

DURAPLUS ABS INDUSTRIAL

3/8" - 12"

Duraplus™

The Duraplus® Industrial Piping System by IPEX offers a complete range of ABS pressure pipe, valves and fittings that are ideal for demanding applications ranging from abrasive slurries and separation reagents to caustic processes and low temperature glycol systems. These rugged Duraplus components operate over a wide range of temperatures while delivering excellent material properties including:

- Exceptional Toughness
- Non-Toxicity
- Corrosion Resistance

This design and installation manual provides the most up-to-date comprehensive information about IPEX's Duraplus ABS Industrial Piping System. By combining IPEX's laboratory test results with over 65 years of field experience, we have produced a manual suited to engineers, contractors and distributors alike. All aspects of Duraplus are described here – from basic raw material properties through to installation procedures of the finished product.

IPEX offers matched Duraplus pipes, fittings and valves in IPS sizes ranging from 3/8" to 12" nominal diameter, suitable for pressures up to 230 psi at 73°F (depending on the size).

DURAPLUS® FEATURES:

- High impact strength
- Outstanding ductility
- Wide chemical resistance
- Competitive installed cost
- Operating range from -40°F to +158°F
- Long term UV resistance
- Multiple proven and easy joining methods

ADVANTAGES

- 1 Lightweight**
Duraplus Industrial ABS material is 1/8 the weight of steel and 1/5 the weight of copper.
- 2 Simple, reliable joining method**
Solvent cemented joints can be made quickly and easily without expensive equipment or certifications. Flanging and threaded joints are also possible.
- 3 Grooved joints**
Allow quick assembly and disassembly, pipe rotation for even wear and cleaning of individual pipe sections.
- 4 Wide range of pressure and temperature capabilities**
Operating pressures from drainage up to 230 psi and temperature range from -40°F to 176°F make this product suitable for the harshest environments.
- 5 Lower installation costs**
Duraplus Industrial ABS is less expensive to install because of its simple joining methods – its lightweight and ease of handling.
- 6 Lower maintenance costs**
Duraplus Industrial ABS has excellent chemical resistance, corrosion resistance and impact resistance resulting in a piping system that lasts longer.
- 7 No heat, no sparks, no open flames**
Pipe can be joined to fitting without the necessity of heat.
- 8 Abrasion resistance**
The rubber-like poly-butadiene phase gives Duraplus Industrial ABS exceptionally good abrasion resistance to slurries and other abrasive media.

APPLICATIONS

• Chilled water / HVAC

Chilled Water Lines	Cooling Tower Pipes
Condensate Drain Lines	Humidification Supply Lines

• Off Shore Applications

"Mud" Systems	Deluge Systems
Topside (low pressure) Operations	(Emergency Showers/Eye Baths)
Vacuum Systems (Drill Cuttings Transport)	Chilled Water (Air Conditioning)
Deck Wash System – Supply & Drainage	Potable Water
	Black Water Drainage

• Mining

Slurries	Chemical Treatment
Water Lines	Tailing Lines
Vent Piping	

• Secondary Loop Refrigeration

Glycol Chilled Lines

STANDARDS



The ABS compound used in the manufacturing of Duraplus ABS Industrial Pipe complies with the material requirements of ASTM D3965, "Standard Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Materials for Pipe and Fittings".

i DID YOU KNOW?

Duraplus Industrial ABS is an extremely versatile process piping system that combines ruggedness, chemical resistance, light weight and ease of installation.

The most common applications for Duraplus Industrial ABS utilizes its outstanding impact resistance, ductility and abrasion resistance at both low and high temperatures.



SHORT FORM SPECIFICATIONS

GENERAL

Duraplus ABS is designed for industrial pressure pipe applications where the extremely high-impact resistance and ductility of the material offers some insurance against internal and external shock loadings and site abuse conditions. It's unique combination of ABS properties – non-toxicity, purity, corrosion- and chemical-resistance, toughness, low-hydraulic resistance, and the ability to perform over a wide temperature range (-40°F to +158°F) ensures excellent in-service performance and system life.

MATERIAL SPECIFICATION

Pipe and fittings shall be manufactured from a copolymeric material – Acrylonitrile Butadiene Styrene (ABS) – conforming to a 43232 cell classification in accordance with ASTM D3965.

Material for both pipe and fittings shall have a design stress of not less than 2,000 psi, and shall be designed with a 2 to 1 safety factor for a 50 year lifespan when operated under continuous pressure.

The material shall have an izod impact resistance value of not less than 6 ft./lb. at 73°F and 3 ft./lb. at -22°F, when tested in accordance with ASTM D256, method 'A'.

PIPE

Pipes shall be manufactured by IPEX and designed on a Standard Dimension Ratio (SDR) basis to give various pressure ratings as described below:

Pipe Class	Equivalent DR	Continuous Pressure Rating at 73°F (23°C)	Size Range
Class B 90 psi	DR 24.0	90 psi	10" & 12"
Class C 145 psi	DR 15.5	145 psi	1" to 8"
Class D 180 psi	DR 12.5	180 psi	1" to 6"
Class E 230 psi	DR 10.0	230 psi	3/8" to 4"
Class T 230 psi		180 psi	3/8" to 2"

FITTINGS

Fittings shall be of the socket type, designed for solvent welding as supplied by IPEX.

Fittings shall be designed and manufactured so that they withstand the continuous pressures applicable to the maximum pressure native of the pipe.

SOLVENT CEMENT

All joints shall be made with Gray Duraplus ABS solvent cement as supplied by IPEX.

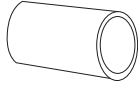
The solvent cement shall be designed to withstand continuous applied pressures up to 230 psi at 73°F.

DESIGN AND INSTALLATION

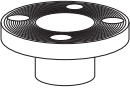
The design and installation of ABS pressure systems shall be performed in accordance with the recommendations detailed in the Handling and Installation section of this manual, local and national regulations where applicable.

To ensure the full integrity of the completed system, all components shall be supplied by IPEX.

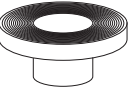
PRODUCT SELECTION CHART – DURAPLUS

	Dimension inches	Significant Number	Product Code	
	3/8	100101	337021	
	1/2	100102	337022	
	3/4	100103	337023	
	1	100104	337024	
	1-1/4	100105	337025	
	1-1/2	100106	337026	
	2	100107	337027	
	3	100109	337028	
	4	100110	337029	
	6	100112	337030	
	8	100113	337031	
	*	10	100114	337032
	*	12	100115	337033

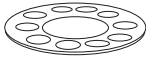
* Fabricated - 90 psi max

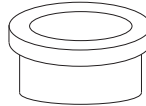
	Dimension inches	Significant Number	Product Code
	1/2	322102	337353
	3/4	322103	337354
	1	322104	337355
	1-1/4	322105	337356
	1-1/2	322106	337357
	2	322107	337358
	3	322109	337359
	4	322110	337360
	6	322112	337361

Note: A metal backing ring must be used with this flange.

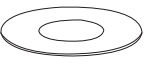
	Dimension inches	Significant Number	Product Code
	1/2	129102	337226
	3/4	129103	337227
	1	129104	337228
	1-1/4	129105	337229
	1-1/2	129106	337230
	2	129107	337231
	3	129109	337232
	4	129110	337233
	6	129112	337234

Note: A metal backing ring must be used with this flange.

	Dimension inches	Significant Number	Product Code
	1/2	426102	337439
	3/4	426103	337440
	1	426104	337441
	1-1/4	426105	337442
	1-1/2	426106	337443
	2	426107	337444
	3	426109	337445
	4	426110	337446
	6	426112	337447

	Dimension inches	Significant Number	Product Code
	2	135107	337235
	3	135109	337236
	4	135110	337237
	6	135112	337238
	8	135113	337239
	10	139114	337243
	12	139115	337244

Note: A metal backing ring must be used with this flange.

	Dimension inches	Significant Number	Product Code
	2	431107	337448
	3	431109	337449
	4	431110	337450
	6	431112	337451
	8	431113	337452
	10	411114	337422
	12	411115	337423

Note: It is essential that steel backing rings are used with all types of stub, full face and blind flanges.

All Threads are BSP tapered unless otherwise noted ***.
 Systems using plastic threaded components are restricted to 180 psi. The use of PTFE sealing tape is recommended.
 Only the correct Duraplus® cement will provide a compatible joint. All warranties void if other cement used.