

**SPECIFICATION**  
**ALPHAPLUS POLYPROPYLENE PIPING SYSTEM**

**1.0 PIPE**

**1.1 Material**

Pipe shall be extruded from Group 1, Class 2, Alpha nucleated homopolymer material in accordance with ASTM D-4101. AP polypropylene resin shall achieve a minimum tensile strength of 300 bar when tested at 23°C according to ASTM D 638. Material shall allow continuous operating temperatures to 95° C. AP resin shall comply with relevant food substance regulation, US FDA guidelines as specified in Code of Federal Regulators (CFR), Title 21, Chapter 1: Section 177.1520 and Section 178.3297 suitable for contact with foodstuff, pharmaceutical use and potable water.

**1.2 Stress Relieved**

Pipe shall be stress relieved by post-extrusion annealing to eliminate inherent stresses in the pipe wall created during the extrusion process and eliminate weld failure due to pipe stress

**1.3 Pressure Rating**

System (pipe and fittings) shall be pressure rated in accordance with ASTM D-2837 and Din 8077 for hydrostatic design basis. Pipe shall be manufactured to an SDR (standard dimension ratio) in order to provide the same pressure rating in all diameters. Pipe shall be (select one):

SDR 11	=	150 PSI (PN10)
SDR 17.6	=	90 PSI (PN6)
SDR 33	=	45 PSI (PN3.2)

PN = Nominal Pressure Rating in Bar

**1.4 Dimensions and Tolerances**

Pipe shall be SDR (standard dimension ratio) series that defines the wall thickness and outer diameter of the pipe

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**2.0 FITTINGS**

**2.1 Material**

See material under PIPE section 1.0

**2.2 Pressure Fittings**

All pressure pattern fittings (elbows, tees, flanges and reducers) from ½" (20 mm) through 16" (400 mm) shall be injection molded and shall have the same pressure rating as the pipe.

**2.3 Drainage Pattern Fittings**

Drain fittings (wyes, laterals, sanitary tees) may be fabricated by mitering and butt fusion welding or by side-wall fusion techniques. Extrusion welding is permitted. Hot air welding is not acceptable. Wall thickness of fabricated fitting shall be the same as the pipe.

**2.4 Dimensions and Tolerances**

Socket fusion fittings dimension are in accordance with ISO 7279 and DIN 16962. Butt fusion conform to SDR (standard dimension ratio) series that defines the wall thickness and outer diameter

**3.0 JOINING**

**3.1 Welding Method**

All pressure fitting ½" (20 mm) through 2" (63 mm) shall be socket fusion type joints. Pressure fittings, drainage pattern fittings and pipe 2½" (75mm) and larger shall be joined by butt fusion welding. All fusion-welded joints to be performed in accordance with ASTM D-2657 and piping manufacturers recommendations.

**3.2 Welding Certification and Training**

Training and certification shall be conducted by a direct Simtech employee. Each welder will be fully trained on the welding equipment for the particular project and will be required to demonstrate the full process of welding. The process includes set up of the tool, loading of the pipe and/or fittings, alignment of the tool, and the weld process. Training will also include minor maintenance techniques to keep tools in ideal operating conditions. After an operator has demonstrated their ability to operate the equipment, Simtech will issue a certified welders card upon completion.

**4.0 MANUFACTURER**

SIMTECH

877-777-2467

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