Duratec®
AIRLINE SYSTEM

Submittal Data Sheet

Job or Customer: .....

Engineer: .....

Contractor: .....

Submitted by: ..... Date

Approved by: ..... Date

Order No: ..... Date

Specification: .....

Duratec® pipe's unique composite structure incorporates a rigid yet flexible aluminum core, bonded to layers of durable polyethylene of raised temperature (PE-RT) plastic. PE-RT on the inner and outer layers provides corrosion resistance against aggressive manufacturing environments while eliminating the inner scaling and corrosion associated with traditional metal compressed air pipes. Duratec fittings are supplied in tough nickel plated brass or stainless steel and utilize unique double o-ring seals to ensure long term joint integrity.

Duratec pipe meets the requirements of ASTM F1282 and CSA B137.9, Standards specifications for PE-AL-PE Composite Pressure Pipes. Duratec fittings meet the requirements ASTM F1974, Standard specification for Metal Insert Fittings for Composite Pressure Pipes. The Duratec pipe and fitting system is rated for long term continuous operating pressures of 200psi at 73°F, and 160psi at 140°F. The minimum allowable operating temperature for Duratec pipe and fittings is -40°F.

Duratec may be used for a wide range of applications including compressed air supply, hand tool operation, valve actuation, robotic installation, bulk inert gas delivery systems, and CO_2 delivery for carbonated beverage lines.

< STANDARDS >

ASTM F1282
ASTM F1974

CSA B137.9

< CODES >

ASME B31.3
ASTM B31.9

pipe and fitting availability

DURATEC PIPE

Sizes: 1/2", 3/4" and 1" diameters
Configurations: 100 ft. and 300 ft. coils

DURATEC NICKEL PLATED FITTINGS

Sizes: 1/2", 3/4" and 1"
Configurations: Couplers, Tees, Caps, Elbows, Reducers, Male Thread Adapters, Female Thread Adapters, Copper Solder Adapters

DURATEC 316 STAINLESS STEEL FITTINGS

Sizes: 1/2", 3/4" and 1"
Configurations: Duratec x Male Thread Straight Adapters

DURATEC NICKEL PLATED VALVES

Sizes: 1/2", 3/4" and 1"
Configurations: Duratec x Duratec straight ball valves

Duratec® fittings carry a national pressure vessel CRN# 0A02020.2CL (CRN# 0C02020.2CL for ball vavles.) Some fittings don't have CRN registration. Contact IPEX Inc for details

ipexna.com
Toll Free: 866 473-9462

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Installation Procedures

Installation:

The Duratec fitting system is a compression style fitting with a twist. It includes a split ring that tightens down onto the outside of the pipe when the nut is tightened over the joint

Tools Required:

Installation is simple and straight forward. To install Duratec Pipe and Duratec fittings, you will need the following, Plastic Pipe Cutter, Duratec beveling tool, adjustable end wrench(es), Suitable bending spring (optional).

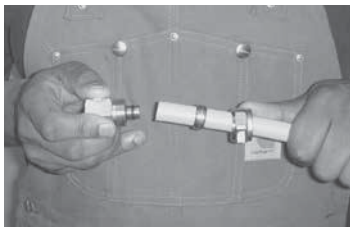
Procedure:

Cutting and Joining Duratec

1. Cut the pipe square. A plastic pipe cutter should be used. Ensure that the stainless steel cutting blade being used is in good condition and sharp. Rotate wrist while cutting.
2. Remove the nut and the split ring from the fitting.

3. Push the nut and the split ring onto the pipe. Bevel the inside of the pipe by inserting the Duratec reaming tool and rotating it 360° to engage the blades. The fitting will then slip easily into the pipe without displacing the o-rings.
4. Push the fitting onto the pipe and fully against the shoulder of the fitting. If necessary, at this point the fitting can be rotated on the pipe to facilitate threading onto a valve, tee, etc.

   Turn the nut finger tight, plus one full turn with a wrench.



5. If it is necessary to remove the fitting, release the nut, remove the split ring and pull the fitting off the pipe. Before reassembling the joint, inspect the split ring and o-rings and replace them if necessary.

Bending Duratec Pipe:

Duratec is easy to bend and unlike plastic pipes, retains it shape when bent. External bending springs and standard tube benders are available. Pipe in dimensions 1/2 and 3/4 inch are easily bent by hand. For 1 inch pipe or if the bending radius is near the recommended limit of five (5) times the diameter of the pipe, a bending tool should be used.

Installation Procedures

The purpose of a site pressure test is to establish that all joints have been correctly made. Air test in accordance with the authority having jurisdiction.

After making the first 20 or 30 joints, it is recommended that a test be applied to prove that the installation is satisfactory. If a leak is discovered, follow the appropriate procedure below. Testing of Duratec systems can take place immediately upon installation, since the joining procedure does not require a curing time.

The pressure testing procedure detailed below should be strictly followed.

1. Fully inspect the installed piping for evidence of mechanical abuse and suspect joints.
2. Split the system into convenient test sections, not exceeding 1,000 feet. The piping should be capped off with a Duratec cap at the end of the pipe section to be tested.
3. Test Duratec to a maximum of 1.25 times the design operating pressure up to a maximum of 1.0 times the IPEX maximum rated pressure. Duration of testing shall comply with local regulatory measures or alternatively with the engineer designing and inspecting the system.
4. If there is a significant drop in pressure, or extended times are required to achieve the desired pressure, joint leakage has occurred. In this event inspect for joint leaks.
5. If joints are leaking, tighten the nut 1/8 to 1/4 turn.
6. Repeat Step 3 after repairing any leaking joints.

⚠ WARNING

Duratec pipes are not intended for use in conditions below -40°F (-40°C).

⚠ WARNING

Use of Oxygen in Duratec pipe and fittings above these parameters can result in explosive failures and cause severe injury or death.

⚠ WARNING

Duratec is only suitable for compressed air and inert gases.

Installation Procedures

Electrical Grounding

Duratec systems should not be used to ground an electrical system. Although Duratec contains an aluminum core, its joining system is not designed to provide electrical continuity.

Testing Duratec Systems

Testing of Duratec can take place immediately upon installation, since the joining procedure does not require a curing time.

The purpose of a site pressure test is to establish that all joints have been correctly made before commissioning the system. (Always air test in accordance with the authority having jurisdiction.)

After making the first 20 or 30 joints, it is recommended that a test be applied to prove that the joint-making technique is satisfactory. If a leak is discovered, follow the appropriate procedure below.

The pressure testing procedure detailed below should be strictly followed.

1. Fully inspect the installed piping for evidence of mechanical abuse and suspect joints.
2. Split the system into convenient test sections, not exceeding 1,000 feet. The piping should be capped off with a Duratec cap at the end of the pipe sectionto be tested.
3. Test Duratec to a maximum of 1.25 times the design operating pressure. Duration of testing shall comply with local regulatory measures or alternatively with the engineer designing and inspecting the system, however this should not exceed 2 hours.
4. If there is a significant drop in pressure, or extended times are required to achieve the desired pressure, a joint leakage has occurred. In this event inspect for joint leaks.
5. If joints are leaking, tighten the nut 1/8 to 1/4 turn.
6. Repeat step 3 after repairing any leaking joints.

Handling and Storage

Care should be taken to avoid prolonged exposure to sunlight during storage. Duratec pipe contains UV stabilizers and antioxidants that provides short-term protection against UV degradation. However, if stored outdoors, best practice is to protect the Duratec piping materials with a light-colored, well-ventilated opaque covering.

Burial

Duratec pipe is suitable for direct burial applications as well as encasement in concrete. No additional protective sleeving is required unless entering or exiting a concrete slab. If Duratec D1 fittings are to be buried, a protective heat shrink sleeve must be used to protect the fittings.

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About IPEX

About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems
- PVC, CPVC, PP, PVDF, PE, ABS, and PEX pipe and fittings

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