Copper Chloride	R	R	R	R	R	R
Copper Cyanide	R	R	R	R	R	NR
Copper Fluoride	NR	NR	R	R	NR	NR
Copper Nitrate	R	NR	R	R	R	R
Copper Plating Solution: Copper Cyanide 10.5% Copper 4% Copper Cyanide 6% Rochelle Salts	R	R	R	R	NR	NR
Copper Brite Plating: Caustic Cyanide	R	120	R	120	NR	NR
Copper Plating Solution: 45% Copper Fluoborate 19% Copper Sulfate 8% Sulfuric Acid	NR	NR	R	R	NR	NR
Copper Matte Dipping Bath: 30% Ferric Chloride 19% Hydrochloric Acid	R	R	R	R	NR	NR
Copper Pickling Bath: 10% Ferric Sulfate 10% Sulfuric Acid	R	R	R	R	NR	NR
Copper Sulfate	R	R	R	R	R	R
Corn Oil	R	R	R	R	R	R
Corn Starch-Slurry	R	R	R	R	R	R
Corn Sugar	R	R	R	R	R	R
Cottonseed Oil	R	R	R	R	R	R
Crude Oil, Sour	R	R	R	R	R	NR
Crude Oil, Sweet	R	R	R	R	R	NR
Cyclohexane	R	120	R	120	NR	NR
<b>D</b> Detergents, Sulfonated	R	R	R	R	R	NR
Di-Ammonium Phosphate	R	R	R	R	NR	NR
Dibromophenol	NR	NR	NR	NR	NR	NR
Dibutyl Ether	R	NR	R	NR	NR	NR
Dichloro Benzene	NR	NR	NR	NR	NR	NR
Dichloroethylene	NR	NR	NR	NR	NR	NR

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
160°F

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
150°F

**CHEMICAL  
ENVIRONMENT**

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F
<b>D</b> Diesel Fuel	R	R	R	NR
Diethylene Glycol	R	R	R	R
Dimethyl Phthalate	R	R	NR	NR
Diocetyl Phthalate	R	R	NR	NR
Dipropylene Glycol	R	R	R	R
Dodecyl Alcohol	R	R	NR	NR
<b>E</b> Esters, Fatty Acids	R	R	R	R
Ethyl Acetate	NR	NR	NR	NR
Ethyl Benzene	NR	NR	NR	NR
Ethyl Ether	NR	NR	NR	NR
Ethylene Dichloride	NR	NR	NR	NR
Ethylene Glycol	R	R	R	R
<b>F</b> Fatty Acids	R	R	R	R
Ferric Chloride	R	R	R	R
Ferric Nitrate	R	R	R	R
Ferric Sulfate	R	R	R	R
Ferrous Chloride	R	R	R	R
Ferrous Nitrate	R	R	R	R
Ferrous Sulfate	R	R	R	R
8-8-8 Fertilizer	R	R	R	R
Fertilizer: Urea Ammonium Nitrate	R	120	NR	NR
Flue Gas	R	R	NR	NR
Formaldehyde	R	R	R	NR
Formic Acid 10%	R	R	R	NR
Fuel Oil	R	R	R	NR
<b>G</b> Gas, Natural	R	R	R	NR
Gasoline, Auto	R	R	R	NR
Gasoline, Aviation	R	R	R	NR
Gasoline, Ethyl	R	R	R	NR
Gasoline, Sour	R	R	R	NR
Glyconic Acid	R	R	R	NR
Glucose	R	R	R	R
Glycerine	R	R	R	R
Glycol, Propylene	R	R	R	R
Glycolic Acid 70%	R	R	R	NR
Gold Plating Solution: 63% Potassium Ferrocyanide 2% Potassium Gold Cyanide 8% Sodium Cyanide	R	R	NR	NR

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM	FIBREBOLT® SYSTEM	VINYL ESTER	VINYL ESTER	PREMIUM ISOPHTHALIC POLYESTER	PREMIUM ISOPHTHALIC POLYESTER
	R.T. (≤ 100°F)	150°F	R.T. (≤ 100°F)	160°F	R.T. (≤100°F)	150°F
<b>D</b> Diesel Fuel	R	R	R	R	R	120
Diethylene Glycol	R	R	R	R	R	R
Dimethyl Phthalate	R	R	R	R	NR	NR
Diethyl Phthalate	R	R	R	R	NR	NR
Dipropylene Glycol	R	R	R	R	R	R
Dodecyl Alcohol	R	R	R	R	NR	NR
<b>E</b> Esters, Fatty Acids	R	R	R	R	R	R
Ethyl Acetate	NR	NR	NR	NR	NR	NR
Ethyl Benzene	NR	NR	NR	NR	NR	NR
Ethyl Ether	NR	NR	NR	NR	NR	NR
Ethylene Dichloride	NR	NR	NR	NR	NR	NR
Ethylene Glycol	R	R	R	R	R	R
<b>F</b> Fatty Acids	R	R	R	R	R	R
Ferric Chloride	R	R	R	R	R	R
Ferric Nitrate	R	R	R	R	R	R
Ferric Sulfate	R	R	R	R	R	R
Ferrous Chloride	R	R	R	R	R	R
Ferrous Nitrate	R	R	R	R	R	R
Ferrous Sulfate	R	R	R	R	R	R
8-8-8 Fertilizer	R	120	R	R	R	R
Fertilizer: Urea Ammonium Nitrate	R	120	R	120	NR	NR
Flue Gas	R	R	R	R	NR	NR
Formaldehyde	R	R	R	R	R	NR
Formic Acid 10%	C	C	R	R	R	NR
Fuel Oil	R	R	R	R	R	NR
<b>G</b> Gas, Natural	R	R	R	R	R	NR
Gasoline, Auto	R	R	R	120	R	NR
Gasoline, Aviation	R	R	R	120	R	NR
Gasoline, Ethyl	R	R	R	120	R	NR
Gasoline, Sour	R	R	R	120	R	NR
Glyconic Acid	R	R	R	R	R	NR
Glucose	R	R	R	R	R	R
Glycerine	R	R	R	R	R	R
Glycol, Propylene	R	R	R	R	R	R
Glycolic Acid 70%	R	R	R	R	R	NR
Gold Plating Solution: 63% Potassium Ferrocyanide 2% Potassium Gold Cyanide 8% Sodium Cyanide	R	R	R	R	R	NR

CHEMICAL ENVIRONMENT	VINYL ESTER COMPOSOLITE®	VINYL ESTER COMPOSOLITE®	POLYESTER COMPOSOLITE®	POLYESTER COMPOSOLITE®
	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F
<b>H</b> Heptane	R	R	R	NR
Hexane	R	R	R	NR
Hexalene Glycol	R	R	R	R
Hydraulic Fluid	R	R	R	NR
Hydrobromic Acid 0-25%	R	R	R	NR
Hydrochloric Acid 0-37%	R	R	NR	NR
Hydrocyanic Acid	R	R	R	NR
Hydrofluoric Acid	NR	NR	NR	NR
Hydrofluorosilic Acid (Hydroflurosilicic Acid or Fluosilicic Acid)	NR	NR	NR	NR
Hydrogen Bromide, Wet Gas	R	R	NR	NR
Hydrogen Chloride, Dry Gas	R	R	NR	NR
Hydrogen Chloride, Wet Gas	R	120	NR	NR
Hydrogen Fluoride, Vapor	NR	NR	NR	NR
Hydrogen Peroxide 35%	R	120	NR	NR
Hydrogen Sulfide Dry	R	R	R	120
Hydrogen Sulfide, Aqueous	R	R	R	NR
Hydrosulfite Bleach	R	120	NR	NR
Hypochlorous Acid 0-10%	R	120	NR	NR
Iron Plating Solution: 45% FeCl <sub>2</sub> ; 15% CaCl <sub>2</sub> ; 20% FeSo <sub>4</sub> ; 11% (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	R	R	NR	NR
Iron and Steel Cleaning Bath: 9% Hydrochloric, 23% Sulfuric	R	R	NR	NR
Isopropyl Amine	R	NR	NR	NR
Isopropyl Palmitate	R	R	R	R
<b>J</b> Jet Fuel	R	R	R	NR
<b>K</b> Kerosene	R	R	R	NR
<b>L</b> Lactic Acid	R	R	R	NR
Lauroyl Chloride	R	R	NR	NR
Lauric Acid	R	R	R	NR
Lead Acetate	R	R	R	NR
Lead Chloride	R	R	R	R
Lead Nitrate	R	R	R	R
Lead Plating Solution: 0.8% Fluoboric Acid 0.4% Boric Acid	R	120	NR	NR
Levulinic Acid	R	R	R	NR

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM	FIBREBOLT® SYSTEM	VINYL ESTER	VINYL ESTER	PREMIUM ISOPHTHALIC POLYESTER	PREMIUM ISOPHTHALIC POLYESTER
	R.T. (≤ 100°F)	150°F	R.T. (≤ 100°F)	160°F	R.T. (≤100°F)	150°F
<b>H</b> Heptane	R	R	R	R	R	NR
Hexane	R	R	R	R	R	NR
Hexalene Glycol	R	R	R	R	R	R
Hydraulic Fluid	R	R	R	R	R	NR
Hydrobromic Acid 0-25%	NR	NR	R	R	R	NR
Hydrochloric Acid 0-37%	NR	NR	R	R	NR	NR
Hydrocyanic Acid	R	R	R	R	R	NR
Hydrofluoric Acid	NR	NR	NR	NR	NR	NR
Hydrofluorosilic Acid (Hydroflurosilicic Acid or Fluosilicic Acid)	NR	NR	NR	NR	NR	NR
Hydrogen Bromide, Wet Gas	NR	NR	R	R	NR	NR
Hydrogen Chloride, Dry Gas	NR	NR	R	R	NR	NR
Hydrogen Chloride, Wet Gas	NR	NR	R	120	NR	NR
Hydrogen Fluoride, Vapor	NR	NR	NR	NR	NR	NR
Hydrogen Peroxide 35%	C	C	R	120	R	120
Hydrogen Sulfide Dry	R	120	R	R	R	120
Hydrogen Sulfide, Aqueous	R	R	R	R	NR	NR
Hydrosulfite Bleach	C	C	R	120	NR	NR
Hypochlorous Acid 0-10%	C	C	R	120	NR	NR
<b>I</b> Iron Plating Solution: 45% FeCl <sub>2</sub> ; 15% CaCl <sub>2</sub> ; 20% FeSO <sub>4</sub> ; 11% (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	R	R	R	R	NR	NR
Iron and Steel Cleaning Bath: 9% Hydrochloric, 23% Sulfuric	C	C	R	R	NR	NR
Isopropyl Amine	R	NR	R	NR	NR	NR
Isopropyl Palmitate	R	R	R	R	R	R
<b>J</b> Jet Fuel	R	R	R	R	NR	NR
<b>K</b> Kerosene	R	R	R	R	R	120
<b>L</b> Lactic Acid	R	R	R	R	R	R
Lauroyl Chloride	R	R	R	R	NR	NR
Lauric Acid	R	R	R	R	NR	NR
Lead Acetate	R	R	R	R	R	R
Lead Chloride	R	R	R	R	R	R
Lead Nitrate	R	R	R	R	R	R
Lead Plating Solution: 0.8% Fluoboric Acid 0.4% Boric Acid	R	NR	R	120	NR	NR
Levulinic Acid	R	R	R	R	NR	NR

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F	
<b>L</b>	Linseed Oil	R	R	NR	NR
	Lithium Bromide	R	R	R	R
	Lithium Sulfate	R	R	R	R
<b>M</b>	Magnesium Bisulfite	R	R	NR	NR
	Magnesium Chloride	R	R	R	R
	Magnesium Hydroxide	R	140	NR	NR
	Magnesium Nitrate	R	R	R	R
	Magnesium Sulfate	R	R	R	R
	Maleic Acid	R	R	NR	NR
	Mercuric Chloride	R	R	R	R
	Mercurous Chloride	R	R	R	R
	Methanol 10% (see Alcohol, Methyl 10%)	R	NR	NR	NR
	Methylene Chloride	NR	NR	NR	NR
	Methyl Ethyl Ketone	NR	NR	NR	NR
	Methyl Isobutyl Carbitol	NR	NR	NR	NR
	Methyl Isobutyl Ketone	NR	NR	NR	NR
	Methyl Styrene	NR	NR	NR	NR
	Mineral Oils	R	R	R	R
	Molybdenum Disulfide	R	R	NR	NR
	Monochloric Acetic Acid	NR	NR	NR	NR
	Monoethanolamine	NR	NR	NR	NR
	Motor Oil	R	R	R	R
	Myristic Acid	R	R	NR	NR
<b>N</b>	Naphtha	R	R	R	R
	Naphthalene	R	R	R	NR
	Nickel Chloride	R	R	R	R
	Nickel Nitrate	R	R	R	R
	Nickel Plating: 8% Lead, 0.8% Fluoboric Acid 0.4% Boric Acid	R	R	NR	NR
	Nickel Plating: 11% Nickel Sulfate 2% Nickel Chloride 1% Boric Acid	R	R	R	NR
	Nickel Plating: 44% Nickel Sulfate 4% Ammonium Chloride 4% Boric Acid	R	R	R	NR
	Nickel Sulfate	R	R	R	R
	Nitric Acid 0-5%	R	R	R	NR



**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM		DURAGRATE® MOLDED GRATING			
	R.T. (≤ 100°F)	150°F	VINYL ESTER R.T. (≤ 100°F)	VINYL ESTER 160°F	PREMIUM ISOPHTHALIC POLYESTER R.T. (≤100°F)	PREMIUM ISOPHTHALIC POLYESTER 150°F
<b>L</b> Linseed Oil	R	R	R	R	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
<b>M</b> Magnesium Bisulfite	R	R	R	R	NR	NR
	R	R	R	R	R	R
	R	140	R	140	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
	R	R	R	R	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
	R	R	R	R	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
	R	NR	R	NR	NR	NR
	NR	NR	NR	NR	NR	NR
	NR	NR	NR	NR	NR	NR
	NR	NR	NR	NR	NR	NR
	NR	NR	NR	NR	NR	NR
	R	R	R	R	R	R
	R	R	R	R	NR	NR
	R	R	R	R	NR	NR
	<b>N</b> Naphtha	R	R	R	R	R
R		R	R	R	R	NR
R		R	R	R	R	R
R		R	R	R	R	R
R		R	R	R	R	R
R		R	R	R	NR	NR
R		R	R	R	R	NR
R		R	R	R	R	R
R		R	R	R	R	R
R		R	R	R	R	R
R		R	R	R	R	R
R		R	R	R	R	R
R		R	R	R	R	R

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F	
<b>CHEMICAL ENVIRONMENT</b>					
<b>N</b>	Nitric Acid 15%	R	120	NR	NR
	Nitric Acid Fumes	NR	NR	NR	NR
	Nitrobenzene	NR	NR	NR	NR
<b>O</b>	Octanoic Acid	R	R	R	NR
	Oil, Sour Crude	R	R	R	R
	Oil, Sweet Crude	R	R	R	R
	Oleic Acid	R	R	R	R
	Oleum (Fuming Sulfuric)	NR	NR	NR	NR
	Olive Oil	R	R	R	R
	Oxalic Acid	R	R	R	R
	Ozone	NR	NR	NR	NR
	Peroxide Bleach: 2% Sodium Peroxide 96% 0.025% Epsom Salts, 5% Sodium Silicate 42° Be, 1.4% Sulfuric Acid 66° Be	R	R	R	R
<b>P</b>	Phenol	NR	NR	NR	NR
	Phenol Sulfonic Acid	NR	NR	NR	NR
	Phosphoric Acid 85%	R	R	R	R
	Phosphoric Acid Fumes	R	R	R	R
	Phosphorous Pentoxide	R	R	R	NR
	Phosphorous Trichloride	NR	NR	NR	NR
	Phthalic Acid	R	R	R	R
	Pickling Acids: Sulfuric and Hydrochloric	NR	NR	NR	NR
	Picric Acid, Alcoholic	R	R	R	NR
	Polyvinyl Acetate Latex	R	R	R	NR
	Polyvinyl Alcohol	R	R	R	NR
	Polyvinyl Chloride Latex (with 35 Parts DOP)	R	120	NR	NR
	Potassium Aluminum Sulfate	R	R	R	R
	Potassium Bicarbonate	R	R	R	NR
	Potassium Bromide	R	R	R	NR
	Potassium Chloride	R	R	R	R
	Potassium Dichromate	R	140	NR	NR
	Potassium Ferricyanide	R	R	R	R
	Potassium Ferrocyanide	R	R	R	R
	Potassium Nitrate	R	R	R	R
	Potassium Permanganate	R	140	NR	NR
	Potassium Persulfate	R	R	R	NR
	Potassium Sulfate	R	R	R	R
	Propionic Acid 1-50%	R	120	NR	NR

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT® SYSTEM	FIBREBOLT® SYSTEM	VINYL ESTER	VINYL ESTER	PREMIUM ISOPHTHALIC POLYESTER	PREMIUM ISOPHTHALIC POLYESTER
	R.T. (≤ 100°F)	150°F	R.T. (≤ 100°F)	160°F	R.T. (≤ 100°F)	150°F
<b>N</b> Nitric Acid 15%	NR	NR	R	120	NR	NR
	NR	NR	NR	NR	NR	NR
	NR	NR	NR	NR	NR	NR
<b>O</b> Octanoic Acid	R	R	R	R	R	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
	R	R	R	R	R	R
	NR	NR	NR	NR	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
	NR	NR	NR	NR	NR	NR
	NR	NR	NR	NR	NR	NR
<b>P</b> Peroxide Bleach: 2% Sodium Peroxide 96% 0.025% Epsom Salts, 5% Sodium Silicate 42° Be, 1.4% Sulfuric Acid 66° Be	R	R	R	R	R	R
	NR	NR	NR	NR	NR	NR
	NR	NR	NR	NR	NR	NR
	C	C	R	R	R	R
	C	C	R	R	R	R
	C	C	R	R	R	NR
	NR	NR	NR	NR	NR	NR
	R	R	R	R	R	R
	NR	NR	NR	NR	NR	NR
	NR	NR	R	R	R	NR
	R	R	R	R	R	NR
	R	NR	R	NR	R	NR
	R	120	R	120	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	NR
	R	R	R	R	R	R
	R	120	R	140	NR	NR
	R	R	R	R	R	R
	R	R	R	R	R	R
	R	140	R	140	NR	NR
R	R	R	R	R	NR	
R	R	R	R	R	R	
R	120	R	120	NR	NR	

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
160°F

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
R.T. (≤ 100°F)

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRAIL™  
150°F

**CHEMICAL  
ENVIRONMENT**

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRAIL™ 150°F
<b>P</b> Propylene Glycol	R	R	R	R
Pulp Paper Mill Effluent	R	R	NR	NR
Pyridine	NR	NR	NR	NR
<b>S</b> Salicylic Acid	R	140	NR	NR
Sebacic Acid	R	R	NR	NR
Selenious Acid	R	R	NR	NR
Silver Nitrate	R	R	R	R
Silver Plating Solution: 4% Silver Cyanide 7% Potassium Cyanide 5% Sodium Cyanide 2% Potassium Carbonate	R	R	NR	NR
Sodium Acetate	R	R	R	NR
Sodium Benzoate	R	R	R	NR
Sodium Bicarbonate	R	R	NR	NR
Sodium Bifluoride	R	120	R	NR
Sodium Bisulfate	R	R	R	R
Sodium Bisulfite	R	R	R	R
Sodium Bromate	R	140	R	R
Sodium Bromide	R	R	R	R
Sodium Chlorate	R	R	R	NR
Sodium Chloride	R	R	R	R
Sodium Chlorite 25%	R	R	R	NR
Sodium Chromate	R	R	NR	NR
Sodium Cyanide	R	R	R	NR
Sodium Dichromate	R	R	NR	NR
Sodium Di-Phosphate	R	R	R	R
Sodium Ferricyanide	R	R	R	R
Sodium Fluoride	R	120	NR	NR
Sodium Fluoro Silicate	R	120	NR	NR
Sodium Hexametaphosphates	R	NR	NR	NR
Sodium Hydroxide 0-5%	R	150	NR	NR
Sodium Hydroxide 5-50%	R	120	NR	NR
Sodium Hydrosulfide	R	R	R	NR
Sodium Hypochlorite (5% bleach)	R	120	NR	NR
Sodium Hypochlorite 5-15% Commercial Grade	R	NR	NR	NR
Sodium Lauryl Sulfate	R	R	R	R
Sodium Mono-Phosphate	R	R	R	R
Sodium Nitrate	R	R	R	R
Sodium Silicate	R	R	R	R
Sodium Sulfate	R	R	R	R
Sodium Sulfide	R	R	R	R

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT®		DURAGRATE® MOLDED GRATING				
	SYSTEM R.T. (≤ 100°F)	SYSTEM 150°F	VINYL ESTER R.T. (≤ 100°F)	VINYL ESTER 160°F	PREMIUM ISOPHTHALIC POLYESTER R.T. (≤100°F)	PREMIUM ISOPHTHALIC POLYESTER 150°F	
<b>P</b> Propylene Glycol	R	R	R	R	R	R	
	R	R	R	R	NR	NR	
	NR	NR	NR	NR	NR	NR	
<b>S</b> Salicylic Acid	R	140	R	140	NR	NR	
	R	R	R	R	NR	NR	
	R	R	R	R	NR	NR	
	R	R	R	R	R	R	
	Silver Plating Solution: 4% Silver Cyanide 7% Potassium Cyanide 5% Sodium Cyanide 2% Potassium Carbonate						
	R	R	R	R	NR	NR	
	R	R	R	R	R	NR	
	R	R	R	R	R	NR	
	R	R	R	R	NR	NR	
	R	120	R	120	R	NR	
	R	R	R	R	R	R	
	R	R	R	R	R	R	
	R	140	R	140	R	NR	
	R	R	R	R	R	R	
	R	R	R	R	R	NR	
	R	R	R	R	R	R	
	R	R	R	R	R	NR	
	R	R	R	R	R	NR	
	R	R	R	R	R	R	
	R	R	R	R	R	R	
	R	120	R	120	NR	NR	
	R	120	R	120	NR	NR	
	R	NR	R	NR	NR	NR	
	R	150	R	150	NR	NR	
	R	120	R	120	NR	NR	
	R	R	R	R	R	NR	
	R	120	R	120	NR	NR	
	Sodium Hypochlorite 5-15% Commercial Grade						
	R	NR	R	NR	NR	NR	
	R	R	R	R	R	R	
R	R	R	R	R	R		
R	R	R	R	R	R		
R	R	R	R	R	R		
R	R	R	R	R	R		
R	R	R	R	R	R		
R	R	R	R	R	R		
R	R	R	R	R	R		

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRIL™  
R.T. (≤ 100°F)

VINYL ESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRIL™  
160°F

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRIL™  
R.T. (≤ 100°F)

POLYESTER  
COMPOSOLITE®  
EXTREN®  
DURADEK®  
DURAGRID®  
DURASHIELD®  
SAFPLANK®  
SAFPLATE®  
SAFRIL™  
150°F

**CHEMICAL ENVIRONMENT**

	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ R.T. (≤ 100°F)	VINYL ESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ 160°F	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ R.T. (≤ 100°F)	POLYESTER COMPOSOLITE® EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ 150°F
<b>S</b> Sodium Sulfite	R	R	R	NR
Sodium Tetra Borate	R	R	R	R
Sodium Thiocyanate	R	R	NR	NR
Sodium Thiosulfate	R	R	R	NR
Sodium Tripolyphosphate	R	R	R	NR
Sodium Xylene Sulfonate	R	R	R	NR
Soya Oil	R	R	R	R
Stannic Chloride	R	R	R	R
Stannous Chloride	R	R	R	R
Stearic Acid	R	R	R	R
Styrene	NR	NR	NR	NR
Sugar, Beet and Cane Liquor	R	R	R	NR
Sugar, Sucrose	R	R	R	R
Sulfamic Acid	R	R	R	NR
Sulfanilic Acid 50%	R	R	NR	NR
Sulfated Detergents	R	R	R	NR
Sulfur Dioxide, Dry or Wet	R	R	NR	NR
Sulfur, Trioxide/Air	R	R	NR	NR
Sulfuric Acid 0-30%	R	R	R	NR
Sulfuric Acid 30-50%	R	R	NR	NR
Sulfuric Acid 50-70%	R	NR	NR	NR
Sulfurous Acid 10%	R	NR	NR	NR
Superphosphoric Acid (76% P <sub>2</sub> O <sub>5</sub> )	R	R	NR	NR

<b>T</b> Tall Oil	R	150	R	NR
Tannic Acid	R	120	R	NR
Tartaric Acid	R	R	R	R
Thionyl Chloride	NR	NR	NR	NR
Tin Plating: 18% Stannous Fluoborate 7% Tin 9% Fluoboric Acid 2% Boric Acid	R	120	NR	NR
Toluene	NR	NR	NR	NR
Toluene Sulfonic Acid	R	R	NR	NR
Transformer Oils: Mineral Oil Types Chloro-Phenyl Types	R NR	R NR	R NR	R NR
Trichloro Acetic Acid	NR	NR	NR	NR
Trichlorethylene	NR	NR	NR	NR
Trichloropentol	NR	NR	NR	NR

**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	FIBREBOLT®		DURAGRATE® MOLDED GRATING			
	SYSTEM R.T. (≤ 100°F)	SYSTEM 150°F	VINYL ESTER R.T. (≤ 100°F)	VINYL ESTER 160°F	PREMIUM ISOPHTHALIC POLYESTER R.T. (≤100°F)	PREMIUM ISOPHTHALIC POLYESTER 150°F
<b>S</b> Sodium Sulfite	R	R	R	R	R	NR
Sodium Tetra Borate	R	R	R	R	R	R
Sodium Thiocyanate	R	R	R	R	NR	NR
Sodium Thiosulfate	R	R	R	R	R	NR
Sodium Tripolyphosphate	R	R	R	R	R	NR
Sodium Xylene Sulfonate	R	R	R	R	R	NR
Soya Oil	R	R	R	R	R	R
Stannic Chloride	R	R	R	R	R	R
Stannous Chloride	R	R	R	R	R	R
Stearic Acid	R	R	R	R	R	R
Styrene	NR	NR	NR	NR	NR	NR
Sugar, Beet and Cane Liquor	R	R	R	R	R	NR
Sugar, Sucrose	R	R	R	R	R	R
Sulfamic Acid	R	R	R	R	R	NR
Sulfanilic Acid 50%	R	R	R	R	NR	NR
Sulfated Detergents	R	R	R	R	R	NR
Sulfur Dioxide, Dry or Wet	R	R	R	R	NR	NR
Sulfur, Trioxide/Air	R	R	R	R	NR	NR
Sulfuric Acid 0-30%	R	C	R	R	R	R
Sulfuric Acid 30-50%	C	C	R	R	NR	NR
Sulfuric Acid 50-70%	C	C	R	NR	NR	NR
Sulfurous Acid 10%	R	NR	R	NR	NR	NR
Superphosphoric Acid (76% P <sub>2</sub> O <sub>5</sub> )	C	C	R	R	NR	NR
<b>T</b> Tall Oil	R	140	R	150	R	NR
Tannic Acid	R	150	R	120	R	NR
Tartaric Acid	R	R	R	R	R	R
Thionyl Chloride	NR	NR	NR	NR	NR	NR
Tin Plating: 18% Stannous Fluoborate 7% Tin 9% Fluoboric Acid 2% Boric Acid	R	R	R	120	NR	NR
Toluene	NR	NR	NR	NR	NR	NR
Toluene Sulfonic Acid	R	R	R	R	NR	NR
Transformer Oils: Mineral Oil Types	C	C	R	R	R	R
Chloro-Phenyl Types	NR	NR	NR	NR	NR	NR
Trichloro Acetic Acid	C	C	NR	NR	NR	NR
Trichlorethylene	NR	NR	NR	NR	NR	NR
Trichloropenol	NR	NR	NR	NR	NR	NR

CHEMICAL ENVIRONMENT	VINYL ESTER COMPOSOLITE®	VINYL ESTER COMPOSOLITE®	POLYESTER COMPOSOLITE®	POLYESTER COMPOSOLITE®
	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ R.T. (≤ 100°F)	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ 160°F	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ R.T. (≤ 100°F)	EXTREN® DURADEK® DURAGRID® DURASHIELD® SAFPLANK® SAFPLATE® SAFRIL™ 150°F
<b>T</b> Tricresyl Phosphate	R	120	NR	NR
Tridecylbenzene Sulfonate	R	R	NR	NR
Trisodium Phosphate	R	R	R	NR
Turpentine	R	NR	NR	NR
<b>U</b> Urea	R	140	R	NR
<b>V</b> Vegetable Oils	R	R	R	R
Vinegar	R	R	R	R
Vinyl Acetate	NR	NR	NR	NR
<b>W</b> Water:				
Deionized	R	R	R	R
Demineralized	R	R	R	R
Distilled	R	R	R	R
Fresh	R	R	R	R
Salt	R	R	R	R
Sea	R	R	R	R
White Liquor (Pulp Mill)	R	R	NR	NR
<b>X</b> Xylene	NR	NR	NR	NR
<b>Z</b> Zinc Chlorate	R	R	R	R
Zinc Nitrate	R	R	R	R
Zinc Plating Solution: 9% Zinc Cyanide 4% Sodium Cyanide 9% Sodium Hydroxide	R	120	NR	NR
Zinc Plating Solution: 49% Zinc Fluoborate 5% Ammonium Chloride 6% Ammonium Fluoborate	R	120	NR	NR
Zinc Sulfate	R	R	R	R



**DURAGRATE® MOLDED GRATING**

CHEMICAL ENVIRONMENT	DURAGRATE® MOLDED GRATING						
	FIBREBOLT® SYSTEM R.T. (≤ 100°F)	FIBREBOLT® SYSTEM 150°F	VINYL ESTER R.T. (≤ 100°F)	VINYL ESTER 160°F	PREMIUM ISOPHTHALIC POLYESTER R.T. (≤100°F)	PREMIUM ISOPHTHALIC POLYESTER 150°F	
<b>T</b>	Tricresyl Phosphate	R	120	R	120	NR	NR
	Tridecylbenzene Sulfonate	R	R	R	R	R	NR
	Trisodium Phosphate	R	R	R	R	R	NR
	Turpentine	R	NR	R	NR	NR	NR
<b>U</b>	Urea	R	NR	R	140	R	NR
<b>V</b>	Vegetable Oils	R	R	R	R	R	R
	Vinegar	R	R	R	R	R	R
	Vinyl Acetate	NR	NR	NR	NR	NR	NR
<b>W</b>	Water:						
	Deionized	R	R	R	R	R	R
	Demineralized	R	R	R	R	R	R
	Distilled	R	R	R	R	R	R
	Fresh	R	R	R	R	R	R
	Salt	R	R	R	R	R	R
	Sea	R	R	R	R	R	R
	White Liquor (Pulp Mill)	R	R	R	R	NR	NR
<b>X</b>	Xylene	NR	NR	NR	NR	NR	NR
<b>Z</b>	Zinc Chlorate	R	R	R	R	R	R
	Zinc Nitrate	R	R	R	R	R	R
	Zinc Plating Solution: 9% Zinc Cyanide 4% Sodium Cyanide 9% Sodium Hydroxide	R	120	R	120	NR	NR
	Zinc Plating Solution: 49% Zinc Fluoborate 5% Ammonium Chloride 6% Ammonium Fluoborate	R	R	R	120	NR	NR
	Zinc Sulfate	R	R	R	R	R	R



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