

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.

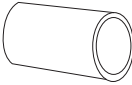
The solvent cement shall be designed to withstand continuous applied pressures up to 230 psi at 73°F.

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

Flange – Full Face, Drilled ASA 150 Soc

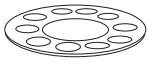
| | | | |
|---|--------|--------|--------|
|  | 1/2 | 322102 | 337353 |
| | 3/4 | 322103 | 337354 |
| | 1 | 322104 | 337355 |
| | 1-1/4 | 322105 | 337356 |
| | 1-1/2 | 322106 | 337357 |
| | 2 | 322107 | 337358 |
| | 3 | 322109 | 337359 |
| | 4 | 322110 | 337360 |
| 6 | 322112 | 337361 | |

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

Flange – Full Face, Undrilled Soc

| | | | |
|---|--------|--------|--------|
|  | 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 |

Flange – Stub Soc

| | | | |
|---|----|--------|--------|
|  | 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.

Gasket – Stub Flange, Neoprene

| | | | |
|---|----|--------|--------|
|  | 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.