

Dip Pipe Steel Tube Material

Comparison of ASTM/AISI 1026 DOM Steel Tube and A-106-B Schedule 80 Steel Pipe in Dip Pipes

1026 DOM Steel Tubing far exceeds the strength of the A-106-B Schedule 80 Steel Pipe commonly used in the process industry. Tensile and yield strength parameters are key factors affecting the ability of a dip pipe to withstand side thrust forces in agitated service.

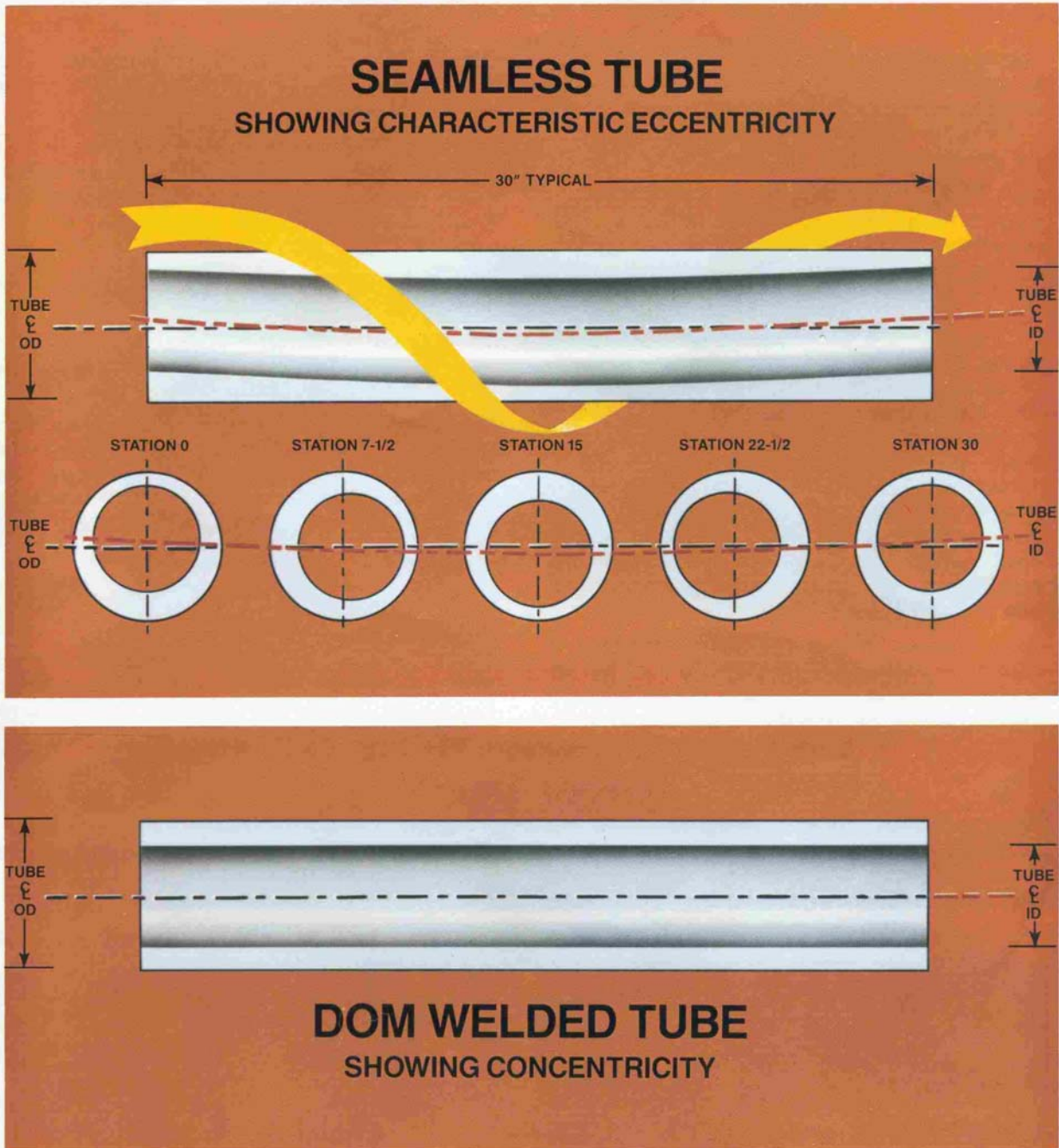
According to ASTM specifications and real world testing, minimum yield and tensile strengths of the two materials are given in Table 1.

Table 1: Tensile and Yield Strength of A-106-B versus 1026 DOM Steel Tubing

Material	Minimum Yield (PSI)	Minimum Tensile (PSI)
ASTM-A-106-B SCHEDULE 80 STEEL PIPE	30,000	60,000
ASTM/AISI-1026 DOM STEEL TUBING	72,000	87,000
1026 DOM TYPICAL TEST RESULTS ¹	88,000	103,000

In addition to the obvious basic material strength advantage of the 1026 DOM, the manufacturing process also results in better concentricity and a more uniform wall. This, in turn, results in much more uniform strength in the finished dip pipe. This is graphically illustrated on the following page.

¹Test Report: PTCAlliance, Alliance, Ohio



SPIRALING ECCENTRICITY OF SEAMLESS TUBING AND CONCENTRICITY OF COPPER-WELD DOM TUBING, FIG. F: To some degree, spiraling eccentricity occurs in all seamless steel tubing as a natural consequence of the rotary piercing process. The effect may be compared to gun barrel rifling. The eccentric spiral makes a complete revolution in approximately every 30" (approximately 76 cm) of tube length. In contrast, Copperweld DOM tubing is concentric, with uniform wall thickness throughout its length. For illustrative purposes, degree of eccentricity is exaggerated.

Graphic courtesy of Copperweld Tubing Group from brochure [DOM TUBING Size Range/Technical Data](#)

