



Titanium Finned Tubes

S/T Trufin® S/T Turbo-Chil®

Titanium Type S/T Trufin and S/T Turbo-Chil are integral finned tubes from welded or seamless tube of Grade 1 or Grade 2 Titanium manufactured in accordance to ASTM B-338 or ASME SB-338. S/T Trufin is available in fin counts of 30, 32, 36, and 43 fins per inch (FPI). S/T Turbo-Chil is available in fin counts of 32, 36, and 40 FPI configurations. All of the S/T Turbo-Chil products provide external surface enhancements along with internal helical ridges. The 32 FPI S/T Turbo-Chil has 10 internal helical ridges, the 36 FPI has 20 internal helical ridges, and the 40 FPI has 28 internal helical ridges. The S/T Turbo-Chil products provide both shell-side and tube-side surface area enhancement.

All Trufin and Turbo-Chil which meet the requirement of Paragraph UG-8(b), ASME Boiler and pressure Vessel

Code, Section VIII, are made to an average wall in the fin area. When a minimum wall size is specified, the next larger average wall size should be ordered.

Testing After Finning

Air Test at 250 PSI, Encircling Coil Eddy Current Test, per ASTM/ASME standards.

Tempers

Trufin and Turbo-Chil are supplied in the "as finned" Temper. Unfinned sections are supplied in the condition as described by the governing plain tube ASTM or ASME standard.

Plain tube mechanical properties per governing ASTM and/or ASME standard – minimum tensile strength, 50 KSI (345 Mpa); minimum yield strength, 40 KSI (275 Mpa). The UNS number for this alloy is R50400.

Plain Section Requirements

Plain end lengths 1" (25.4 mm) and over are supplied as standard. If plain ends less than 1" (25.4 mm) are required, contact the Wieland Marketing Department.

Land Lengths 1" (25.4 mm) and over are supplied as standard. If land lengths down to 5/8" (15.9 mm) minimum are required, contact the Wieland Marketing Department.

Distances of 18" (457.2 mm) and over between lands are supplied as standard.

Titanium Finned Tubes

S/T Trufin® Enhanced Surface Tubes

	Plain Ends		Finnend Section		Area			
Catalog Number	Outside Diameter	Wall Thickness	Min. Wall Under Fins	Finned Section Nom. Root Diam.	Nominal Inside Diameter	Actual Outside Surface ft ² /ft (m ² /m)	Ratio Actual Outside/ Nominal Inside	Weight per Unit Lenght lbs/ft (kg/m)
	inch (mm)	inch (mm)	inch (mm)	inch (mm)	inch (mm)			

30 Fins per inch

70-304028	5/8 (15.88)	0.049 (1.245)	0.025 (0.635)	0.556 (14.12)	0.505 (12.83)	0.411 (0.125)	3.114	0.155 (0.231)
70-304035	5/8 (15.88)	0.058 (1.473)	0.031 (0.787)	0.556 (14.12)	0.491 (12.47)	0.411 (0.125)	3.186	0.188 (0.280)
70-304042	5/8 (15.88)	0.065 (1.651)	0.037 (0.940)	0.556 (14.12)	0.477 (12.12)	0.411 (0.125)	3.288	0.200 (0.298)
70-304049	5/8 (15.88)	0.072 (1.829)	0.044 (1.118)	0.556 (14.12)	0.463 (11.76)	0.411 (0.125)	3.397	0.219 (0.326)
70-305028	3/4 (19.05)	0.049 (1.245)	0.025 (0.635)	0.686 (17.42)	0.630 (16.00)	0.500 (0.152)	3.030	0.189 (0.281)
70-305035	3/4 (19.05)	0.058 (1.473)	0.031 (0.787)	0.686 (17.42)	0.616 (15.65)	0.500 (0.152)	3.106	0.221 (0.329)
70-305042	3/4 (19.05)	0.065 (1.651)	0.037 (0.940)	0.686 (17.42)	0.602 (15.29)	0.500 (0.152)	3.165	0.245 (0.365)
70-305049	3/4 (19.05)	0.072 (1.829)	0.044 (1.118)	0.686 (17.42)	0.552 (14.02)	0.500 (0.152)	3.247	0.269 (0.400)
70-305058	3/4 (19.05)	0.079 (2.006)	0.052 (1.321)	0.686 (17.42)	0.570 (14.48)	0.500 (0.152)	3.341	0.300 (0.446)
70-306028	7/8 (22.23)	0.049 (1.245)	0.025 (0.635)	0.802 (20.37)	0.755 (19.18)	0.587 (0.178)	2.965	0.223 (0.332)
70-306035	7/8 (22.23)	0.058 (1.473)	0.031 (0.787)	0.802 (20.37)	0.741 (18.82)	0.587 (0.178)	3.026	0.261 (0.388)
70-306042	7/8 (22.23)	0.065 (1.651)	0.037 (0.940)	0.802 (20.37)	0.727 (18.47)	0.587 (0.178)	3.089	0.290 (0.432)
70-306049	7/8 (22.23)	0.072 (1.829)	0.044 (1.118)	0.802 (20.37)	0.713 (18.11)	0.587 (0.178)	3.139	0.318 (0.473)
70-307028	1 (25.40)	0.049 (1.245)	0.025 (0.635)	0.932 (23.67)	0.880 (22.35)	0.671 (0.204)	2.917	0.269 (0.400)
70-307035	1 (25.40)	0.058 (1.473)	0.031 (0.787)	0.932 (23.67)	0.866 (22.00)	0.671 (0.204)	2.956	0.301 (0.448)
70-307042	1 (25.40)	0.065 (1.651)	0.037 (0.940)	0.932 (23.67)	0.852 (21.64)	0.671 (0.204)	3.009	0.335 (0.499)
70-307049	1 (25.40)	0.072 (1.829)	0.044 (1.118)	0.932 (23.67)	0.838 (21.29)	0.671 (0.204)	3.064	0.368 (0.548)

For S/T Trufin® 30 FPI, the average fin height is 0.032" (0.813mm)

32 Fins per inch

70-324028	5/8 (15.88)	0.049 (1.245)	0.025 (0.635)	0.557 (14.15)	0.501 (12.73)	0.415 (0.127)	3.130	0.156 (0.232)
70-324035	5/8 (15.88)	0.058 (1.473)	0.031 (0.787)	0.557 (14.15)	0.487 (12.37)	0.415 (0.127)	3.250	0.181 (0.269)
70-325028	3/4 (19.05)	0.049 (1.245)	0.025 (0.635)	0.675 (17.15)	0.624 (15.85)	0.503 (0.153)	3.070	0.192 (0.286)
70-325035	3/4 (19.05)	0.058 (1.473)	0.031 (0.787)	0.675 (17.15)	0.610 (15.49)	0.503 (0.153)	3.140	0.231 (0.344)
70-325049	3/4 (19.05)	0.072 (1.829)	0.044 (1.118)	0.675 (17.15)	0.582 (14.78)	0.503 (0.153)	3.290	0.275 (0.382)
70-326042	7/8 (22.23)	0.065 (1.651)	0.037 (0.940)	0.802 (20.37)	0.718 (18.24)	0.591 (0.180)	3.120	0.304 (0.452)
70-327028	1 (25.40)	0.049 (1.245)	0.025 (0.635)	0.925 (23.50)	0.870 (22.10)	0.679 (0.207)	2.960	0.260 (0.387)
70-327042	1 (25.40)	0.065 (1.651)	0.037 (0.940)	0.925 (23.50)	0.842 (21.39)	0.679 (0.207)	3.050	0.314 (0.467)

For S/T Trufin® 32 FPI, the average fin height is 0.032" (0.813mm)

36 Fins per inch

70-365028	3/4 (19.05)	0.049 (1.245)	0.025 (0.635)	0.696 (17.68)	0.640 (16.26)	0.500 (0.152)	2.980	0.170 (0.253)
70-365035	3/4 (19.05)	0.054 (1.372)	0.031 (0.787)	0.696 (17.68)	0.626 (15.90)	0.500 (0.152)	3.050	0.206 (0.307)
70-367042	1 (25.40)	0.065 (1.651)	0.037 (0.940)	0.943 (23.95)	0.859 (21.82)	0.684 (0.209)	3.040	0.341 (0.723)
70-367049	1 (25.40)	0.072 (1.829)	0.044 (1.118)	0.943 (23.95)	0.845 (21.46)	0.684 (0.209)	3.090	0.375 (0.558)

For S/T Trufin® 36 FPI, the average fin height is 0.026" (0.660mm)

43 Fins per inch

70-435023	3/4 (19.05)	0.035 (0.889)	0.020 (0.508)	0.704 (17.88)	0.658 (16.71)	0.499 (0.152)	2.900	0.142 (0.211)
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For S/T Trufin® 43 FPI, the average fin height is 0.021" (0.533mm)

Titanium Finned Tubes

S/T Turbo-Chil® Double Enhanced Surface Tubes

	Plain Ends		Finnend Section		Area			Weight per Unit Lenght lbs/ft (kg/m)
Catalog Number	Outside Diameter inch (mm)	Wall Thickness inch (mm)	Min. Wall Under Fins inch (mm)	Finned Section Nom. Root Diam. inch (mm)	Nominal Inside Root Diameter inch (mm)	Actual Outside Surface ft²/ft (m²/m)	Ratio Actual Outside/ Nominal Inside	
32 Fins per inch								
56-3250525	3/4 (19.05)	0.052 (1.321)	0.022 (0.559)	0.684 (17.37)	0.634 (16.10)	0.503 (0.153)	2.790	0.200 (0.298)
56-3250528	3/4 (19.05)	0.053 (1.345)	0.025 (0.635)	0.684 (17.37)	0.628 (15.95)	0.503 (0.153)	2.820	0.204 (0.304)
For S/T Turbo-Chil® 32 FPI, the average fin height is 0.032" (0.813mm)								
36 Fins per inch								
56-3652025	3/4 (19.05)	0.049 (1.245)	0.022 (0.559)	0.698 (17.73)	0.648 (16.46)	0.500 (0.152)	2.940	0.189 (0.281)
56-3652028	3/4 (19.05)	0.053 (1.346)	0.025 (0.635)	0.698 (17.73)	0.642 (16.31)	0.500 (0.152)	2.980	0.203 (0.302)
For S/T Turbo-Chil® 36 FPI, the average fin height is 0.026" (0.660mm)								
40 Fins per inch								
56-4052825	3/4 (19.05)	0.049 (1.245)	0.022 (0.559)	0.696 (17.68)	0.614 (16.41)	0.529 (0.161)	3.130	0.160 (0.238)
56-4052828	3/4 (19.05)	0.053 (1.346)	0.025 (0.635)	0.696 (17.68)	0.640 (16.26)	0.529 (0.161)	3.160	0.176 (0.262)
For S/T Turbo-Chil® 40 FPI, the average fin height is 0.026" (0.660mm)								

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