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

APPLICATIONS

- **Chilled water / HVAC**
  - Chilled Water Lines
  - Condensate Drain Lines
  - Cooling Tower Pipes
  - Humidification Supply Lines
- **Off Shore Applications**
  - "Mud" Systems
  - Topside (low pressure) Operations
  - Vacuum Systems (Drill Cuttings Transport)
  - Deck Wash System – Supply & Drainage
  - Deluge Systems (Emergency Showers/Eye Baths)
  - Chilled Water (Air Conditioning)
  - Potable Water
  - Black Water Drainage
- **Mining**
  - Slurries
  - Water Lines
  - Vent Piping
  - Chemical Treatment
  - Tailing Lines
- **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".

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.

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 (-40ºF to +158ºF) 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 73ºF and 3 ft./lb. at -22ºF, 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 73ºF.

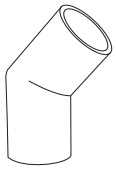
DESIGN AND INSTALLATION

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

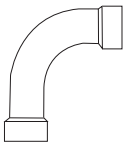
45º Elbow Soc



Dimension inches	Significant Number	Product Code
3/8	119101	337156
1/2	119102	337157
3/4	119103	337158
1	119104	337159
1-1/4	119105	337160
1-1/2	119106	337161
2	119107	337162
3	119109	337163
4	119110	337164
6	119112	337165
8	119113	337166
* 10	119114	337013
* 12	119115	337014

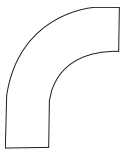
* Only available in spigot x spigot.

90º Bend – Short Radius Soc



Dimension inches	Significant Number	Product Code
1/2	118102	337148
3/4	118103	337149
1	118104	337150
1-1/4	118105	337151
1-1/2	118106	337152
2	118107	337153
3	118109	337154
4	118110	337155

90º Bend – Long Radius Sp (Center Line Radius = 4xD)



Dimension inches	Significant Number	Product Code
3	309109	337320
4	309110	337321
6	309112	337322
8	309113	337323
* 10	309114	337384
* 12	309115	337385

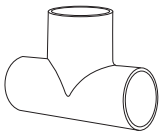
* Please note center line radius of 10" & 12" varies from 4xD

45º Bend – Long Radius Sp (Center Line Radius = 4xD)

Dimension inches	Significant Number	Product Code
3	310109	337330
4	310110	337331
6	310112	337332
8	310113	337333
* 10	310114	337386
* 12	310115	337387

* Please note center line radius of 10" & 12" varies from 4xD

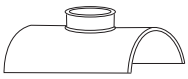
Tee Soc



Dimension inches	Significant Number	Product Code
3/8	122101	337170
1/2	122102	337171
3/4	122103	337172
1	122104	337173
1-1/4	122105	337174
1-1/2	122106	337175
2	122107	337176
3	122109	337177
4	122110	337178
6	122112	337179
8	122113	337180
* 10	122114	337015
* 12	122115	337016

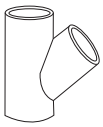
* Only available in spigot tees.

Saddle Soc



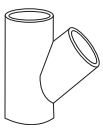
Dimension inches	Significant Number	Product Code
2 x 1-1/4	126129	337205
3 x 1	126132	337207
3 x 1-1/2	126134	337208
4 x 1	126137	337209
4 x 2	126140	337210
6 x 1	126143	337211
6 x 1-1/2	126145	337212
6 x 2	126146	337213

45º Wye Soc



Dimension inches	Significant Number	Product Code
1/2	128102	337214
3/4	128103	337215
1	128104	337216
1-1/4	128105	337217
1-1/2	128106	337218
2	128107	337219

45º Wye – Fabricated Sp x Sp



Dimension inches	Significant Number	Product Code
3	128109	337220
4	128110	337221
6	128112	337222
8	128113	337223
10	128114	337224
12	128115	337225

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.