# ADVANCE PRODUCTS & SYSTEMS, INC.



# **SAFETY SPRAY SHIELDS**

Technical Data and Chemical Resistance Chart

## Advance Safety Spray Shield Technical Data & Chemical Resistance Chart

#### Abbreviations/Codes/Part Number

		Availability	
PE	Polyethylene	ТХ	PTFE Expansion Joint Shields
TW	PTFE White	G	Galvanized Sheet Metal
тс	PTFE Clear	SSS	Stainless Steel (304 or 316)
TP	PTFEn Premium	Р	Polypropylene
Т	PTFE (Standard)	V	Polyvinylchloride

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Flanges	½″ to 60″	150# and 300# ANSI
Valves	½″ to 60″	150# and 300# ANSI for gate, globe, ball, check, plug, butterfly, diaphragm
Expansion Joints	½″ to 24″	All brands, styles, & sizes
Fittings	½″ to 24″	For elbows, tees, couplings, unions, hose connections
Other		Flowmeters, flow indicators, sight glasses, all sizes & styles
Custom		Custom cloth shields & covers available for pumps, braided hose,
		pipe-20' lengths, machinery, etc.

Metal Shields:		
Flanges	½″ to 60″	150# - 2500# ANSI
Valves	½″ to 60″	150# - 2500# ANSI for gate, globe, ball, check, plug, butterfly, diaphragm
Expansion Joints	½″ to 24″	All brands, styles, & sizes
Custom		Available upon request

Note: Cloth & metal shields also available in DN sizes

#### OSHA Guidelines to Maintaining Safety in Hazardous Chemical Environments:

OSHA Standards Vol. 39 No. 125 6-27-74

#### 1910.93 Air Contaminates

(e) To achieve compliance....administrative or engineering controls must first be determined and implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or any other protective measure shall be used to keep the exposure of employees to air contaminates within the limits prescribed.

#### 1910.103 Hydrogen

- (V) Piping, Tubing and fittings
- (d) Means shall be provided to minimize exposure of personnel to piping operating at low temperatures and to prevent air condensation from contacting piping structural members, and surfaces not suitable for cryogenic temperatures. Only those insulating materials which are rated non-burning in

accordance with ASTM Procedures D1692-68 may be used. Other protective means may be used to protect personnel.

- **1910.132 General Requirements** (revised March 11, 1983 regarding use of various protective devices including shields and barriers wherever necessary due to hazards including chemicals)
- (a) Application. Protective equipment, including personal protective equipment for eyes, face, head and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

#### Occupational Safety and Health Act of 1970 General Duty Clause

Sec. 5 (a) Each employer (1) Shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.

NOTE: Clarification as to how OSHA administers the "General Duty Clause" is contained in an informational release (USDL-82-102) issued March 15, 1982 and effective March 17, 1982.

#### U.S. Army Materials Command Safety Manual

#### AMCR 385-100 13-4A (1) (3).....Acid Pump Glands

Flange fittings and valve stems shall be provided with splash shields or collars where personnel are exposed to potential leaks or sprays from equipment.

### American Bureau of Shipping Rules for Building and Classing Steel Vessels

Section 34.12 Internal-Combustion Engines

#### 34.37 Fuel-Oil Injection System

#### 34.37.2 Shielding of High Pressure Fuel-Oil Piping

On all main and auxiliary engines having a cylinder bore of 250mm (10in.) and above, the high pressure fuel-oil injection piping is to be effectively shielded and secured to prevent fuel or fuel mist from reaching a source of ignition on the engine or its surroundings. Suitable arrangements are to be made for draining and oil-fuel leakage and for preventing contamination of lubrication oil by fuel oil. If flexible hoses are used for shielding purposes, these are to be of an approved type. When the peak to peak pressure pulsation in return piping exceeds 20 kg/cm2 (285 psi) shielding of this piping is also required. For engines used in vessels classed ACCU see 41.79.1.

#### Section 41 - Shipboard Automatic and Remote Control Systems

#### 41.79 Fire Protection

#### 41.79.1 Fire Precaution

To minimize the outbreak of fire from oil spray, the following precautions are to be taken where necessary:

(b) Pressurized diesel fuel and lubrication oil lines are to have safety shields around flanges near ignition sources.

#### U.S. Coast Guard Department of Transportation

Marine Engineering Regulations - Subchapter F 56.50-5 Systems Conveying Oil

(D) Piping conveying oil shall be run well away from hot surfaces wherever possible.... suitable shields shall be fitted in the way of flanges or mechanical pipe joints when welded joints are not practicable.

#### 56.50-65 Boiler Fuel Oil Service Systems

(C) ...all bolted flange joints shall be provided with a wrap around deflector to deflect spray in case of a leak.

#### PART 192-TRANSPORTATION OF NATURAL OR OTHER GAS BY PIPELINE: MINIMUM FEDERAL SAFETY STANDARDS

#### §192.199 Requirements for design of pressure relief and limiting devices.

(e) Have discharge stacks, vents or outlet ports designed to prevent accumulation of water, ice, or snow, located where gas can be discharged into the atmosphere without undue hazard;

#### §192.739 Pressure limiting and regulating stations: Inspection and testing.

(d) Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation.

[35 FR 13257, Aug. 19, 1970, as amended by Amdt. 192-43, 47 FR 46850, Oct. 21, 1982]

#### Installation Instructions

- 1) With leak indicating patch facing outwards, wrap Safety Spray Shield around connection.
- 2) Overlap Shield and attach velcro patches together.
- 3) Arrange Shield so that leak patch is facing downwards and towards walkway for visual inspection (indicating styles).
- 4) When one end of matching drawcord in each hand, pull cord tightly to draw Shield down to pipe as much as possible.
- 5) Tie a square knot in each drawcord to securely hold in place.
- 6) Once installed properly, Shield is ready for service.



#### **Operating Instructions**

**Indicating Styles** 

- 1) The Shield is designed to prevent a catastrophe by temporarily containing and detecting hazardous leaks and sprays.
- 2) Shields are ready for service once installed properly so that leak-indicating patches can be easily inspected.
- 3) The leak-indicating patch is designed as a warning device signaling there is a leak.
- 4) When in service, should a leak occur, the patch will immediately change color signaling chemical exposure. The color change depends on the pH of the chemical; red if acidic and green if alkali.
- 5) Should the leak or spray be severe, the Shield will keep the spray from injuring nearby personnel and allow the chemical to drip down.
- 6) We recommend immediate attention to the problem should a leak or spray occur.
- 7) The Shield should be inspected for damages and pH leak patch replaced before reusing Shield.

Clear Styles

- 1) The Shield is designed to prevent a catastrophe by temporarily containing and detecting hazardous leaks and sprays.
- 2) Shields are ready for service once installed properly.
- 3) Should a leak or spray occur, the Shield will temporarily contain it and keep the spray from injuring nearby personnel.
- 4) The clear material will allow for visual indication of the leak; you can see fluid buildup or the spray. Once the Shield is full or saturated, it will allow the chemical to drip down.
- 5) We recommend immediate attention to the problem should a leak or spray occur.
- 6) The Shield should be inspected for damages and can be reused if in good condition.

#### Maintenance Instructions

- 1) At minimum, Shields should be inspected once every 6 months for pH leak patch color change, color change of shield, signs of tears, broken drawcords, or broken thread.
- 2) Always replace Shield if torn, damaged, stiff and brittle, or any other signs of wear.
- 3) If Shield has been subjected to chemical exposure, inspect condition of Shield before reusing. We recommend replacing if entire Shield has been subjected to chemicals.
- 4) Always replace pH leak patch once subjected to chemical exposure and/or color of patch is other than yellow or orange in color.
- 5) Shields should be changed every 3 years if used in outdoor service. If used indoors, change as needed.
- 6) Please consult factory if there are questions concerning condition of Safety Spray Shield.

	ACID					
<u>Chemical</u>	75°F	<u>170°F</u>	<u>200°F</u>	<u>450°F</u>	<u>500°F +</u>	 <u>Not</u> <u>Recommended</u>
Acetic	PE	PVC	PPL	T,TP,TC,TW	304, 316	
Arsenic	PVC	PVC	PPL	T,TP,TC,TW	304, 316	PE
Benzene Sulfonic	PPL	PE, PVC		T,TP,TC,TW	304, 316	
Benzoic	PE, PVC	PE, PVC		T,TP,TC,TW	304, 316	
Boric		PE, PVC	PPL	T,TP,TC,TW	304, 316	
Butyric	PVC	PPL		T,TP,TC,TW	304, 316	
Chromic	PPL, PE, PVC			T,TP,TC,TW	316	304
Cresylic		PVC		T,TP,TC,TW	316	PPL, 304
Fluosilicic	PE	PPL, PVC		T,TP,TC,TW		304, 316
Formic	PVC	PE, PPL		T,TP,TC,TW	304, 316	
Hydrobromic	PVC	PE, PVC	PPL	T,TP,TC,TW	304, 316	
Hydrochloric		PE, PVC	PPL	T,TP,TC,TW	304, 316	
Hydrofluoric	PE, PVC		PPL	TW	304, 316	T, TP, TC
Lactic	PVC	PPL, PE		T,TP,TC,TW	304, 316	
Nitric		PE, PPL, PVC		T,TP,TC,TW	304, 316	
Perchloric	PE, PVC	PPL		T,TP,TC,TW	304, 316	
Phosphoric		PE, PVC	PPL	T,TP,TC,TW	304, 316	
Sulfuric (10%)		PE, PVC	PPL	T,TP,TC,TW	304, 316	
(30%)		PE, PVC	PPL	T,TP,TC,TW	304, 316	
(70%)	PE, PVC		PPL	T,TP,TC,TW	304, 316	
Tannic		PPL, PE, PVC		T,TP,TC,TW	304, 316	
		10/50				]

		ACIDS-CONCENTRATED						
Acetic	PE, PVC	PPL		T,TP,TC,TW	304, 316			
Boric		PE, PVC	PPL	T,TP,TC,TW	304, 316			
Chromic				T,TP,TC,TW	316	PE, PPL, PVC		
Formic		PPL, PVC	PE	T,TP,TC,TW	304, 316			
Hydrochloric		PE, PVC	PPL	T,TP,TC,TW	316	304		
Hydrofluoric	PE, PVC		PPL	TW	304, 316	T, TP, TC		
Nitric				T,TP,TC,TW	304, 316	PE, PVC, PPL		
Nitric (Fuming)				T,TP,TC,TW	304, 316	PE, PVC, PPL		
Phosphoric	PE, PVC		PPL	T,TP,TC,TW	304, 316			
Phthalic	PPL			T,TP,TC,TW	304,316			
Sulfuric	PPL			T,TP,TC,TW	304, 316	PE, PVC		
Oleum				T,TP,TC,TW	304, 316	PE, PVC, PPL		
Trichloracetic	PPL, PVC			T,TP,TC,TW		PE, 304, 316		
			ALCOH	OLS				
Amyl Alochol	PPL	PVC, PE		T,TP,TC,TW	304, 316			
Butyl Alcohol		PVC, PE	PPL	T,TP,TC,TW	316			
Ethanol		PPL, PVC, PE		T,TP,TC,TW	304, 316			
Ethylene Glycol		PVC, PE	PPL	T,TP,TC,TW	304, 316			
Methanol		PVC, PE	PPL	T,TP,TC,TW	304, 316			

\*Not recommended because shield contains fiber-glass

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	OX					
Chemical	75°F	170°F	200°F	450°F	500°F +	Not Recommended
Aluminum Hydroxide		PVC	PPL	T, TP, TC, TW	304, 316	
Aluminum Oxychloride	PPL	PVC		T,TP,TC,TW	304, 316	
Ammonium Hydroxide		PE, PVC	PPL	T,TP,TC,TW	304, 316	
Ammonium Hydroxide		PE	PPL	T,TP,TC,TW	304, 316	PVC
(28%)						
Barium Hydroxide		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Calcium Hydroxide		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Chlorine Dioxide				T,TP,TC,TW		PVC, PPL, PE, 304, 316
Chromium Trioxide	PPL	PVC		T,TP,TC,TW	304, 316	
Hydrogen Peroxide (8%)	PPL, PVC, PE			T,TP,TC,TW	304, 316	
Hydrogen Peroxide (90%)	PPL, PVC			T,TP,TC,TW	304, 316	PE
Magnesium Hydroxide		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Potassium Hydroxide (50%)		PPL, PVC, PE		T,TP,TC,TW	304, 316	
Sodium Hydroxide (50%)		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Sodium Peroxide	PPL, PVC			T,TP,TC,TW	304, 316	
	ALDEHYDE	S, ETHER	RS & KET	ONES (AC	ETONES	S)
Acetaldehyde	PPL			T,TP,TC,TW	304, 316	PE, PVC
Acetone	PPL			T,TP,TC,TW	304, 316	PE, PVC
Acetophenone	PPL			T,TP,TC,TW	304, 316	PE, PVC
Benzaldehyde	PPL			T,TP,TC,TW	304, 316	PE, PVC
Cyclohexanone	PE			T,TP,TC,TW	304, 316	PPL
Dimethyl Ether				T,TP,TC,TW		PPL, PVC
Di-isobutylketone	PPL			T,TP,TC,TW	304, 316	PE, PVC
Formaldehyde	PVC, PE	PPL		T,TP,TC,TW	304, 316	
Glucose		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Methyl Ethyl Ketone	PPL			T,TP,TC,TW	304, 316	PE, PVC
			ESTERS			
Butyl Acetate	PE			T,TP,TC,TW	304, 316	PPL, PVC
Ethyl Acetate	PPL, PE			T,TP,TC,TW	304, 316	PVC
Methyl Salicylate	PPL, PVC			T,TP,TC,TW	304, 316	
	HALO	GEN CON	IPOUND:	s (ammon	IIA)	
Acetyl Chloride	PVC			T,TP,TC,TW	304, 316	PPL
Acetylene Tetrabromide				T,TP,TC,TW		PPL, PVC
Acetylene Tetrachloride				T,TP,TC,TW	304, 316	PPL, PVC
Aluminum Chloride		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Aluminum Oxychloride	PPL	PVC		T,TP,TC,TW		PVC
Ammonia	PE	PPL		T,TP,TC,TW	304, 316	PVC
Ammonium Bromide			0.5	I, IP, TC, TW	304, 316	PPL, PVC
Ammonium Carbonate		PVC, PE	PPL	T, TP, TC, TW	304, 316	
Ammonium Chloride		PVC, PE	PPL	I, IP, IC, TW	304, 316	
Ammonium Dichromate	PPL			T, IP, IC, IW		PVC

## HALOGEN COMPOUNDS (AMMONIA) (CONT'D)

Chemical Ammonium Fluoride	<u>75°F</u>	<u>170°F</u> PPL	<u>200°F</u>	<b>450°F</b> T,TP,TC,TW	<u>500°F +</u>	Not Recommended PVC
Ammonium Hydroxide		PE	PPL	T,TP,TC,TW	304, 316	PVC
Ammonium Nitrate		PPL, PVC, PE		T,TP,TC,TW	304, 316	
Ammonium Phosphate		PVC	PPL	T,TP,TC,TW	304, 316	
Ammonium Sulfate		PE, PVC	PPL	T,TP,TC,TW	304, 316	
Barium Chloride		PVC, PE	PPL	· · · ·	304, 316	
Benzyl Chloride	PPL			T,TP,TC,TW		
Bromine Chloride			T,TP,TC,TW	· · · ·		PVC, PE
Butyl Bromide				T,TP,TC,TW		PE, PVC, PPL
Butyl Chloride				T,TP,TC,TW		PE, PVC, PPL
Calcium Chlorate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Calcium Chloride		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Calcium Chlorite	PVC	PPL, PE		T,TP,TC,TW	304, 316	
Calcium Hypochlorite	PVC	PPL, PE		T,TP,TC,TW	304, 316	
Carbon Tetrachloride				T,TP,TC,TW	304, 316	PE, PPL, PVC
Chlorine Dioxide	PVC			T,TP,TC,TW	i.	PE, PPL, 304, 316
Copper Chloride		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Copper Flouride		PVC, PE	PPL	T.TP.TC.TW	304, 316	
Ethyl Chloride				T.TP.TC.TW	304, 316	PE, PPL, PVC
Ethylene Dibromide	PPL			T.TP.TC.TW	304, 316	PE, PVC
Ethylene Dichloride	PPL			T.TP.TC.TW	304, 316	PE, PVC
Ferric Chloride	PVC. PE		PPL	T.TP.TC.TW		304, 316
Ferrous Chloride	PVC. PE		PPL	T.TP.TC.TW		304, 316
Lauryl Chloride	PVC	PPI		T.TP.TC.TW		
Magnesium Chloride		PVC. PE	PPL	T.TP.TC.TW	304, 316	
Mercuric Chloride		PPL, PVC, PE	T.TP.TC.TW	.,,	304, 316	
Methyl Bromide				T.TP.TC.TW	316	PE, PPL, PVC
Methyl Chloride				T.TP.TC.TW	304, 316	PE, PPL, PVC
Nickel Chloride		PE, PVC	PPL	T.TP.TC.TW	304, 316	
Potassium Aluminum		PVC	PPL	T.TP.TC.TW		
Chloride				, , -,		
Potassium Bromate		PVC, PE	PPL	T,TP,TC,TW		
Potassium Bromide		PVC, PE	PPL	T.TP.TC.TW	304, 316	
Potassium Chlorate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Potassium Chloride	PVC, PE		PPL	T,TP,TC,TW	304, 316	
Potassium Fluoride		PPL, PVC, PE		T,TP,TC,TW		
Potassium Hypochlorite	PVC	PPL		T,TP,TC,TW		
Propylene Dibromide	PPL			T,TP,TC,TW		
Propylene Dichloride	PPL			T,TP,TC,TW	304, 316	PE, PVC
Sodium Bromide	PVC, PE		PPL	T,TP,TC,TW	304, 316	·
Sodium Chlorate		PVC, PE	PPL	T.TP.TC.TW	304, 316	
Sodium Chloride		PVC, PE	PPL	T.TP.TC.TW	304, 316	
Sodium Fluoride		PPL, PVC, PE		T.TP.TC.TW	304, 316	
Sodium Hypochlorite	PVC	PPL, PE		T,TP,TC.TW	304, 316	
Sodium Iodide	PE, PVC	PPL		T,TP,TC,TW	,	
Stannic Chloride		PVC, PE	PPL	T,TP,TC,TW		304, 316
Sulfur Chloride	PVC, PPL		_	T,TP,TC,TW		304, 316
Titanium Tetrachloride				T,TP,TC,TW	304, 316	PE, PVC, PPL
Zinc Chloride		PPL, PVC, PE		T,TP,TC,TW	304, 316	

	ΟΤΙ					
Chemical	75°F	170°F	200°F	450°F	500°F +	Not Recommended
Aluminum Nitrate		PVC	PPL	T,TP,TC,TW	304, 316	
Aluminum Sulfate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Aniline	PPL			T,TP,TC,TW	304, 316	PE, PVC
Aqua Regia	PVC, PPL			T,TP,TC,TW		PE
Barium Carbonate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Barium Sulfate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Barium Sulfide	PVC, PE		PPL	T,TP,TC,TW		
Benzyl Amine		PPL		T,TP,TC,TW		PVC
Bismuth Carbonate		PVC, PE	PPL	T,TP,TC,TW		
Black Liquor		PVC		T,TP,TC,TW	304, 316	
Bromine				T,TP,TC,TW		304, 316, PE, PPL, PVC
Calcium Bisulfide		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Calcium Bisulfite		PVC	PPL	T,TP,TC,TW	304, 316	
Calcium Carbonate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Calcium Nitrate		PVC, PE	PPL	T,TP,TC,TW		
Calcium Oxide	PE	PVC	PPL	T,TP,TC,TW		
Calcium Sulfate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Copper Carbonate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Copper Cyanide		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Copper Nitrate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Copper Sulfate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Cresol	PVC			T,TP,TC,TW	304, 316	PE
Diethyl Amine	PPL			T,TP,TC,TW		PE, PVC
Disodium Phosphate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Ferric Nitrate	PVC, PE		PPL	T,TP,TC,TW	304, 316	
Ferric Sulfate		PVC	PPL	T,TP,TC,TW	304, 316	
Ferrous Nitrate	PVC, PE		PPL	T,TP,TC,TW		
Hydrogen Sulfide		PPL, PVC, PE		T,TP,TC,TW	304, 316	
Magnesium Carbonate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Magnesium Nitrate		PVC, PE	PPL	T,TP,TC,TW		
Magnesium Sulfate			PPL	T,TP,TC,TW	304, 316	
Manganese Sulfate			PPL	T,TP,TC,TW	304, 316	
Mercuric Nitrate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Mercury	PE, PVC	PPL		T,TP,TC,TW	304, 316	
Naphtha	PPL	PVC		T,TP,TC,TW	304, 316	PE
Phenol		PPL		T,TP,TC,TW	304, 316	PE
Phosgene (wet)			T,TP,TC,TW			PPL, PVC
Potassium Aluminum Sulfate		PVC	PPL	T,TP,TC,TW		
Potassium Bicarbonate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Potassium Borate		PVC, PE	PPL	T,TP,TC,TW		
Potassium Carbonate		PVC, PE	PPL	T,TP,TC,TW	316	
Potassium Chromate		PVC, PE	PPL	T,TP,TC,TW		
Potassium Cyanide	PVC, PE		PPL	T,TP,TC,TW	304, 316	
Potassium Nitrate	PVC, PE	PPL		T,TP,TC,TW	304, 316	
Potassium Sulfate		PVC, PE	PPL	T,TP,TC,TW	304, 316	
Potassium Sulfide	PVC, PE	PPL		T,TP,TC,TW	304, 316	
Sodium Nitrate	PVC, PE	PPL		T,TP,TC,TW	304, 316	
Sodium Nitrite	PVC, PE	PPL		T, TP, TC, TW	304, 316	
Sodium Phosphate	PVC, PE	PPL		I, IP, IC, TW	304, 316	
Sodium Silicate	PE	PVC	PPL	T,TP,TC,TW	304, 316	
Sodium Sulfate	PE PUO DE	PVC	PPL		304, 316	
Sodium Sulfide	PPL, PVC, PE			T, IP, IC, IW	304, 316	
Sodium Sulfite	PPL, PVC, PE			I, IP, IC, IW	304, 316	
roiuene					304, 316	PE, PPL, PVC
Ulea Zing Nitrata	PVC, PE		PPL	I, IP, IC, IW	304, 316	
Zinc Nilfale			PPL		304, 316	
Stoam Lines	PVG, PE		PPL	1,1P,1C,1W	304, 310	
					.004 .010	

### **OTHER QUALITY PRODUCTS AVAILABLE:**

- Flange Insulating Gasket Kits •
- Kleerband<sup>®</sup> Flange Band Protectors
  Radolid<sup>®</sup> Nut & Bolt Protective Caps
  U-Bolt Cote<sup>®</sup> Rubber Coated U-bolts
- Casing Insulators & End Seals
- Duocon Centralizers
- Foreman Night Caps
- IsoJoint<sup>®</sup> Monolithic Insulating Joint
   Innerlynx<sup>®</sup> Wall/Pipe Penetration Seals
- Gal-vo-Plast<sup>®</sup> & Plastic Wall Sleeves
- Hammer Cushion Pads
- StomaSeal<sup>®</sup>
- Inspect-a-lift<sup>®</sup>

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