

# DURAPLUS AIR-LINE SYSTEM

1/2" - 8"



Compressed air, a major source of industrial energy, is being used increasingly in both the manufacturing and processing industries. There, its distinct advantages of cleanliness, flexibility, safety and economy of use (compared with other energy sources) are fully exploited.

Modern process equipment, pneumatic controls and instrumentation demand a supply of clean, uncontaminated air and this has prompted the development in recent years of more advanced designs of compressors and ancillary equipment.

Duraplus Air-Line is manufactured from a specially formulated Acrylonitrile Butadiene Styrene (ABS) blend that has a high performance co-extruded liner which greatly enhances its mechanical and chemical properties.

Duraplus fittings are manufactured using an alloy blend of ABS and the liner material, ensuring high performance of the whole system.

## APPLICATIONS

- Plant air
- Valve actuation
- Ventilation

## STANDARDS



## ADVANTAGES

### 1 Safety

The Butadiene component of Duraplus Air-Line contributes resistance to accidental damage and prevents material fracture should the pipe be subjected to severe impact. Duraplus has been designed and tested to withstand impact for a large range of temperatures and has a design life of 30 years with a factor of safety of 2:1.

### 2 Wide Range of Applications

The advanced liner and ABS material combination protects against stray chemicals which may sometimes cause problems for ordinary systems. Duraplus Air-Line is now compatible with even more compressor lubricants.

### 3 Low Installation Costs

Duraplus Air-Line pipe reduces costs on a typical installation not only for materials but also for labor and transportation costs when compared to traditional materials. The reason? Its lightweight construction and simple assembly procedures. Like all thermoplastics, Duraplus is easily handled, stored, cut, joined and installed. As a result, project costs for installed Duraplus systems are significantly lower. Requirements for heavy installation equipment are also eliminated.

### 4 Clean

Duraplus products are packaged to protect the surface finish of the pipe and fittings and to prevent contamination before use. The smooth liner of Duraplus Air-Line cannot rust, corrode or form loose scale, ensuring air remains clean throughout the life of the system.

### 5 Smooth Interior

Less friction means lower pressure drops and higher flow rates allowing for smaller pipe diameters to be used in some cases.

### 6 Ease of Use

Duraplus Air-Line is one sixth the weight of steel and can be joined by solvent welding for easy on-site modifications and repairs without requiring special training or equipment.

### 7 Leak Free System

Correctly made solvent welded joints are leak free and can greatly reduce running costs.

### 8 Metric Sized & Color Coded

Duraplus Air-Line is metric sized to prevent mixing with I.P.S. sized PVC and CPVC pipe. Also the Duraplus Airline is color coded blue to comply with the ISO standards for compressed air products.

### 9 Proven

From manufacturing to the marketplace, Duraplus Air-Line is supported by the technical experience gained through over 30 years of thermoplastic pressure piping production. Both raw material and finished Air-Line products are subjected to rigorous tests, including aging, weathering and stressed environmental tests, to ensure complete system integrity over the designed operating life.





## DID YOU KNOW?

Duraplus Air-Line is corrosion-resistant and features metal-to-ABS special adapter fittings, single and multi-port wall brackets, high-efficiency dropper bends and blue color-coding for easy identification.

### SHORT FORM SPECIFICATIONS

#### GENERAL

Duraplus ABS Air-Line is designed for industrial compressed air 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. Its 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 – 120°F (4°C – 49°C), ensures excellent in-service performance and system life.

#### MATERIAL SPECIFICATIONS

Pipe shall be manufactured from an Acrylonitrile Butadiene Styrene (ABS) blend, with a co-extruded liner. Fitting shall be manufactured from an ABS blend.

Material for both pipe and fittings shall be designed with a 2 to 1 safety factor for a 30 year lifespan when operated under continuous pressure. Pipe and fittings are capable of withstanding a continuous working pressure of 185 psi at 73°F (1275 kPa at 23°C) in accordance with ASTM D2282 and carry a DIN 4102-B2 fire rating.

The material shall have an izod impact resistance value of no less than 8.5 ft.lb/in at 73°F when tested in accordance with ASTM D256, method 'A'. Pipe bore contains a co-extruded liner and fittings are manufactured using an alloy blend of ABS and the liner material.

#### PIPE

Pipes shall be manufactured by IPEX and designed in metric sizes that comply with the dimensional requirements of DIN 8062, and ISO 161/1.

#### FITTINGS

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

Fittings shall be designed and manufactured to withstand the continuous pressures applicable to the maximum pressure rating of the pipe. The sockets and fittings shall have a 0°30 taper, the diameter decreasing from the mouth to the root.

#### BALL VALVES – VKD

The valve body, stem, ball and unions shall be made of Duraplus® ABS compound which shall meet or exceed the requirements of cell classification 43234 according to ASTM D3965.

Ball valves shall be double-blocking type with O-ring cushions under the PTFE seats, in-line micro adjustment capability and incorporate a spanner wrench in the handle.

#### BUTTERFLY VALVES – FK

The valve body shall be made of glass reinforced polypropylene (GRPP) obtained from homopolymer polypropylene (PPH).

The valve disc shall be made of ABS compound.

All butterfly valves shall have non wetted stainless steel shafts and a wafer or lug design with ANSI 150 flange connections. The liner shall completely isolate the valve body from the process flow and act as a flange gasket on both sides of the valve.

#### SOLVENT CEMENT


All joints shall be made with Blue Duraplus Air-Line ABS solvent cement as supplied by IPEX. The solvent cement shall be designed to withstand continuous applied pressures up to 185 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 and in 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 AIRLINE


	Dimension		Significant Number	Product Code
	inches	mm		
<b>Female Adapter Soc x Female Thread</b> 	1/2 x 1/2	20 x 1/2	101306	437034
	3/4 x 3/4	25 x 3/4	101307	437035
	1 x 1	32 x 1	101308	437036


	Dimension		Significant Number	Product Code
	inches	mm		
<b>Female Adapter Sp x Female Thread</b> 	1-1/2 x 1-1/2	50 x 1-1/2	153341	437231
	2 x 2	63 x 2	153343	437232


	Dimension	Significant Number	Product Code	
			inches	mm
<b>Plug Male Thread</b> 	1/2	–	155102	337264
	3/4	–	155103	337265

	Dimension		Significant Number	Product Code
	inches	mm		
<b>Wall Bracket Soc x Female Thread (Brass body)</b> 	1/2 x 1/2	20 x 1/2	422327	437335
	3/4 x 1/2	25 x 1/2	422328	437336
	3/4 x 3/4	25 x 3/4	422329	437337


	Dimension	Significant Number	Product Code	
			inches	mm
<b>Wall Bracket Multiport</b> 	3/4 x 1/2	–	429122	437338
	Inlet – 3/4" male thread. Outlet – 1/2" female			


	Dimension	Significant Number	Product Code	
			inches	mm
<b>Butterfly Valve - FK Manual, EPDM Seals - Glass filled PP Body</b> 	2	–	680107	337651
	3	–	680109	337652
	4	–	680110	337653
	6	–	680112	337654
	8	–	680113	337665


	Dimension		Significant Number	Product Code
	inches	mm		
<b>Composite Union Soc x MPT (Air-line to Brass)</b> 	1/2 x 1/2	20 x 1/2	217306	437247
	3/4 x 3/4	25 x 3/4	217307	437248
	1 x 1	32 x 1	217308	437249
	1-1/2 x 1-1/2	50 x 1-1/2	217310	437250
	2 x 2	63 x 2	217311	437251

	Dimension		Significant Number	Product Code
	inches	mm		
<b>True Union Ball Valve Soc 230psi at 73°F EPDM Seals</b> 	* 1/2	20	882306	437451
	* 3/4	25	882307	437452
	* 1	32	882308	437453
	* 1-1/2	50	882310	437454
	* 2	63	882311	437455

\*Valves are supplied in Grey ABS

	Dimension		Significant Number	Product Code
	inches	mm		
<b>End Connectors</b> 	1/2	20	882312	437446
	3/4	25	882313	437447
	1	32	882314	437448
	1-1/2	50	882315	437449
	2	63	882316	437450

	Quantity	Significant Number	Product Code	
			inches	mm
<b>Air-Line Solvent Cement</b> 	1 pint	461390	437354	
	1 quart	461391	437355	

	Quantity	Significant Number	Product Code	
			inches	mm
<b>MEK Cleaner</b> 	1 pint	461397	337468	
	1 quart	461398	337469	

	Pipe Size		Number of Joints
	inches	mm	
	3/8 - 1	20 - 32	290
	1-1/4 - 2	50 - 63	144
	3	75 - 90	48
	4	110	32
	6	-	16
	8	-	10

**Joints**  
An indication of the number of joints likely to be made per quart of Duraplus® cement is as follows (it is recommended that MEK cleaner orders equals one-half the quantity of solvent cement required).

Certain compressor and lubricant oils will damage your Duraplus Air-Line installation. Before using any oils in the system contact IPEX to obtain a list of recommended oils or to confirm individual oil suitability.