

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".

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.

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.



PRODUCT SELECTION CHART – DURAPLUS

Dimension inches	Significant Number	Product Code
------------------	--------------------	--------------

Pipe – 90 psi at 73° F



10	542114	346034
12	542115	346035

Standard length of pipe is 20 feet.

Pipe – 145 psi at 73° F



1	511104	346003
1-1/2	511106	346004
2	511107	346005
3	511109	346007
4	511110	346008
6	511112	346009
8	511113	346010

Standard length of pipe is 20 feet.

Pipe – 180 psi at 73° F



1	512104	346013
1-1/4	512105	346014
1-1/2	512106	346015
2	512107	346011
3	512109	346016
4	512110	346017
6	512112	346012

Standard length of pipe is 20 feet.

Note: 180 psi pipe is a non-stock item available upon special request.

Minimum runs are required.

Pipe – 230 psi at 73° F



3/8	513101	346018
1/2	513102	346019
3/4	513103	346020
1	513104	346021
1-1/4	513105	346022
1-1/2	513106	346023
2	513107	346024
3	513109	346025
4	513110	346026

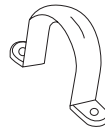
The standard pipe length for 3/8" and 1/2" pipe is 10 feet. The standard length for all other sizes is 20 feet.

Dimension inches	Significant Number	Product Code
------------------	--------------------	--------------

Class "T" – Suitable for Threading

3/8	514101	346033
1/2	514102	346027
3/4	514103	346028
1	514104	346029
1-1/4	514105	346030
1-1/2	514106	346031
2	514107	346032

Saddle Clip – Polypropylene



3/8	455101	337453
1/2	455102	337454
3/4	455103	337455
1	455104	337456
1-1/4	455105	337457
1-1/2	455106	337458
2	455107	337459
3	455109	337460
4	455110	337461

Cobra Pipe Clip – Polypropylene



3/8	434305	437340
1/2	434306	437341
3/4	434307	437342
1	434308	437343
1-1/4	434309	437344
1-1/2	434310	437345
2	434311	437346
2-1/2	434312	437347
3	434313	437348
4	434314	437349
6	434317	437432

Note: 3/8" 1/2", 3/4" and 1" pipe clips are supplied without retaining bands.

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.