Tubing Selection Guide

Although Parker's MPI™ Fittings are engineered and manufactured to consistently provide high levels of reliability, no system's integrity is complete without considering the critical link: tubing.

This section is intended to help you properly select and order quality tubing, both annealed and medium-pressure cold drawn – 1/8 hard as well as 2507 Super Duplex materials.

Parker believes that proper tubing selection and installation are key to building leak-free, reliable tubing systems.

Parker's MPI™ Fittings have been designed to operate on a wide variety of "medium pressure" applications to 15,000 psi.

General Selection Criteria

The data tables in this section will help you select the tubing that best satisfies the flow (size) and material requirements of the application.

The most important consideration in the selection of suitable tubing for any application is the compatibility of the tubing materials with the media to be contained.

System Pressure

The system operating pressure is another important factor in determining the material strength and tubing wall thickness to be used.

In General, high pressure installations require strong materials such as Stainless Steel or Super Duplex to be employed. MPI™ tube fitting assemblies are limited to the lowest MAWP rated part in the fluid system - tubing, fitting or valve. "Periodic" testing of 1.5 times MAWP is allowed.

Temperature Derating Factors

Table 1 (top) indicates derating factors for both Annealed and 1/8th Hard (cold worked) 316SS and 317SS tubing. As indicated this material can be used from -425°F (-254°C) to 1000°F (538°C). **Table 1 (bottom)** indicates derating factors for our 2507 Super Duplex tubing which is designed for use from -50°F (-45°C) to 500°F (260°C).

Table 1	Temperature Derating Factors									
°F	-425º to 100º	200º	300º	400º	500º	600º	700º	800º	900º	1000º
°C	-254º to 538º	93º	149º	204º	260º	316º	371º	427º	482º	538º
1/8 Hard*	1.000	1.000	1.000	0.960	0.885	0.835	0.795	0.770	0.750	0.740
Annealed**	1.000	1.000	1.000	0.965	0.895	0.850	0.815	0.795	0.775	0.765

Super Duplex 2507	1.000	.90	.86	.82	.81	-	-	-	-	-

* Use with 1/8 Hard 316 tubing shown in Tables 2 (MPI) and 3 (C&T) on page 10.

** Use with Annealed 316 tubing shown in Table 4 on page 10.

The rating at temperature is the room temperature (RT) pressure rating listed in the catalog multiplied by the Derating Factor at temperature.

Example: 1/4" MPI™ fittings and tubing @ 800°F

Room Temperature Working Pressure
= **15,000** psi (as shown in Table 3)

800°F Temperature Derating Factor
= **.770** (1/8 Hard tube) (as shown above)

800°F Working Pressure
= 15,000 x .770 = 11,550 psi

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