COILED TUBES TECHNICAL TABLES

Tenaris

Technical Data

Chemical Requirements (mass percent)

GRADE	CARBON	MANGANESE	PHOSPHORUS	SULFUR	SILICON
	MAX	MAX	MAX	MAX	MAX
HS-70™ (CT70)	0.16	1.20	0.020	0.005	0.50
HS-80™ (CT80)	0.16	1.20	0.020	0.005	0.50
HS-90™ (CT90)	0.16	1.20	0.020	0.005	0.50
HS-110™ (CT110)	0.16	1.65	0.020	0.005	0.50
HS-80 CRA™	0.03	6.00	0.040	0.030	1.00
HV-70™ (CT70)	0.16	1.20	0.020	0.005	0.50

Tensile Requirements

GRADE	YIELD STRENGTH		YIELD STRENGTH		TENSILE STRENGTH		HARDNESS MAXIMUM
	MIN		MAX		MIN		BODY AND WELD
	psi	MPa	psi	MPa	psi	MPa	HRC
HS-70™ (CT70)	70,000	483	80,000	552	80,000	552	22
HS-80™ (CT80)	80,000	552	90,000	621	88,000	607	22
HS-90™ (CT90)	90,000	621	100,000	689	97,000	669	22
HS-110™ (CT110)	110,000	758			115,000	793	30
HS-80 CRA™	80,000	552			100,000	689	30
HV-70™ (CT70)	70,000	483	80,000	552	80,000	552	22

Tolerances (*) for Diameter at Tubing Body

SIZE DESIGNATION	TOLERANCE	
	in	mm
ALL SIZES	-0.010 to +0.010	-0.25 to +0.25

Maximum Depth of Trim

SPECIFIED WALL THICKNESS (t)		MAXIMUM DEPTH OF TRIM	
in	mm		
0.150 and less	3.8 and less	0.10 t	
0.151 to 0.300	3.9 to 7.6	0.015 in	0.4 mm

Tolerances for Wall Thickness

SPECIFIED WALL THICKNESS (T)		TOLERANCE	
in	mm	in	mm
< 0.110	< 2.8	-0.005 to +0.010	-0.1 to +0.2
0.110 to 0.175	2.8 to 4.4	-0.008 to +0.012	-0.2 to +0.3
0.176 to 0.250	4.5 to 6.4	-0.012 to +0.012	-0.3 to +0.3
> 0.250	> 6.4	-0.015 to +0.015	-0.4 to +0.4

(*) Tolerance measured at the place of manufacture, prior to spooling.

HS-70™ (CT70) | 1.000" TO 1.750" (2.000" TO 4.500" on reverse side)

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
1.000	0.080	0.075	0.840	0.788	16,200	18,500	9,400	10,400	0.218	0.567	316	340	28.79	0.69	40.80	0.97
	0.087	0.082	0.826	0.850	17,500	20,000	10,200	11,300	0.236	0.549	338	366	27.84	0.66	40.80	0.97
	0.095	0.090	0.810	0.920	18,900	21,600	11,100	12,300	0.257	0.528	362	395	26.77	0.64	40.80	0.97
	0.102	0.097	0.796	0.981	20,100	23,000	12,000	13,300	0.275	0.510	382	420	25.85	0.62	40.80	0.97
	0.109	0.104	0.782	1.040	21,400	24,400	12,800	14,200	0.293	0.493	401	443	24.95	0.59	40.80	0.97
	0.116	0.108	0.768	1.098	22,600	25,800	13,200	14,700	0.303	0.483	411	457	24.06	0.57	40.80	0.97
	0.125	0.117	0.750	1.171	24,100	27,500	14,200	15,800	0.325	0.461	433	485	22.95	0.55	40.80	0.97
	0.134	0.126	0.732	1.242	25,500	29,200	15,200	16,900	0.346	0.439	454	512	21.86	0.52	40.80	0.97
1.250	0.080	0.075	1.090	1.002	20,600	23,500	7,500	8,300	0.277	0.950	517	548	48.47	1.15	63.75	1.52
	0.087	0.082	1.076	1.083	22,300	25,400	8,200	9,100	0.301	0.926	555	592	47.24	1.12	63.75	1.52
	0.095	0.090	1.060	1.175	24,100	27,600	8,900	9,900	0.328	0.899	598	642	45.84	1.09	63.75	1.52
	0.102	0.097	1.046	1.254	25,800	29,400	9,600	10,700	0.351	0.876	633	683	44.64	1.06	63.75	1.52
	0.109	0.104	1.032	1.332	27,400	31,300	10,300	11,400	0.374	0.853	668	724	43.45	1.03	63.75	1.52
	0.116	0.108	1.018	1.408	28,900	33,100	10,700	11,900	0.387	0.840	686	747	42.28	1.01	63.75	1.52
	0.125	0.117	1.000	1.506	30,900	35,300	11,500	12,800	0.416	0.811	727	797	40.80	0.97	63.75	1.52
	0.134	0.126	0.982	1.601	32,900	37,600	12,400	13,800	0.445	0.782	766	845	39.34	0.94	63.75	1.52
	0.145	0.137	0.960	1.715	35,200	40,300	13,400	14,900	0.479	0.748	811	902	37.60	0.90	63.75	1.52
	0.156	0.148	0.938	1.827	37,500	42,900	14,400	16,000	0.512	0.715	853	956	35.90	0.85	63.75	1.52
	0.175	0.167	0.900	2.014	41,400	47,300	16,100	17,900	0.568	0.659	919	1,044	33.05	0.79	63.75	1.52
1.500	0.080	0.075	1.340	1.216	25,000	28,600	6,300	7,000	0.336	1.431	767	806	73.26	1.74	91.80	2.19
	0.087	0.082	1.326	1.316	27,000	30,900	6,800	7,600	0.365	1.402	827	873	71.74	1.71	91.80	2.19
	0.095	0.090	1.310	1.429	29,400	33,500	7,500	8,300	0.399	1.368	893	947	70.02	1.67	91.80	2.19
	0.102	0.097	1.296	1.527	31,400	35,800	8,100	9,000	0.428	1.340	949	1,011	68.53	1.63	91.80	2.19
	0.109	0.104	1.282	1.623	33,300	38,100	8,600	9,600	0.456	1.311	1,003	1,074	67.06	1.60	91.80	2.19
	0.116	0.108	1.268	1.719	35,300	40,300	8,900	9,900	0.472	1.295	1,033	1,109	65.60	1.56	91.80	2.19
	0.125	0.117	1.250	1.840	37,800	43,200	9,700	10,800	0.508	1.259	1,099	1,186	63.75	1.52	91.80	2.19
	0.134	0.126	1.232	1.960	40,300	46,000	10,400	11,600	0.544	1.223	1,162	1,261	61.93	1.47	91.80	2.19
	0.145	0.137	1.210	2.104	43,200	49,400	11,300	12,500	0.587	1.181	1,235	1,350	59.74	1.42	91.80	2.19
	0.156	0.148	1.188	2.245	46,100	52,700	12,200	13,500	0.629	1.139	1,305	1,436	57.58	1.37	91.80	2.19
	0.175	0.167	1.150	2.483	51,000	58,300	13,600	15,100	0.699	1.068	1,416	1,577	53.96	1.28	91.80	2.19
	0.190	0.178	1.120	2.665	54,700	62,600	14,400	16,000	0.739	1.028	1,476	1,655	51.18	1.22	91.80	2.19
	0.204	0.192	1.092	2.831	58,100	66,400	15,500	17,200	0.789	0.978	1,547	1,749	48.65	1.16	91.80	2.19
1.750	0.087	0.082	1.576	1.549	31,800	36,400	5,900	6,500	0.430	1.976	1,152	1,207	101.34	2.41	124.95	2.97
	0.095	0.090	1.560	1.683	34,600	39,500	6,500	7,200	0.469	1.936	1,247	1,312	99.29	2.36	124.95	2.97
	0.102	0.097	1.546	1.800	37,000	42,200	6,900	7,700	0.504	1.902	1,328	1,403	97.52	2.32	124.95	2.97
	0.109	0.104	1.532	1.915	39,300	45,000	7,400	8,200	0.538	1.867	1,407	1,492	95.76	2.28	124.95	2.97
	0.116	0.108	1.518	2.029	41,700	47,600	7,700	8,600	0.557	1.848	1,451	1,542	94.02	2.24	124.95	2.97
	0.125	0.117	1.500	2.175	44,700	51,100	8,400	9,300	0.600	1.805	1,547	1,652	91.80	2.19	124.95	2.97
	0.134	0.126	1.482	2.318	47,600	54,400	8,900	9,900	0.643	1.762	1,640	1,760	89.61	2.13	124.95	2.97
	0.145	0.137	1.460	2.492	51,200	58,500	9,700	10,800	0.694	1.711	1,750	1,889	86.97	2.07	124.95	2.97
	0.156	0.148	1.438	2.662	54,700	62,500	10,400	11,600	0.745	1.660	1,854	2,014	84.37	2.01	124.95	2.97
	0.175	0.167	1.400	2.951	60,600	69,300	11,800	13,100	0.831	1.575	2,024	2,221	79.97	1.90	124.95	2.97
	0.190	0.178	1.370	3.173	65,200	74,500	12,500	13,900	0.879	1.526	2,116	2,336	76.58	1.82	124.95	2.97
	0.204	0.192	1.342	3.377	69,400	79,300	13,400	14,900	0.940	1.466	2,227	2,477	73.48	1.75	124.95	2.97
	0.224	0.212	1.302	3.660	75,200	85,900	14,700	16,300	1.024	1.381	2,374	2,668	69.16	1.65	124.95	2.97
	0.250	0.238	1.250	4.015	82,500	94,200	16,400	18,200	1.131	1.275	2,547	2,900	63.75	1.52	124.95	2.97

MINIMUM YIELD
70 Ksi

MINIMUM ULTIMATE STRENGTH
80 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-70™ (CT70) | 2.000" TO 4.500"

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
2.000	0.102	0.097	1.796	2.073	42,600	48,700	6,000	6,700	0.580	2.562	1,772	1,859	131.60	3.13	163.20	3.89
	0.109	0.104	1.782	2.207	45,300	51,800	6,500	7,200	0.619	2.522	1,879	1,979	129.56	3.08	163.20	3.89
	0.116	0.108	1.768	2.340	48,100	54,900	6,800	7,500	0.642	2.500	1,940	2,046	127.53	3.04	163.20	3.89
	0.125	0.117	1.750	2.509	51,500	58,900	7,300	8,100	0.692	2.449	2,073	2,196	124.95	2.97	163.20	3.89
	0.134	0.126	1.732	2.677	55,000	62,800	7,800	8,700	0.742	2.400	2,202	2,343	122.39	2.91	163.20	3.89
	0.145	0.137	1.710	2.880	59,200	67,600	8,600	9,500	0.802	2.340	2,354	2,518	119.30	2.84	163.20	3.89
	0.156	0.148	1.688	3.080	63,300	72,300	9,200	10,200	0.861	2.280	2,501	2,690	116.25	2.77	163.20	3.89
	0.175	0.167	1.650	3.419	70,200	80,300	10,400	11,500	0.962	2.180	2,741	2,975	111.08	2.64	163.20	3.89
	0.190	0.178	1.620	3.682	75,600	86,400	11,000	12,200	1.019	2.123	2,873	3,134	107.08	2.55	163.20	3.89
	0.204	0.192	1.592	3.923	80,600	92,100	11,800	13,100	1.091	2.051	3,034	3,331	103.41	2.46	163.20	3.89
	0.224	0.212	1.552	4.259	87,500	100,000	13,000	14,400	1.191	1.951	3,249	3,600	98.27	2.34	163.20	3.89
	0.250	0.238	1.500	4.684	96,200	110,000	14,500	16,100	1.317	1.824	3,505	3,930	91.80	2.19	163.20	3.89
	0.280	0.265	1.440	5.156	105,900	121,000	15,900	17,700	1.444	1.697	3,744	4,250	84.60	2.01	163.20	3.89
2.375	0.125	0.117	2.125	3.011	61,900	70,700	6,200	6,900	0.830	3.600	3,007	3,157	184.24	4.39	230.14	5.48
	0.134	0.126	2.107	3.215	66,000	75,500	6,700	7,400	0.890	3.540	3,201	3,373	181.13	4.31	230.14	5.48
	0.145	0.137	2.085	3.462	71,100	81,300	7,200	8,000	0.963	3.467	3,431	3,632	177.37	4.22	230.14	5.48
	0.156	0.148	2.063	3.706	76,100	87,000	7,700	8,600	1.035	3.395	3,655	3,886	173.64	4.13	230.14	5.48
	0.175	0.167	2.025	4.122	84,700	96,800	8,700	9,700	1.158	3.272	4,025	4,313	167.31	3.98	230.14	5.48
	0.190	0.178	1.995	4.445	91,300	104,300	9,300	10,300	1.229	3.202	4,230	4,552	162.38	3.87	230.14	5.48
	0.204	0.192	1.967	4.742	97,400	111,300	10,000	11,100	1.317	3.113	4,481	4,850	157.86	3.76	230.14	5.48
	0.224	0.212	1.927	5.159	106,000	121,100	11,000	12,200	1.441	2.990	4,822	5,261	151.50	3.61	230.14	5.48
	0.250	0.238	1.875	5.688	116,800	133,500	12,300	13,700	1.598	2.832	5,235	5,770	143.44	3.42	230.14	5.48
	0.280	0.265	1.815	6.280	129,000	147,400	13,600	15,100	1.757	2.674	5,629	6,270	134.40	3.20	230.14	5.48
	0.300	0.285	1.775	6.665	136,900	156,500	14,600	16,200	1.871	2.559	5,900	6,623	128.55	3.06	230.14	5.48
2.625	0.134	0.126	2.357	3.574	73,400	83,900	6,000	6,700	0.989	4.423	3,971	4,164	226.66	5.40	281.14	6.69
	0.145	0.137	2.335	3.850	79,100	90,400	6,600	7,300	1.071	4.341	4,263	4,488	222.45	5.30	281.14	6.69
	0.156	0.148	2.313	4.124	84,700	96,800	7,000	7,800	1.152	4.260	4,546	4,807	218.28	5.20	281.14	6.69
	0.175	0.167	2.275	4.590	94,300	107,800	7,900	8,800	1.290	4.122	5,018	5,343	211.17	5.03	281.14	6.69
	0.190	0.178	2.245	4.953	101,700	116,300	8,500	9,400	1.368	4.044	5,281	5,645	205.63	4.90	281.14	6.69
	0.204	0.192	2.217	5.288	108,600	124,100	9,100	10,100	1.468	3.944	5,604	6,021	200.54	4.77	281.14	6.69
	0.224	0.212	2.177	5.758	118,300	135,200	10,000	11,100	1.607	3.805	6,045	6,543	193.36	4.60	281.14	6.69
	0.250	0.238	2.125	6.357	130,600	149,200	11,200	12,400	1.785	3.627	6,584	7,193	184.24	4.39	281.14	6.69
	0.280	0.265	2.065	7.030	144,400	165,000	12,400	13,800	1.965	3.447	7,104	7,836	173.98	4.14	281.14	6.69
	0.300	0.285	2.025	7.468	153,400	175,300	13,200	14,700	2.095	3.317	7,464	8,291	167.31	3.98	281.14	6.69
2.875	0.145	0.137	2.585	4.238	87,100	99,500	5,900	6,600	1.178	5.313	5,184	5,435	272.63	6.49	337.24	8.03
	0.156	0.148	2.563	4.541	93,300	106,600	6,500	7,200	1.268	5.224	5,536	5,825	268.01	6.38	337.24	8.03
	0.175	0.167	2.525	5.059	103,900	118,800	7,300	8,100	1.421	5.071	6,122	6,483	260.12	6.19	337.24	8.03
	0.190	0.178	2.495	5.462	112,200	128,200	7,700	8,600	1.508	4.984	6,449	6,855	253.98	6.05	337.24	8.03
	0.204	0.192	2.467	5.834	119,800	136,900	8,300	9,200	1.618	4.873	6,854	7,320	248.31	5.91	337.24	8.03
	0.224	0.212	2.427	6.358	130,600	149,200	9,200	10,200	1.774	4.718	7,409	7,965	240.32	5.72	337.24	8.03
	0.250	0.238	2.375	7.026	144,300	164,900	10,300	11,400	1.972	4.520	8,091	8,774	230.14	5.48	337.24	8.03
	0.280	0.265	2.315	7.779	159,800	182,600	11,300	12,600	2.173	4.319	8,754	9,577	218.66	5.21	337.24	8.03
	0.300	0.285	2.275	8.271	169,900	194,200	12,200	13,500	2.319	4.173	9,216	10,149	211.17	5.03	337.24	8.03
3.500	0.175	0.167	3.150	6.230	128,000	146,200	5,900	6,600	1.749	7.872	9,364	9,817	404.84	9.64	499.80	11.90
	0.190	0.178	3.120	6.733	138,300	158,100	6,400	7,100	1.858	7.763	9,886	10,396	397.16	9.46	499.80	11.90
	0.204	0.192	3.092	7.199	147,900	169,000	6,800	7,600	1.995	7.626	10,534	11,121	390.07	9.29	499.80	11.90
	0.224	0.212	3.052	7.857	161,400	184,400	7,600	8,400	2.190	7.431	11,431	12,134	380.04	9.05	499.80	11.90
	0.250	0.238	3.000	8.699	178,700	204,200	8,500	9,400	2.439	7.182	12,545	13,413	367.20	8.74	499.80	11.90
	0.280	0.265	2.940	9.653	198,300	226,600	9,400	10,400	2.693	6.928	13,643	14,695	352.66	8.40	499.80	11.90
	0.300	0.285	2.900	10.278	211,100	241,300	10,100	11,200	2.879	6.743	14,419	15,615	343.13	8.17	499.80	11.90
4.500	0.224	0.212	4.052	10.255	210,600	240,700	5,900	6,600	2.856	13.048	19,686	20,626	669.88	15.95	826.20	19.67
	0.250	0.238	4.000	11.376	233,700	267,000	6,700	7,400	3.187	12.718	21,715	22,881	652.80	15.54	826.20	19.67
	0.280	0.265	3.940	12.651	259,800	297,000	7,400	8,200	3.526	12.379	23,741	25,161	633.36	15.08	826.20	19.67
	0.300	0.285	3.900	13.490	277,100	316,700	7,900	8,800	3.774	12.130	25,189	26,811	620.57	14.78	826.20	19.67

MINIMUM YIELD
70 Ksi

MINIMUM ULTIMATE STRENGTH
80 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-70™ (CT70) | 25.400 mm TO 44.450 mm (50.800 mm TO 114.300 mm on reverse side)

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
25.400	2.03	1.905	21.3	1.17	72,000	82,300	64,300	71,400	1.41	3.66	430	460	0.36	0.51
	2.21	2.083	21.0	1.27	77,700	88,800	70,000	77,800	1.53	3.54	460	500	0.35	0.51
	2.41	2.286	20.6	1.37	84,100	96,100	76,600	85,100	1.66	3.41	490	540	0.33	0.51
	2.59	2.464	20.2	1.46	89,600	102,400	82,300	91,400	1.78	3.29	520	570	0.32	0.51
	2.77	2.642	19.9	1.55	95,000	108,600	87,900	97,700	1.89	3.18	540	600	0.31	0.51
	2.95	2.743	19.5	1.63	100,300	114,600	91,100	101,200	1.95	3.11	560	620	0.30	0.51
	3.18	2.972	19.1	1.74	107,000	122,300	98,200	109,100	2.09	2.97	590	660	0.28	0.51
	3.40	3.200	18.6	1.85	113,500	129,700	105,100	116,800	2.23	2.84	620	690	0.27	0.51
31.750	2.03	1.905	27.7	1.49	91,600	104,600	51,700	57,400	1.79	6.13	700	740	0.60	0.79
	2.21	2.083	27.3	1.61	99,000	113,100	56,300	62,600	1.94	5.98	750	800	0.59	0.79
	2.41	2.286	26.9	1.75	107,300	122,700	61,700	68,600	2.12	5.80	810	870	0.57	0.79
	2.59	2.464	26.6	1.87	114,500	130,900	66,400	73,800	2.27	5.65	860	930	0.55	0.79
	2.77	2.642	26.2	1.98	121,700	139,000	71,000	78,900	2.42	5.50	910	980	0.54	0.79
	2.95	2.743	25.9	2.10	128,700	147,100	73,600	81,800	2.50	5.42	930	1,010	0.52	0.79
	3.18	2.972	25.4	2.24	137,600	157,200	79,600	88,400	2.69	5.23	990	1,080	0.51	0.79
	3.40	3.200	24.9	2.38	146,300	167,200	85,300	94,800	2.87	5.05	1,040	1,150	0.49	0.79
	3.68	3.480	24.4	2.55	156,700	179,100	92,300	102,600	3.09	4.83	1,100	1,220	0.47	0.79
	3.96	3.759	23.8	2.72	166,900	190,800	99,300	110,300	3.31	4.61	1,160	1,300	0.45	0.79
	4.45	4.242	22.9	3.00	184,000	210,300	110,900	123,200	3.67	4.25	1,250	1,420	0.41	0.79
38.100	2.03	1.905	34.0	1.81	111,100	127,000	43,200	48,000	2.17	9.23	1,040	1,090	0.91	1.14
	2.21	2.083	33.7	1.96	120,300	137,400	47,200	52,400	2.36	9.04	1,120	1,180	0.89	1.14
	2.41	2.286	33.3	2.13	130,600	149,200	51,700	57,400	2.57	8.83	1,210	1,280	0.87	1.14
	2.59	2.464	32.9	2.27	139,500	159,400	55,600	61,800	2.76	8.64	1,290	1,370	0.85	1.14
	2.77	2.642	32.6	2.42	148,300	169,500	59,500	66,100	2.94	8.46	1,360	1,460	0.83	1.14
	2.95	2.743	32.2	2.56	157,000	179,500	61,700	68,600	3.05	8.35	1,400	1,500	0.81	1.14
	3.18	2.972	31.8	2.74	168,100	192,100	66,700	74,100	3.28	8.12	1,490	1,610	0.79	1.14
	3.40	3.200	31.3	2.92	179,100	204,600	71,600	79,600	3.51	7.89	1,580	1,710	0.77	1.14
	3.68	3.480	30.7	3.13	192,200	219,700	77,700	86,300	3.78	7.62	1,670	1,830	0.74	1.14
	3.96	3.759	30.2	3.34	205,100	234,400	83,600	92,900	4.06	7.35	1,770	1,950	0.71	1.14
	4.45	4.242	29.2	3.69	226,800	259,200	93,700	104,100	4.51	6.89	1,920	2,140	0.67	1.14
	4.83	4.521	28.4	3.97	243,500	278,300	99,500	110,500	4.77	6.63	2,000	2,240	0.64	1.14
	5.18	4.877	27.7	4.21	258,600	295,600	106,700	118,500	5.09	6.31	2,100	2,370	0.60	1.14
44.450	2.21	2.083	40.0	2.31	141,500	161,700	40,500	45,000	2.77	12.75	1,560	1,640	1.26	1.55
	2.41	2.286	39.6	2.51	153,800	175,800	44,400	49,300	3.03	12.49	1,690	1,780	1.23	1.55
	2.59	2.464	39.3	2.68	164,400	187,900	47,800	53,100	3.25	12.27	1,800	1,900	1.21	1.55
	2.77	2.642	38.9	2.85	175,000	200,000	51,200	56,900	3.47	12.05	1,910	2,020	1.19	1.55
	2.95	2.743	38.6	3.02	185,400	211,900	53,100	59,000	3.59	11.92	1,970	2,090	1.17	1.55
	3.18	2.972	38.1	3.24	198,700	227,100	57,400	63,800	3.87	11.65	2,100	2,240	1.14	1.55
	3.40	3.200	37.6	3.45	211,800	242,100	61,700	68,600	4.15	11.37	2,220	2,390	1.11	1.55
	3.68	3.480	37.1	3.71	227,700	260,200	67,000	74,400	4.48	11.04	2,370	2,560	1.08	1.55
	3.96	3.759	36.5	3.96	243,200	278,000	72,200	80,200	4.81	10.71	2,510	2,730	1.05	1.55
	4.45	4.242	35.6	4.39	269,600	308,100	81,000	90,000	5.36	10.16	2,740	3,010	0.99	1.55
	4.83	4.521	34.8	4.72	289,900	331,400	86,000	95,600	5.67	9.85	2,870	3,170	0.95	1.55
	5.18	4.877	34.1	5.02	308,500	352,600	92,400	102,700	6.06	9.45	3,020	3,360	0.91	1.55
	5.69	5.385	33.1	5.45	334,400	382,100	101,300	112,600	6.61	8.91	3,220	3,620	0.86	1.55
	6.35	6.045	31.8	5.97	366,800	419,200	112,700	125,200	7.29	8.22	3,450	3,930	0.79	1.55

MINIMUM YIELD
483 MPa

MINIMUM ULTIMATE STRENGTH
552 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-70™ (CT70) | 50.800 mm TO 114.300 mm

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
50.800	2.59	2.464	45.6	3.08	189,400	216,400	41,900	46,500	3.74	16.53	2,400	2,520	1.63	2.03
	2.77	2.642	45.3	3.28	201,600	230,400	44,900	49,900	4.00	16.27	2,550	2,680	1.61	2.03
	2.95	2.743	44.9	3.48	213,800	244,300	46,500	51,700	4.14	16.13	2,630	2,770	1.58	2.03
	3.18	2.972	44.5	3.73	229,300	262,000	50,400	56,000	4.47	15.80	2,810	2,980	1.55	2.03
	3.40	3.200	44.0	3.98	244,600	279,500	54,200	60,200	4.79	15.48	2,990	3,180	1.52	2.03
	3.68	3.480	43.4	4.29	263,100	300,700	58,800	65,300	5.17	15.10	3,190	3,410	1.48	2.03
	3.96	3.759	42.9	4.58	281,400	321,600	63,400	70,400	5.56	14.71	3,390	3,650	1.44	2.03
	4.45	4.242	41.9	5.09	312,400	357,000	71,300	79,200	6.20	14.06	3,720	4,030	1.38	2.03
	4.83	4.521	41.1	5.48	336,400	384,500	75,800	84,200	6.57	13.69	3,900	4,250	1.33	2.03
	5.18	4.877	40.4	5.84	358,400	409,600	81,500	90,500	7.04	13.23	4,110	4,520	1.28	2.03
	5.69	5.385	39.4	6.34	389,200	444,800	89,500	99,400	7.68	12.59	4,410	4,880	1.22	2.03
	6.35	6.045	38.1	6.97	428,000	489,100	99,700	110,800	8.50	11.77	4,750	5,330	1.14	2.03
	7.11	6.731	36.6	7.67	471,100	538,400	110,100	122,300	9.32	10.95	5,080	5,760	1.05	2.03
60.325	3.18	2.972	54.0	4.48	275,100	314,400	42,600	47,300	5.35	23.23	4,080	4,280	2.29	2.86
	3.40	3.200	53.5	4.78	293,800	335,700	45,700	50,800	5.74	22.84	4,340	4,570	2.25	2.86
	3.68	3.480	53.0	5.15	316,300	361,500	49,700	55,200	6.21	22.37	4,650	4,920	2.20	2.86
	3.96	3.759	52.4	5.52	338,600	387,000	53,600	59,600	6.68	21.90	4,960	5,270	2.16	2.86
	4.45	4.242	51.4	6.13	376,600	430,400	60,300	67,000	7.47	21.11	5,460	5,850	2.08	2.86
	4.83	4.521	50.7	6.61	406,100	464,100	64,200	71,300	7.93	20.66	5,740	6,170	2.02	2.86
	5.18	4.877	50.0	7.06	433,200	495,100	69,000	76,700	8.50	20.09	6,080	6,580	1.96	2.86
	5.69	5.385	48.9	7.68	471,300	538,700	76,000	84,400	9.29	19.29	6,540	7,130	1.88	2.86
	6.35	6.045	47.6	8.46	519,700	593,900	84,900	94,300	10.31	18.27	7,100	7,820	1.78	2.86
	7.11	6.731	46.1	9.35	573,800	655,800	93,900	104,300	11.33	17.25	7,630	8,500	1.67	2.86
	7.62	7.239	45.1	9.92	608,900	695,900	100,500	111,700	12.07	16.51	8,000	8,980	1.60	2.86
66.675	3.40	3.200	59.9	5.32	326,500	373,200	41,500	46,100	6.38	28.53	5,380	5,650	2.81	3.49
	3.68	3.480	59.3	5.73	351,800	402,000	45,000	50,000	6.91	28.01	5,780	6,080	2.76	3.49
	3.96	3.759	58.8	6.14	376,800	430,600	48,600	54,000	7.43	27.49	6,160	6,520	2.71	3.49
	4.45	4.242	57.8	6.83	419,400	479,300	54,700	60,800	8.32	26.60	6,800	7,240	2.62	3.49
	4.83	4.521	57.0	7.37	452,600	517,200	58,200	64,700	8.83	26.09	7,160	7,650	2.55	3.49
	5.18	4.877	56.3	7.87	483,100	552,100	62,600	69,600	9.47	25.45	7,600	8,160	2.49	3.49
	5.69	5.385	55.3	8.57	526,100	601,300	69,000	76,700	10.37	24.55	8,200	8,870	2.40	3.49
	6.35	6.045	54.0	9.46	580,800	663,800	77,100	85,700	11.51	23.40	8,930	9,750	2.29	3.49
	7.11	6.731	52.5	10.46	642,300	734,100	85,400	94,900	12.68	22.24	9,630	10,620	2.16	3.49
	7.62	7.239	51.4	11.11	682,300	779,800	91,500	101,700	13.52	21.40	10,120	11,240	2.08	3.49
73.025	3.68	3.480	65.7	6.31	387,200	442,500	41,100	45,700	7.60	34.28	7,030	7,370	3.38	4.19
	3.96	3.759	65.1	6.76	414,900	474,200	44,500	49,400	8.18	33.70	7,510	7,900	3.33	4.19
	4.45	4.242	64.1	7.53	462,200	528,200	50,000	55,600	9.17	32.72	8,300	8,790	3.23	4.19
	4.83	4.521	63.4	8.13	499,000	570,300	53,300	59,200	9.73	32.15	8,740	9,290	3.15	4.19
	5.18	4.877	62.7	8.68	533,000	609,200	57,300	63,700	10.44	31.44	9,290	9,920	3.08	4.19
	5.69	5.385	61.6	9.46	580,900	663,900	63,200	70,200	11.44	30.44	10,050	10,800	2.98	4.19
	6.35	6.045	60.3	10.46	642,000	733,700	70,700	78,500	12.72	29.16	10,970	11,900	2.86	4.19
	7.11	6.731	58.8	11.58	710,800	812,300	78,400	87,100	14.02	27.86	11,870	12,980	2.71	4.19
	7.62	7.239	57.8	12.31	755,700	863,600	84,000	93,300	14.96	26.92	12,500	13,760	2.62	4.19
88.900	4.45	4.242	80.0	9.27	569,200	650,500	41,200	45,800	11.28	50.79	12,700	13,310	5.03	6.21
	4.83	4.521	79.2	10.02	615,200	703,100	43,900	48,800	11.98	50.09	13,400	14,100	4.93	6.21
	5.18	4.877	78.5	10.71	657,700	751,700	47,300	52,500	12.87	49.20	14,280	15,080	4.84	6.21
	5.69	5.385	77.5	11.69	717,800	820,400	52,100	57,900	14.13	47.94	15,500	16,450	4.72	6.21
	6.35	6.045	76.2	12.95	794,800	908,300	58,400	64,900	15.74	46.34	17,010	18,190	4.56	6.21
	7.11	6.731	74.7	14.37	882,000	1,008,000	64,800	72,000	17.38	44.70	18,500	19,920	4.38	6.21
	7.62	7.239	73.7	15.30	939,100	1,073,200	69,600	77,300	18.57	43.50	19,550	21,170	4.26	6.21
114.300	5.69	5.385	102.9	15.26	937,000	1,070,800	40,700	45,200	18.43	84.18	26,690	27,970	8.32	10.26
	6.35	6.045	101.6	16.93	1,039,400	1,187,800	45,600	50,700	20.56	82.05	29,440	31,020	8.10	10.26
	7.11	6.731	100.1	18.83	1,155,900	1,321,000	50,700	56,300	22.75	79.86	32,190	34,110	7.86	10.26
	7.62	7.239	99.1	20.08	1,232,600	1,408,600	54,500	60,500	24.35	78.26	34,150	36,350	7.70	10.26

MINIMUM YIELD
483 MPa

MINIMUM ULTIMATE STRENGTH
552 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-80™ (CT80) | 1.000" TO 1.750" (2.000" TO 4.500" on reverse side)

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
1.000	0.080	0.075	0.840	0.788	18,500	20,300	10,600	11,800	0.218	0.567	361	389	28.79	0.69	40.80	0.97
	0.087	0.082	0.826	0.850	20,000	22,000	11,600	12,900	0.236	0.549	386	419	27.84	0.66	40.80	0.97
	0.095	0.090	0.810	0.920	21,600	23,800	12,700	14,100	0.257	0.528	414	452	26.77	0.64	40.80	0.97
	0.102	0.097	0.796	0.981	23,000	25,300	13,700	15,200	0.275	0.510	437	480	25.85	0.62	40.80	0.97
	0.109	0.104	0.782	1.040	24,400	26,800	14,600	16,200	0.293	0.493	458	507	24.95	0.59	40.80	0.97
	0.116	0.108	0.768	1.098	25,800	28,300	15,100	16,800	0.303	0.483	470	522	24.06	0.57	40.80	0.97
	0.125	0.117	0.750	1.171	27,500	30,200	16,300	18,100	0.325	0.461	495	554	22.95	0.55	40.80	0.97
	0.134	0.126	0.732	1.242	29,200	32,100	17,500	19,400	0.346	0.439	519	586	21.86	0.52	40.80	0.97
1.250	0.080	0.075	1.090	1.002	23,500	25,900	8,600	9,500	0.277	0.950	591	627	48.47	1.15	63.75	1.52
	0.087	0.082	1.076	1.083	25,400	28,000	9,400	10,400	0.301	0.926	635	677	47.24	1.12	63.75	1.52
	0.095	0.090	1.060	1.175	27,600	30,300	10,300	11,400	0.328	0.899	683	733	45.84	1.09	63.75	1.52
	0.102	0.097	1.046	1.254	29,400	32,400	11,000	12,200	0.351	0.876	724	781	44.64	1.06	63.75	1.52
	0.109	0.104	1.032	1.332	31,300	34,400	11,800	13,100	0.374	0.853	763	828	43.45	1.03	63.75	1.52
	0.116	0.108	1.018	1.408	33,100	36,400	12,200	13,600	0.387	0.840	784	854	42.28	1.01	63.75	1.52
	0.125	0.117	1.000	1.506	35,300	38,900	13,100	14,600	0.416	0.811	831	911	40.80	0.97	63.75	1.52
	0.134	0.126	0.982	1.601	37,600	41,300	14,100	15,700	0.445	0.782	876	966	39.34	0.94	63.75	1.52
	0.145	0.137	0.960	1.715	40,300	44,300	15,300	17,000	0.479	0.748	927	1,031	37.60	0.90	63.75	1.52
	0.156	0.148	0.938	1.827	42,900	47,200	16,500	18,300	0.512	0.715	975	1,093	35.90	0.85	63.75	1.52
	0.175	0.167	0.900	2.014	47,300	52,000	17,500	20,400	0.568	0.659	1,050	1,193	33.05	0.79	63.75	1.52
1.500	0.080	0.075	1.340	1.216	28,600	31,400	7,100	7,900	0.336	1.431	877	921	73.26	1.74	91.80	2.19
	0.087	0.082	1.326	1.316	30,900	34,000	7,800	8,700	0.365	1.402	945	997	71.74	1.71	91.80	2.19
	0.095	0.090	1.310	1.429	33,500	36,900	8,600	9,500	0.399	1.368	1,020	1,083	70.02	1.67	91.80	2.19
	0.102	0.097	1.296	1.527	35,800	39,400	9,200	10,200	0.428	1.340	1,084	1,156	68.53	1.63	91.80	2.19
	0.109	0.104	1.282	1.623	38,100	41,900	9,900	11,000	0.456	1.311	1,146	1,227	67.06	1.60	91.80	2.19
	0.116	0.108	1.268	1.719	40,300	44,400	10,300	11,400	0.472	1.295	1,180	1,267	65.60	1.56	91.80	2.19
	0.125	0.117	1.250	1.840	43,200	47,500	11,100	12,300	0.508	1.259	1,256	1,355	63.75	1.52	91.80	2.19
	0.134	0.126	1.232	1.960	46,000	50,600	11,900	13,200	0.544	1.223	1,328	1,441	61.93	1.47	91.80	2.19
	0.145	0.137	1.210	2.104	49,400	54,300	12,900	14,300	0.587	1.181	1,412	1,543	59.74	1.42	91.80	2.19
	0.156	0.148	1.188	2.245	52,700	58,000	13,900	15,400	0.629	1.139	1,491	1,641	57.58	1.37	91.80	2.19
	0.175	0.167	1.150	2.483	58,300	64,100	15,600	17,300	0.699	1.068	1,618	1,802	53.96	1.28	91.80	2.19
	0.190	0.178	1.120	2.665	62,600	68,800	16,500	18,300	0.739	1.028	1,687	1,891	51.18	1.22	91.80	2.19
	0.204	0.192	1.092	2.831	66,400	73,100	17,500	19,600	0.789	0.978	1,768	1,999	48.65	1.16	91.80	2.19
1.750	0.087	0.082	1.576	1.549	36,400	40,000	6,800	7,500	0.430	1.976	1,317	1,380	101.34	2.41	124.95	2.97
	0.095	0.090	1.560	1.683	39,500	43,500	7,400	8,200	0.469	1.936	1,426	1,500	99.29	2.36	124.95	2.97
	0.102	0.097	1.546	1.800	42,200	46,500	7,900	8,800	0.504	1.902	1,518	1,603	97.52	2.32	124.95	2.97
	0.109	0.104	1.532	1.915	45,000	49,500	8,500	9,400	0.538	1.867	1,608	1,705	95.76	2.28	124.95	2.97
	0.116	0.108	1.518	2.029	47,600	52,400	8,800	9,800	0.557	1.848	1,658	1,762	94.02	2.24	124.95	2.97
	0.125	0.117	1.500	2.175	51,100	56,200	9,500	10,600	0.600	1.805	1,768	1,888	91.80	2.19	124.95	2.97
	0.134	0.126	1.482	2.318	54,400	59,900	10,300	11,400	0.643	1.762	1,875	2,012	89.61	2.13	124.95	2.97
	0.145	0.137	1.460	2.492	58,500	64,300	11,100	12,300	0.694	1.711	1,999	2,159	86.97	2.07	124.95	2.97
	0.156	0.148	1.438	2.662	62,500	68,700	12,000	13,300	0.745	1.660	2,119	2,302	84.37	2.01	124.95	2.97
	0.175	0.167	1.400	2.951	69,300	76,200	13,400	14,900	0.831	1.575	2,313	2,538	79.97	1.90	124.95	2.97
	0.190	0.178	1.370	3.173	74,500	81,900	14,300	15,900	0.879	1.526	2,418	2,669	76.58	1.82	124.95	2.97
	0.204	0.192	1.342	3.377	79,300	87,200	15,300	17,000	0.940	1.466	2,545	2,830	73.48	1.75	124.95	2.97
	0.224	0.212	1.302	3.660	85,900	94,500	16,800	18,700	1.024	1.381	2,714	3,049	69.16	1.65	124.95	2.97
	0.250	0.238	1.250	4.015	94,200	103,700	17,500	20,800	1.131	1.275	2,911	3,315	63.75	1.52	124.95	2.97

MINIMUM YIELD
80 Ksi

MININUM ULTIMATE STRENGTH
88 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-80™ (CT80) | 2.000" TO 4.500"

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
2.000	0.102	0.097	1.796	2.073	48,700	53,500	6,900	7,700	0.580	2.562	2,025	2,124	131.60	3.13	163.20	3.89
	0.109	0.104	1.782	2.207	51,800	57,000	7,500	8,300	0.619	2.522	2,148	2,261	129.56	3.08	163.20	3.89
	0.116	0.108	1.768	2.340	54,900	60,400	7,700	8,600	0.642	2.500	2,217	2,339	127.53	3.04	163.20	3.89
	0.125	0.117	1.750	2.509	58,900	64,800	8,400	9,300	0.692	2.449	2,369	2,510	124.95	2.97	163.20	3.89
	0.134	0.126	1.732	2.677	62,800	69,100	9,000	10,000	0.742	2.400	2,517	2,678	122.39	2.91	163.20	3.89
	0.145	0.137	1.710	2.880	67,600	74,400	9,700	10,800	0.802	2.340	2,691	2,878	119.30	2.84	163.20	3.89
	0.156	0.148	1.688	3.080	72,300	79,500	10,500	11,700	0.861	2.280	2,858	3,074	116.25	2.77	163.20	3.89
	0.175	0.167	1.650	3.419	80,300	88,300	11,800	13,100	0.962	2.180	3,133	3,400	111.08	2.64	163.20	3.89
	0.190	0.178	1.620	3.682	86,400	95,100	12,600	14,000	1.019	2.123	3,284	3,582	107.08	2.55	163.20	3.89
	0.204	0.192	1.592	3.923	92,100	101,300	13,500	15,000	1.091	2.051	3,467	3,807	103.41	2.46	163.20	3.89
	0.224	0.212	1.552	4.259	100,000	110,000	14,900	16,500	1.191	1.951	3,713	4,114	98.27	2.34	163.20	3.89
	0.250	0.238	1.500	4.684	110,000	121,000	16,600	18,400	1.317	1.824	4,005	4,492	91.80	2.19	163.20	3.89
	0.280	0.265	1.440	5.156	121,000	133,100	17,500	20,300	1.444	1.697	4,279	4,858	84.60	2.01	163.20	3.89
2.375	0.125	0.117	2.125	3.011	70,700	77,800	7,000	7,800	0.830	3.600	3,436	3,608	184.24	4.39	230.14	5.48
	0.134	0.126	2.107	3.215	75,500	83,000	7,600	8,400	0.890	3.540	3,658	3,855	181.13	4.31	230.14	5.48
	0.145	0.137	2.085	3.462	81,300	89,400	8,300	9,200	0.963	3.467	3,922	4,151	177.37	4.22	230.14	5.48
	0.156	0.148	2.063	3.706	87,000	95,700	8,900	9,900	1.035	3.395	4,177	4,442	173.64	4.13	230.14	5.48
	0.175	0.167	2.025	4.122	96,800	106,400	10,000	11,100	1.158	3.272	4,600	4,929	167.31	3.98	230.14	5.48
	0.190	0.178	1.995	4.445	104,300	114,800	10,600	11,800	1.229	3.202	4,834	5,203	162.38	3.87	230.14	5.48
	0.204	0.192	1.967	4.742	111,300	122,400	11,400	12,700	1.317	3.113	5,121	5,543	157.86	3.76	230.14	5.48
	0.224	0.212	1.927	5.159	121,100	133,200	12,600	14,000	1.441	2.990	5,511	6,012	151.50	3.61	230.14	5.48
	0.250	0.238	1.875	5.688	133,500	146,900	14,000	15,600	1.598	2.832	5,983	6,595	143.44	3.42	230.14	5.48
	0.280	0.265	1.815	6.280	147,400	162,200	15,600	17,300	1.757	2.674	6,433	7,166	134.40	3.20	230.14	5.48
	0.300	0.285	1.775	6.665	156,500	172,100	16,700	18,500	1.871	2.559	6,743	7,569	128.55	3.06	230.14	5.48
2.625	0.134	0.126	2.357	3.574	83,900	92,300	6,800	7,600	0.989	4.423	4,538	4,759	226.66	5.40	281.14	6.69
	0.145	0.137	2.335	3.850	90,400	99,400	7,500	8,300	1.071	4.341	4,871	5,129	222.45	5.30	281.14	6.69
	0.156	0.148	2.313	4.124	96,800	106,500	8,000	8,900	1.152	4.260	5,196	5,493	218.28	5.20	281.14	6.69
	0.175	0.167	2.275	4.590	107,800	118,500	9,100	10,100	1.290	4.122	5,735	6,106	211.17	5.03	281.14	6.69
	0.190	0.178	2.245	4.953	116,300	127,900	9,600	10,700	1.368	4.044	6,035	6,451	205.63	4.90	281.14	6.69
	0.204	0.192	2.217	5.288	124,100	136,500	10,400	11,500	1.468	3.944	6,405	6,882	200.54	4.77	281.14	6.69
	0.224	0.212	2.177	5.758	135,200	148,700	11,400	12,700	1.607	3.805	6,909	7,478	193.36	4.60	281.14	6.69
	0.250	0.238	2.125	6.357	149,200	164,100	12,800	14,200	1.785	3.627	7,525	8,221	184.24	4.39	281.14	6.69
	0.280	0.265	2.065	7.030	165,000	181,500	14,100	15,700	1.965	3.447	8,119	8,956	173.98	4.14	281.14	6.69
	0.300	0.285	2.025	7.468	175,300	192,800	15,200	16,900	2.095	3.317	8,530	9,476	167.31	3.98	281.14	6.69
2.875	0.145	0.137	2.585	4.238	99,500	109,400	6,800	7,600	1.178	5.313	5,925	6,211	272.63	6.49	337.24	8.03
	0.156	0.148	2.563	4.541	106,600	117,300	7,400	8,200	1.268	5.224	6,326	6,657	268.01	6.38	337.24	8.03
	0.175	0.167	2.525	5.059	118,800	130,600	8,300	9,200	1.421	5.071	6,996	7,409	260.12	6.19	337.24	8.03
	0.190	0.178	2.495	5.462	128,200	141,000	8,800	9,800	1.508	4.984	7,371	7,835	253.98	6.05	337.24	8.03
	0.204	0.192	2.467	5.834	136,900	150,600	9,500	10,600	1.618	4.873	7,833	8,365	248.31	5.91	337.24	8.03
	0.224	0.212	2.427	6.358	149,200	164,200	10,400	11,600	1.774	4.718	8,468	9,103	240.32	5.72	337.24	8.03
	0.250	0.238	2.375	7.026	164,900	181,400	11,700	13,000	1.972	4.520	9,247	10,027	230.14	5.48	337.24	8.03
	0.280	0.265	2.315	7.779	182,600	200,900	13,000	14,400	2.173	4.319	10,004	10,945	218.66	5.21	337.24	8.03
	0.300	0.285	2.275	8.271	194,200	213,600	14,000	15,500	2.319	4.173	10,533	11,598	211.17	5.03	337.24	8.03
3.500	0.175	0.167	3.150	6.230	146,200	160,900	6,800	7,600	1.749	7.872	10,702	11,219	404.84	9.64	499.80	11.90
	0.190	0.178	3.120	6.733	158,100	173,900	7,300	8,100	1.858	7.763	11,298	11,881	397.16	9.46	499.80	11.90
	0.204	0.192	3.092	7.199	169,000	185,900	7,800	8,700	1.995	7.626	12,039	12,709	390.07	9.29	499.80	11.90
	0.224	0.212	3.052	7.857	184,400	202,900	8,600	9,600	2.190	7.431	13,064	13,868	380.04	9.05	499.80	11.90
	0.250	0.238	3.000	8.699	204,200	224,600	9,700	10,800	2.439	7.182	14,337	15,329	367.20	8.74	499.80	11.90
	0.280	0.265	2.940	9.653	226,600	249,300	10,700	11,900	2.693	6.928	15,592	16,795	352.66	8.40	499.80	11.90
	0.300	0.285	2.900	10.278	241,300	265,400	11,500	12,800	2.879	6.743	16,479	17,846	343.13	8.17	499.80	11.90
4.500	0.224	0.212	4.052	10.255	240,700	264,800	6,800	7,500	2.856	13.048	22,498	23,572	669.88	15.95	826.20	19.67
	0.250	0.238	4.000	11.376	267,000	293,700	7,600	8,400	3.187	12.718	24,818	26,149	652.80	15.54	826.20	19.67
	0.280	0.265	3.940	12.651	297,000	326,700	8,400	9,300	3.526	12.379	27,133	28,756	633.36	15.08	826.20	19.67
	0.300	0.285	3.900	13.490	316,700	348,300	9,000	10,000	3.774	12.130	28,788	30,641	620.57	14.78	826.20	19.67

MINIMUM YIELD
80 Ksi

MINIMUM ULTIMATE STRENGTH
88 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-80™ (CT80) | 25.400 mm TO 44.450 mm (50.800 mm TO 114.300 mm on reverse side)

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
25.400	2.03	1.905	21.3	1.17	82,300	90,500	73,400	81,600	1.41	3.66	490	530	0.36	0.51
	2.21	2.083	21.0	1.27	88,800	97,700	80,000	88,900	1.53	3.54	520	570	0.35	0.51
	2.41	2.286	20.6	1.37	96,100	105,700	87,600	97,300	1.66	3.41	560	610	0.33	0.51
	2.59	2.464	20.2	1.46	102,400	112,600	94,100	104,500	1.78	3.29	590	650	0.32	0.51
	2.77	2.642	19.9	1.55	108,600	119,400	100,400	111,600	1.89	3.18	620	690	0.31	0.51
	2.95	2.743	19.5	1.63	114,600	126,100	104,000	115,600	1.95	3.11	640	710	0.30	0.51
	3.18	2.972	19.1	1.74	122,300	134,500	112,100	124,600	2.09	2.97	670	750	0.28	0.51
	3.40	3.200	18.6	1.85	129,700	142,700	120,200	133,500	2.23	2.84	700	790	0.27	0.51
31.750	2.03	1.905	27.7	1.49	104,600	115,100	59,000	65,600	1.79	6.13	800	850	0.60	0.79
	2.21	2.083	27.3	1.61	113,100	124,400	64,400	71,600	1.94	5.98	860	920	0.59	0.79
	2.41	2.286	26.9	1.75	122,700	134,900	70,600	78,400	2.12	5.80	930	990	0.57	0.79
	2.59	2.464	26.6	1.87	130,900	144,000	75,900	84,300	2.27	5.65	980	1,060	0.55	0.79
	2.77	2.642	26.2	1.98	139,000	152,900	81,200	90,200	2.42	5.50	1,030	1,120	0.54	0.79
	2.95	2.743	25.9	2.10	147,100	161,800	84,200	93,500	2.50	5.42	1,060	1,160	0.52	0.79
	3.18	2.972	25.4	2.24	157,200	172,900	90,900	101,000	2.69	5.23	1,130	1,240	0.51	0.79
	3.40	3.200	24.9	2.38	167,200	183,900	97,600	108,400	2.87	5.05	1,190	1,310	0.49	0.79
	3.68	3.480	24.4	2.55	179,100	197,000	105,600	117,300	3.09	4.83	1,260	1,400	0.47	0.79
	3.96	3.759	23.8	2.72	190,800	209,900	113,400	126,000	3.31	4.61	1,320	1,480	0.45	0.79
	4.45	4.242	22.9	3.00	210,300	231,300	120,200	140,800	3.67	4.25	1,420	1,620	0.41	0.79
38.100	2.03	1.905	34.0	1.81	127,000	139,700	49,300	54,800	2.17	9.23	1,190	1,250	0.91	1.14
	2.21	2.083	33.7	1.96	137,400	151,200	53,900	59,900	2.36	9.04	1,280	1,350	0.89	1.14
	2.41	2.286	33.3	2.13	149,200	164,100	59,000	65,600	2.57	8.83	1,380	1,470	0.87	1.14
	2.59	2.464	32.9	2.27	159,400	175,400	63,500	70,600	2.76	8.64	1,470	1,570	0.85	1.14
	2.77	2.642	32.6	2.42	169,500	186,500	68,000	75,600	2.94	8.46	1,550	1,660	0.83	1.14
	2.95	2.743	32.2	2.56	179,500	197,400	70,600	78,400	3.05	8.35	1,600	1,720	0.81	1.14
	3.18	2.972	31.8	2.74	192,100	211,400	76,200	84,700	3.28	8.12	1,700	1,840	0.79	1.14
	3.40	3.200	31.3	2.92	204,600	225,100	81,900	91,000	3.51	7.89	1,800	1,950	0.77	1.14
	3.68	3.480	30.7	3.13	219,700	241,600	88,700	98,600	3.78	7.62	1,910	2,090	0.74	1.14
	3.96	3.759	30.2	3.34	234,400	257,800	95,600	106,200	4.06	7.35	2,020	2,220	0.71	1.14
	4.45	4.242	29.2	3.69	259,200	285,100	107,100	119,000	4.51	6.89	2,190	2,440	0.67	1.14
	4.83	4.521	28.4	3.97	278,300	306,100	113,700	126,300	4.77	6.63	2,290	2,560	0.64	1.14
	5.18	4.877	27.7	4.21	295,600	325,100	120,200	135,400	5.09	6.31	2,400	2,710	0.60	1.14
44.450	2.21	2.083	40.0	2.31	161,700	177,900	46,300	51,400	2.77	12.75	1,790	1,870	1.26	1.55
	2.41	2.286	39.6	2.51	175,800	193,300	50,800	56,400	3.03	12.49	1,930	2,030	1.23	1.55
	2.59	2.464	39.3	2.68	187,900	206,700	54,600	60,700	3.25	12.27	2,060	2,170	1.21	1.55
	2.77	2.642	38.9	2.85	200,000	220,000	58,500	65,000	3.47	12.05	2,180	2,310	1.19	1.55
	2.95	2.743	38.6	3.02	211,900	233,100	60,700	67,400	3.59	11.92	2,250	2,390	1.17	1.55
	3.18	2.972	38.1	3.24	227,100	249,800	65,600	72,900	3.87	11.65	2,400	2,560	1.14	1.55
	3.40	3.200	37.6	3.45	242,100	266,300	70,600	78,400	4.15	11.37	2,540	2,730	1.11	1.55
	3.68	3.480	37.1	3.71	260,200	286,200	76,500	85,000	4.48	11.04	2,710	2,930	1.08	1.55
	3.96	3.759	36.5	3.96	278,000	305,800	82,400	91,600	4.81	10.71	2,870	3,120	1.05	1.55
	4.45	4.242	35.6	4.39	308,100	339,000	92,600	102,900	5.36	10.16	3,140	3,440	0.99	1.55
	4.83	4.521	34.8	4.72	331,400	364,500	98,400	109,300	5.67	9.85	3,280	3,620	0.95	1.55
	5.18	4.877	34.1	5.02	352,600	387,800	105,700	117,400	6.06	9.45	3,450	3,840	0.91	1.55
	5.69	5.385	33.1	5.45	382,100	420,400	115,800	128,700	6.61	8.91	3,680	4,130	0.86	1.55
	6.35	6.045	31.8	5.97	419,200	461,200	120,200	143,100	7.29	8.22	3,950	4,490	0.79	1.55

MINIMUM YIELD
552 MPa

MINIMUM ULTIMATE STRENGTH
607 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-80™ (CT80) | 50.800 mm TO 114.300 mm

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
50.800	2.59	2.464	45.6	3.08	216,400	238,100	47,900	53,200	3.74	16.53	2,750	2,880	1.63	2.03
	2.77	2.642	45.3	3.28	230,400	253,500	51,300	57,000	4.00	16.27	2,910	3,070	1.61	2.03
	2.95	2.743	44.9	3.48	244,300	268,800	53,200	59,100	4.14	16.13	3,010	3,170	1.58	2.03
	3.18	2.972	44.5	3.73	262,000	288,200	57,600	64,000	4.47	15.80	3,210	3,400	1.55	2.03
	3.40	3.200	44.0	3.98	279,500	307,500	61,900	68,800	4.79	15.48	3,410	3,630	1.52	2.03
	3.68	3.480	43.4	4.29	300,700	330,800	67,200	74,700	5.17	15.10	3,650	3,900	1.48	2.03
	3.96	3.759	42.9	4.58	321,600	353,800	72,500	80,500	5.56	14.71	3,870	4,170	1.44	2.03
	4.45	4.242	41.9	5.09	357,000	392,800	81,500	90,500	6.20	14.06	4,250	4,610	1.38	2.03
	4.83	4.521	41.1	5.48	384,500	422,900	86,600	96,200	6.57	13.69	4,450	4,860	1.33	2.03
	5.18	4.877	40.4	5.84	409,600	450,600	93,100	103,400	7.04	13.23	4,700	5,160	1.28	2.03
	5.69	5.385	39.4	6.34	444,800	489,200	102,200	113,600	7.68	12.59	5,030	5,580	1.22	2.03
	6.35	6.045	38.1	6.97	489,100	538,000	113,900	126,600	8.50	11.77	5,430	6,090	1.14	2.03
	7.11	6.731	36.6	7.67	538,400	592,300	120,200	139,800	9.32	10.95	5,800	6,590	1.05	2.03
60.325	3.18	2.972	54.0	4.48	314,400	345,900	48,600	54,000	5.35	23.23	4,660	4,890	2.29	2.86
	3.40	3.200	53.5	4.78	335,700	369,300	52,300	58,100	5.74	22.84	4,960	5,230	2.25	2.86
	3.68	3.480	53.0	5.15	361,500	397,600	56,800	63,100	6.21	22.37	5,320	5,630	2.20	2.86
	3.96	3.759	52.4	5.52	387,000	425,700	61,300	68,100	6.68	21.90	5,660	6,020	2.16	2.86
	4.45	4.242	51.4	6.13	430,400	473,500	68,900	76,600	7.47	21.11	6,240	6,680	2.08	2.86
	4.83	4.521	50.7	6.61	464,100	510,500	73,400	81,500	7.93	20.66	6,550	7,050	2.02	2.86
	5.18	4.877	50.0	7.06	495,100	544,600	78,900	87,700	8.50	20.09	6,940	7,520	1.96	2.86
	5.69	5.385	48.9	7.68	538,700	592,500	86,900	96,500	9.29	19.29	7,470	8,150	1.88	2.86
	6.35	6.045	47.6	8.46	593,900	653,300	97,000	107,800	10.31	18.27	8,110	8,940	1.78	2.86
	7.11	6.731	46.1	9.35	655,800	721,400	107,300	119,200	11.33	17.25	8,720	9,720	1.67	2.86
	7.62	7.239	45.1	9.92	695,900	765,500	114,800	127,600	12.07	16.51	9,140	10,260	1.60	2.86
66.675	3.40	3.200	59.9	5.32	373,200	410,500	47,300	52,600	6.38	28.53	6,150	6,450	2.81	3.49
	3.68	3.480	59.3	5.73	402,000	442,200	51,500	57,200	6.91	28.01	6,600	6,950	2.76	3.49
	3.96	3.759	58.8	6.14	430,600	473,700	55,500	61,700	7.43	27.49	7,040	7,450	2.71	3.49
	4.45	4.242	57.8	6.83	479,300	527,300	62,600	69,500	8.32	26.60	7,780	8,280	2.62	3.49
	4.83	4.521	57.0	7.37	517,200	568,900	66,500	73,900	8.83	26.09	8,180	8,750	2.55	3.49
	5.18	4.877	56.3	7.87	552,100	607,400	71,600	79,600	9.47	25.45	8,680	9,330	2.49	3.49
	5.69	5.385	55.3	8.57	601,300	661,400	78,800	87,600	10.37	24.55	9,370	10,140	2.40	3.49
	6.35	6.045	54.0	9.46	663,800	730,200	88,100	97,900	11.51	23.40	10,200	11,150	2.29	3.49
	7.11	6.731	52.5	10.46	734,100	807,500	97,700	108,500	12.68	22.24	11,010	12,140	2.16	3.49
	7.62	7.239	51.4	11.11	779,800	857,800	104,600	116,200	13.52	21.40	11,570	12,850	2.08	3.49
73.025	3.68	3.480	65.7	6.31	442,500	486,800	47,100	52,300	7.60	34.28	8,030	8,420	3.38	4.19
	3.96	3.759	65.1	6.76	474,200	521,600	50,800	56,400	8.18	33.70	8,580	9,030	3.33	4.19
	4.45	4.242	64.1	7.53	528,200	581,100	57,200	63,500	9.17	32.72	9,490	10,050	3.23	4.19
	4.83	4.521	63.4	8.13	570,300	627,400	60,800	67,600	9.73	32.15	9,990	10,620	3.15	4.19
	5.18	4.877	62.7	8.68	609,200	670,100	65,500	72,800	10.44	31.44	10,620	11,340	3.08	4.19
	5.69	5.385	61.6	9.46	663,900	730,300	72,200	80,200	11.44	30.44	11,480	12,340	2.98	4.19
	6.35	6.045	60.3	10.46	733,700	807,000	80,700	89,700	12.72	29.16	12,540	13,590	2.86	4.19
	7.11	6.731	58.8	11.58	812,300	893,500	89,600	99,500	14.02	27.86	13,560	14,840	2.71	4.19
	7.62	7.239	57.8	12.31	863,600	950,000	95,900	106,600	14.96	26.92	14,280	15,720	2.62	4.19
88.900	4.45	4.242	80.0	9.27	650,500	715,600	47,100	52,300	11.28	50.79	14,510	15,210	5.03	6.21
	4.83	4.521	79.2	10.02	703,100	773,400	50,100	55,700	11.98	50.09	15,320	16,110	4.93	6.21
	5.18	4.877	78.5	10.71	751,700	826,900	54,100	60,100	12.87	49.20	16,320	17,230	4.84	6.21
	5.69	5.385	77.5	11.69	820,400	902,400	59,600	66,200	14.13	47.94	17,710	18,800	4.72	6.21
	6.35	6.045	76.2	12.95	908,300	999,200	66,700	74,100	15.74	46.34	19,440	20,780	4.56	6.21
	7.11	6.731	74.7	14.37	1,008,000	1,108,700	74,100	82,300	17.38	44.70	21,140	22,770	4.38	6.21
	7.62	7.239	73.7	15.30	1,073,200	1,180,600	79,500	88,300	18.57	43.50	22,340	24,200	4.26	6.21
114.300	5.69	5.385	102.9	15.26	1,070,800	1,177,900	46,500	51,700	18.43	84.18	30,500	31,960	8.32	10.26
	6.35	6.045	101.6	16.93	1,187,800	1,306,600	52,100	57,900	20.56	82.05	33,650	35,450	8.10	10.26
	7.11	6.731	100.1	18.83	1,321,000	1,453,100	58,000	64,400	22.75	79.86	36,790	38,990	7.86	10.26
	7.62	7.239	99.1	20.08	1,408,600	1,549,500	62,300	69,200	24.35	78.26	39,030	41,540	7.70	10.26

MINIMUM YIELD
552 MPa

MININUM ULTIMATE STRENGTH
607 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-90™ (CT90) | 1.000" TO 1.750" (2.000" TO 4.500" on reverse side)

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
1.000	0.087	0.082	0.826	0.850	22,500	24,200	13,100	14,500	0.236	0.549	435	471	27.84	0.66	40.80	0.97
	0.095	0.090	0.810	0.920	24,300	26,200	14,300	15,900	0.257	0.528	466	508	26.77	0.64	40.80	0.97
	0.102	0.097	0.796	0.981	25,900	27,900	15,300	17,000	0.275	0.510	491	540	25.85	0.62	40.80	0.97
	0.109	0.104	0.782	1.040	27,500	29,600	16,400	18,200	0.293	0.493	515	570	24.95	0.59	40.80	0.97
	0.116	0.108	0.768	1.098	29,000	31,200	17,000	18,900	0.303	0.483	529	587	24.06	0.57	40.80	0.97
	0.125	0.117	0.750	1.171	30,900	33,300	17,500	20,300	0.325	0.461	557	624	22.95	0.55	40.80	0.97
	0.134	0.126	0.732	1.242	32,800	35,400	17,500	21,800	0.346	0.439	584	659	21.86	0.52	40.80	0.97
1.250	0.087	0.082	1.076	1.083	28,600	30,800	10,500	11,700	0.301	0.926	714	762	47.24	1.12	63.75	1.52
	0.095	0.090	1.060	1.175	31,000	33,400	11,500	12,800	0.328	0.899	769	825	45.84	1.09	63.75	1.52
	0.102	0.097	1.046	1.254	33,100	35,700	12,400	13,800	0.351	0.876	814	879	44.64	1.06	63.75	1.52
	0.109	0.104	1.032	1.332	35,200	37,900	13,200	14,700	0.374	0.853	858	931	43.45	1.03	63.75	1.52
	0.116	0.108	1.018	1.408	37,200	40,100	13,800	15,300	0.387	0.840	883	960	42.28	1.01	63.75	1.52
	0.125	0.117	1.000	1.506	39,800	42,900	14,900	16,500	0.416	0.811	935	1,025	40.80	0.97	63.75	1.52
	0.134	0.126	0.982	1.601	42,300	45,600	15,900	17,700	0.445	0.782	985	1,087	39.34	0.94	63.75	1.52
	0.145	0.137	0.960	1.715	45,300	48,800	17,200	19,100	0.479	0.748	1,043	1,159	37.60	0.90	63.75	1.52
	0.156	0.148	0.938	1.827	48,300	52,000	17,500	20,600	0.512	0.715	1,097	1,229	35.90	0.85	63.75	1.52
	0.175	0.167	0.900	2.014	53,200	57,300	17,500	23,000	0.568	0.659	1,181	1,342	33.05	0.79	63.75	1.52
1.500	0.087	0.082	1.326	1.316	34,800	37,500	8,800	9,800	0.365	1.402	1,063	1,122	71.74	1.71	91.80	2.19
	0.095	0.090	1.310	1.429	37,700	40,700	9,600	10,700	0.399	1.368	1,148	1,218	70.02	1.67	91.80	2.19
	0.102	0.097	1.296	1.527	40,300	43,500	10,400	11,500	0.428	1.340	1,220	1,300	68.53	1.63	91.80	2.19
	0.109	0.104	1.282	1.623	42,900	46,200	11,100	12,300	0.456	1.311	1,289	1,380	67.06	1.60	91.80	2.19
	0.116	0.108	1.268	1.719	45,400	48,900	11,500	12,800	0.472	1.295	1,328	1,425	65.60	1.56	91.80	2.19
	0.125	0.117	1.250	1.840	48,600	52,400	12,400	13,800	0.508	1.259	1,413	1,525	63.75	1.52	91.80	2.19
	0.134	0.126	1.232	1.960	51,800	55,800	13,400	14,900	0.544	1.223	1,494	1,621	61.93	1.47	91.80	2.19
	0.145	0.137	1.210	2.104	55,600	59,900	14,500	16,100	0.587	1.181	1,588	1,736	59.74	1.42	91.80	2.19
	0.156	0.148	1.188	2.245	59,300	63,900	15,600	17,300	0.629	1.139	1,677	1,846	57.58	1.37	91.80	2.19
	0.175	0.167	1.150	2.483	65,600	70,700	17,500	19,400	0.699	1.068	1,821	2,028	53.96	1.28	91.80	2.19
	0.190	0.178	1.120	2.665	70,400	75,800	17,500	20,600	0.739	1.028	1,898	2,127	51.18	1.22	91.80	2.19
	0.204	0.192	1.092	2.831	74,800	80,600	17,500	22,100	0.789	0.978	1,989	2,249	48.65	1.16	91.80	2.19
1.750	0.087	0.082	1.576	1.549	40,900	44,100	7,600	8,400	0.430	1.976	1,482	1,552	101.34	2.41	124.95	2.97
	0.095	0.090	1.560	1.683	44,500	47,900	8,300	9,200	0.469	1.936	1,604	1,687	99.29	2.36	124.95	2.97
	0.102	0.097	1.546	1.800	47,500	51,200	8,900	9,900	0.504	1.902	1,708	1,804	97.52	2.32	124.95	2.97
	0.109	0.104	1.532	1.915	50,600	54,500	9,500	10,600	0.538	1.867	1,809	1,918	95.76	2.28	124.95	2.97
	0.116	0.108	1.518	2.029	53,600	57,800	9,900	11,000	0.557	1.848	1,865	1,982	94.02	2.24	124.95	2.97
	0.125	0.117	1.500	2.175	57,400	61,900	10,700	11,900	0.600	1.805	1,989	2,125	91.80	2.19	124.95	2.97
	0.134	0.126	1.482	2.318	61,200	66,000	11,500	12,800	0.643	1.762	2,109	2,263	89.61	2.13	124.95	2.97
	0.145	0.137	1.460	2.492	65,800	70,900	12,500	13,900	0.694	1.711	2,249	2,429	86.97	2.07	124.95	2.97
	0.156	0.148	1.438	2.662	70,300	75,800	13,400	14,900	0.745	1.660	2,384	2,589	84.37	2.01	124.95	2.97
	0.175	0.167	1.400	2.951	77,900	84,000	15,100	16,800	0.831	1.575	2,602	2,855	79.97	1.90	124.95	2.97
	0.190	0.178	1.370	3.173	83,800	90,300	16,000	17,800	0.879	1.526	2,720	3,003	76.58	1.82	124.95	2.97
	0.204	0.192	1.342	3.377	89,200	96,100	17,300	19,200	0.940	1.466	2,863	3,184	73.48	1.75	124.95	2.97
	0.224	0.212	1.302	3.660	96,600	104,200	17,500	21,000	1.024	1.381	3,053	3,430	69.16	1.65	124.95	2.97
	0.250	0.238	1.250	4.015	106,000	114,300	17,500	23,400	1.131	1.275	3,275	3,729	63.75	1.52	124.95	2.97

MINIMUM YIELD
90 Ksi

MINIMUM ULTIMATE STRENGTH
97 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-90™ (CT90) | 2.000" TO 4.500"

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
2.000	0.102	0.097	1.796	2.073	54,700	59,000	7,800	8,700	0.580	2.562	2,278	2,390	131.60	3.13	163.20	3.89
	0.109	0.104	1.782	2.207	58,300	62,800	8,400	9,300	0.619	2.522	2,416	2,544	129.56	3.08	163.20	3.89
	0.116	0.108	1.768	2.340	61,800	66,600	8,600	9,600	0.642	2.500	2,494	2,631	127.53	3.04	163.20	3.89
	0.125	0.117	1.750	2.509	66,300	71,400	9,400	10,400	0.692	2.449	2,665	2,824	124.95	2.97	163.20	3.89
	0.134	0.126	1.732	2.677	70,700	76,200	10,100	11,200	0.742	2.400	2,831	3,012	122.39	2.91	163.20	3.89
	0.145	0.137	1.710	2.880	76,100	82,000	11,000	12,200	0.802	2.340	3,027	3,238	119.30	2.84	163.20	3.89
	0.156	0.148	1.688	3.080	81,300	87,700	11,800	13,100	0.861	2.280	3,216	3,458	116.25	2.77	163.20	3.89
	0.175	0.167	1.650	3.419	90,300	97,300	13,300	14,800	0.962	2.180	3,525	3,825	111.08	2.64	163.20	3.89
	0.190	0.178	1.620	3.682	97,200	104,800	14,100	15,700	1.019	2.123	3,694	4,030	107.08	2.55	163.20	3.89
	0.204	0.192	1.592	3.923	103,600	111,600	15,200	16,900	1.091	2.051	3,900	4,282	103.41	2.46	163.20	3.89
	0.224	0.212	1.552	4.259	112,500	121,200	16,700	18,500	1.191	1.951	4,177	4,629	98.27	2.34	163.20	3.89
	0.250	0.238	1.500	4.684	123,700	133,300	17,500	20,700	1.317	1.824	4,506	5,053	91.80	2.19	163.20	3.89
	0.280	0.265	1.440	5.156	136,200	146,800	17,500	22,800	1.444	1.697	4,814	5,465	84.60	2.01	163.20	3.89
2.375	0.125	0.117	2.125	3.011	79,500	85,700	7,900	8,800	0.830	3.600	3,866	4,059	184.24	4.39	230.14	5.48
	0.134	0.126	2.107	3.215	84,900	91,500	8,600	9,500	0.890	3.540	4,115	4,337	181.13	4.31	230.14	5.48
	0.145	0.137	2.085	3.462	91,400	98,500	9,300	10,300	0.963	3.467	4,412	4,670	177.37	4.22	230.14	5.48
	0.156	0.148	2.063	3.706	97,900	105,500	10,000	11,100	1.035	3.395	4,699	4,997	173.64	4.13	230.14	5.48
	0.175	0.167	2.025	4.122	108,900	117,300	11,300	12,500	1.158	3.272	5,175	5,545	167.31	3.98	230.14	5.48
	0.190	0.178	1.995	4.445	117,400	126,500	12,000	13,300	1.229	3.202	5,438	5,853	162.38	3.87	230.14	5.48
	0.204	0.192	1.967	4.742	125,200	135,000	12,900	14,300	1.317	3.113	5,761	6,236	157.86	3.76	230.14	5.48
	0.224	0.212	1.927	5.159	136,200	146,800	14,100	15,700	1.441	2.990	6,199	6,764	151.50	3.61	230.14	5.48
	0.250	0.238	1.875	5.688	150,200	161,900	15,800	17,600	1.598	2.832	6,730	7,419	143.44	3.42	230.14	5.48
	0.280	0.265	1.815	6.280	165,900	178,800	17,500	19,500	1.757	2.674	7,237	8,062	134.40	3.20	230.14	5.48
2.625	0.134	0.126	2.357	3.574	94,400	101,700	7,700	8,600	0.989	4.423	5,105	5,353	226.66	5.40	281.14	6.69
	0.145	0.137	2.335	3.850	101,700	109,600	8,400	9,300	1.071	4.341	5,480	5,771	222.45	5.30	281.14	6.69
	0.156	0.148	2.313	4.124	108,900	117,400	9,100	10,100	1.152	4.260	5,845	6,180	218.28	5.20	281.14	6.69
	0.175	0.167	2.275	4.590	121,200	130,700	10,200	11,300	1.290	4.122	6,452	6,869	211.17	5.03	281.14	6.69
	0.190	0.178	2.245	4.953	130,800	141,000	10,900	12,100	1.368	4.044	6,790	7,258	205.63	4.90	281.14	6.69
	0.204	0.192	2.217	5.288	139,600	150,500	11,700	13,000	1.468	3.944	7,205	7,742	200.54	4.77	281.14	6.69
	0.224	0.212	2.177	5.758	152,100	163,900	12,900	14,300	1.607	3.805	7,773	8,412	193.36	4.60	281.14	6.69
	0.250	0.238	2.125	6.357	167,900	180,900	14,400	16,000	1.785	3.627	8,466	9,249	184.24	4.39	281.14	6.69
	0.280	0.265	2.065	7.030	185,600	200,100	15,900	17,700	1.965	3.447	9,134	10,075	173.98	4.14	281.14	6.69
2.875	0.145	0.137	2.585	4.238	111,900	120,600	7,700	8,500	1.178	5.313	6,665	6,987	272.63	6.49	337.24	8.03
	0.156	0.148	2.563	4.541	119,900	129,300	8,300	9,200	1.268	5.224	7,117	7,489	268.01	6.38	337.24	8.03
	0.175	0.167	2.525	5.059	133,600	144,000	9,400	10,400	1.421	5.071	7,871	8,335	260.12	6.19	337.24	8.03
	0.190	0.178	2.495	5.462	144,200	155,500	9,900	11,000	1.508	4.984	8,292	8,814	253.98	6.05	337.24	8.03
	0.204	0.192	2.467	5.834	154,100	166,000	10,700	11,900	1.618	4.873	8,813	9,411	248.31	5.91	337.24	8.03
	0.224	0.212	2.427	6.358	167,900	181,000	11,800	13,100	1.774	4.718	9,526	10,241	240.32	5.72	337.24	8.03
	0.250	0.238	2.375	7.026	185,600	200,000	13,100	14,600	1.972	4.520	10,403	11,281	230.14	5.48	337.24	8.03
	0.280	0.265	2.315	7.779	205,400	221,400	14,600	16,200	2.173	4.319	11,255	12,313	218.66	5.21	337.24	8.03
3.500	0.175	0.167	3.150	6.230	164,500	177,300	7,700	8,500	1.749	7.872	12,039	12,621	404.84	9.64	499.80	11.90
	0.190	0.178	3.120	6.733	177,800	191,600	8,200	9,100	1.858	7.763	12,710	13,366	397.16	9.46	499.80	11.90
	0.204	0.192	3.092	7.199	190,100	204,900	8,800	9,800	1.995	7.626	13,544	14,298	390.07	9.29	499.80	11.90
	0.224	0.212	3.052	7.857	207,500	223,600	9,700	10,800	2.190	7.431	14,697	15,601	380.04	9.05	499.80	11.90
	0.250	0.238	3.000	8.699	229,700	247,600	10,900	12,100	2.439	7.182	16,130	17,245	367.20	8.74	499.80	11.90
	0.280	0.265	2.940	9.653	254,900	274,700	12,100	13,400	2.693	6.928	17,541	18,894	352.66	8.40	499.80	11.90
4.500	0.224	0.212	4.052	10.255	270,800	291,900	7,600	8,400	2.856	13.048	25,311	26,519	669.88	15.95	826.20	19.67
	0.250	0.238	4.000	11.376	300,400	323,800	8,600	9,500	3.187	12.718	27,920	29,418	652.80	15.54	826.20	19.67
	0.280	0.265	3.940	12.651	334,100	360,100	9,500	10,500	3.526	12.379	30,524	32,350	633.36	15.08	826.20	19.67

MINIMUM YIELD
90 Ksi

MININUM ULTIMATE STRENGTH
97 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-90™ (CT90) | 25.400 mm TO 44.450 mm (50.800 mm TO 114.300 mm on reverse side)

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
25.400	2.21	2.083	21.0	1.27	99,900	107,700	90,000	100,000	1.53	3.54	590	640	0.35	0.51
	2.41	2.286	20.6	1.37	108,100	116,500	98,500	109,400	1.66	3.41	630	690	0.33	0.51
	2.59	2.464	20.2	1.46	115,200	124,200	105,800	117,500	1.78	3.29	670	730	0.32	0.51
	2.77	2.642	19.9	1.55	122,100	131,600	113,000	125,600	1.89	3.18	700	770	0.31	0.51
	2.95	2.743	19.5	1.63	129,000	139,000	117,100	130,100	1.95	3.11	720	800	0.30	0.51
	3.18	2.972	19.1	1.74	137,600	148,300	120,200	140,200	2.09	2.97	760	850	0.28	0.51
	3.40	3.200	18.6	1.85	145,900	157,300	120,200	150,200	2.23	2.84	790	890	0.27	0.51
31.750	2.21	2.083	27.3	1.61	127,300	137,200	72,500	80,500	1.94	5.98	970	1,030	0.59	0.79
	2.41	2.286	26.9	1.75	138,000	148,700	79,400	88,200	2.12	5.80	1,040	1,120	0.57	0.79
	2.59	2.464	26.6	1.87	147,300	158,700	85,300	94,800	2.27	5.65	1,100	1,190	0.55	0.79
	2.77	2.642	26.2	1.98	156,400	168,600	91,300	101,400	2.42	5.50	1,160	1,260	0.54	0.79
	2.95	2.743	25.9	2.10	165,400	178,300	94,700	105,200	2.50	5.42	1,200	1,300	0.52	0.79
	3.18	2.972	25.4	2.24	176,900	190,600	102,200	113,600	2.69	5.23	1,270	1,390	0.51	0.79
	3.40	3.200	24.9	2.38	188,100	202,700	109,700	121,900	2.87	5.05	1,340	1,470	0.49	0.79
	3.68	3.480	24.4	2.55	201,500	217,200	118,700	131,900	3.09	4.83	1,410	1,570	0.47	0.79
	3.96	3.759	23.8	2.72	214,600	231,300	120,200	141,800	3.31	4.61	1,490	1,670	0.45	0.79
	4.45	4.242	22.9	3.00	236,600	255,000	120,200	158,400	3.67	4.25	1,600	1,820	0.41	0.79
38.100	2.21	2.083	33.7	1.96	154,600	166,600	60,600	67,300	2.36	9.04	1,440	1,520	0.89	1.14
	2.41	2.286	33.3	2.13	167,900	180,900	66,400	73,800	2.57	8.83	1,560	1,650	0.87	1.14
	2.59	2.464	32.9	2.27	179,300	193,300	71,500	79,400	2.76	8.64	1,650	1,760	0.85	1.14
	2.77	2.642	32.6	2.42	190,700	205,500	76,500	85,000	2.94	8.46	1,750	1,870	0.83	1.14
	2.95	2.743	32.2	2.56	201,900	217,600	79,400	88,200	3.05	8.35	1,800	1,930	0.81	1.14
	3.18	2.972	31.8	2.74	216,200	233,000	85,800	95,300	3.28	8.12	1,920	2,070	0.79	1.14
	3.40	3.200	31.3	2.92	230,200	248,100	92,200	102,400	3.51	7.89	2,030	2,200	0.77	1.14
	3.68	3.480	30.7	3.13	247,100	266,300	99,900	111,000	3.78	7.62	2,150	2,350	0.74	1.14
	3.96	3.759	30.2	3.34	263,700	284,200	107,500	119,400	4.06	7.35	2,270	2,500	0.71	1.14
	4.45	4.242	29.2	3.69	291,600	314,300	120,200	133,900	4.51	6.89	2,470	2,750	0.67	1.14
	4.83	4.521	28.4	3.97	313,000	337,400	120,200	142,100	4.77	6.63	2,570	2,880	0.64	1.14
	5.18	4.877	27.7	4.21	332,500	358,400	120,200	152,400	5.09	6.31	2,700	3,050	0.60	1.14
44.450	2.21	2.083	40.0	2.31	182,000	196,100	52,000	57,800	2.77	12.75	2,010	2,100	1.26	1.55
	2.41	2.286	39.6	2.51	197,700	213,100	57,100	63,400	3.03	12.49	2,170	2,290	1.23	1.55
	2.59	2.464	39.3	2.68	211,400	227,900	61,500	68,300	3.25	12.27	2,320	2,450	1.21	1.55
	2.77	2.642	38.9	2.85	225,000	242,500	65,800	73,100	3.47	12.05	2,450	2,600	1.19	1.55
	2.95	2.743	38.6	3.02	238,400	256,900	68,300	75,900	3.59	11.92	2,530	2,690	1.17	1.55
	3.18	2.972	38.1	3.24	255,500	275,300	73,800	82,000	3.87	11.65	2,700	2,880	1.14	1.55
	3.40	3.200	37.6	3.45	272,300	293,500	79,400	88,200	4.15	11.37	2,860	3,070	1.11	1.55
	3.68	3.480	37.1	3.71	292,700	315,500	86,100	95,700	4.48	11.04	3,050	3,290	1.08	1.55
	3.96	3.759	36.5	3.96	312,700	337,100	92,800	103,100	4.81	10.71	3,230	3,510	1.05	1.55
	4.45	4.242	35.6	4.39	346,700	373,600	104,100	115,700	5.36	10.16	3,530	3,870	0.99	1.55
	4.83	4.521	34.8	4.72	372,800	401,800	110,600	122,900	5.67	9.85	3,690	4,070	0.95	1.55
	5.18	4.877	34.1	5.02	396,700	427,500	118,800	132,000	6.06	9.45	3,880	4,320	0.91	1.55
	5.69	5.385	33.1	5.45	429,900	463,400	120,200	144,800	6.61	8.91	4,140	4,650	0.86	1.55
	6.35	6.045	31.8	5.97	471,600	508,300	120,200	161,000	7.29	8.22	4,440	5,060	0.79	1.55

MINIMUM YIELD
621 MPa

MINIMUM ULTIMATE STRENGTH
669 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-90™ (CT90) | 50.800 mm TO 114.300 mm

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
50.800	2.59	2.464	45.6	3.08	243,500	262,400	53,800	59,800	3.74	16.53	3,090	3,240	1.63	2.03
	2.77	2.642	45.3	3.28	259,200	279,400	57,700	64,100	4.00	16.27	3,280	3,450	1.61	2.03
	2.95	2.743	44.9	3.48	274,900	296,200	59,900	66,500	4.14	16.13	3,380	3,570	1.58	2.03
	3.18	2.972	44.5	3.73	294,800	317,700	64,800	72,000	4.47	15.80	3,610	3,830	1.55	2.03
	3.40	3.200	44.0	3.98	314,500	338,900	69,700	77,400	4.79	15.48	3,840	4,080	1.52	2.03
	3.68	3.480	43.4	4.29	338,300	364,600	75,600	84,000	5.17	15.10	4,100	4,390	1.48	2.03
	3.96	3.759	42.9	4.58	361,800	389,900	81,500	90,600	5.56	14.71	4,360	4,690	1.44	2.03
	4.45	4.242	41.9	5.09	401,700	432,900	91,600	101,800	6.20	14.06	4,780	5,190	1.38	2.03
	4.83	4.521	41.1	5.48	432,500	466,200	97,400	108,200	6.57	13.69	5,010	5,460	1.33	2.03
	5.18	4.877	40.4	5.84	460,800	496,600	104,800	116,400	7.04	13.23	5,290	5,810	1.28	2.03
	5.69	5.385	39.4	6.34	500,300	539,300	115,000	127,800	7.68	12.59	5,660	6,280	1.22	2.03
	6.35	6.045	38.1	6.97	550,200	593,000	120,200	142,400	8.50	11.77	6,110	6,850	1.14	2.03
	7.11	6.731	36.6	7.67	605,700	652,800	120,200	157,200	9.32	10.95	6,530	7,410	1.05	2.03
60.325	3.18	2.972	54.0	4.48	353,700	381,200	54,700	60,800	5.35	23.23	5,240	5,500	2.29	2.86
	3.40	3.200	53.5	4.78	377,700	407,100	58,900	65,400	5.74	22.84	5,580	5,880	2.25	2.86
	3.68	3.480	53.0	5.15	406,700	438,300	63,900	71,000	6.21	22.37	5,980	6,330	2.20	2.86
	3.96	3.759	52.4	5.52	435,400	469,200	68,900	76,600	6.68	21.90	6,370	6,780	2.16	2.86
	4.45	4.242	51.4	6.13	484,200	521,900	77,600	86,200	7.47	21.11	7,020	7,520	2.08	2.86
	4.83	4.521	50.7	6.61	522,100	562,700	82,500	91,700	7.93	20.66	7,370	7,940	2.02	2.86
	5.18	4.877	50.0	7.06	557,000	600,300	88,800	98,700	8.50	20.09	7,810	8,450	1.96	2.86
	5.69	5.385	48.9	7.68	606,000	653,100	97,700	108,600	9.29	19.29	8,400	9,170	1.88	2.86
	6.35	6.045	47.6	8.46	668,200	720,100	109,100	121,200	10.31	18.27	9,120	10,060	1.78	2.86
	7.11	6.731	46.1	9.35	737,800	795,200	120,200	134,100	11.33	17.25	9,810	10,930	1.67	2.86
66.675	3.40	3.200	59.9	5.32	419,800	452,500	53,300	59,200	6.38	28.53	6,920	7,260	2.81	3.49
	3.68	3.480	59.3	5.73	452,300	487,400	57,900	64,300	6.91	28.01	7,430	7,820	2.76	3.49
	3.96	3.759	58.8	6.14	484,400	522,100	62,500	69,400	7.43	27.49	7,920	8,380	2.71	3.49
	4.45	4.242	57.8	6.83	539,200	581,200	70,300	78,100	8.32	26.60	8,750	9,310	2.62	3.49
	4.83	4.521	57.0	7.37	581,900	627,100	74,900	83,200	8.83	26.09	9,210	9,840	2.55	3.49
	5.18	4.877	56.3	7.87	621,200	669,500	80,600	89,500	9.47	25.45	9,770	10,500	2.49	3.49
	5.69	5.385	55.3	8.57	676,400	729,000	88,700	98,600	10.37	24.55	10,540	11,410	2.40	3.49
	6.35	6.045	54.0	9.46	746,800	804,800	99,200	110,200	11.51	23.40	11,480	12,540	2.29	3.49
	7.11	6.731	52.5	10.46	825,800	890,000	109,900	122,100	12.68	22.24	12,380	13,660	2.16	3.49
73.025	3.68	3.480	65.7	6.31	497,900	536,600	52,900	58,800	7.60	34.28	9,040	9,470	3.38	4.19
	3.96	3.759	65.1	6.76	533,500	575,000	57,200	63,500	8.18	33.70	9,650	10,150	3.33	4.19
	4.45	4.242	64.1	7.53	594,300	640,500	64,400	71,500	9.17	32.72	10,670	11,300	3.23	4.19
	4.83	4.521	63.4	8.13	641,600	691,500	68,500	76,100	9.73	32.15	11,240	11,950	3.15	4.19
	5.18	4.877	62.7	8.68	685,300	738,600	73,700	81,900	10.44	31.44	11,950	12,760	3.08	4.19
	5.69	5.385	61.6	9.46	746,900	804,900	81,300	90,300	11.44	30.44	12,920	13,880	2.98	4.19
	6.35	6.045	60.3	10.46	825,400	889,600	90,900	101,000	12.72	29.16	14,100	15,290	2.86	4.19
	7.11	6.731	58.8	11.58	913,800	984,900	100,700	111,900	14.02	27.86	15,260	16,690	2.71	4.19
88.900	4.45	4.242	80.0	9.27	731,800	788,700	53,000	58,900	11.28	50.79	16,320	17,110	5.03	6.21
	4.83	4.521	79.2	10.02	791,000	852,500	56,400	62,700	11.98	50.09	17,230	18,120	4.93	6.21
	5.18	4.877	78.5	10.71	845,700	911,400	60,800	67,600	12.87	49.20	18,360	19,390	4.84	6.21
	5.69	5.385	77.5	11.69	922,900	994,700	67,100	74,500	14.13	47.94	19,930	21,150	4.72	6.21
	6.35	6.045	76.2	12.95	1,021,900	1,101,400	75,100	83,400	15.74	46.34	21,870	23,380	4.56	6.21
	7.11	6.731	74.7	14.37	1,133,900	1,222,100	83,300	92,600	17.38	44.70	23,780	25,620	4.38	6.21
114.300	5.69	5.385	102.9	15.26	1,204,700	1,298,400	52,300	58,100	18.43	84.18	34,320	35,950	8.32	10.26
	6.35	6.045	101.6	16.93	1,336,300	1,440,200	58,700	65,200	20.56	82.05	37,850	39,890	8.10	10.26
	7.11	6.731	100.1	18.83	1,486,100	1,601,700	65,200	72,400	22.75	79.86	41,380	43,860	7.86	10.26

MINIMUM YIELD
621 MPa

MINIMUM ULTIMATE STRENGTH
669 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-110™ (CT110) | 1.250" TO 1.750" (2.000" TO 4.500" on reverse side)

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
1.250	0.087	0.082	1.076	1.083	35,000	36,600	12,900	14,300	0.301	0.926	873	931	47.24	1.12	63.75	1.52
	0.095	0.090	1.060	1.175	37,900	39,600	14,000	15,600	0.328	0.899	939	1,008	45.84	1.09	63.75	1.52
	0.102	0.097	1.046	1.254	40,500	42,300	15,100	16,800	0.351	0.876	995	1,074	44.64	1.06	63.75	1.52
	0.109	0.104	1.032	1.332	43,000	44,900	16,200	18,000	0.374	0.853	1,049	1,138	43.45	1.03	63.75	1.52
	0.116	0.108	1.018	1.408	45,500	47,500	16,700	18,600	0.387	0.840	1,079	1,174	42.28	1.01	63.75	1.52
	0.125	0.117	1.000	1.506	48,600	50,800	17,500	20,100	0.416	0.811	1,143	1,252	40.80	0.97	63.75	1.52
	0.134	0.126	0.982	1.601	51,700	54,000	17,500	21,600	0.445	0.782	1,204	1,328	39.34	0.94	63.75	1.52
	0.145	0.137	0.960	1.715	55,400	57,900	17,500	23,400	0.479	0.748	1,274	1,417	37.60	0.90	63.75	1.52
	0.156	0.148	0.938	1.827	59,000	61,700	17,500	25,100	0.512	0.715	1,340	1,502	35.90	0.85	63.75	1.52
	0.175	0.167	0.900	2.014	65,000	68,000	17,500	28,100	0.568	0.659	1,443	1,640	33.05	0.79	63.75	1.52
1.500	0.087	0.082	1.326	1.316	42,500	44,400	10,700	11,900	0.365	1.402	1,299	1,371	71.74	1.71	91.80	2.19
	0.095	0.090	1.310	1.429	46,100	48,200	11,800	13,100	0.399	1.368	1,403	1,489	70.02	1.67	91.80	2.19
	0.102	0.097	1.296	1.527	49,300	51,500	12,700	14,100	0.428	1.340	1,491	1,589	68.53	1.63	91.80	2.19
	0.109	0.104	1.282	1.623	52,400	54,800	13,600	15,100	0.456	1.311	1,576	1,687	67.06	1.60	91.80	2.19
	0.116	0.108	1.268	1.719	55,500	58,000	14,000	15,600	0.472	1.295	1,623	1,742	65.60	1.56	91.80	2.19
	0.125	0.117	1.250	1.840	59,400	62,100	15,200	16,900	0.508	1.259	1,726	1,864	63.75	1.52	91.80	2.19
	0.134	0.126	1.232	1.960	63,300	66,100	16,400	18,200	0.544	1.223	1,826	1,982	61.93	1.47	91.80	2.19
	0.145	0.137	1.210	2.104	67,900	71,000	17,500	19,700	0.587	1.181	1,941	2,122	59.74	1.42	91.80	2.19
	0.156	0.148	1.188	2.245	72,500	75,700	17,500	21,200	0.629	1.139	2,050	2,257	57.58	1.37	91.80	2.19
	0.175	0.167	1.150	2.483	80,100	83,800	17,500	23,700	0.699	1.068	2,225	2,478	53.96	1.28	91.80	2.19
	0.190	0.178	1.120	2.665	86,000	89,900	17,500	25,200	0.739	1.028	2,319	2,600	51.18	1.22	91.80	2.19
	0.204	0.192	1.092	2.831	91,400	95,500	17,500	27,000	0.789	0.978	2,431	2,749	48.65	1.16	91.80	2.19
1.750	0.087	0.082	1.576	1.549	50,000	52,300	9,300	10,300	0.430	1.976	1,811	1,897	101.34	2.41	124.95	2.97
	0.095	0.090	1.560	1.683	54,300	56,800	10,100	11,200	0.469	1.936	1,960	2,062	99.29	2.36	124.95	2.97
	0.102	0.097	1.546	1.800	58,100	60,700	10,900	12,100	0.504	1.902	2,087	2,205	97.52	2.32	124.95	2.97
	0.109	0.104	1.532	1.915	61,800	64,600	11,700	13,000	0.538	1.867	2,211	2,344	95.76	2.28	124.95	2.97
	0.116	0.108	1.518	2.029	65,500	68,500	12,100	13,400	0.557	1.848	2,280	2,423	94.02	2.24	124.95	2.97
	0.125	0.117	1.500	2.175	70,200	73,400	13,100	14,500	0.600	1.805	2,431	2,597	91.80	2.19	124.95	2.97
	0.134	0.126	1.482	2.318	74,800	78,200	14,000	15,600	0.643	1.762	2,578	2,766	89.61	2.13	124.95	2.97
	0.145	0.137	1.460	2.492	80,400	84,100	15,300	17,000	0.694	1.711	2,749	2,969	86.97	2.07	124.95	2.97
	0.156	0.148	1.438	2.662	85,900	89,800	16,500	18,300	0.745	1.660	2,913	3,165	84.37	2.01	124.95	2.97
	0.175	0.167	1.400	2.951	95,200	99,600	17,500	20,500	0.831	1.575	3,180	3,490	79.97	1.90	124.95	2.97
	0.190	0.178	1.370	3.173	102,400	107,100	17,500	21,800	0.879	1.526	3,325	3,670	76.58	1.82	124.95	2.97
	0.204	0.192	1.342	3.377	109,000	113,900	17,500	23,400	0.940	1.466	3,500	3,892	73.48	1.75	124.95	2.97
	0.224	0.212	1.302	3.660	118,100	123,500	17,500	25,700	1.024	1.381	3,731	4,193	69.16	1.65	124.95	2.97
	0.250	0.238	1.250	4.015	129,600	135,500	17,500	28,500	1.131	1.275	4,002	4,558	63.75	1.52	124.95	2.97

MINIMUM YIELD
110 Ksi

MINIMUM ULTIMATE STRENGTH
115 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-110™ (CT110) | 2.000" TO 4.500"

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
2.000	0.102	0.097	1.796	2.073	66,900	69,900	9,500	10,600	0.580	2.562	2,784	2,921	131.60	3.13	163.20	3.89
	0.109	0.104	1.782	2.207	71,200	74,500	10,300	11,400	0.619	2.522	2,953	3,109	129.56	3.08	163.20	3.89
	0.116	0.108	1.768	2.340	75,500	79,000	10,600	11,800	0.642	2.500	3,048	3,215	127.53	3.04	163.20	3.89
	0.125	0.117	1.750	2.509	81,000	84,700	11,500	12,800	0.692	2.449	3,258	3,451	124.95	2.97	163.20	3.89
	0.134	0.126	1.732	2.677	86,400	90,300	12,300	13,700	0.742	2.400	3,460	3,682	122.39	2.91	163.20	3.89
	0.145	0.137	1.710	2.880	93,000	97,200	13,400	14,900	0.802	2.340	3,700	3,958	119.30	2.84	163.20	3.89
	0.156	0.148	1.688	3.080	99,400	103,900	14,500	16,100	0.861	2.280	3,930	4,226	116.25	2.77	163.20	3.89
	0.175	0.167	1.650	3.419	110,400	115,400	16,200	18,000	0.962	2.180	4,308	4,675	111.08	2.64	163.20	3.89
	0.190	0.178	1.620	3.682	118,800	124,200	17,300	19,200	1.019	2.123	4,515	4,925	107.08	2.55	163.20	3.89
	0.204	0.192	1.592	3.923	126,600	132,400	17,500	20,600	1.091	2.051	4,767	5,234	103.41	2.46	163.20	3.89
	0.224	0.212	1.552	4.259	137,500	143,700	17,500	22,700	1.191	1.951	5,105	5,657	98.27	2.34	163.20	3.89
	0.250	0.238	1.500	4.684	151,200	158,100	17,500	25,300	1.317	1.824	5,507	6,176	91.80	2.19	163.20	3.89
	0.280	0.265	1.440	5.156	166,400	174,000	17,500	27,900	1.444	1.697	5,884	6,679	84.60	2.01	163.20	3.89
2.375	0.116	0.108	2.143	2.806	90,600	94,700	9,000	10,000	0.769	3.661	4,412	4,615	187.37	4.46	230.14	5.48
	0.125	0.117	2.125	3.011	97,200	101,600	9,700	10,800	0.830	3.600	4,725	4,961	184.24	4.39	230.14	5.48
	0.134	0.126	2.107	3.215	103,800	108,500	10,400	11,600	0.890	3.540	5,030	5,300	181.13	4.31	230.14	5.48
	0.145	0.137	2.085	3.462	111,700	116,800	11,300	12,600	0.963	3.467	5,392	5,708	177.37	4.22	230.14	5.48
	0.156	0.148	2.063	3.706	119,600	125,100	12,200	13,600	1.035	3.395	5,744	6,107	173.64	4.13	230.14	5.48
	0.175	0.167	2.025	4.122	133,000	139,100	13,800	15,300	1.158	3.272	6,325	6,777	167.31	3.98	230.14	5.48
	0.190	0.178	1.995	4.445	143,500	150,000	14,700	16,300	1.229	3.202	6,647	7,154	162.38	3.87	230.14	5.48
	0.204	0.192	1.967	4.742	153,000	160,000	15,800	17,500	1.317	3.113	7,041	7,621	157.86	3.76	230.14	5.48
	0.224	0.212	1.927	5.159	166,500	174,100	17,300	19,200	1.441	2.990	7,577	8,267	151.50	3.61	230.14	5.48
	0.250	0.238	1.875	5.688	183,600	191,900	17,500	21,500	1.598	2.832	8,226	9,067	143.44	3.42	230.14	5.48
	0.280	0.265	1.815	6.280	202,700	211,900	17,500	23,800	1.757	2.674	8,846	9,854	134.40	3.20	230.14	5.48
2.625	0.134	0.126	2.357	3.574	115,400	120,600	9,500	10,500	0.989	4.423	6,240	6,543	226.66	5.40	281.14	6.69
	0.145	0.137	2.335	3.850	124,300	129,900	10,300	11,400	1.071	4.341	6,698	7,053	222.45	5.30	281.14	6.69
	0.156	0.148	2.313	4.124	133,100	139,200	11,100	12,300	1.152	4.260	7,144	7,553	218.28	5.20	281.14	6.69
	0.175	0.167	2.275	4.590	148,200	154,900	12,500	13,900	1.290	4.122	7,886	8,396	211.17	5.03	281.14	6.69
	0.190	0.178	2.245	4.953	159,900	167,100	13,200	14,700	1.368	4.044	8,298	8,871	205.63	4.90	281.14	6.69
	0.204	0.192	2.217	5.288	170,700	178,400	14,300	15,900	1.468	3.944	8,806	9,462	200.54	4.77	281.14	6.69
	0.224	0.212	2.177	5.758	185,900	194,300	15,800	17,500	1.607	3.805	9,500	10,282	193.36	4.60	281.14	6.69
	0.250	0.238	2.125	6.357	205,200	214,500	17,500	19,500	1.785	3.627	10,347	11,304	184.24	4.39	281.14	6.69
	0.280	0.265	2.065	7.030	226,900	237,200	17,500	21,600	1.965	3.447	11,164	12,314	173.98	4.14	281.14	6.69
2.875	0.145	0.137	2.585	4.238	136,800	143,000	9,400	10,400	1.178	5.313	8,147	8,540	272.63	6.49	337.24	8.03
	0.156	0.148	2.563	4.541	146,600	153,200	10,100	11,200	1.268	5.224	8,699	9,153	268.01	6.38	337.24	8.03
	0.175	0.167	2.525	5.059	163,300	170,700	11,400	12,700	1.421	5.071	9,620	10,188	260.12	6.19	337.24	8.03
	0.190	0.178	2.495	5.462	176,300	184,300	12,200	13,500	1.508	4.984	10,135	10,773	253.98	6.05	337.24	8.03
	0.204	0.192	2.467	5.834	188,300	196,900	13,100	14,500	1.618	4.873	10,771	11,502	248.31	5.91	337.24	8.03
	0.224	0.212	2.427	6.358	205,200	214,500	14,400	16,000	1.774	4.718	11,643	12,517	240.32	5.72	337.24	8.03
	0.250	0.238	2.375	7.026	226,800	237,100	16,100	17,900	1.972	4.520	12,715	13,787	230.14	5.48	337.24	8.03
	0.280	0.265	2.315	7.779	251,100	262,500	17,500	19,800	2.173	4.319	13,756	15,050	218.66	5.21	337.24	8.03
3.500	0.175	0.167	3.150	6.230	201,100	210,200	9,400	10,400	1.749	7.872	14,715	15,426	404.84	9.64	499.80	11.90
	0.190	0.178	3.120	6.733	217,300	227,200	10,000	11,100	1.858	7.763	15,535	16,336	397.16	9.46	499.80	11.90
	0.204	0.192	3.092	7.199	232,400	242,900	10,800	12,000	1.995	7.626	16,554	17,475	390.07	9.29	499.80	11.90
	0.224	0.212	3.052	7.857	253,600	265,100	11,900	13,200	2.190	7.431	17,963	19,068	380.04	9.05	499.80	11.90
	0.250	0.238	3.000	8.699	280,800	293,500	13,300	14,800	2.439	7.182	19,714	21,078	367.20	8.74	499.80	11.90
	0.280	0.265	2.940	9.653	311,600	325,700	14,800	16,400	2.693	6.928	21,439	23,093	352.66	8.40	499.80	11.90
4.500	0.224	0.212	4.052	10.255	331,000	346,000	9,300	10,300	2.856	13.048	30,935	32,412	669.88	15.95	826.20	19.67
	0.250	0.238	4.000	11.376	367,200	383,900	10,400	11,600	3.187	12.718	34,124	35,955	652.80	15.54	826.20	19.67
	0.280	0.265	3.940	12.651	408,300	426,900	11,500	12,800	3.526	12.379	37,308	39,539	633.36	15.08	826.20	19.67

MINIMUM YIELD
110 Ksi

MINIMUM ULTIMATE STRENGTH
115 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-110™ (CT110) | 31.750 mm TO 50.800 mm (60.325 mm TO 114.300 mm on reverse side)

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
31.750	2.21	2.083	27.3	1.61	155,500	162,600	88,600	98,400	1.94	5.98	1,180	1,260	0.59	0.79
	2.41	2.286	26.9	1.75	168,700	176,300	97,000	107,800	2.12	5.80	1,270	1,370	0.57	0.79
	2.59	2.464	26.6	1.87	180,000	188,200	104,300	115,900	2.27	5.65	1,350	1,460	0.55	0.79
	2.77	2.642	26.2	1.98	191,200	199,900	111,600	124,000	2.42	5.50	1,420	1,540	0.54	0.79
	2.95	2.743	25.9	2.10	202,200	211,400	115,700	128,600	2.50	5.42	1,460	1,590	0.52	0.79
	3.18	2.972	25.4	2.24	216,200	226,000	120,200	138,800	2.69	5.23	1,550	1,700	0.51	0.79
	3.40	3.200	24.9	2.38	229,900	240,300	120,200	149,000	2.87	5.05	1,630	1,800	0.49	0.79
	3.68	3.480	24.4	2.55	246,300	257,500	120,200	161,200	3.09	4.83	1,730	1,920	0.47	0.79
	3.96	3.759	23.8	2.72	262,300	274,300	120,200	173,300	3.31	4.61	1,820	2,040	0.45	0.79
	4.45	4.242	22.9	3.00	289,200	302,300	120,200	193,600	3.67	4.25	1,960	2,220	0.41	0.79
38.100	2.21	2.083	33.7	1.96	189,000	197,600	74,100	82,300	2.36	9.04	1,760	1,860	0.89	1.14
	2.41	2.286	33.3	2.13	205,200	214,500	81,200	90,200	2.57	8.83	1,900	2,020	0.87	1.14
	2.59	2.464	32.9	2.27	219,200	229,200	87,400	97,100	2.76	8.64	2,020	2,150	0.85	1.14
	2.77	2.642	32.6	2.42	233,100	243,700	93,500	103,900	2.94	8.46	2,140	2,290	0.83	1.14
	2.95	2.743	32.2	2.56	246,800	258,000	97,000	107,800	3.05	8.35	2,200	2,360	0.81	1.14
	3.18	2.972	31.8	2.74	264,200	276,200	104,900	116,500	3.28	8.12	2,340	2,530	0.79	1.14
	3.40	3.200	31.3	2.92	281,400	294,200	112,600	125,100	3.51	7.89	2,480	2,690	0.77	1.14
	3.68	3.480	30.7	3.13	302,000	315,700	120,200	135,600	3.78	7.62	2,630	2,880	0.74	1.14
	3.96	3.759	30.2	3.34	322,300	336,900	120,200	146,000	4.06	7.35	2,780	3,060	0.71	1.14
	4.45	4.242	29.2	3.69	356,400	372,600	120,200	163,600	4.51	6.89	3,020	3,360	0.67	1.14
	4.83	4.521	28.4	3.97	382,600	400,000	120,200	173,700	4.77	6.63	3,140	3,530	0.64	1.14
	5.18	4.877	27.7	4.21	406,400	424,900	120,200	186,200	5.09	6.31	3,300	3,730	0.60	1.14
44.450	2.21	2.083	40.0	2.31	222,400	232,500	63,600	70,700	2.77	12.75	2,460	2,570	1.26	1.55
	2.41	2.286	39.6	2.51	241,700	252,700	69,800	77,500	3.03	12.49	2,660	2,800	1.23	1.55
	2.59	2.464	39.3	2.68	258,400	270,100	75,100	83,400	3.25	12.27	2,830	2,990	1.21	1.55
	2.77	2.642	38.9	2.85	275,000	287,500	80,400	89,300	3.47	12.05	3,000	3,180	1.19	1.55
	2.95	2.743	38.6	3.02	291,400	304,600	83,400	92,700	3.59	11.92	3,090	3,290	1.17	1.55
	3.18	2.972	38.1	3.24	312,200	326,400	90,300	100,300	3.87	11.65	3,300	3,520	1.14	1.55
	3.40	3.200	37.6	3.45	332,900	348,000	97,000	107,800	4.15	11.37	3,500	3,750	1.11	1.55
	3.68	3.480	37.1	3.71	357,700	374,000	105,200	116,900	4.48	11.04	3,730	4,030	1.08	1.55
	3.96	3.759	36.5	3.96	382,200	399,600	113,400	126,000	4.81	10.71	3,950	4,290	1.05	1.55
	4.45	4.242	35.6	4.39	423,700	442,900	120,200	141,400	5.36	10.16	4,310	4,730	0.99	1.55
	4.83	4.521	34.8	4.72	455,600	476,300	120,200	150,300	5.67	9.85	4,510	4,980	0.95	1.55
	5.18	4.877	34.1	5.02	484,800	506,800	120,200	161,400	6.06	9.45	4,750	5,280	0.91	1.55
	5.69	5.385	33.1	5.45	525,500	549,300	120,200	177,000	6.61	8.91	5,060	5,680	0.86	1.55
	6.35	6.045	31.8	5.97	576,400	602,700	120,200	196,800	7.29	8.22	5,430	6,180	0.79	1.55
50.800	2.59	2.464	45.6	3.08	297,600	311,100	65,800	73,100	3.74	16.53	3,770	3,960	1.63	2.03
	2.77	2.642	45.3	3.28	316,800	331,200	70,500	78,300	4.00	16.27	4,000	4,220	1.61	2.03
	2.95	2.743	44.9	3.48	335,900	351,200	73,200	81,300	4.14	16.13	4,130	4,360	1.58	2.03
	3.18	2.972	44.5	3.73	360,300	376,700	79,200	88,000	4.47	15.80	4,420	4,680	1.55	2.03
	3.40	3.200	44.0	3.98	384,400	401,800	85,100	94,600	4.79	15.48	4,690	4,990	1.52	2.03
	3.68	3.480	43.4	4.29	413,500	432,300	92,400	102,700	5.17	15.10	5,020	5,370	1.48	2.03
	3.96	3.759	42.9	4.58	442,200	462,300	99,600	110,700	5.56	14.71	5,330	5,730	1.44	2.03
	4.45	4.242	41.9	5.09	490,900	513,300	112,000	124,400	6.20	14.06	5,840	6,340	1.38	2.03
	4.83	4.521	41.1	5.48	528,600	552,700	119,100	132,300	6.57	13.69	6,120	6,680	1.33	2.03
	5.18	4.877	40.4	5.84	563,200	588,800	120,200	142,200	7.04	13.23	6,460	7,100	1.28	2.03
	5.69	5.385	39.4	6.34	611,500	639,300	120,200	156,200	7.68	12.59	6,920	7,670	1.22	2.03
	6.35	6.045	38.1	6.97	672,500	703,100	120,200	174,100	8.50	11.77	7,470	8,370	1.14	2.03
	7.11	6.731	36.6	7.67	740,300	774,000	120,200	192,200	9.32	10.95	7,980	9,060	1.05	2.03

MINIMUM YIELD
758 MPa

MINIMUM ULTIMATE STRENGTH
793 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-110™ (CT110) | 60.325 mm TO 114.300 mm

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
60.325	2.95	2.743	54.4	4.18	402,800	421,100	61,700	68,600	4.96	23.62	5980	6,260	2.33	2.86
	3.18	2.972	54.0	4.48	432,300	452,000	66,900	74,300	5.35	23.23	6410	6,730	2.29	2.86
	3.40	3.200	53.5	4.78	461,600	482,600	71,900	79,900	5.74	22.84	6820	7,190	2.25	2.86
	3.68	3.480	53.0	5.15	497,100	519,600	78,100	86,800	6.21	22.37	7310	7,740	2.20	2.86
	3.96	3.759	52.4	5.52	532,100	556,300	84,200	93,600	6.68	21.90	7790	8,280	2.16	2.86
	4.45	4.242	51.4	6.13	591,800	618,700	94,800	105,300	7.47	21.11	8580	9,190	2.08	2.86
	4.83	4.521	50.7	6.61	638,200	667,200	100,900	112,100	7.93	20.66	9010	9,700	2.02	2.86
	5.18	4.877	50.0	7.06	680,800	711,700	108,500	120,600	8.50	20.09	9550	10,330	1.96	2.86
	5.69	5.385	48.9	7.68	740,700	774,300	119,400	132,700	9.29	19.29	10,270	11,210	1.88	2.86
	6.35	6.045	47.6	8.46	816,600	853,800	120,200	148,200	10.31	18.27	11,150	12,290	1.78	2.86
	7.11	6.731	46.1	9.35	901,700	942,700	120,200	164,000	11.33	17.25	11,990	13,360	1.67	2.86
66.675	3.40	3.200	59.9	5.32	513,100	536,400	65,200	72,400	6.38	28.53	8,460	8,870	2.81	3.49
	3.68	3.480	59.3	5.73	552,800	577,900	70,700	78,600	6.91	28.01	9,080	9,560	2.76	3.49
	3.96	3.759	58.8	6.14	592,100	619,000	76,300	84,800	7.43	27.49	9,690	10,240	2.71	3.49
	4.45	4.242	57.8	6.83	659,100	689,000	86,000	95,500	8.32	26.60	10,690	11,380	2.62	3.49
	4.83	4.521	57.0	7.37	711,200	743,500	91,500	101,700	8.83	26.09	11,250	12,030	2.55	3.49
	5.18	4.877	56.3	7.87	759,200	793,700	98,500	109,400	9.47	25.45	11,940	12,830	2.49	3.49
	5.69	5.385	55.3	8.57	826,700	864,300	108,500	120,500	10.37	24.55	12,880	13,940	2.40	3.49
	6.35	6.045	54.0	9.46	912,700	954,200	120,200	134,700	11.51	23.40	14,030	15,330	2.29	3.49
	7.11	6.731	52.5	10.46	1,009,300	1,055,200	120,200	149,200	12.68	22.24	15,140	16,700	2.16	3.49
73.025	3.68	3.480	65.7	6.31	608,500	636,200	64,700	71,900	7.60	34.28	11,050	11,580	3.38	4.19
	3.96	3.759	65.1	6.76	652,000	681,700	69,800	77,600	8.18	33.70	11,790	12,410	3.33	4.19
	4.45	4.242	64.1	7.53	726,300	759,300	78,700	87,400	9.17	32.72	13,040	13,810	3.23	4.19
	4.83	4.521	63.4	8.13	784,200	819,800	83,700	93,000	9.73	32.15	13,740	14,610	3.15	4.19
	5.18	4.877	62.7	8.68	837,600	875,700	90,200	100,200	10.44	31.44	14,600	15,590	3.08	4.19
	5.69	5.385	61.6	9.46	912,800	954,300	99,300	110,300	11.44	30.44	15,790	16,970	2.98	4.19
	6.35	6.045	60.3	10.46	1,008,800	1,054,600	111,100	123,400	12.72	29.16	17,240	18,690	2.86	4.19
	7.11	6.731	58.8	11.58	1,116,900	1,167,700	120,200	136,800	14.02	27.86	18,650	20,410	2.71	4.19
88.900	4.45	4.242	80.0	9.27	894,500	935,100	64,800	72,000	11.28	50.79	19,950	20,910	5.03	6.21
	4.83	4.521	79.2	10.02	966,700	1,010,700	68,900	76,600	11.98	50.09	21,060	22,150	4.93	6.21
	5.18	4.877	78.5	10.71	1,033,600	1,080,600	74,300	82,600	12.87	49.20	22,440	23,690	4.84	6.21
	5.69	5.385	77.5	11.69	1,128,000	1,179,300	81,900	91,000	14.13	47.94	24,350	25,850	4.72	6.21
	6.35	6.045	76.2	12.95	1,249,000	1,305,700	91,700	101,900	15.74	46.34	26,730	28,580	4.56	6.21
	7.11	6.731	74.7	14.37	1,385,900	1,448,900	101,900	113,200	17.38	44.70	29,070	31,310	4.38	6.21
114.300	5.69	5.385	102.9	15.26	1,472,400	1,539,300	64,000	71,100	18.43	84.18	41,940	43,940	8.32	10.26
	6.35	6.045	101.6	16.93	1,633,300	1,707,500	71,700	79,700	20.56	82.05	46,270	48,750	8.10	10.26
	7.11	6.731	100.1	18.83	1,816,300	1,898,900	79,700	88,500	22.75	79.86	50,580	53,610	7.86	10.26

MINIMUM YIELD
758 MPa

MINIMUM ULTIMATE STRENGTH
793 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-80 CRA™ | 0.375" TO 0.875" (1.000" TO 2.000" on reverse side)

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
0.375	0.035	0.030	0.305	0.125	3,000	4,100	11,300	12,600	0.033	0.078	20	22	3.80	0.09	5.74	0.14
	0.050	0.045	0.275	0.171	4,100	5,600	16,700	18,500	0.047	0.064	27	30	3.09	0.07	5.74	0.14
	0.065	0.060	0.245	0.212	5,100	7,000	17,500	24,000	0.059	0.051	31	36	2.45	0.06	5.74	0.14
	0.075	0.070	0.225	0.237	5,700	7,800	17,500	27,400	0.067	0.043	34	40	2.07	0.05	5.74	0.14
0.500	0.035	0.030	0.430	0.171	4,100	5,600	8,600	9,500	0.044	0.152	38	40	7.54	0.18	10.20	0.24
	0.050	0.045	0.400	0.237	5,700	7,800	12,700	14,100	0.064	0.132	52	56	6.53	0.16	10.20	0.24
	0.065	0.060	0.370	0.297	7,100	9,800	16,700	18,500	0.083	0.113	63	71	5.59	0.13	10.20	0.24
	0.075	0.070	0.350	0.335	8,000	11,000	17,500	21,300	0.095	0.102	69	79	5.00	0.12	10.20	0.24
	0.090	0.085	0.320	0.388	9,300	12,800	17,500	25,300	0.111	0.086	76	90	4.18	0.10	10.20	0.24
0.625	0.035	0.030	0.555	0.217	5,200	7,100	6,800	7,600	0.056	0.251	61	64	12.57	0.30	15.94	0.38
	0.050	0.045	0.525	0.302	7,200	9,900	10,300	11,400	0.082	0.225	85	92	11.25	0.27	15.94	0.38
	0.065	0.060	0.495	0.383	9,100	12,600	13,500	15,000	0.106	0.200	106	116	10.00	0.24	15.94	0.38
	0.075	0.070	0.475	0.434	10,400	14,300	15,700	17,400	0.122	0.185	118	131	9.21	0.22	15.94	0.38
	0.090	0.085	0.445	0.506	12,100	16,600	17,500	20,800	0.144	0.163	133	151	8.08	0.19	15.94	0.38
	0.100	0.095	0.425	0.552	13,200	18,100	17,500	22,900	0.158	0.149	141	163	7.37	0.18	15.94	0.38
	0.109	0.104	0.407	0.592	14,100	19,400	17,500	24,800	0.170	0.137	148	173	6.76	0.16	15.94	0.38
	0.125	0.117	0.375	0.657	15,700	21,600	17,500	27,400	0.187	0.120	156	186	5.74	0.14	15.94	0.38
0.750	0.035	0.030	0.680	0.263	6,300	8,600	5,800	6,400	0.068	0.374	90	94	18.87	0.45	22.95	0.55
	0.050	0.045	0.650	0.368	8,800	12,100	8,600	9,500	0.100	0.342	128	135	17.24	0.41	22.95	0.55
	0.065	0.060	0.620	0.468	11,200	15,400	11,300	12,600	0.130	0.312	160	173	15.68	0.37	22.95	0.55
	0.075	0.070	0.600	0.532	12,700	17,500	13,100	14,600	0.150	0.292	179	196	14.69	0.35	22.95	0.55
	0.090	0.085	0.570	0.625	14,900	20,500	15,800	17,500	0.178	0.264	205	228	13.26	0.32	22.95	0.55
	0.100	0.095	0.550	0.684	16,300	22,500	17,500	19,500	0.195	0.246	220	248	12.34	0.29	22.95	0.55
	0.109	0.104	0.532	0.735	17,600	24,100	17,500	21,100	0.211	0.231	232	265	11.55	0.27	22.95	0.55
	0.125	0.117	0.500	0.822	19,600	27,000	17,500	23,500	0.233	0.209	247	286	10.20	0.24	22.95	0.55
	0.134	0.126	0.482	0.868	20,700	28,500	17,500	25,000	0.247	0.195	257	300	9.48	0.23	22.95	0.55
0.875	0.050	0.045	0.775	0.434	10,400	14,300	7,400	8,200	0.117	0.484	178	187	24.51	0.58	31.24	0.74
	0.065	0.060	0.745	0.554	13,200	18,200	9,700	10,800	0.154	0.448	226	241	22.64	0.54	31.24	0.74
	0.075	0.070	0.725	0.631	15,100	20,700	11,300	12,600	0.177	0.424	254	275	21.45	0.51	31.24	0.74
	0.090	0.085	0.695	0.743	17,800	24,400	13,700	15,200	0.211	0.390	293	322	19.71	0.47	31.24	0.74
	0.100	0.095	0.675	0.815	19,500	26,800	15,200	16,900	0.233	0.369	316	351	18.59	0.44	31.24	0.74
	0.109	0.104	0.657	0.878	21,000	28,900	16,500	18,300	0.252	0.349	335	376	17.61	0.42	31.24	0.74
	0.125	0.117	0.625	0.986	23,600	32,400	17,500	20,400	0.279	0.323	360	409	15.94	0.38	31.24	0.74
	0.134	0.126	0.607	1.044	25,000	34,300	17,500	21,900	0.296	0.305	376	431	15.03	0.36	31.24	0.74
	0.153	0.145	0.569	1.162	27,800	38,200	17,500	24,700	0.333	0.269	405	473	13.21	0.31	31.24	0.74

MINIMUM YIELD
80 Ksi

MININUM ULTIMATE STRENGTH
100 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

CTC / Version 01 / March 2012

HS-80 CRA™ | 1.000" TO 2.000"

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
1.000	0.050	0.045	0.900	0.500	11,900	16,400	6,500	7,200	0.135	0.650	237	248	33.05	0.79	40.80	0.97
	0.065	0.060	0.870	0.639	15,300	21,000	8,600	9,500	0.177	0.608	302	321	30.88	0.74	40.80	0.97
	0.075	0.070	0.850	0.730	17,400	24,000	10,000	11,100	0.205	0.581	342	367	29.48	0.70	40.80	0.97
	0.090	0.085	0.820	0.861	20,600	28,300	12,100	13,400	0.244	0.541	397	431	27.43	0.65	40.80	0.97
	0.100	0.095	0.800	0.947	22,600	31,100	13,400	14,900	0.270	0.515	430	472	26.11	0.62	40.80	0.97
	0.109	0.104	0.782	1.022	24,400	33,600	14,600	16,200	0.293	0.493	458	507	24.95	0.59	40.80	0.97
	0.125	0.117	0.750	1.150	27,500	37,800	16,300	18,100	0.325	0.461	495	554	22.95	0.55	40.80	0.97
	0.134	0.126	0.732	1.221	29,200	40,100	17,500	19,400	0.346	0.439	519	586	21.86	0.52	40.80	0.97
	0.153	0.145	0.694	1.363	32,600	44,800	17,500	22,000	0.389	0.396	563	647	19.65	0.47	40.80	0.97
1.250	0.050	0.045	1.150	0.631	15,100	20,700	5,100	5,700	0.170	1.057	381	395	53.96	1.28	63.75	1.52
	0.065	0.060	1.120	0.810	19,400	26,600	6,800	7,600	0.224	1.003	490	514	51.18	1.22	63.75	1.52
	0.075	0.070	1.100	0.927	22,100	30,500	8,000	8,900	0.259	0.968	558	590	49.37	1.18	63.75	1.52
	0.090	0.085	1.070	1.098	26,200	36,100	9,700	10,800	0.311	0.916	653	698	46.71	1.11	63.75	1.52
	0.100	0.095	1.050	1.210	28,900	39,700	10,800	12,000	0.345	0.882	712	767	44.98	1.07	63.75	1.52
	0.109	0.104	1.032	1.308	31,300	43,000	11,800	13,100	0.374	0.853	763	828	43.45	1.03	63.75	1.52
	0.125	0.117	1.000	1.479	35,300	48,600	13,100	14,600	0.416	0.811	831	911	40.80	0.97	63.75	1.52
	0.134	0.126	0.982	1.573	37,600	51,700	14,100	15,700	0.445	0.782	876	966	39.34	0.94	63.75	1.52
	0.153	0.145	0.944	1.765	42,200	58,000	16,100	17,900	0.503	0.724	962	1,076	36.36	0.87	63.75	1.52
1.500	0.065	0.060	1.370	0.981	23,400	32,200	5,800	6,400	0.271	1.496	723	752	76.58	1.82	91.80	2.19
	0.075	0.070	1.350	1.124	26,900	36,900	6,700	7,400	0.314	1.453	827	866	74.36	1.77	91.80	2.19
	0.090	0.085	1.320	1.335	31,900	43,900	8,100	9,000	0.378	1.389	974	1,030	71.09	1.69	91.80	2.19
	0.100	0.095	1.300	1.473	35,200	48,400	9,000	10,000	0.419	1.348	1,066	1,135	68.95	1.64	91.80	2.19
	0.109	0.104	1.282	1.595	38,100	52,400	9,900	11,000	0.456	1.311	1,146	1,227	67.06	1.60	91.80	2.19
	0.125	0.117	1.250	1.808	43,200	59,400	11,100	12,300	0.508	1.259	1,256	1,355	63.75	1.52	91.80	2.19
	0.134	0.126	1.232	1.925	46,000	63,300	11,900	13,200	0.544	1.223	1,328	1,441	61.93	1.47	91.80	2.19
	0.153	0.145	1.194	2.168	51,800	71,200	13,600	15,100	0.617	1.150	1,470	1,615	58.17	1.38	91.80	2.19
1.750	0.075	0.070	1.600	1.321	31,600	43,400	5,800	6,400	0.369	2.036	1,148	1,194	104.45	2.49	124.95	2.97
	0.090	0.085	1.570	1.571	37,500	51,600	6,900	7,700	0.445	1.961	1,358	1,425	100.57	2.39	124.95	2.97
	0.100	0.095	1.550	1.735	41,500	57,000	7,700	8,600	0.494	1.911	1,492	1,574	98.02	2.33	124.95	2.97
	0.109	0.104	1.532	1.881	45,000	61,800	8,500	9,400	0.538	1.867	1,608	1,705	95.76	2.28	124.95	2.97
	0.125	0.117	1.500	2.136	51,100	70,200	9,500	10,600	0.600	1.805	1,768	1,888	91.80	2.19	124.95	2.97
	0.134	0.126	1.482	2.278	54,400	74,800	10,300	11,400	0.643	1.762	1,875	2,012	89.61	2.13	124.95	2.97
	0.153	0.145	1.444	2.570	61,400	84,400	11,700	13,000	0.731	1.674	2,087	2,263	85.07	2.03	124.95	2.97
2.000	0.090	0.085	1.820	1.808	43,200	59,400	6,100	6,800	0.511	2.630	1,807	1,885	135.15	3.22	163.20	3.89
	0.100	0.095	1.800	1.998	47,800	65,700	6,800	7,600	0.569	2.573	1,989	2,085	132.19	3.15	163.20	3.89
	0.109	0.104	1.782	2.168	51,800	71,200	7,500	8,300	0.619	2.522	2,148	2,261	129.56	3.08	163.20	3.89
	0.125	0.117	1.750	2.465	58,900	81,000	8,400	9,300	0.692	2.449	2,369	2,510	124.95	2.97	163.20	3.89
	0.134	0.126	1.732	2.630	62,800	86,400	9,000	10,000	0.742	2.400	2,517	2,678	122.39	2.91	163.20	3.89
	0.153	0.145	1.694	2.972	71,000	97,700	10,300	11,400	0.845	2.297	2,813	3,021	117.08	2.79	163.20	3.89

MINIMUM YIELD
80 Ksi

MINIMUM ULTIMATE STRENGTH
100 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-80 CRA™ | 9.525 mm TO 22.225 mm (25.400 mm TO 50.800 mm on reverse side)

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
9.525	0.89	0.762	7.7	0.19	13,300	18,300	78,100	86,800	0.21	0.50	30	30	0.05	0.07
	1.27	1.143	7.0	0.26	18,200	25,000	114,800	127,600	0.30	0.41	40	40	0.04	0.07
	1.65	1.524	6.2	0.32	22,500	31,000	120,200	165,400	0.38	0.33	40	50	0.03	0.07
	1.91	1.778	5.7	0.36	25,200	34,600	120,200	188,600	0.43	0.28	50	50	0.03	0.07
12.700	0.89	0.762	10.9	0.26	18,200	25,000	59,000	65,600	0.29	0.98	50	50	0.09	0.13
	1.27	1.143	10.2	0.36	25,200	34,600	87,600	97,300	0.41	0.85	70	80	0.08	0.13
	1.65	1.524	9.4	0.45	31,600	43,500	114,800	127,600	0.54	0.73	90	100	0.07	0.13
	1.91	1.778	8.9	0.51	35,600	49,000	120,200	146,900	0.61	0.66	90	110	0.06	0.13
	2.29	2.159	8.1	0.59	41,300	56,700	120,200	174,300	0.71	0.55	100	120	0.05	0.13
15.875	0.89	0.762	14.1	0.33	23,100	31,700	47,300	52,600	0.36	1.62	80	90	0.16	0.20
	1.27	1.143	13.3	0.46	32,100	44,200	70,600	78,400	0.53	1.45	120	120	0.14	0.20
	1.65	1.524	12.6	0.58	40,700	56,000	93,100	103,400	0.69	1.29	140	160	0.12	0.20
	1.91	1.778	12.1	0.66	46,100	63,400	107,700	119,700	0.79	1.19	160	180	0.11	0.20
	2.29	2.159	11.3	0.77	53,800	74,000	120,200	143,100	0.93	1.05	180	200	0.10	0.20
	2.54	2.413	10.8	0.84	58,700	80,700	120,200	158,100	1.02	0.96	190	220	0.09	0.20
	2.77	2.642	10.3	0.90	62,900	86,500	120,200	171,100	1.10	0.88	200	230	0.08	0.20
	3.18	2.972	9.5	1.00	69,900	96,100	120,200	189,100	1.20	0.77	210	250	0.07	0.20
19.050	0.89	0.762	17.3	0.40	28,000	38,500	39,500	43,900	0.44	2.41	120	130	0.23	0.28
	1.27	1.143	16.5	0.56	39,100	53,800	59,000	65,600	0.64	2.21	170	180	0.21	0.28
	1.65	1.524	15.7	0.71	49,800	68,400	78,100	86,800	0.84	2.01	220	230	0.19	0.28
	1.91	1.778	15.2	0.81	56,600	77,800	90,600	100,700	0.96	1.89	240	270	0.18	0.28
	2.29	2.159	14.5	0.95	66,400	91,300	108,900	121,000	1.15	1.70	280	310	0.16	0.28
	2.54	2.413	14.0	1.04	72,700	99,900	120,200	134,100	1.26	1.59	300	340	0.15	0.28
	2.77	2.642	13.5	1.11	78,100	107,400	120,200	145,700	1.36	1.49	310	360	0.14	0.28
	3.18	2.972	12.7	1.24	87,300	120,100	120,200	161,800	1.50	1.35	330	390	0.13	0.28
	3.40	3.200	12.2	1.32	92,300	126,900	120,200	172,500	1.59	1.26	350	410	0.12	0.28
22.225	1.27	1.143	19.7	0.66	46,100	63,400	50,800	56,400	0.76	3.12	240	250	0.30	0.39
	1.65	1.524	18.9	0.84	58,900	80,900	67,200	74,700	0.99	2.89	310	330	0.28	0.39
	1.91	1.778	18.4	0.96	67,100	92,200	78,100	86,800	1.14	2.74	340	370	0.27	0.39
	2.29	2.159	17.7	1.13	79,000	108,600	94,100	104,600	1.36	2.52	400	440	0.24	0.39
	2.54	2.413	17.1	1.23	86,600	119,100	104,600	116,200	1.50	2.38	430	480	0.23	0.39
	2.77	2.642	16.7	1.33	93,300	128,300	113,900	126,500	1.63	2.25	450	510	0.22	0.39
	3.18	2.972	15.9	1.49	104,800	144,100	120,200	140,900	1.80	2.08	490	550	0.20	0.39
	3.40	3.200	15.4	1.58	111,000	152,600	120,200	150,700	1.91	1.97	510	580	0.19	0.39
	3.89	3.683	14.5	1.76	123,500	169,800	120,200	170,500	2.15	1.73	550	640	0.16	0.39

MINIMUM YIELD
552 MPa

MINIMUM ULTIMATE STRENGTH
689 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HS-80 CRA™ | 25.400 mm TO 50.800 mm

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	per meter
25.400	1.27	1.143	22.9	0.76	53,100	73,000	44,500	49,400	0.87	4.20	320	340	0.41	0.51
	1.65	1.524	22.1	0.97	67,900	93,400	59,000	65,600	1.14	3.92	410	440	0.38	0.51
	1.91	1.778	21.6	1.11	77,600	106,600	68,700	76,300	1.32	3.75	460	500	0.37	0.51
	2.29	2.159	20.8	1.30	91,600	125,900	82,900	92,100	1.58	3.49	540	580	0.34	0.51
	2.54	2.413	20.3	1.43	100,600	138,300	92,200	102,400	1.74	3.32	580	640	0.32	0.51
	2.77	2.642	19.9	1.55	108,600	149,300	100,400	111,600	1.89	3.18	620	690	0.31	0.51
	3.18	2.972	19.1	1.74	122,300	168,100	112,100	124,600	2.09	2.97	670	750	0.28	0.51
	3.40	3.200	18.6	1.85	129,700	178,400	120,200	133,500	2.23	2.84	700	790	0.27	0.51
	3.89	3.683	17.6	2.06	144,900	199,200	120,200	151,600	2.51	2.55	760	880	0.24	0.51
31.750	1.27	1.143	29.2	0.96	67,100	92,200	35,600	39,600	1.10	6.82	520	540	0.67	0.79
	1.65	1.524	28.4	1.23	86,100	118,400	47,300	52,600	1.45	6.47	660	700	0.64	0.79
	1.91	1.778	27.9	1.40	98,500	135,500	55,200	61,300	1.67	6.24	760	800	0.61	0.79
	2.29	2.159	27.2	1.66	116,700	160,500	66,700	74,100	2.01	5.91	890	950	0.58	0.79
	2.54	2.413	26.7	1.83	128,600	176,800	74,300	82,600	2.22	5.69	970	1,040	0.56	0.79
	2.77	2.642	26.2	1.98	139,000	191,200	81,200	90,200	2.42	5.50	1,030	1,120	0.54	0.79
	3.18	2.972	25.4	2.24	157,200	216,200	90,900	101,000	2.69	5.23	1,130	1,240	0.51	0.79
	3.40	3.200	24.9	2.38	167,200	229,900	97,600	108,400	2.87	5.05	1,190	1,310	0.49	0.79
	3.89	3.683	24.0	2.67	187,600	258,000	111,200	123,600	3.25	4.67	1,300	1,460	0.45	0.79
38.100	1.65	1.524	34.8	1.49	104,300	143,400	39,500	43,900	1.75	9.65	980	1,020	0.95	1.14
	1.91	1.778	34.3	1.70	119,500	164,300	46,100	51,200	2.03	9.37	1,120	1,170	0.92	1.14
	2.29	2.159	33.5	2.02	141,900	195,100	55,800	62,000	2.44	8.96	1,320	1,400	0.88	1.14
	2.54	2.413	33.0	2.23	156,500	215,200	62,300	69,200	2.71	8.70	1,450	1,540	0.86	1.14
	2.77	2.642	32.6	2.42	169,500	233,100	68,000	75,600	2.94	8.46	1,550	1,660	0.83	1.14
	3.18	2.972	31.8	2.74	192,100	264,200	76,200	84,700	3.28	8.12	1,700	1,840	0.79	1.14
	3.40	3.200	31.3	2.92	204,600	281,400	81,900	91,000	3.51	7.89	1,800	1,950	0.77	1.14
	3.89	3.683	30.3	3.28	230,400	316,800	93,700	104,100	3.98	7.42	1,990	2,190	0.72	1.14
44.450	1.91	1.778	40.6	2.00	140,400	193,100	39,500	43,900	2.38	13.13	1,560	1,620	1.30	1.55
	2.29	2.159	39.9	2.38	167,000	229,700	48,000	53,300	2.87	12.65	1,840	1,930	1.25	1.55
	2.54	2.413	39.4	2.63	184,500	253,600	53,500	59,400	3.19	12.33	2,020	2,130	1.22	1.55
	2.77	2.642	38.9	2.85	200,000	275,000	58,500	65,000	3.47	12.05	2,180	2,310	1.19	1.55
	3.18	2.972	38.1	3.24	227,100	312,200	65,600	72,900	3.87	11.65	2,400	2,560	1.14	1.55
	3.40	3.200	37.6	3.45	242,100	332,900	70,600	78,400	4.15	11.37	2,540	2,730	1.11	1.55
	3.89	3.683	36.7	3.89	273,200	375,600	80,800	89,800	4.72	10.80	2,830	3,070	1.06	1.55
50.800	2.29	2.159	46.2	2.74	192,200	264,200	42,000	46,700	3.30	16.97	2,450	2,560	1.68	2.03
	2.54	2.413	45.7	3.03	212,400	292,100	46,900	52,100	3.67	16.60	2,700	2,830	1.64	2.03
	2.77	2.642	45.3	3.28	230,400	316,800	51,300	57,000	4.00	16.27	2,910	3,070	1.61	2.03
	3.18	2.972	44.5	3.73	262,000	360,300	57,600	64,000	4.47	15.80	3,210	3,400	1.55	2.03
	3.40	3.200	44.0	3.98	279,500	384,400	61,900	68,800	4.79	15.48	3,410	3,630	1.52	2.03
	3.89	3.683	43.0	4.50	315,900	434,400	71,000	78,900	5.45	14.82	3,810	4,100	1.45	2.03

MINIMUM YIELD
552 MPa

MINIMUM ULTIMATE STRENGTH
689 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 90% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HV-70™ (CT70) | 1.000" TO 2.000"

ENGLISH VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY		EXTERNAL DISPLACEMENT	
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Gallons	Barrels	Gallons	Barrels
in	in	in	in	lb/ft	lb	lb	psi	psi	sq in	sq in	ft-lb	ft-lb	x 1000 ft		x 1000 ft	
1.000	0.095	0.090	0.810	0.920	18,900	21,600	9,800	12,300	0.257	0.528	362	395	26.77	0.64	40.80	0.97
	0.109	0.104	0.782	1.040	21,400	24,400	11,400	14,200	0.293	0.493	401	443	24.95	0.59	40.80	0.97
	0.125	0.117	0.750	1.171	24,100	27,500	12,600	15,800	0.325	0.461	433	485	22.95	0.55	40.80	0.97
1.250	0.095	0.090	1.060	1.175	24,100	27,600	7,900	9,900	0.328	0.899	598	642	45.84	1.09	63.75	1.52
	0.109	0.104	1.032	1.332	27,400	31,300	9,100	11,400	0.374	0.853	668	724	43.45	1.03	63.75	1.52
	0.125	0.117	1.000	1.506	30,900	35,300	10,200	12,800	0.415	0.811	717	797	40.80	0.97	63.75	1.52
1.500	0.109	0.104	1.282	1.623	33,300	38,100	7,700	9,600	0.456	1.311	1,003	1,074	67.06	1.60	91.80	2.19
	0.125	0.117	1.250	1.840	37,800	43,200	8,600	10,800	0.508	1.259	1,099	1,186	63.75	1.52	91.80	2.19
1.750	0.109	0.104	1.532	1.915	39,300	45,000	6,600	8,200	0.538	1.867	1,407	1,492	95.76	2.28	124.95	2.97
	0.125	0.117	1.500	2.175	44,700	51,100	7,400	9,300	0.600	1.805	1,547	1,652	91.80	2.19	124.95	2.97
2.000	0.109	0.104	1.782	2.207	45,300	51,800	5,600	7,200	0.619	2.522	1,879	1,979	129.56	3.08	163.20	3.89
	0.125	0.117	1.750	2.509	51,500	58,900	6,500	8,100	0.692	2.449	2,073	2,196	124.95	2.97	163.20	3.89

MINIMUM YIELD
70 Ksi

MININUM ULTIMATE STRENGTH
80 Ksi

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 80% of the minimum internal yield pressure rating or 17,500 psi (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

HV-70™ (CT70) | 25.400 mm TO 50.800 mm

METRIC VALUES

DIMENSIONS				NOMINAL WEIGHT	TUBE LOAD BODY		INTERNAL PRESSURE		TUBING AREA		TORSIONAL YIELD		INTERNAL CAPACITY	EXTERNAL DISPLACEMENT
Specified OD	Specified Wall	Wall Minimum	ID Calculated		Yield Minimum	Tensile Minimum	Hydro Test Pressure	Internal Yield Minimum	Wall Area Minimum Wall	I.D. Area Minimum Wall	Yield	Ultimate	Liters	Liters
mm	mm	mm	mm	kg/m	N	N	kPa	kPa	sq cm	sq cm	N-m	N-m	per meter	nt per meter
25.400	2.41	2.286	20.6	1.37	84,100	96,100	68,100	85,100	1.66	3.41	490	540	0.33	0.51
	2.77	2.642	19.9	1.55	95,000	108,600	78,200	97,700	1.89	3.18	540	600	0.31	0.51
	3.18	2.972	19.1	1.74	107,000	122,300	87,300	109.100	2.09	2.97	590	660	0.28	0.51
31.750	2.41	2.286	26.9	1.75	107,300	122,700	54,900	68,600	2.12	5.80	810	870	0.57	0.79
	2.77	2.642	26.2	1.98	121,700	139,000	63,100	78,900	2.42	5.50	910	980	0.54	0.79
	3.18	2.972	25.4	2.24	137,600	157,200	70,700	88,400	2.69	5.23	990	1080	0.51	0.79
38.100	2.77	2.642	26.2	1.98	121,700	139,000	71,000	78,900	2.42	5.50	910	980	0.54	0.79
	3.18	2.972	31.8	2.74	168,100	192,100	66,700	74,100	2.94	8.46	1,360	1,460	0.83	1.14
44.450	2.77	2.642	38.9	2.85	175,000	200,000	51,200	56,900	3.47	12.05	1,910	2,020	1.19	1.55
	3.18	2.972	38.1	3.24	198,700	227,100	57,400	63,800	3.87	11.65	2,100	2,240	1.14	1.55
50.800	2.77	2.642	45.3	3.28	201,600	230,400	39,900	49,900	4.00	16.27	2,550	2,680	1.61	2.03
	3.18	2.972	44.5	3.73	229,300	262,000	44,800	56,000	4.47	15.80	2,810	2,980	1.55	2.03

MINIMUM YIELD
483 MPa

MININUM ULTIMATE STRENGTH
552 MPa

Loads calculated using nominal wall.
Pressures calculated using minimal wall.

Note: The coiled tubing data in this handbook is for new tubing at specified minimum strength.
Tube Body Load: Yield & Tensile minimums calculated based on specified wall
Hydro Test: Test pressure value is 80% of the minimum internal yield pressure rating or 120,200 kPa (whichever is less)
Internal Yield: Internal pressure to cause yielding based on minimum yield strength and minimum wall thickness
Torsional Yield is calculated using minimum wall thickness and minimum yield strength.

Definitions & Calculations

Common Metric Conversion Factors

LENGTH	multiply by	to convert to
in	2.54	cm
ft	0.3048	m
mile	1.609344	km

AREA	multiply by	to convert to
in^2	6.4516	cm^2
ft^2	0.09290304	m^2

VOLUME (GAS/FLUID)	multiply by	to convert to
in^3	16.38706	cm^3
ft^3	0.02831685	m^3
gal	3,785.412	cm^3
bbl	0.1589873	m^3
mL	1.0	cm^3

PRESSURE	multiply by	to convert to
psi	6.894757	kPa
ksi	6894.757	kPa
bar	100	kPa
atm	101.325	kPa

MASS	multiply by	to convert to
lbm	0.4535924	kg
ton	0.9071847	t (metric)

FORCE	multiply by	to convert to
lbf	4.448222	N
tonf	8.896444	kN

VELOCITY	multiply by	to convert to
ft/s	0.3048	m/s

POWER	multiply by	to convert to
hpBtu	0.7456999	kW

TEMPERATURE		to convert to
°F	(°F – 32) / 1.8	°C
°F	(°F + 459.67) / 1.8	°K

VISCOSITY	multiply by	to convert to
cp	0.001	Pa s

PRESSURE DROP/LENGTH	multiply by	to convert to
psi/100ft	0.2262059	kPa/m

Commonly used Coiled Tubing Material Properties for the purpose of these calculations:

α

Coefficient of Thermal Expansion

6.51 x 10^{-6} / °F or (11.7 x 10^{-6} / °C)

ε

Effective Roughness

0.0018 in

ε/D

Relative Roughness

Effective Roughness / inner diameter of CT string

ν

Poisson's Ratio

0.30

μ

Shear Modulus

11.7 x 10^6 psi or (8.2 x 10^3 kg/mm^2)

ρ

Steel Density

0.284 lbs/in^3 or (7.86 g/cm^3)

E

Young's Modulus

30 x 10^6 psi or (21.55 x 10^3 kg/mm^2)

ADD YOURS

General

The following calculations are based upon the known tubing dimensions:

MINIMUM INNER DIAMETER (ID_m)

Inner diameter of the tubing determined using the minimum wall thickness for specified nominal wall thickness.

1. $$ID_m = OD - 2\,t_m$$

NOMINAL INNER DIAMETER (ID_n)

Inner diameter of the tubing determined using the nominal wall thickness specified.

2. $$ID_n = OD - 2\,t_n$$

MINIMUM CROSS-SECTIONAL AREA (A_m)

Tubing cross-sectional area based upon its minimum wall thickness.

3. $$A_m = \frac{\pi}{4}(OD^2 - ID_m^2)$$

NOMINAL CROSS-SECTIONAL AREA (A_n)

Tubing cross-sectional area based upon its nominal wall thickness.

4. $$A_n = \frac{\pi}{4}(OD^2 - ID_n^2)$$

Specific Calculations

The following define the tubing properties

WEIGHT (W_t)

Weight of the tubing using the nominal wall thickness per unit length:

5. $$W_t = A_n \rho$$

ρ Density, for steel
$\rho = 0.284$ lbs/in³.

YIELD LOAD CAPACITY (L_y)

Axial tension load to produce stress equal to the specified minimum yield strength (σ_y) using the nominal wall thickness:

6. $$L_y = \sigma_h A_n$$

ULTIMATE LOAD CAPACITY (L_u)

Axial tension load to produce stress equal to the specified minimum ultimate tensile strength (σ_{uts}) using the nominal wall thickness:

7. $$L_u = \sigma_{uts} A_n$$

YIELD TORQUE (T_y)

Torque that will stress the outer surface to the specified minimum yield strength:

8. $$T_y = \frac{2 \tau_y J}{OD}$$

τ_y Shear yield strength according to the Maximum Distortion-Energy Theory.
J Polar moment of inertia.

$$\tau_y = 0.577 \sigma_y$$

$$J = \frac{\pi}{32}(OD^4 - ID_m^4)$$

ULTIMATE TORQUE (T_u)

Torque that will stress the inner surface to the specified minimum yield strength. This condition causes the yield strength to be exceeded through the wall of the tubing:

9. $$T_u = \frac{\pi \tau_y (OD^3 - ID_m^3)}{12}$$

SECTION WEIGHT (W_s)

Weight of tubing string section for a particular wall thickness:

10. $$W_s = LW_l$$

L Length of tubing section.

CUMULATIVE WEIGHT (W_c)

Weight of string as tubing section of different wall thicknesses are added:

11. $$W_c = \sum_{i=1}^{n} W_{si}$$

PERCENTAGE YIELD LOAD USED ($\%L_y$)

For tapered string designs, the percentage of a particular wall thickness section's yield strength used to support the weight of itself and subsequent wall thickness sections in tension:

12. $$\%L_y = 100 \frac{W_c}{L_y}$$

SAFETY FACTOR, PERCENT YIELD ($\%SF_y$)

For tapered string designs, the yield strength safety factor for the wall thickness section for which $\%L_y$ is calculated:

13. $$\%SF_y = 100 - \%L_y$$

AVAILABLE OVERPULL (L_o)

For tapered string designs, the remaining yield load capability of a wall thickness section to support itself and any subsequent wall thickness sections in tension:

14. $$L_o = L_y - W_c$$

Calculation of Simple Pressure Drop Due to Fluid Flow Friction

The pressure drop in straight coiled tubing can be calculated as:

$$\Delta\rho = f\left(\frac{1}{2}\rho U^2\right)\left(\frac{L}{D}\right)$$

- f Darcy friction factor (non-dimensional)
- ρ Fluid density (lbm/ft³)
- U Average (bulk) fluid velocity (ft/s)
- L Tube length (ft)
- D Tube internal diameter (ft)

The average velocity is calculated from the volumetric flow rate:

$$U = \frac{4Q}{\pi D^2}$$

- Q Volumetric flow rate (ft³/s)

To determine the Darcy friction factor, it is necessary to determine two non-dimensional parameters, the Reynolds Number:

$$Re = \frac{\rho UD}{\mu}$$

- Re Reynolds number (non-dimensional)
- μ Fluid dynamic viscosity (lbm/ft·s)

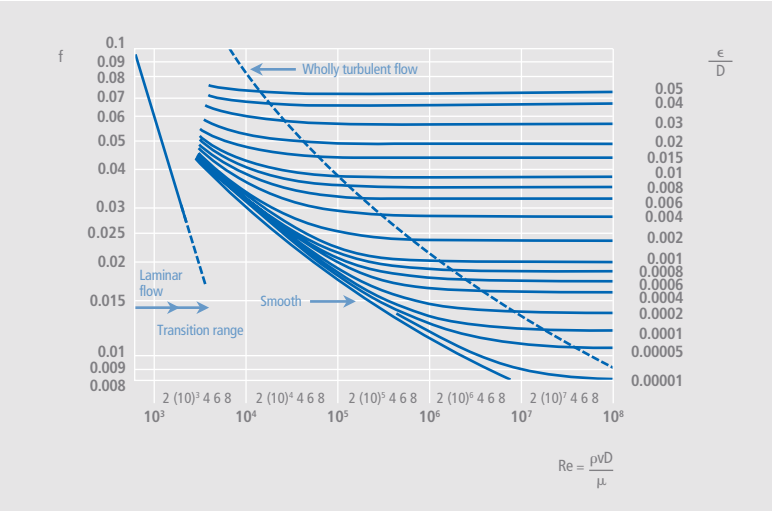
and the relative roughness:

$$\epsilon/D$$

- ϵ Tube internal roughness (ft)

A reasonable value for the internal roughness of new coiled tubing is 8.3×10^{-5} ft (0.001 in).

With these values known, the Darcy friction factor can be found graphically using the Moody chart:



or calculated by an iterative process with Colebrook's equation:

$$\frac{1}{\sqrt{f}} = -2\log\left(\frac{\epsilon/D}{3.7}\right) + \left(\frac{2.5}{Re\sqrt{f}}\right)$$

The following unit conversions are useful for these calculations:

1 BPM = 9.36 x 10^{-2} ft^3/s
1 cP = 6.72 x 10^{-4} lbm/ft·s
1 ppg = 7.48 lbm/ft^3
gc = 32.174 (lbm ft/s^2)/lbf

The following table provides common fluid properties used in these calculations:

FLUID	DENSITY	VISCOSITY
68°F	lbm/f³	(cP)
Fresh water	62.310	0.9784
10 ppg brine	74.806	2.3000
15% HCl	66.967	1.9500
Diesel	51.724	1.6200

Calculation of Burst Yield Pressure for Round Tubing

BURST YIELD PRESSURE

Is defined as the amount of internal pressure that will cause the Von Mises equivalent stress at the tube inside surface to equal the material yield strength.

We assume no external pressure for the calculation of burst yield. If we denote axial stress as σ_a, hoop stress σ_h and radial stress σ_r, then the stress values at the inside surface can be calculated from the thick-walled cylinder equation:

15. $$\sigma_a = \frac{F}{\frac{\pi}{4}(OD^2 - ID^2)}$$

16. $$\sigma_h = p_i \frac{(OD^2 + ID^2)}{(OD^2 - ID^2)}$$

17. $$\sigma_r = -p_i$$

p_i Internal pressure.
F Tension force (weight here).
ID Tubing inner diameter.
OD Outer diameter.

Substituting (11), (12) and (13) into the Von Mises criterion:

18. $$(\sigma_a - \sigma_h)^2 + (\sigma_h - \sigma_r)^2 + (\sigma_r - \sigma_a)^2 = 2\sigma_y{}^2$$

19. $$p_{i\,burst} = \frac{1}{2(B^2 + B + 1)}\left(\sigma_a(B - 1) + \sqrt{\sigma_a{}^2(B - 1)^2 + 4(B^2 + B + 1)(\sigma_y{}^2 - \sigma_a{}^2)}\right)$$

$$B = \frac{(OD^2 + ID^2)}{(OD^2 - ID^2)}$$

σ_y Yield strength.

Collapse Yield Pressure for Round Tubing

COLLAPSE YIELD PRESSURE

Is defined as the amount of external pressure that will cause the Von Mises equivalent stress at the tube inside surface to equal the material yield strength.

We assume no internal pressure. Denote the external pressure as p_0. The axial stress is the same as that given by (1). The radial pressure at the inner surface is zero:

20. $$\sigma_r = 0$$

From analytical calculations, we get hoop stress:

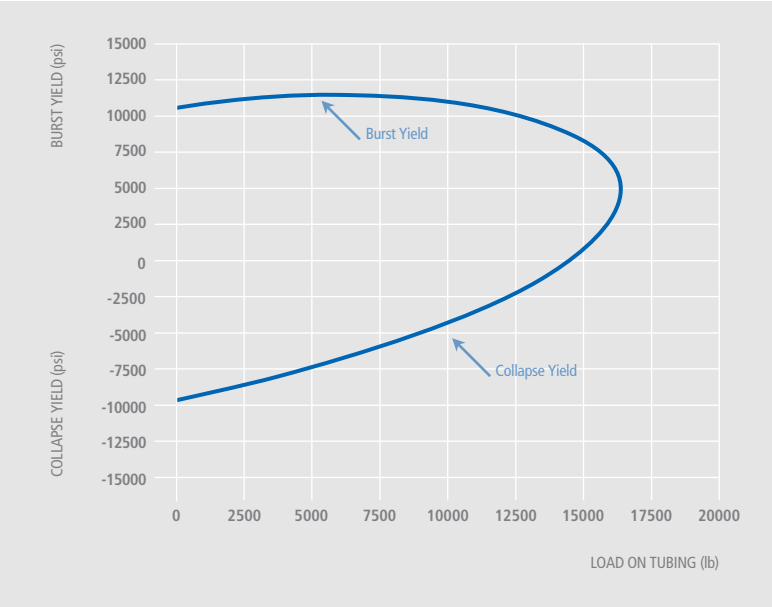
21. $$\sigma_h = -2p_0 \frac{OD^2}{OD^2 - ID^2}$$

Substituting (11), (16) and (17) into (14), we get:

22. $$p_0^{collapse} = \frac{-\sigma_a \pm \sqrt{\sigma_y^2 - 3\sigma_a^2}}{2C}$$

$$C = \frac{2OD^2}{(OD^2 - ID^2)}$$

Because conventionally collapse pressure is negative, we add a negative sign before the positive root.



Free Point Calculation & CT Stretch Table

If coiled tubing is stuck in a well, a free point test can be performed to determine the approximate location where the tubing is stuck. From Hooke's Law, if tubing is under a tension force, F, then the elastic elongation, ΔL, is given by:

$$\Delta L = \frac{F \times L}{E \times A}$$

Where L is the free length of tubing, E is Young's modulus of elasticity and A is the cross sectional area of the tube.

To determine the free point, pull the tube in tension with at least 500 pounds of load over the hanging weight of the tubing in the hole. Call this reading the original weight. Make a visible reference mark on the pipe. Increase the pull on the pipe by a multiple of 1000 pounds over the original weight. Call this reading the final weight. Measure the amount of pipe stretch. Calculate the pull force difference by subtracting the original weight from the final weight. Read the Free Point Constant (FPC) from the table below for the coiled tubing involved and use the following equation:

$$L = \frac{\Delta L \times C_{FPC}}{F_D}$$

- L Minimum length of free pipe (ft).
- ΔL Tubing stretch (in).
- C_{FPC} Free Point Constant.
- F_D Pull force difference (1,000 lbs).

Example: Determine the minimum length of free coiled tubing being stretched when a 10,000 foot string of 1.25" OD, 0.087 inch wall tubing stretches 39 inches with an applied pull force difference of 5,000 pounds.

$$L = \frac{\Delta L \times C_{FPC}}{F_D} = \frac{39 \times 795}{5} = 6201 \text{ ft}$$

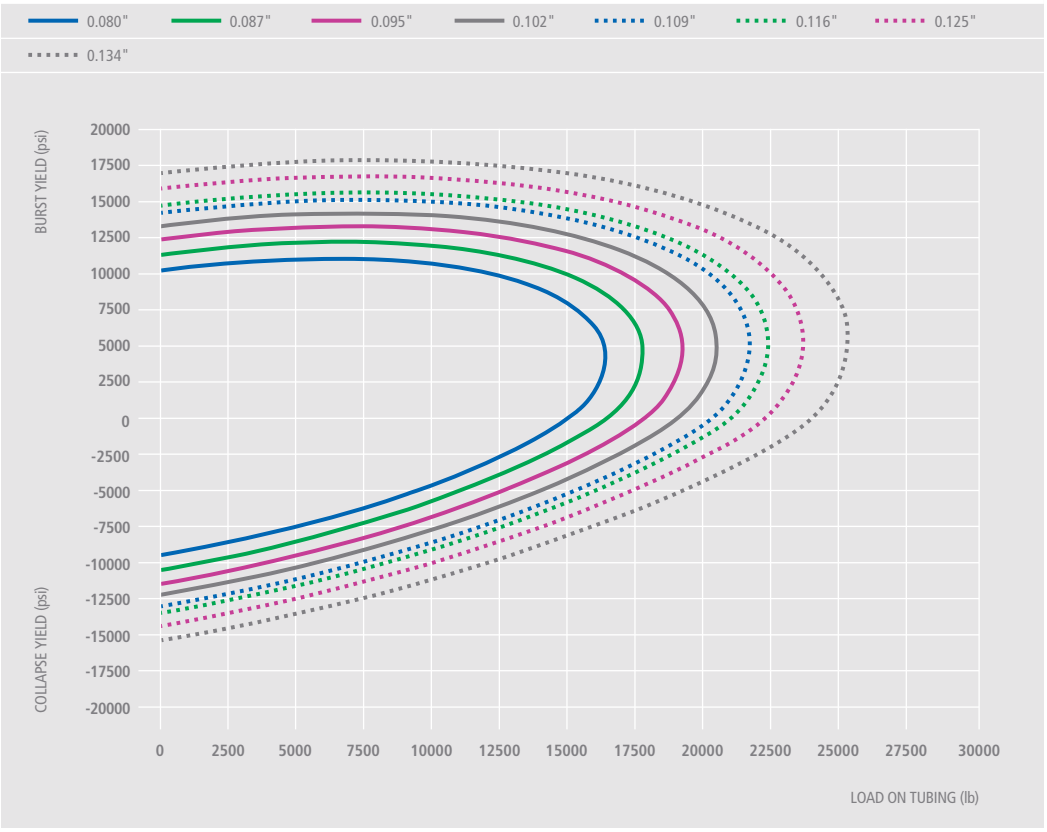
SPECIFIED OD	SPECIFIED WALL	FPC
in	in	
1.000 x	0.080	578
	0.087	624
	0.095	675
	0.102	719
	0.109	763
	0.116	805
	0.125	859
	0.134	911
1.250 x	0.080	735
	0.087	795
	0.095	862
	0.102	920
	0.109	977
	0.116	1033
	0.125	1104
	0.134	1175
	0.145	1258
	0.156	1340
	0.175	1478
1.500 x	0.080	892
	0.087	965
	0.095	1048
	0.102	1120
	0.109	1191
	0.116	1261
	0.125	1350
	0.134	1438
	0.145	1543
	0.156	1647
	0.175	1821
	0.190	1955
	0.204	2076
1.750 x	0.087	1136
	0.095	1235
	0.102	1320
	0.109	1405
	0.116	1489
	0.125	1595

SPECIFIED OD	SPECIFIED WALL	FPC
in	in	
	0.134	1701
	0.145	1828
	0.156	1953
	0.175	2165
	0.190	2328
	0.204	2477
	0.224	2685
	0.250	2945
2.000 x	0.102	1520
	0.109	1619
	0.116	1716
	0.125	1841
	0.134	1964
	0.145	2113
	0.156	2259
	0.175	2508
	0.190	2701
	0.204	2878
	0.224	3125
	0.250	3436
	0.280	3782
2.375 x	0.125	2209
	0.134	2359
	0.145	2540
	0.156	2719
	0.175	3024
	0.190	3261
	0.204	3478
	0.224	3784
	0.250	4172
	0.280	4607
	0.300	4889
2.625 x	0.134	2622
	0.145	2824
	0.156	3025
	0.175	3367
	0.190	3634
	0.204	3879

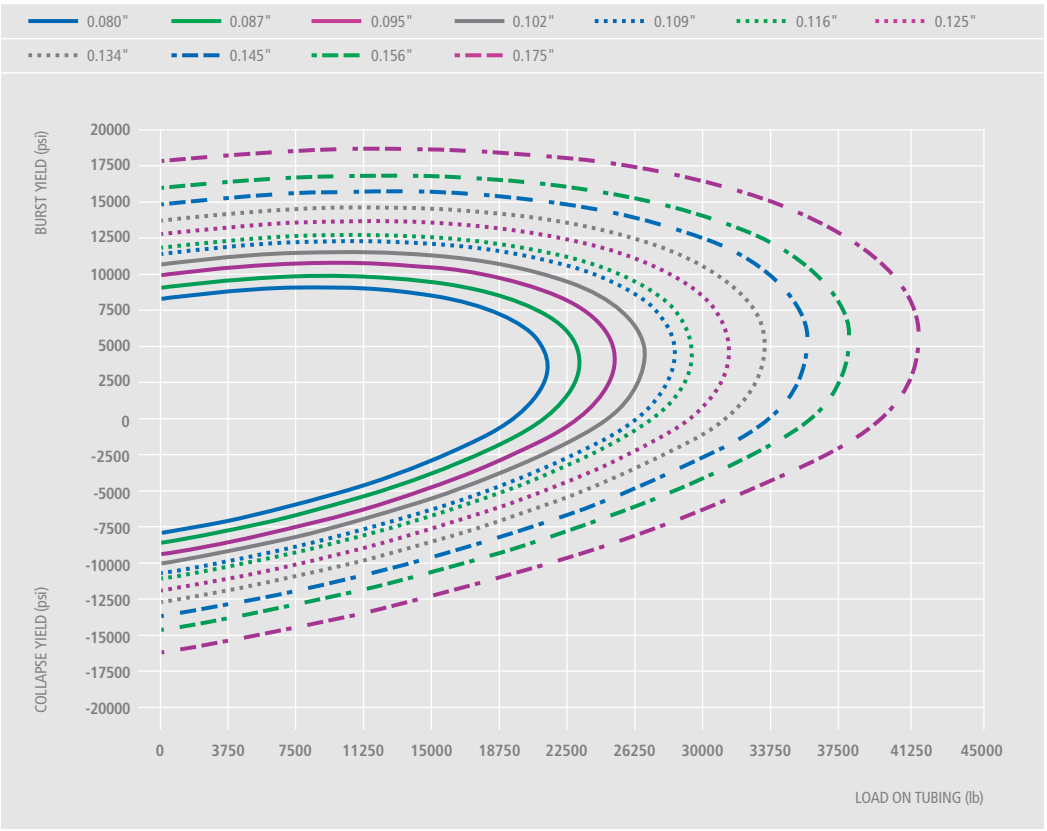
SPECIFIED OD	SPECIFIED WALL	FPC
in	in	
	0.224	4224
	0.250	4663
	0.280	5157
	0.30	5478
2.875 x	0.145	3109
	0.156	3331
	0.175	3711
	0.190	4007
	0.204	4280
	0.224	4664
	0.25	5154
	0.28	5707
	0.30	6067
3.250 x	0.175	4226
	0.190	4566
	0.204	4880
	0.224	5324
	0.250	5890
	0.280	6531
	0.300	6951
3.500 x	0.175	4570
	0.19	4939
	0.204	5281
	0.224	5763
	0.250	6381
	0.280	7081
	0.300	7540
4.500 x	0.175	5944
	0.19	6432
	0.204	6883
	0.224	7523
	0.250	8345
	0.280	9280
	0.300	9896
5.000 x	0.280	10380
	0.300	11074

Collapse/Burst Charts

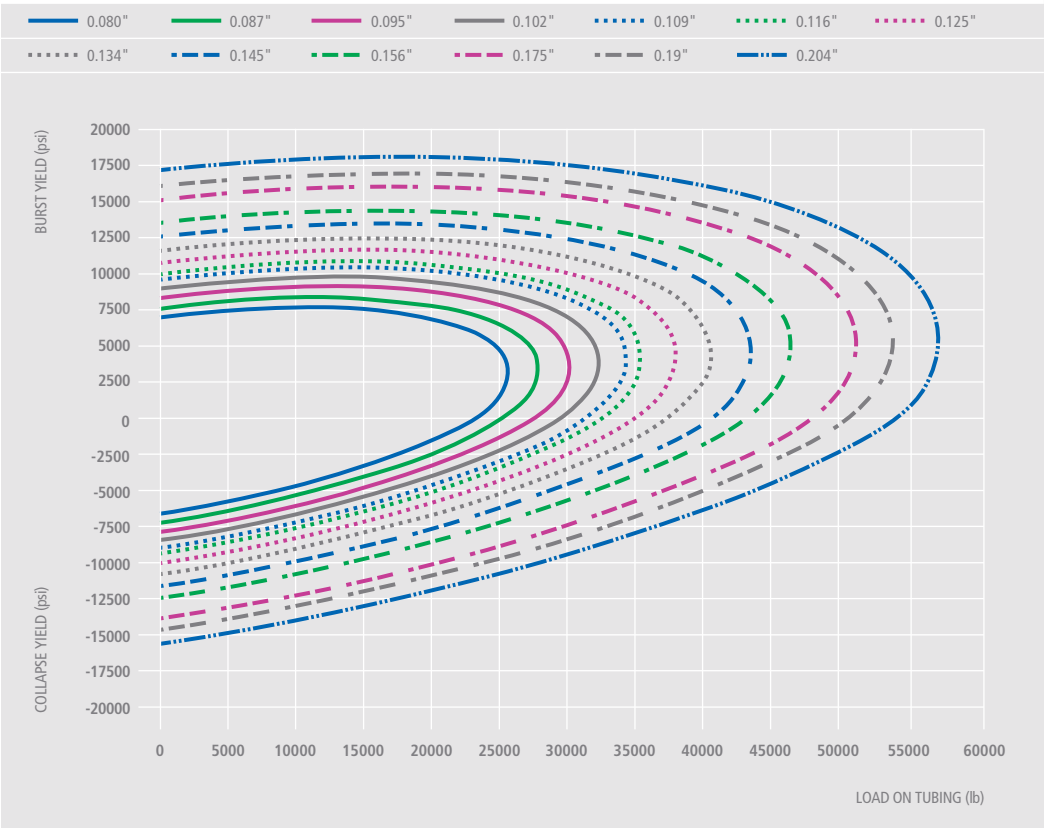
HS-70™ (CT70) | 1.00" OD



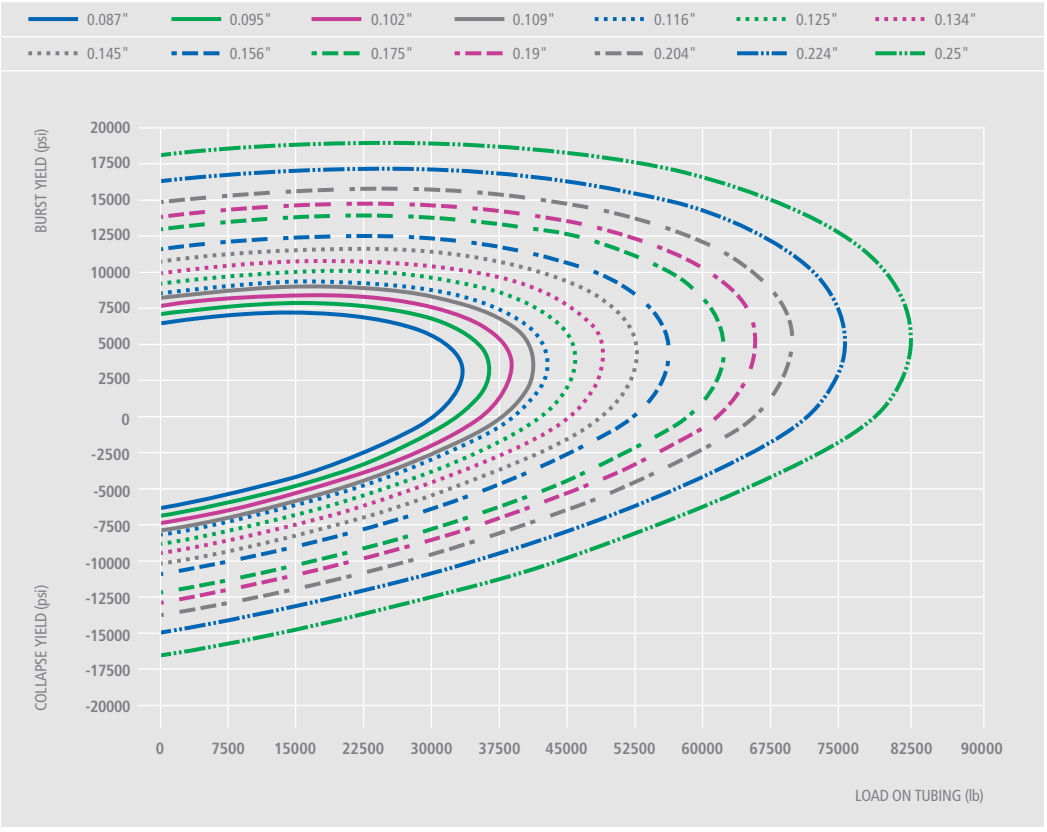
HS-70™ (CT70) | 1.25" OD



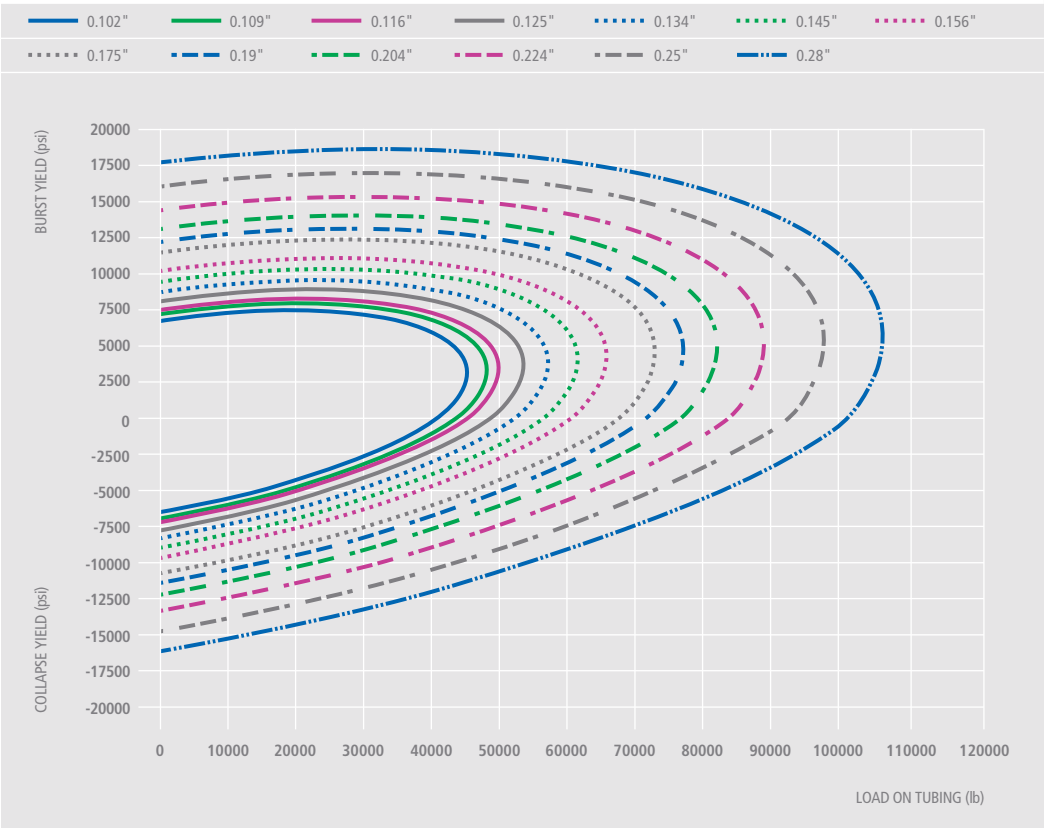
HS-70™ (CT70) | 1.50" OD



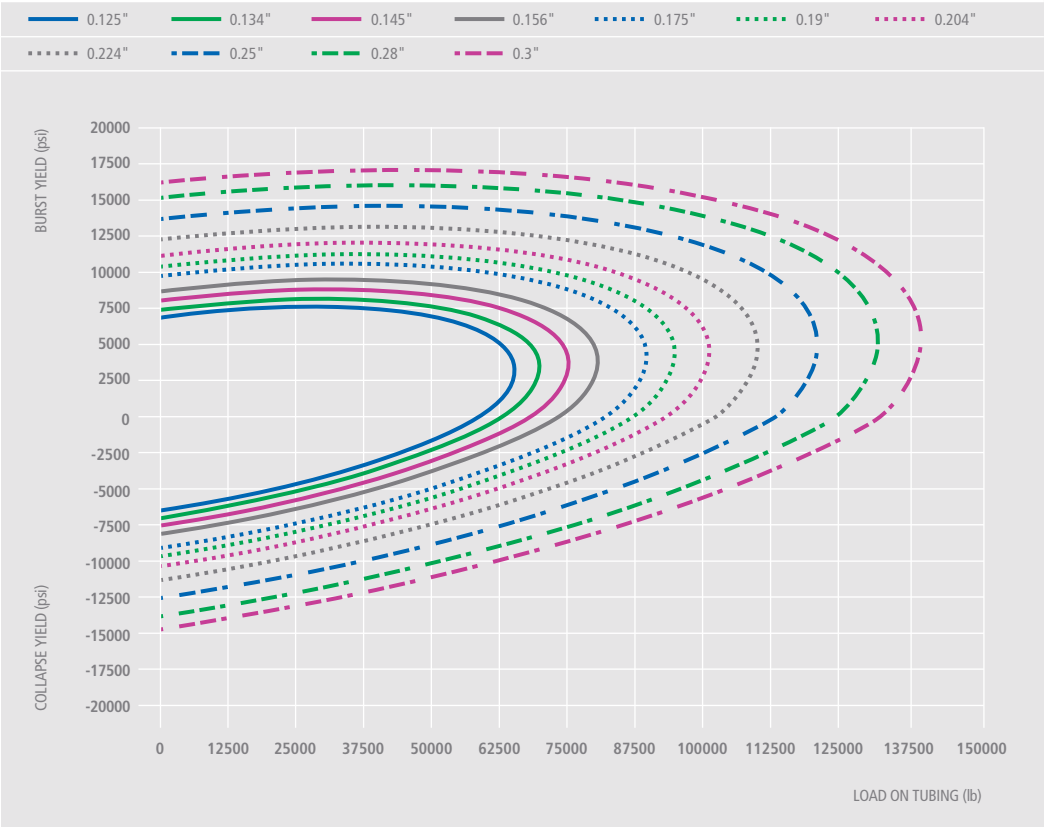
HS-70™ (CT70) | 1.75" OD



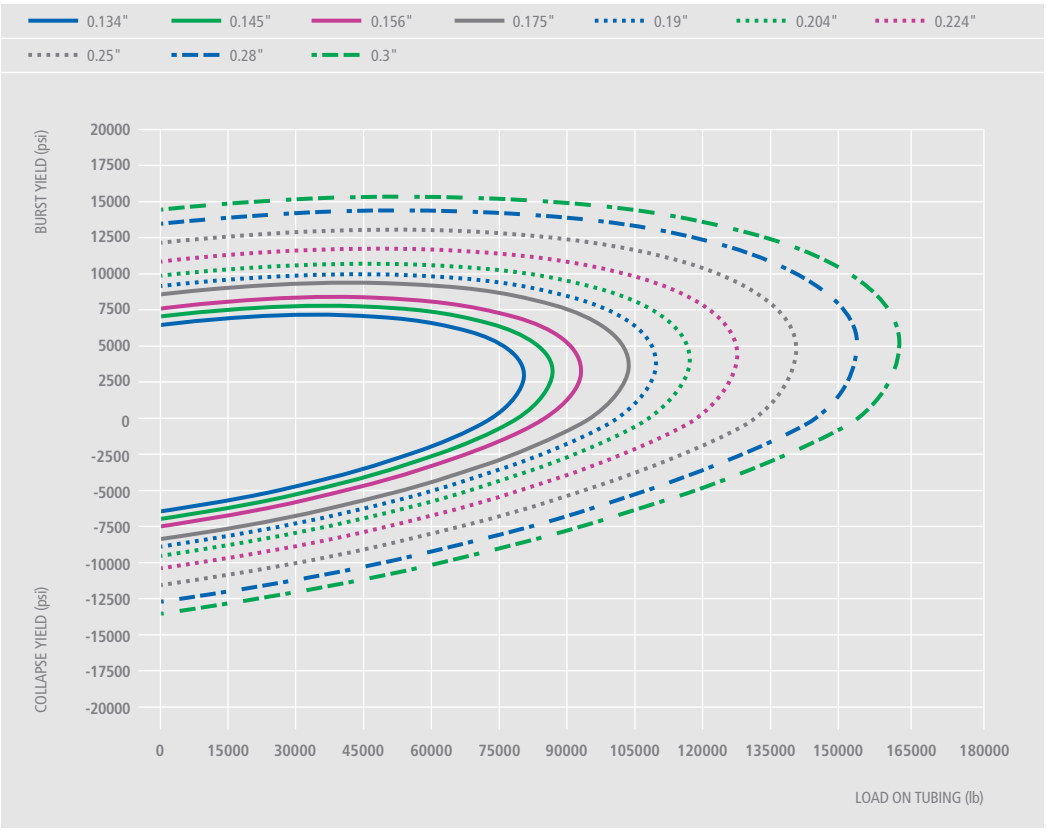
HS-70™ (CT70) | 2.00" OD



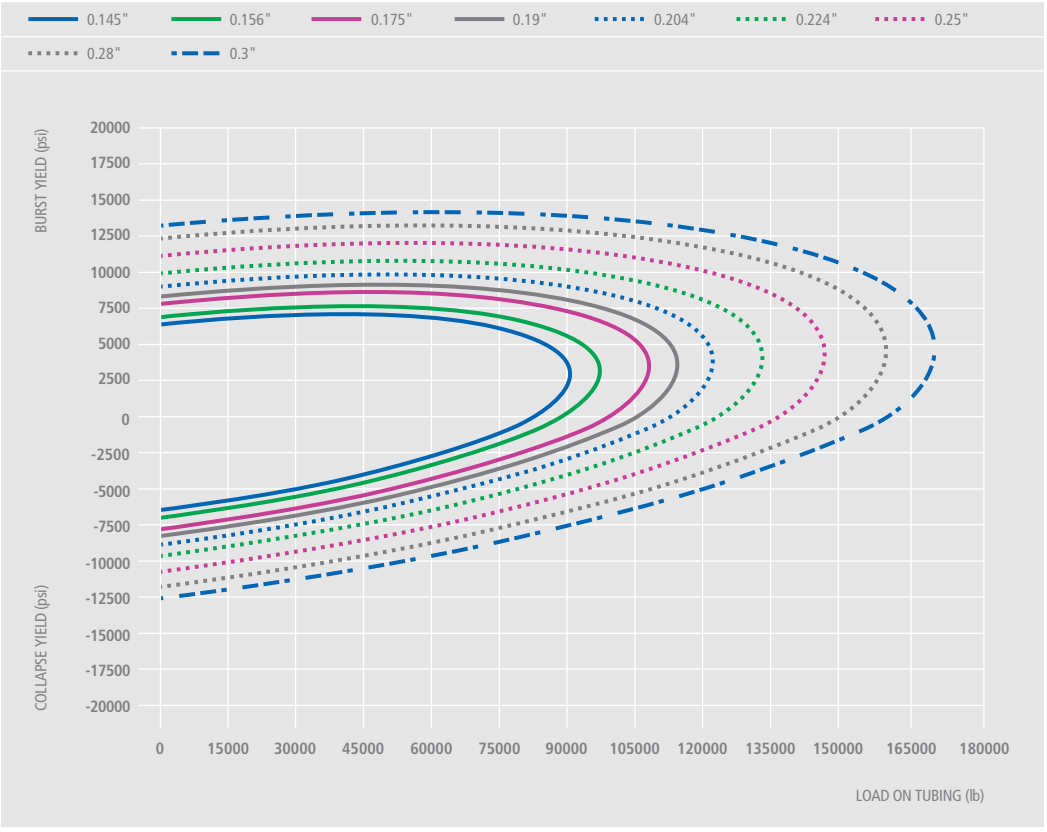
HS-70™ (CT70) | 2.375" OD



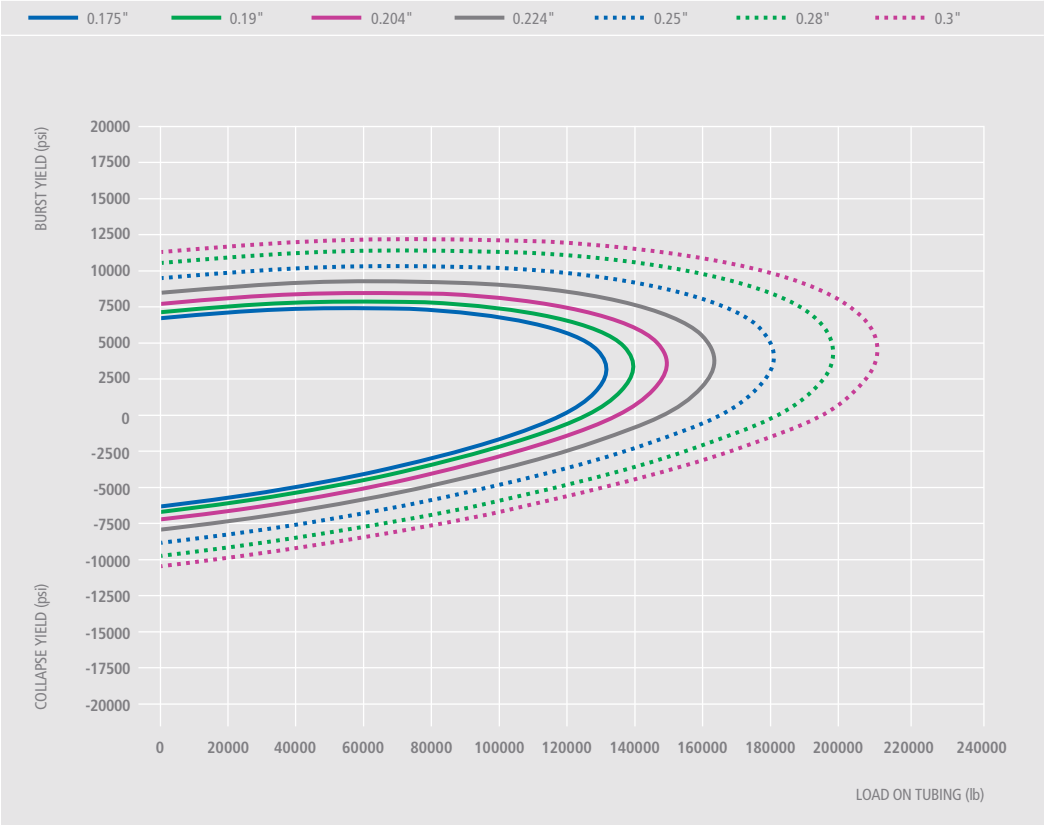
HS-70™ (CT70) | 2.675" OD



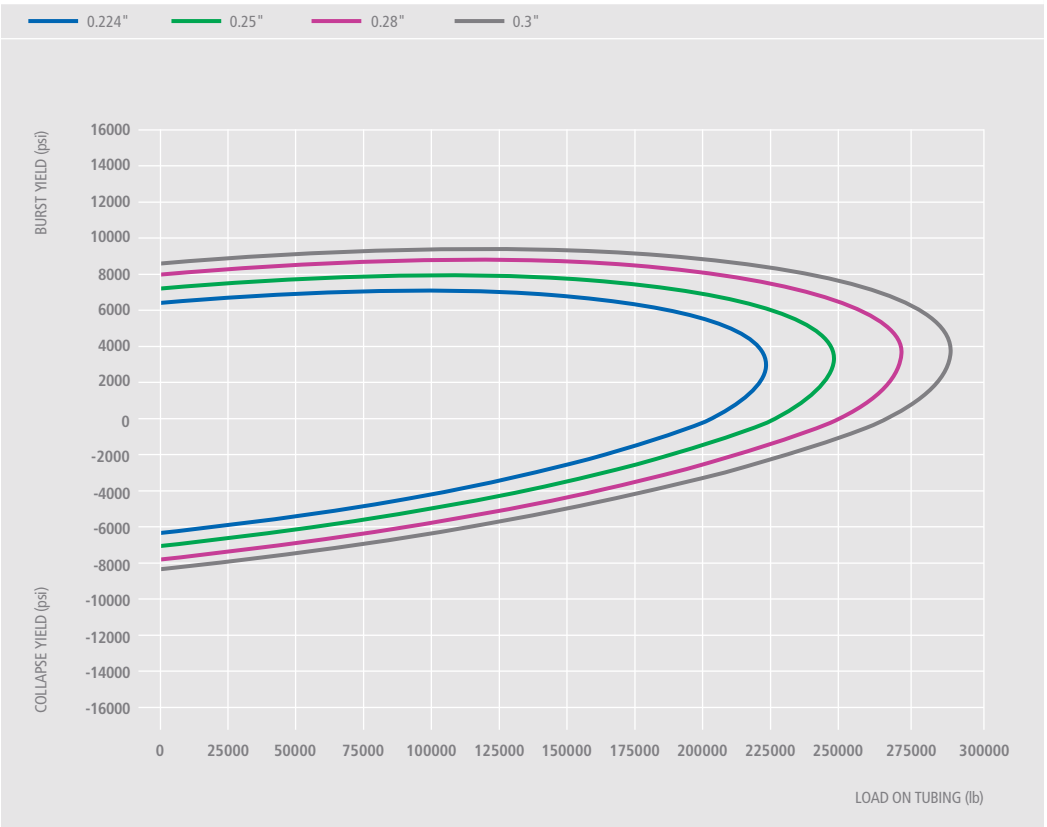
HS-70™ (CT70) | 2.875" OD



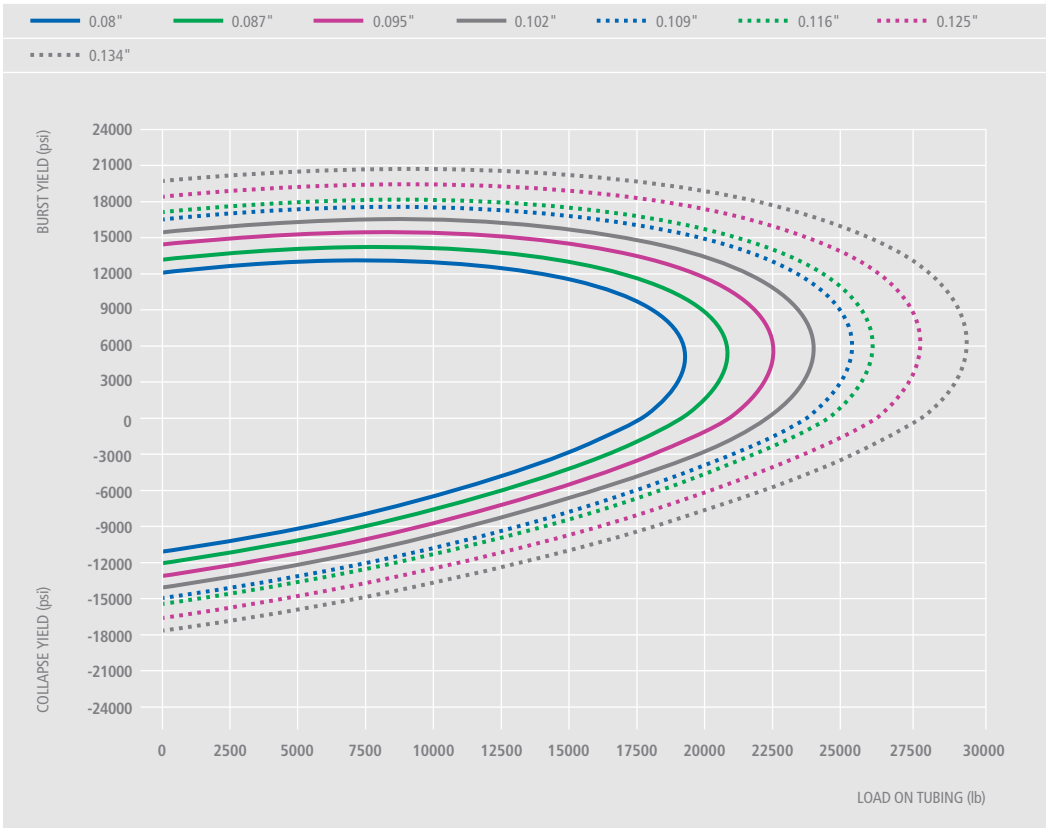
HS-70™ (CT70) | 3.50" OD



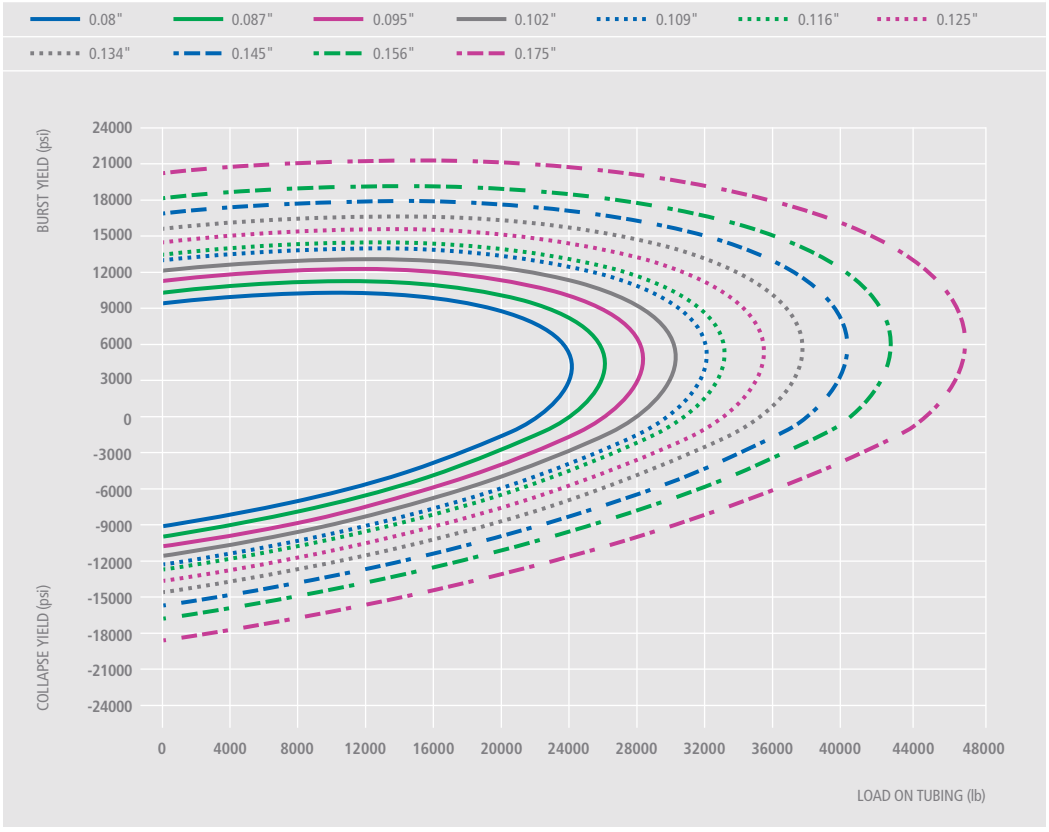
HS-70™ (CT70) | 4.50" OD



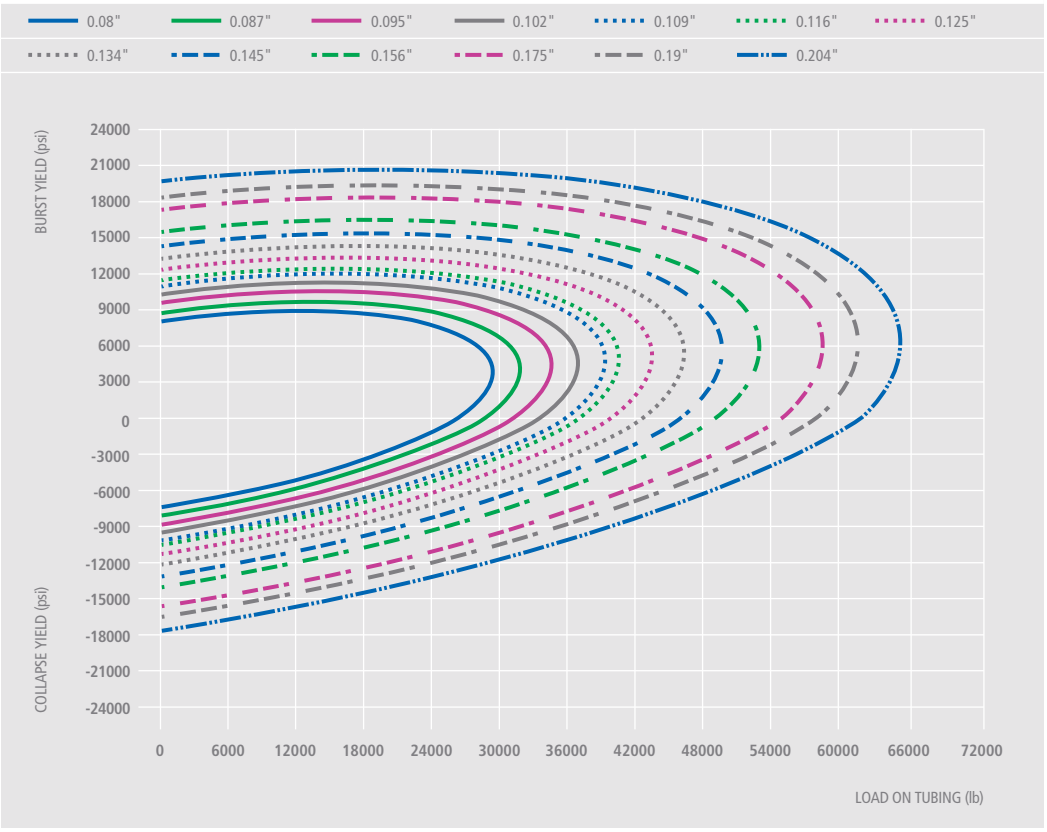
HS-80™ (CT80) | 1.00" OD



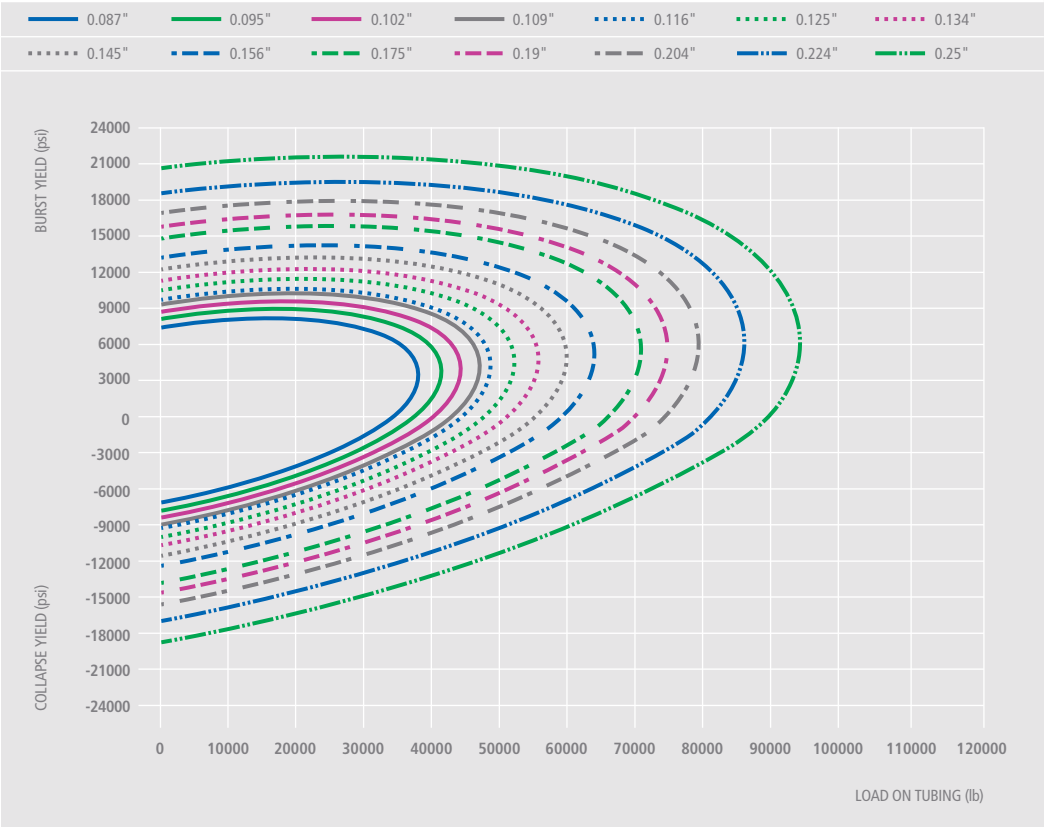
HS-80™ (CT80) | 1.25" OD



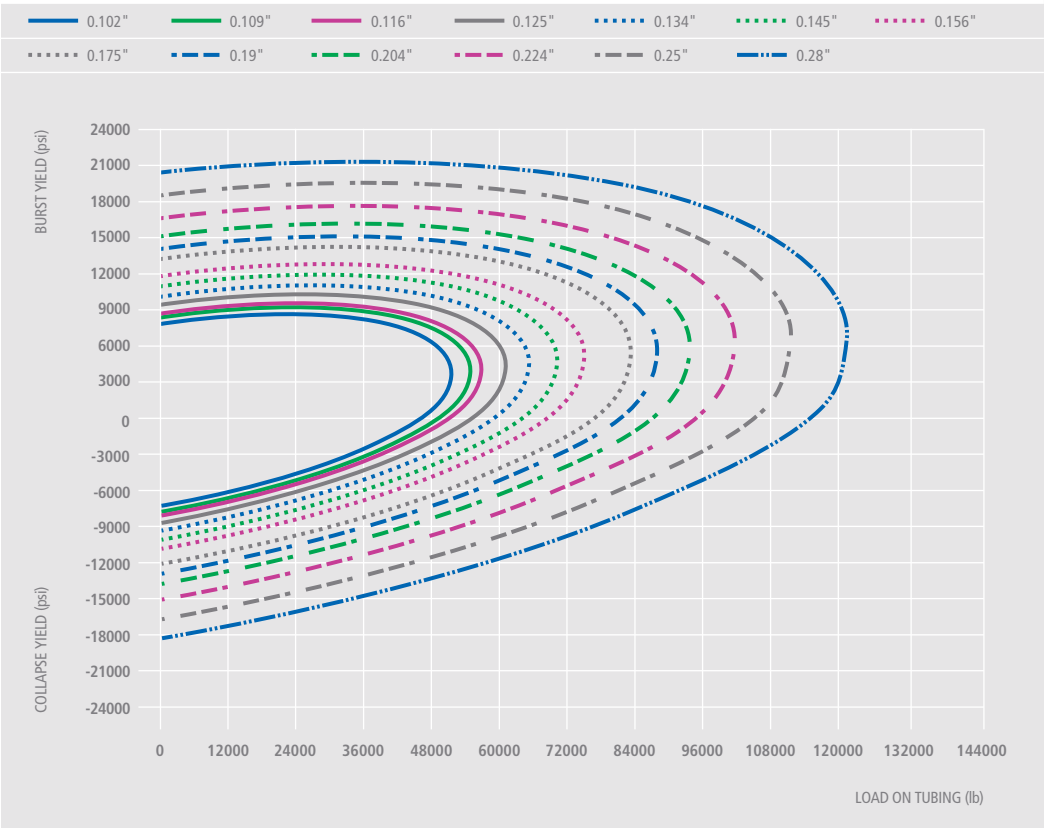
HS-80™ (CT80) | 1.50" OD



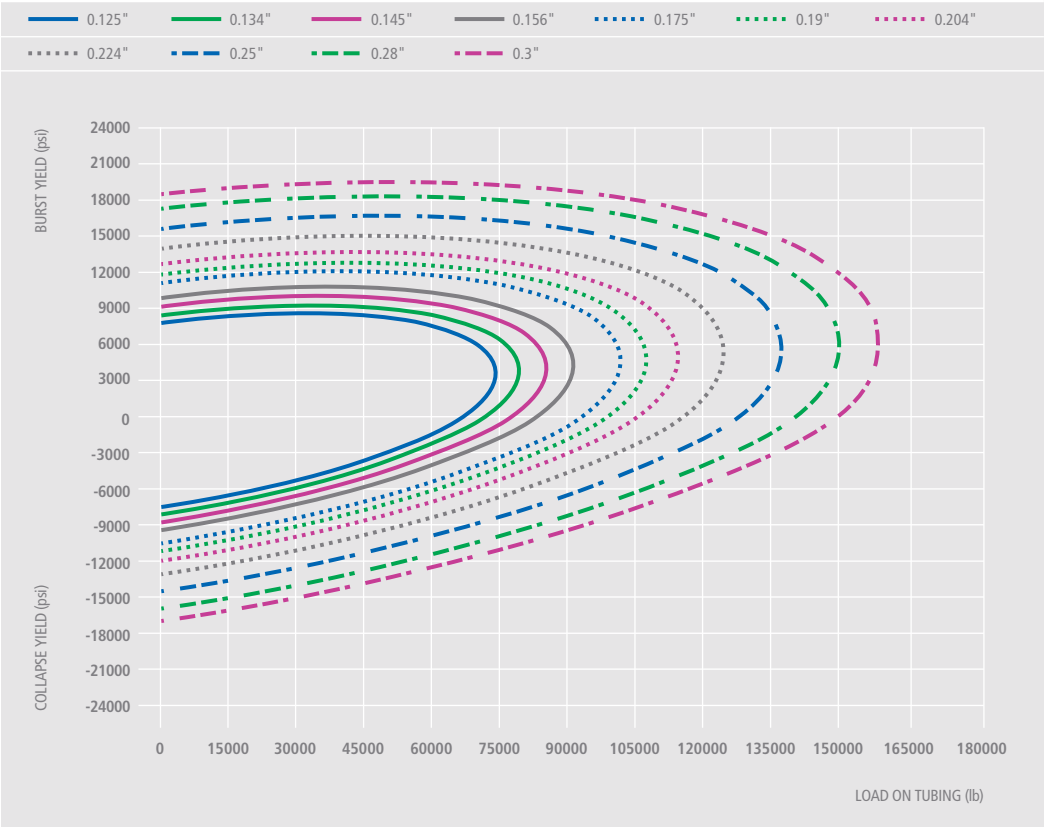
HS-80™ (CT80) | 1.75" OD



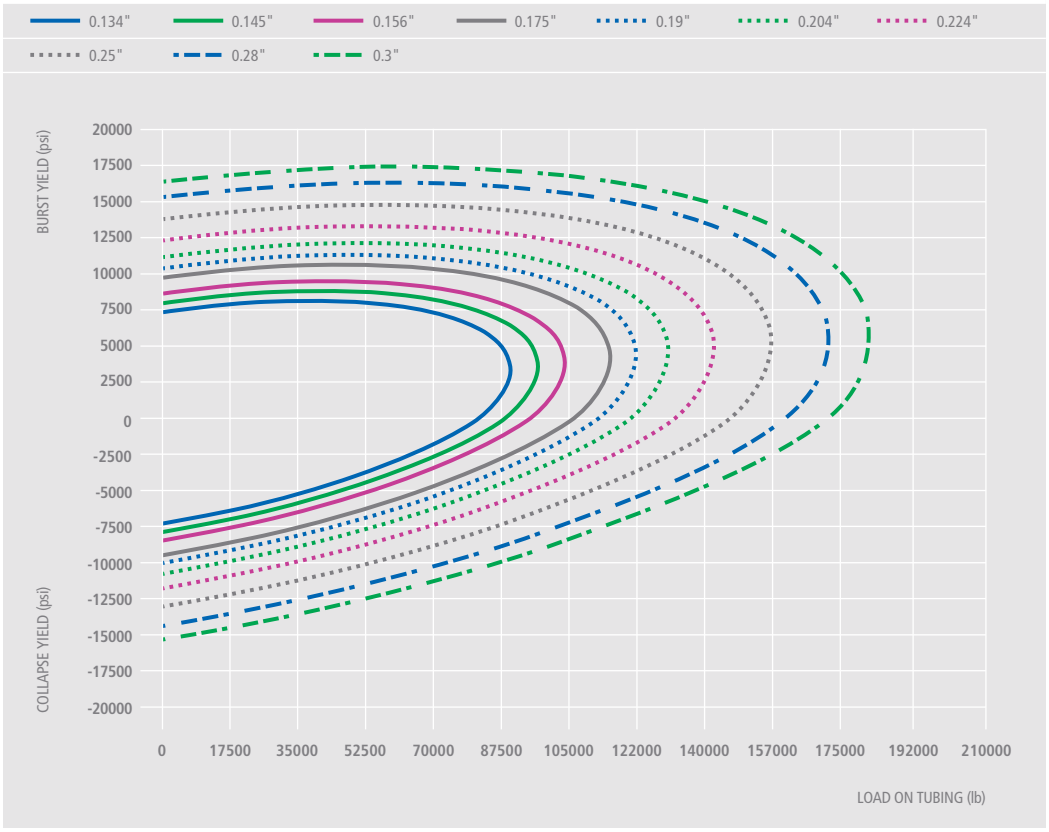
HS-80™ (CT80) | 2.00" OD



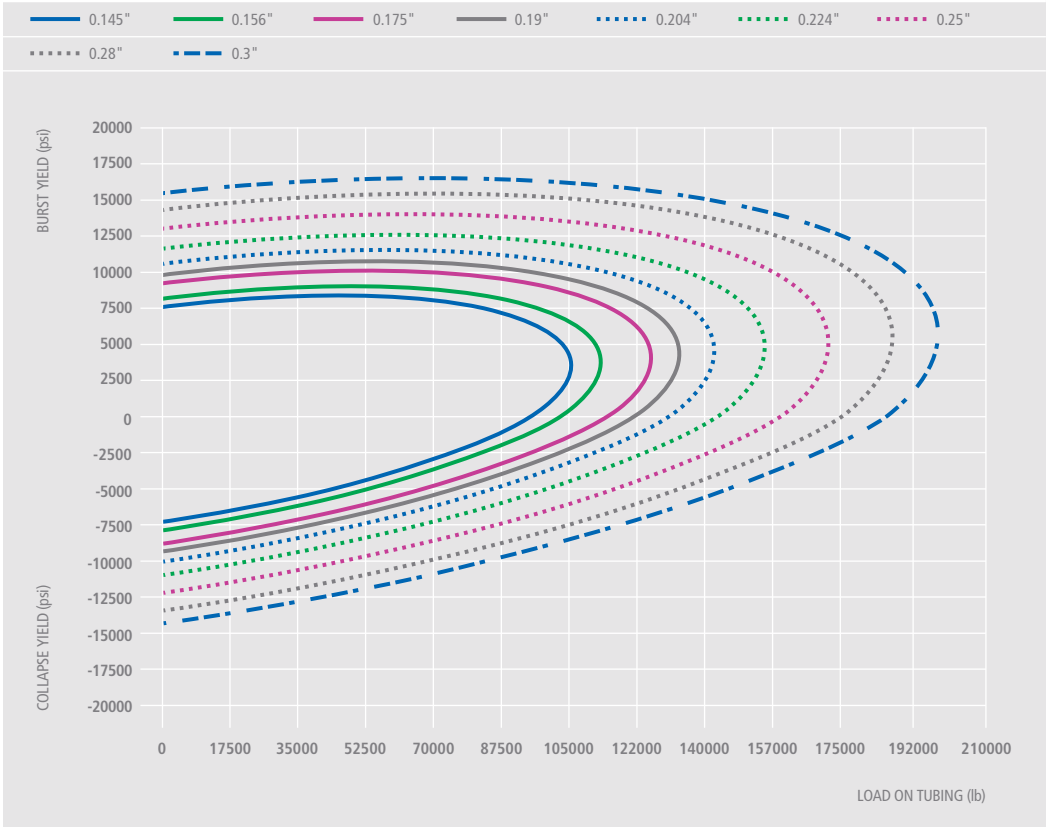
HS-80™ (CT80) | 2.375" OD



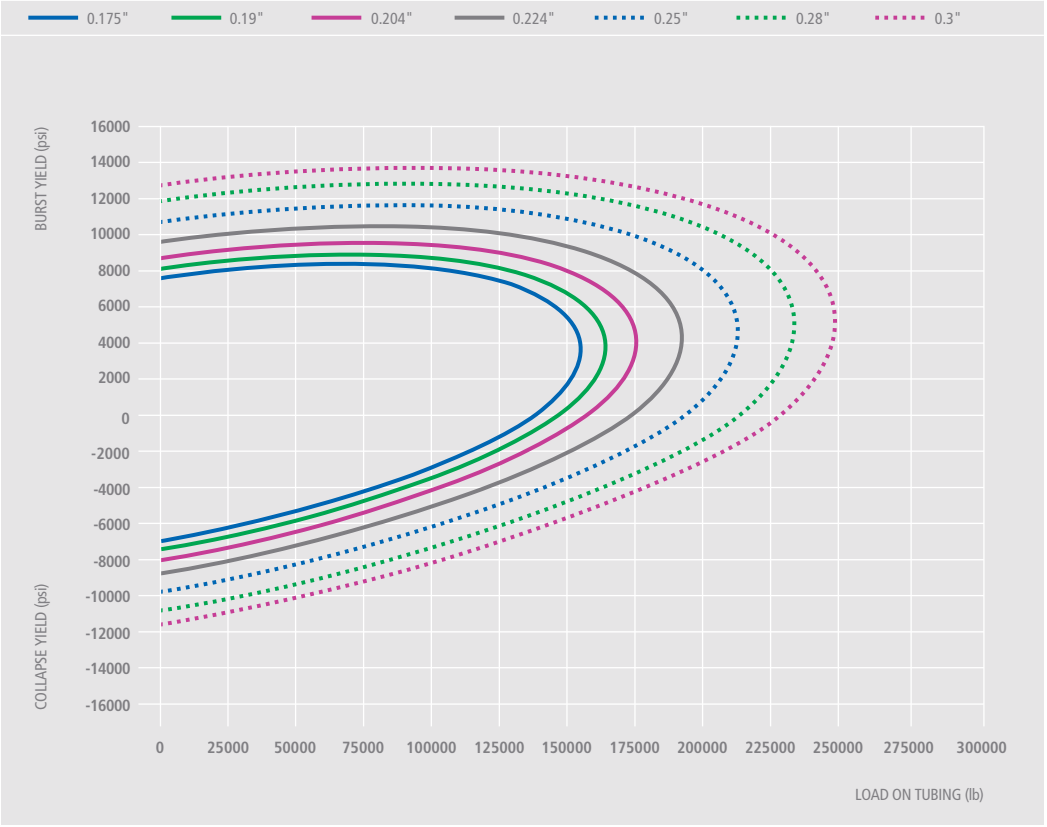
HS-80™ (CT80) | 2.675" OD



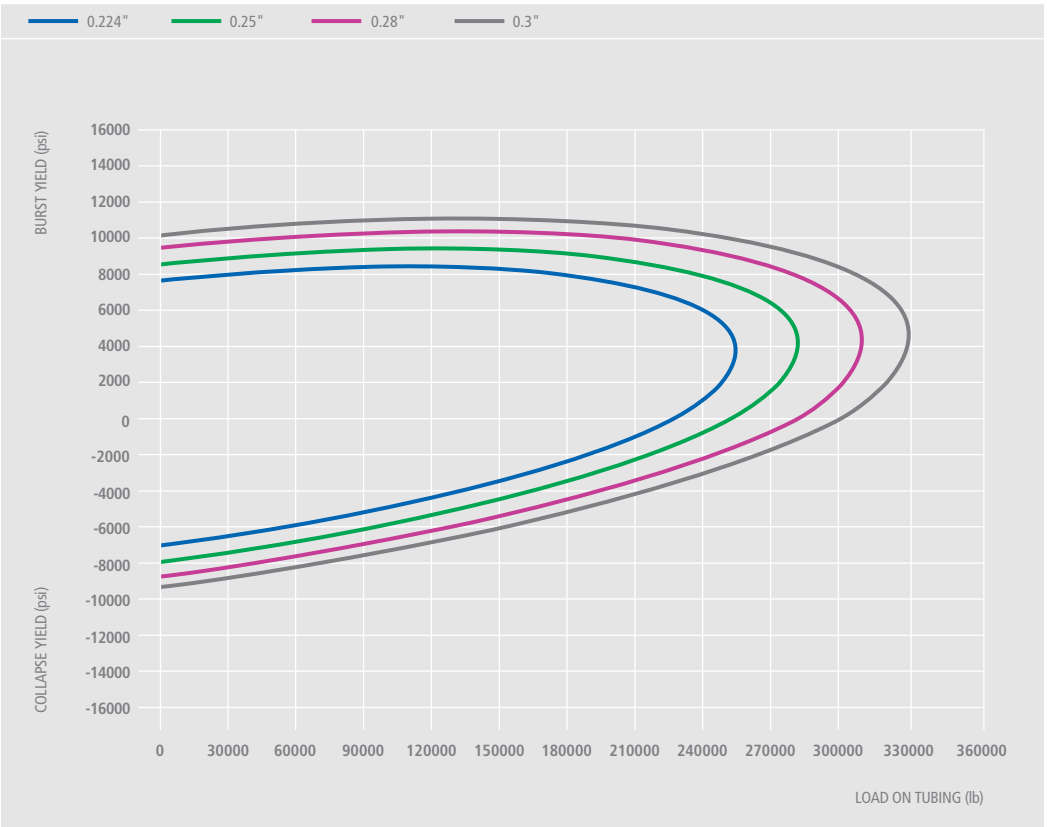
HS-80™ (CT80) | 2.875" OD



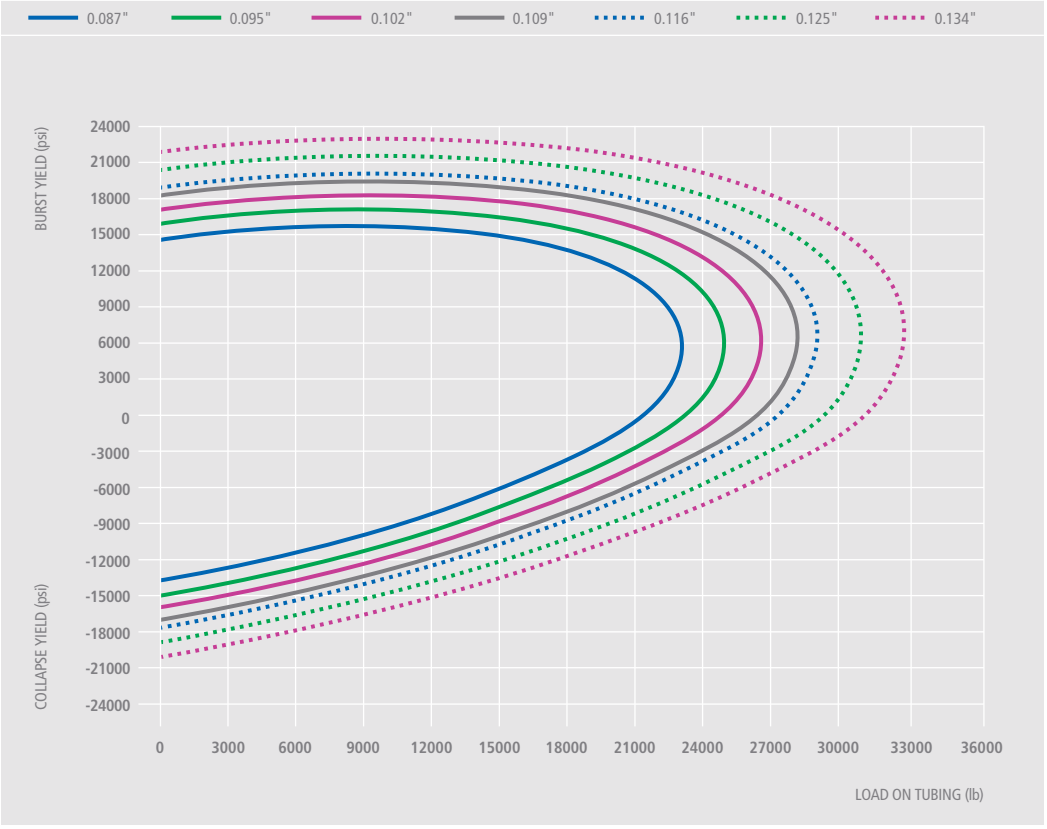
HS-80™ (CT80) | 3.50" OD



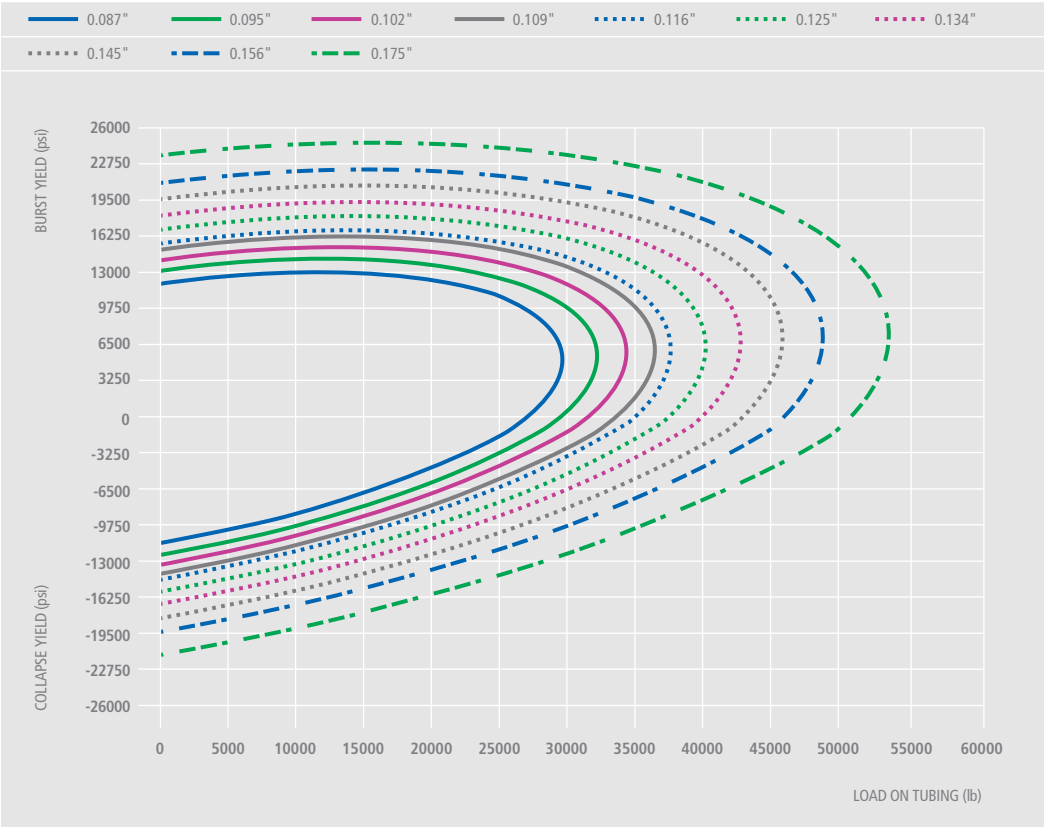
HS-80™ (CT80) | 4.50" OD



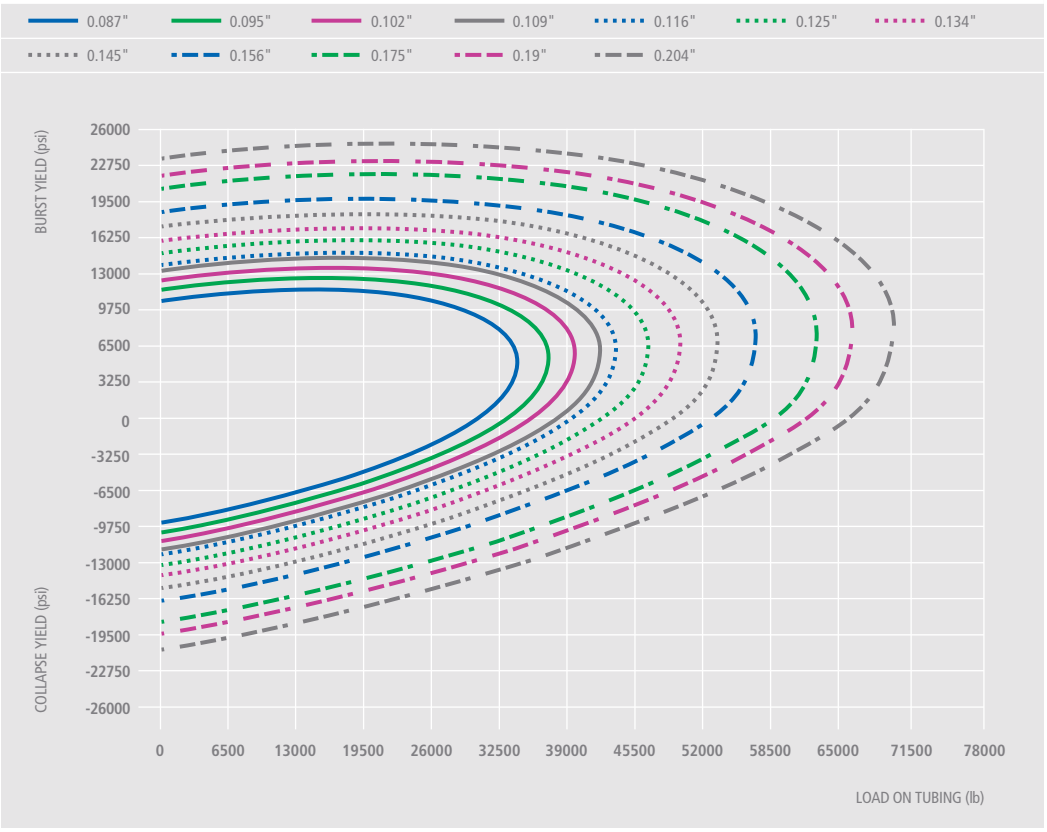
HS-90™ (CT90) | 1.00" OD



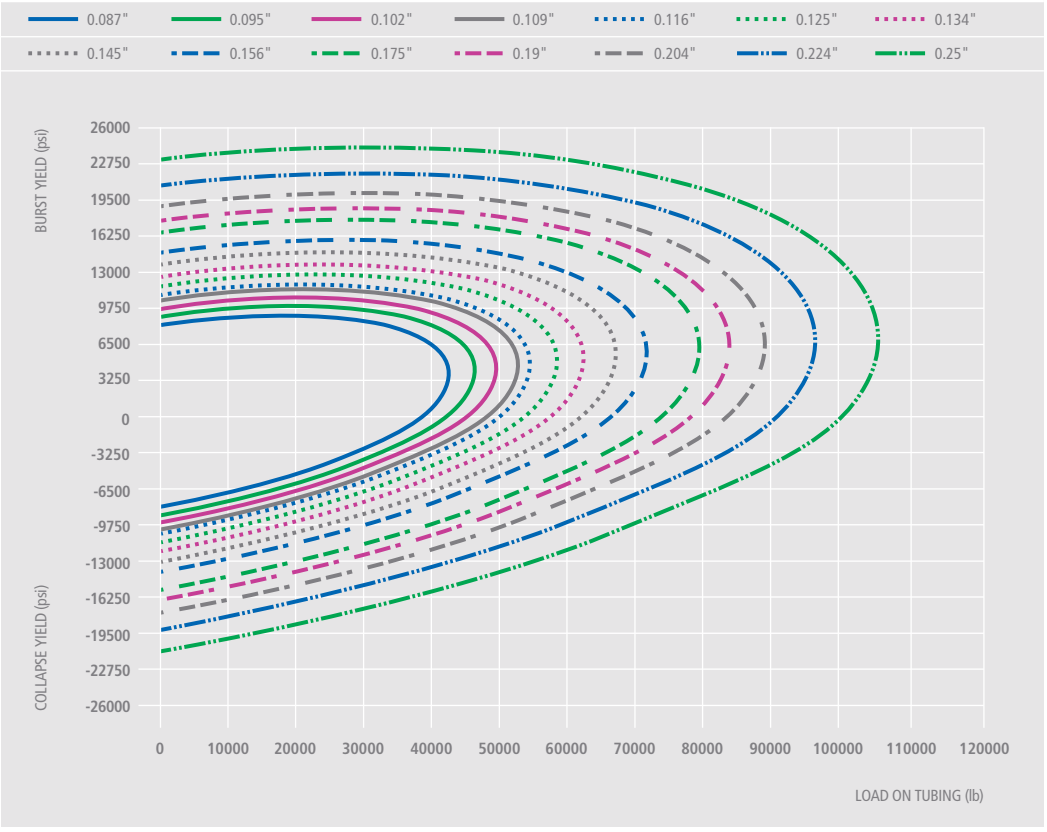
HS-90™ (CT90) | 1.25" OD



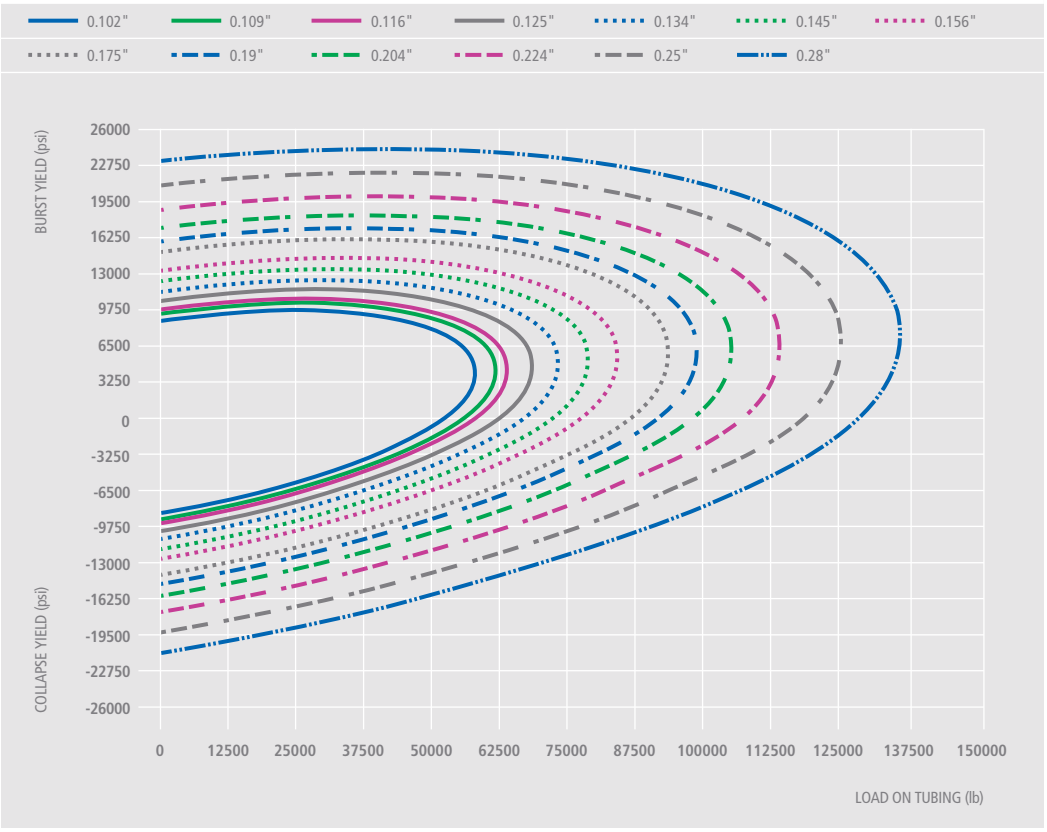
HS-90™ (CT90) | 1.50" OD



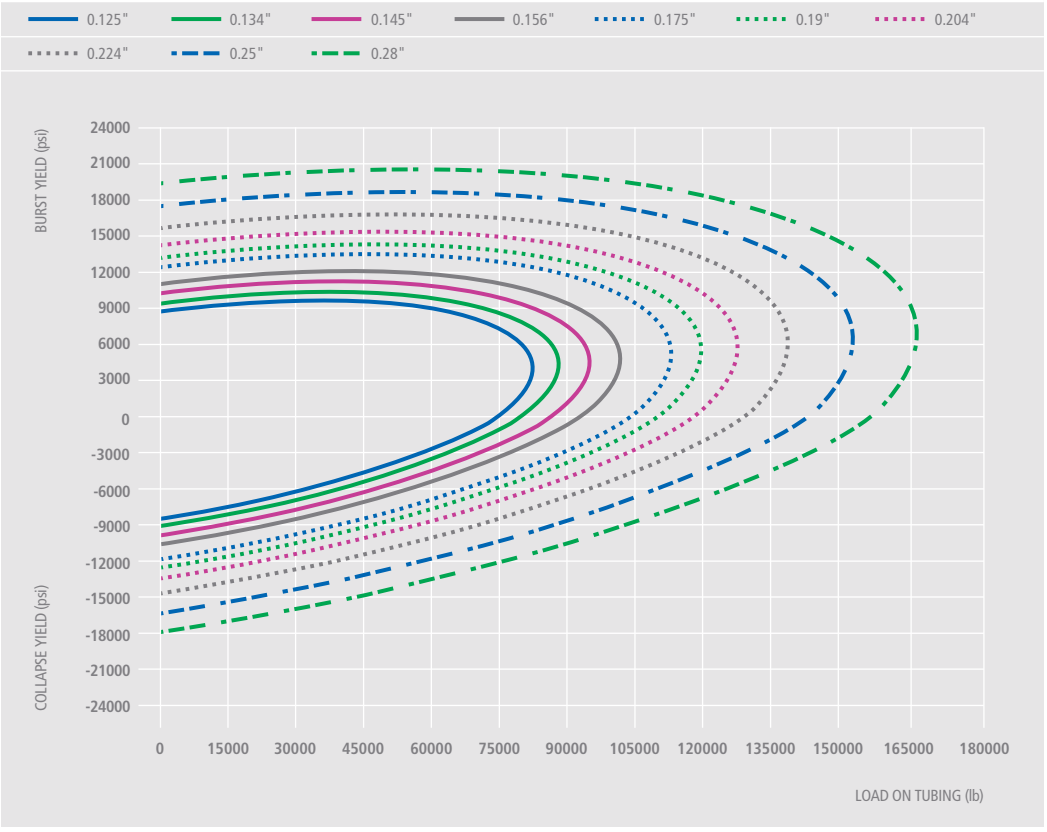
HS-90™ (CT90) | 1.75" OD



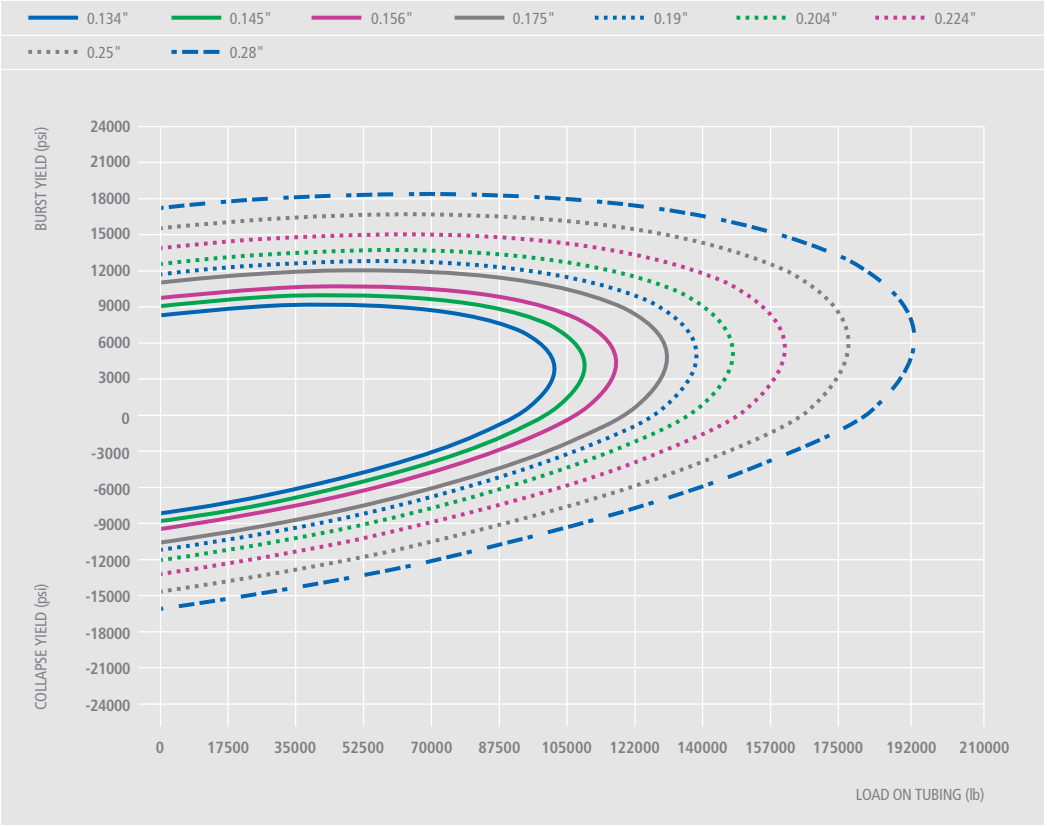
HS-90™ (CT90) | 2.00" OD



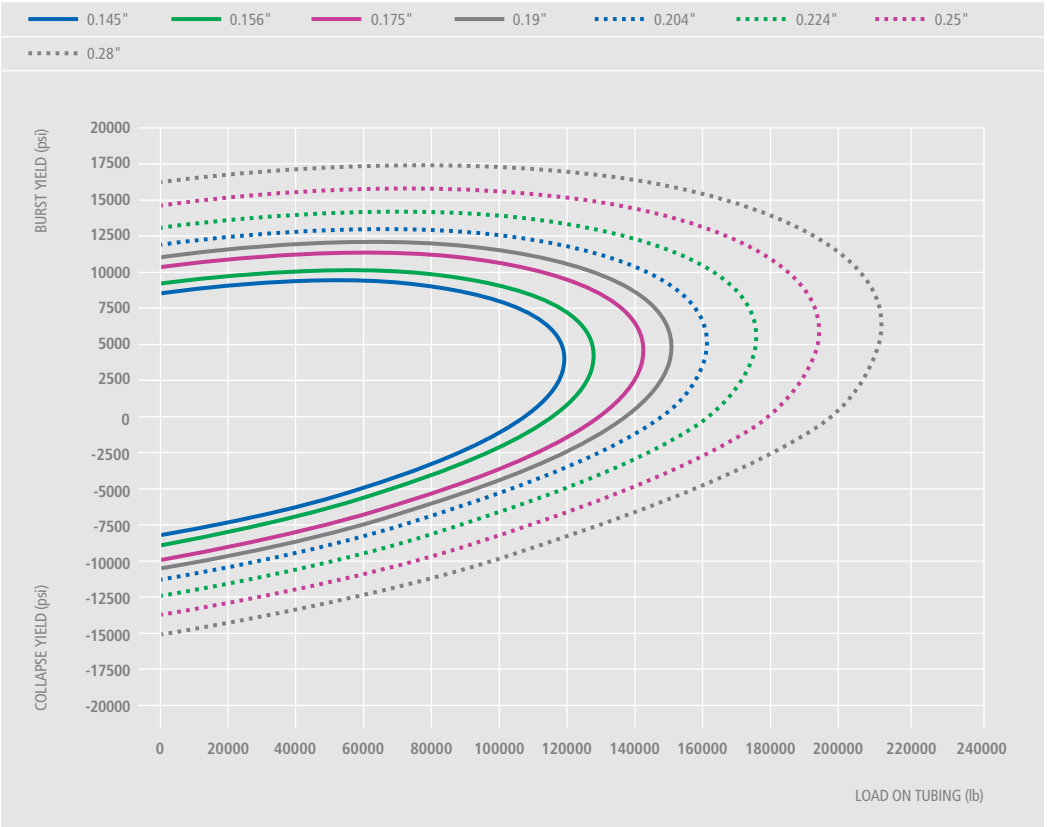
HS-90™ (CT90) | 2.375" OD



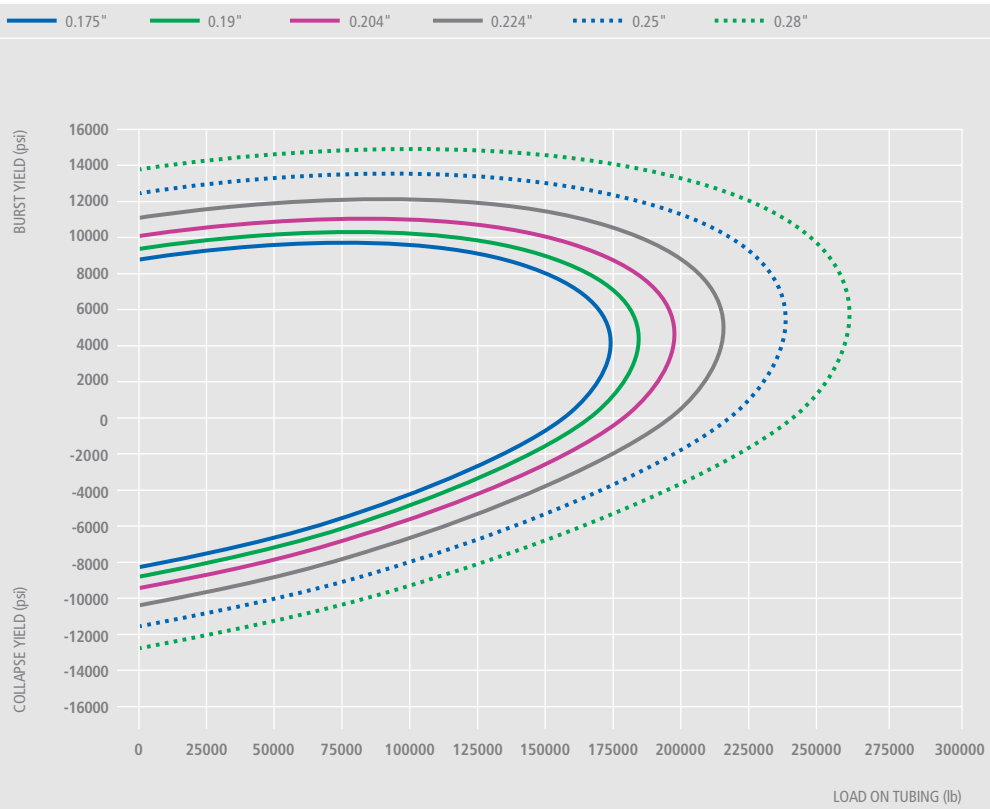
HS-90™ (CT90) | 2.675" OD



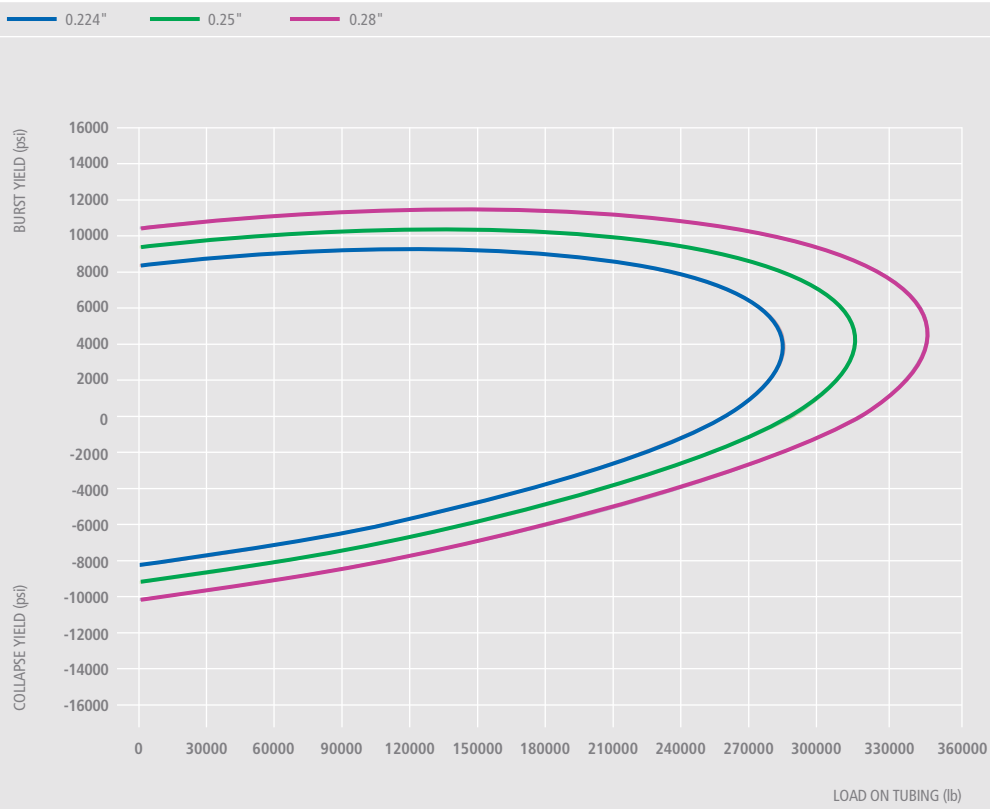
HS-90™ (CT90) | 2.875" OD



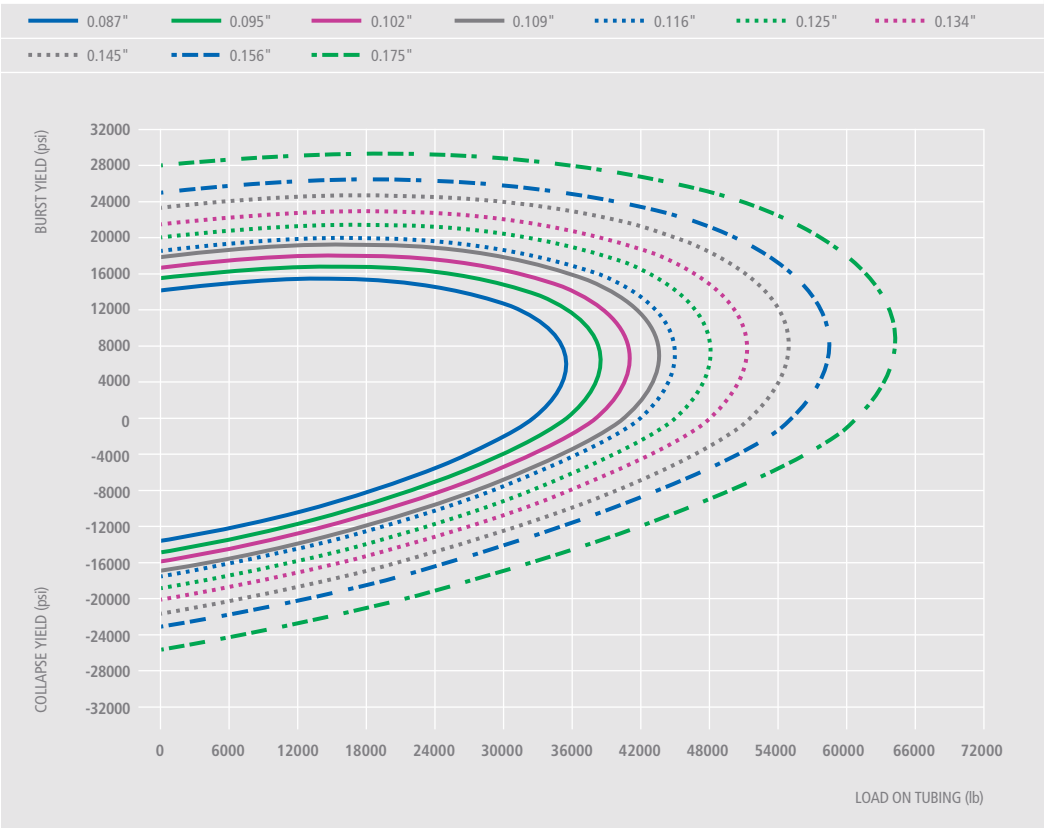
HS-90™ (CT90) | 3.50" OD



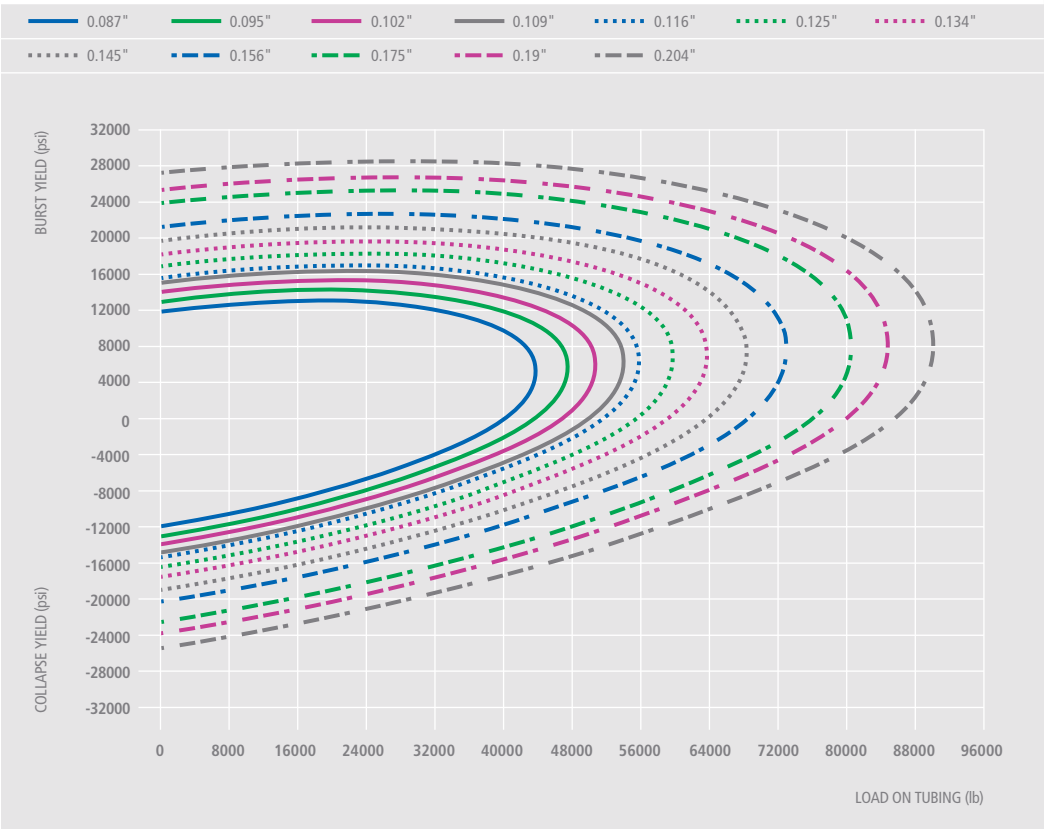
HS-90™ (CT90) | 4.50" OD



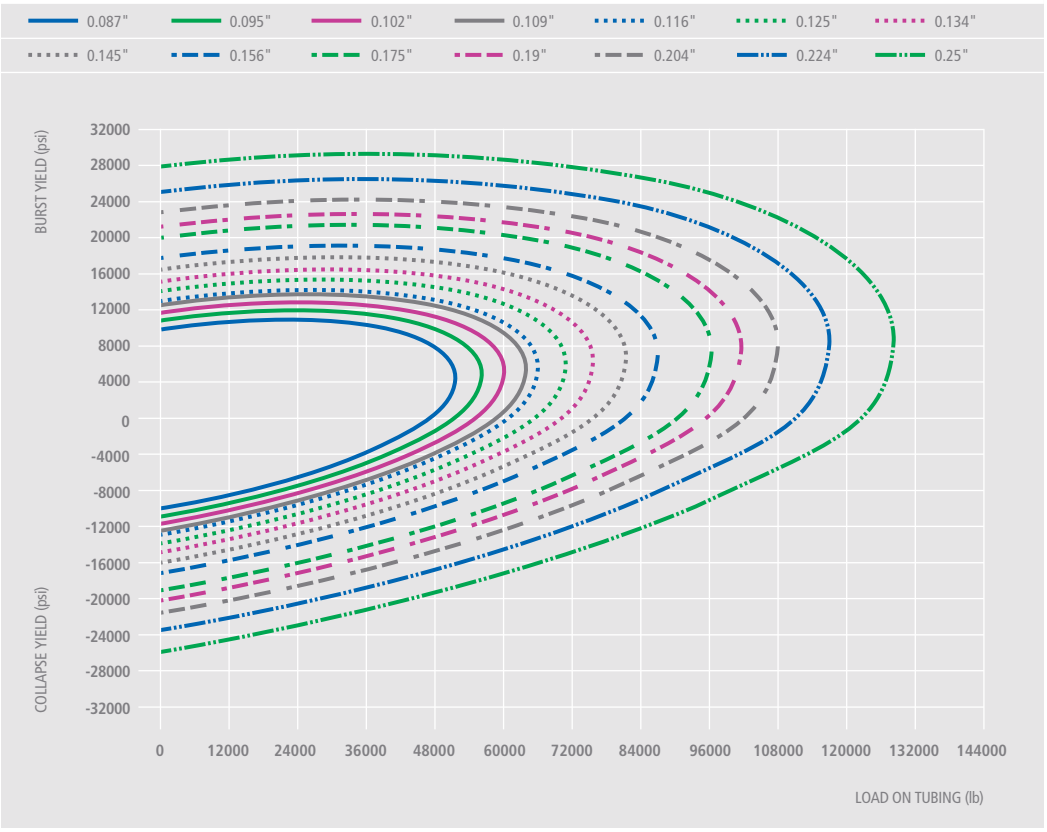
HS-110™ (CT110) | 1.25" OD



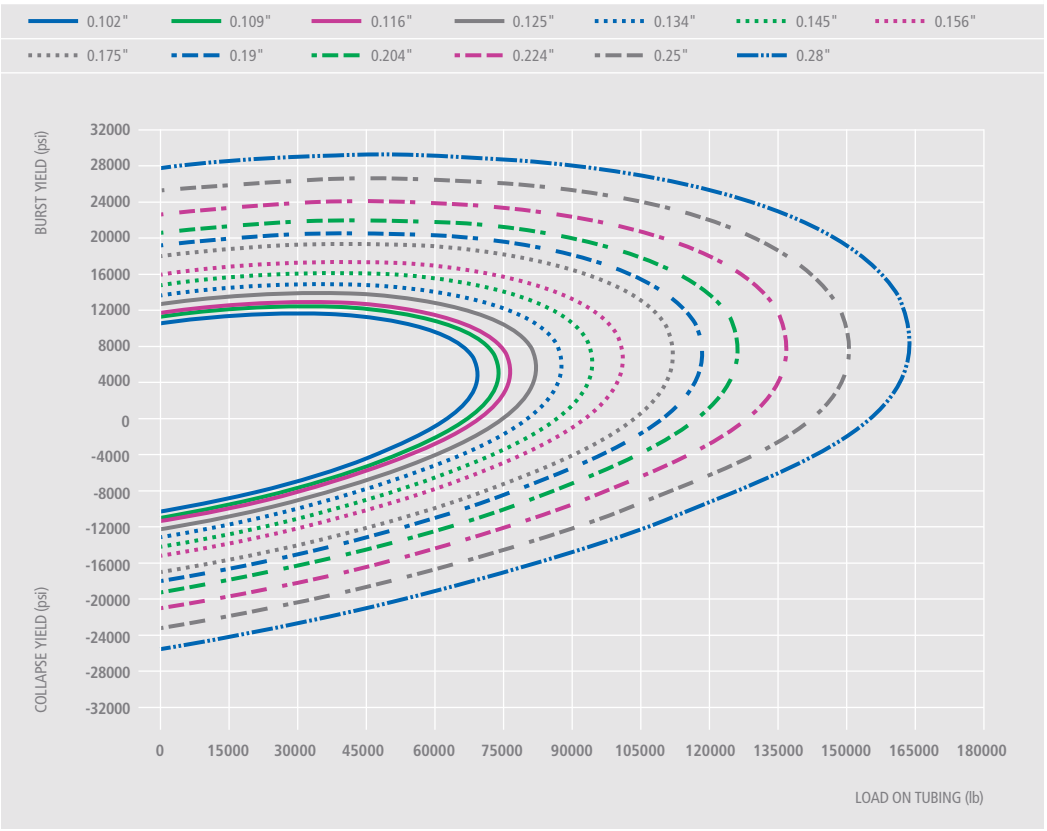
HS-110™ (CT110) | 1.50" OD



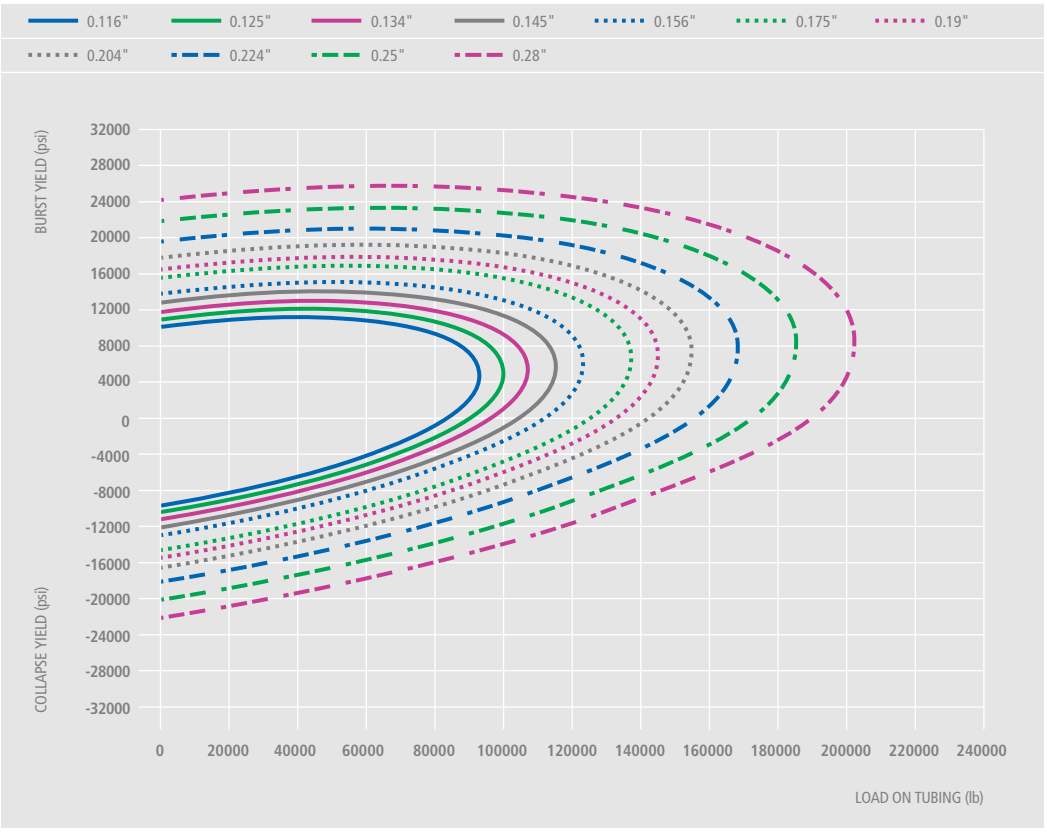
HS-110™ (CT110) | 1.75" OD



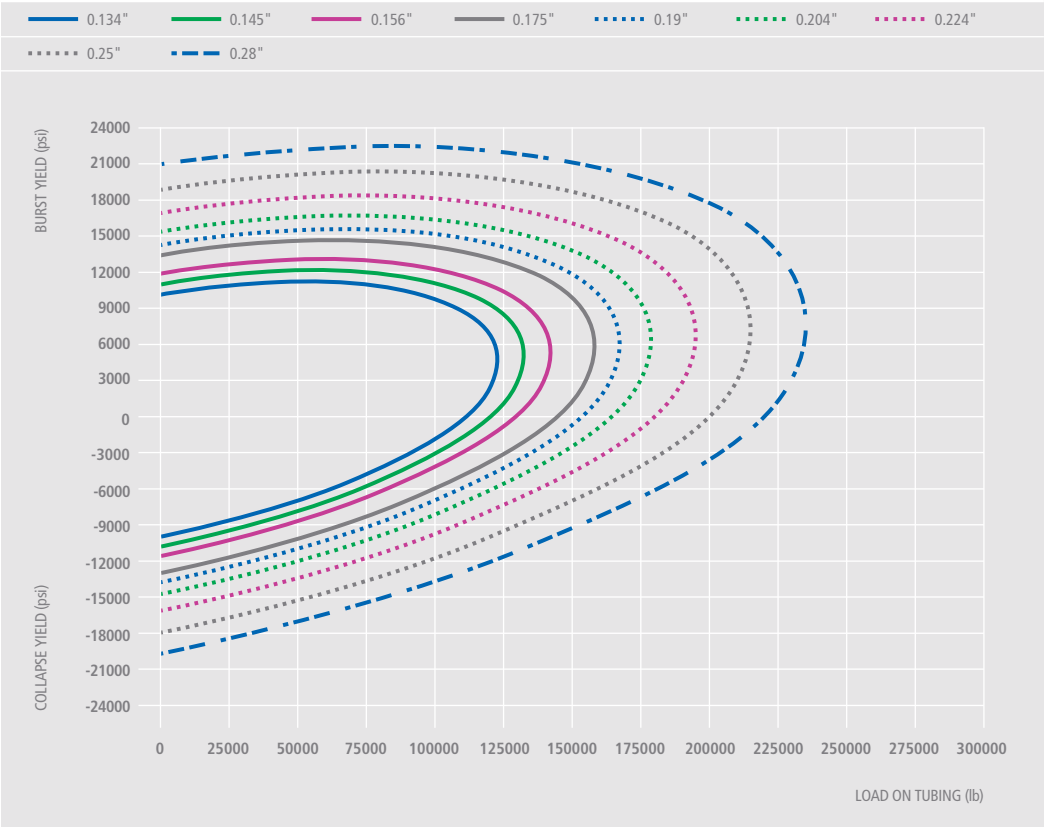
HS-110™ (CT110) | 2.00" OD



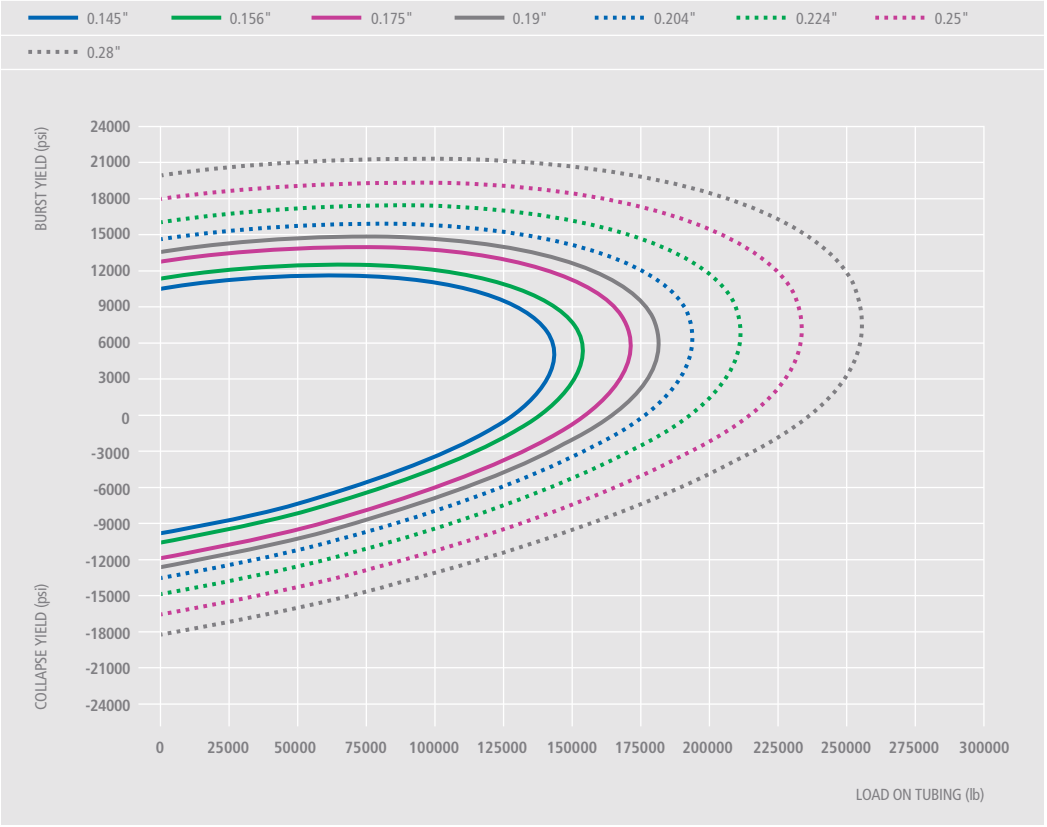
HS-110™ (CT110) | 2.375" OD



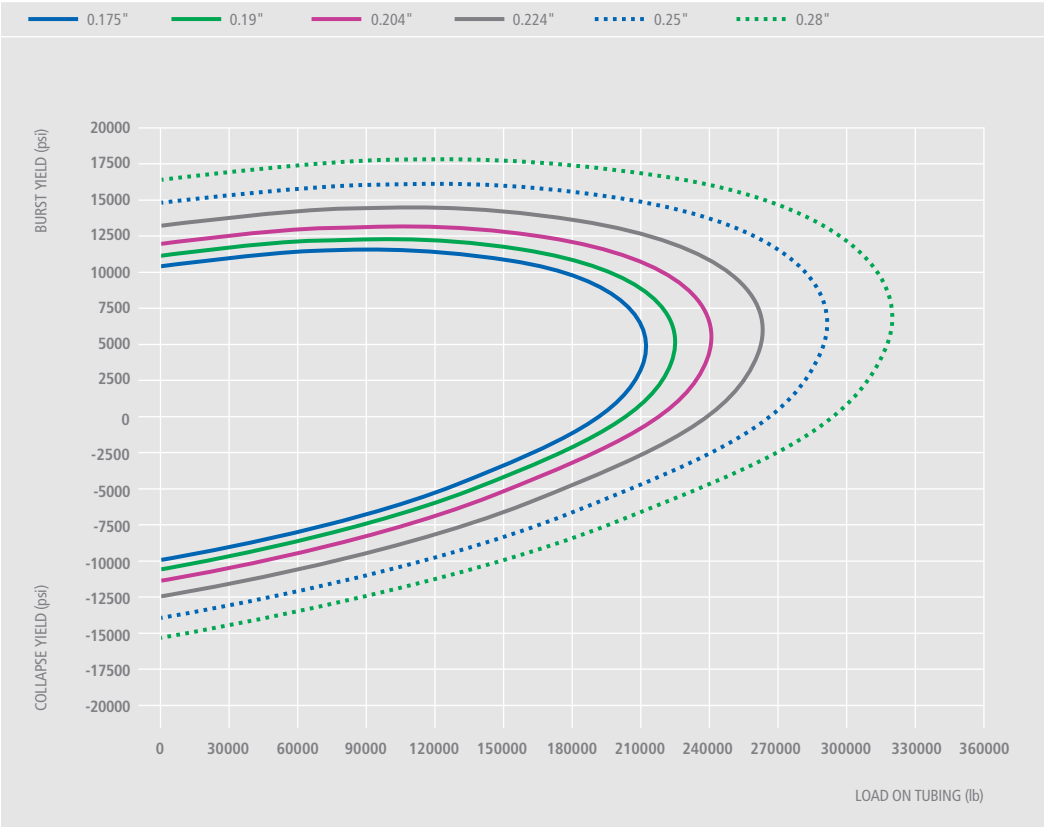
HS-110™ (CT110) | 2.675" OD



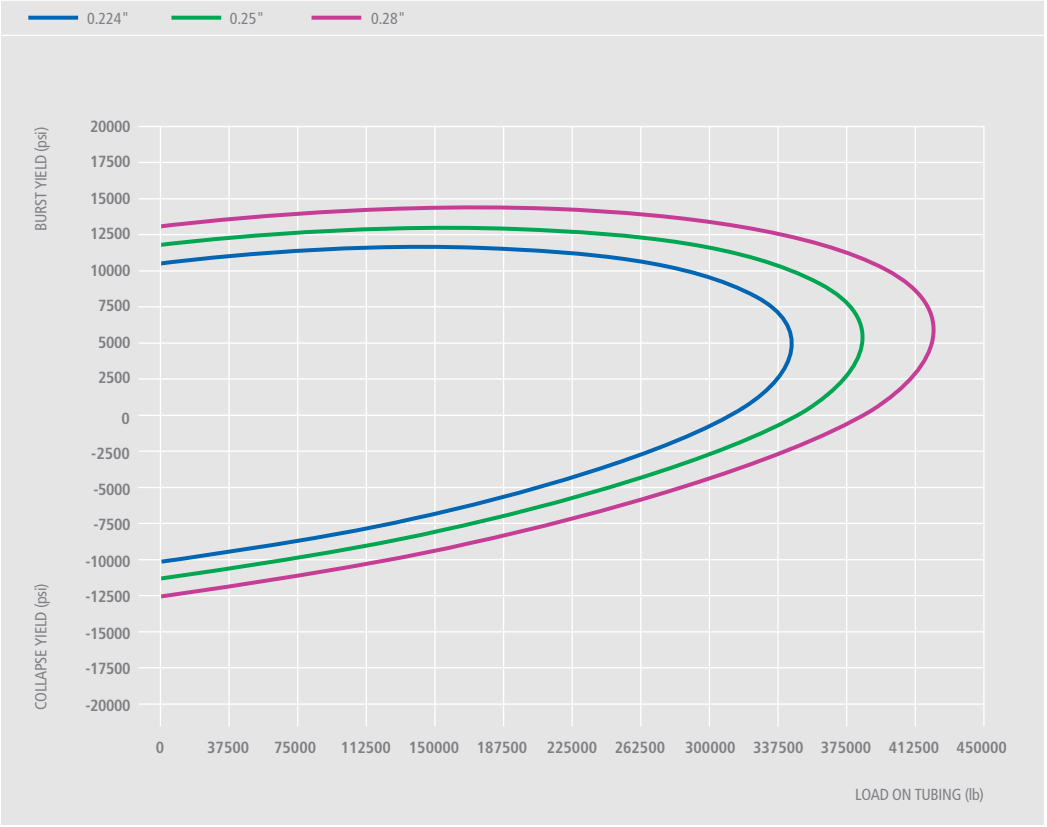
HS-110™ (CT110) | 2.875" OD



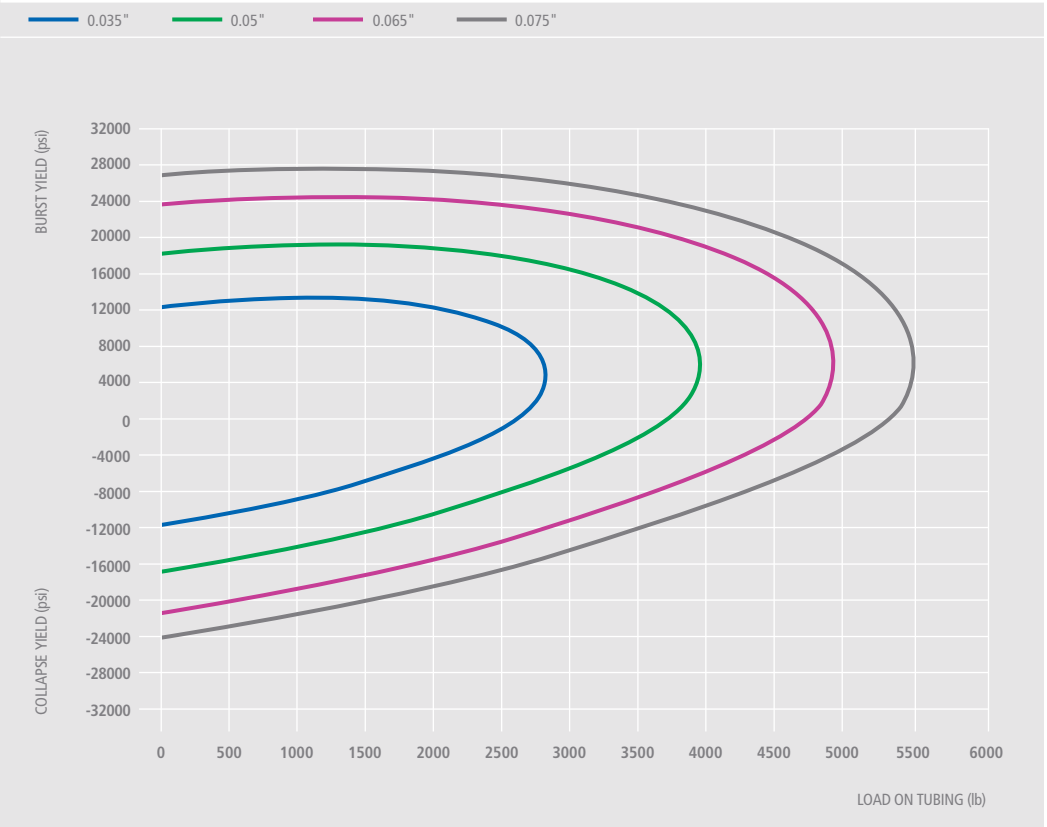
HS-110™ (CT110) | 3.50" OD



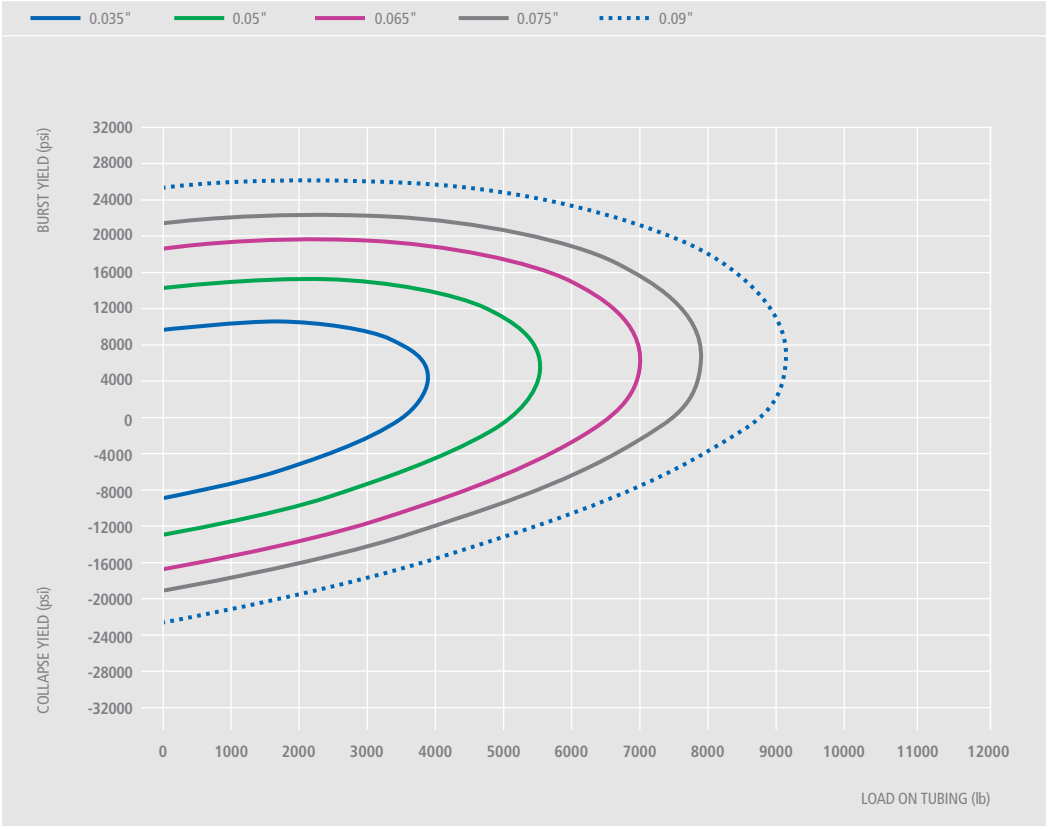
HS-110™ (CT110) | 4.50" OD



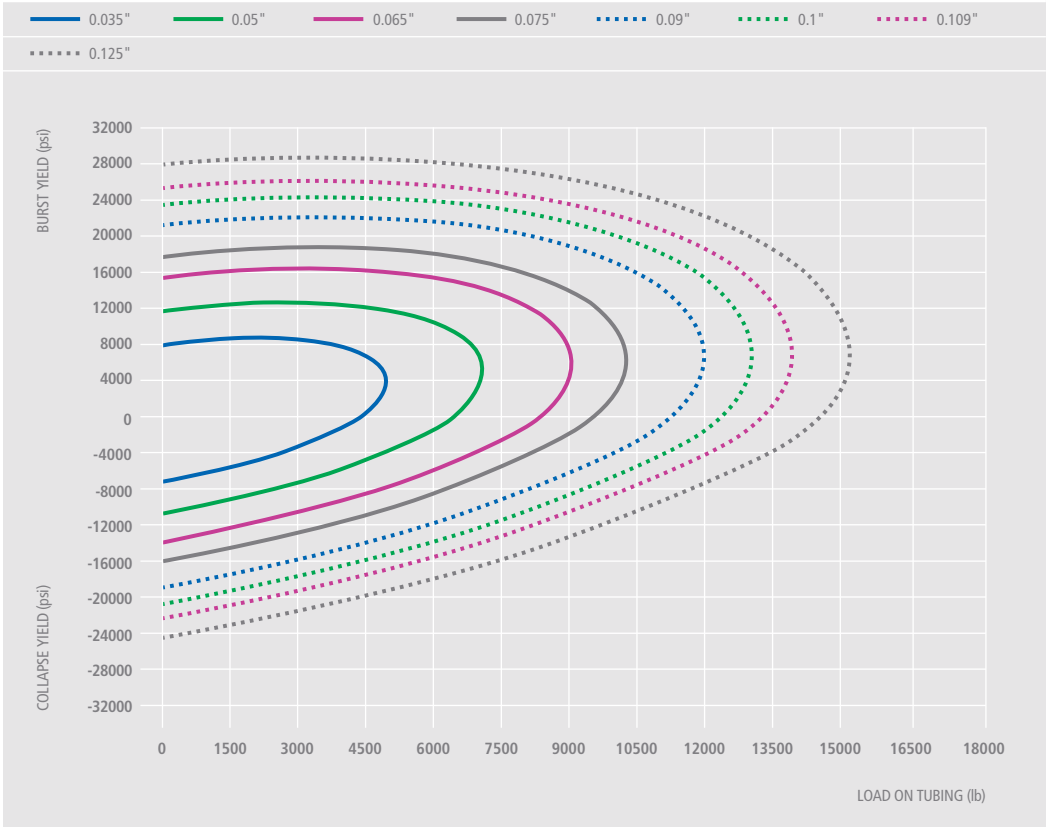
HS-80 CRA™ | 0.375" OD



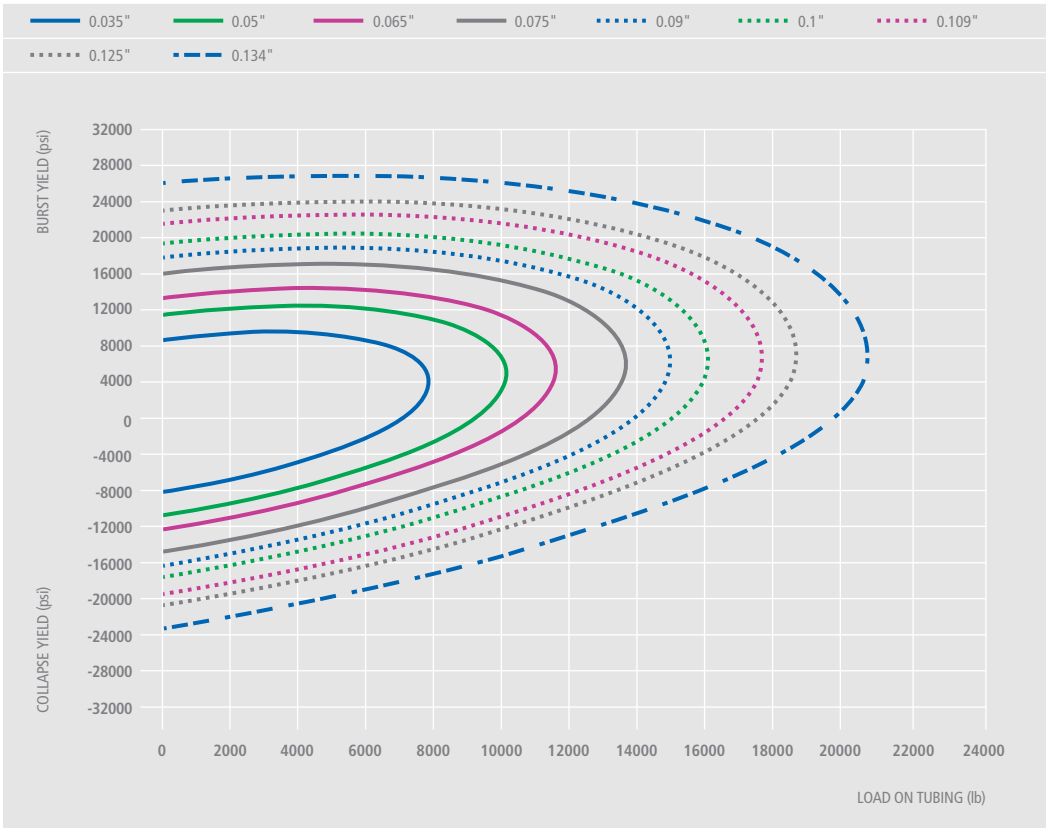
HS-80 CRA™ | 0.50" OD



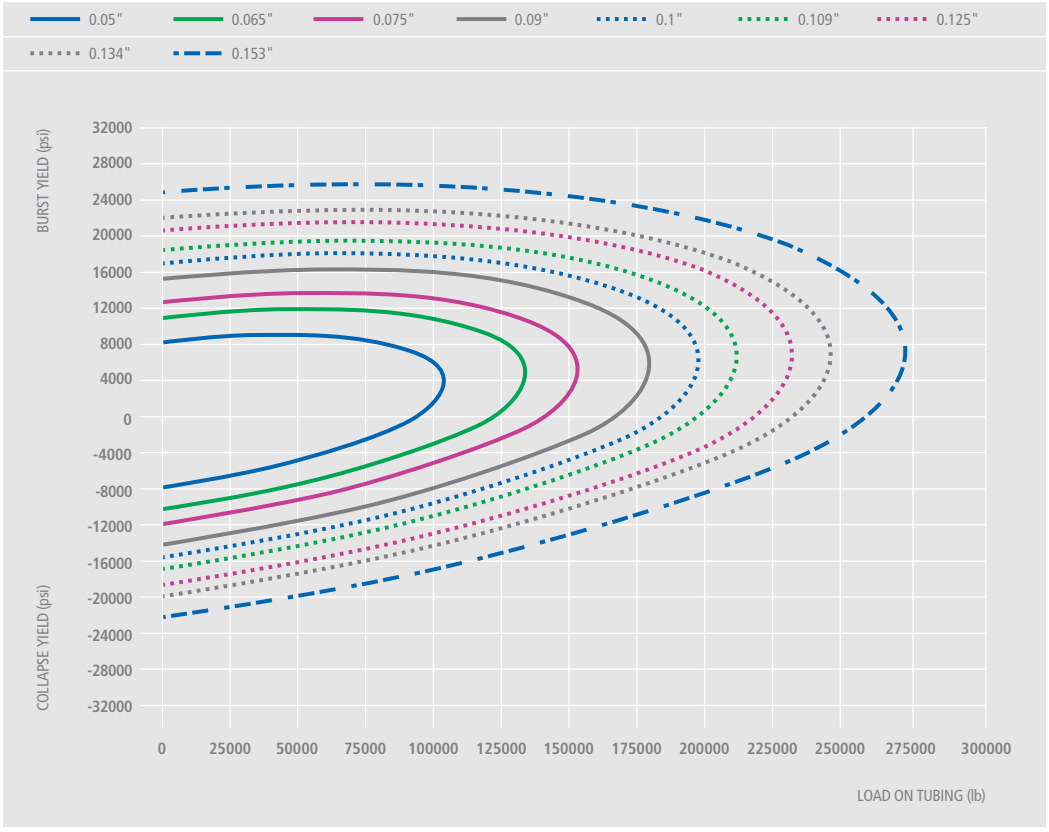
HS-80 CRA™ | 0.625" OD



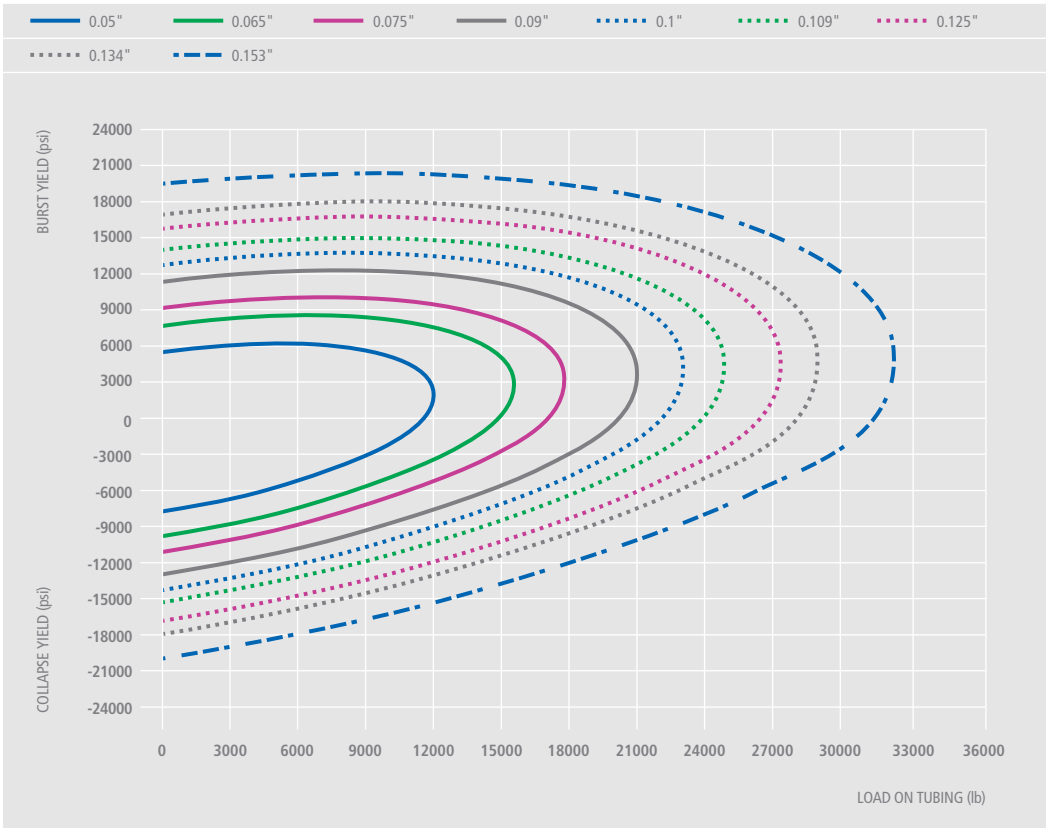
HS-80 CRA™ | 0.75" OD



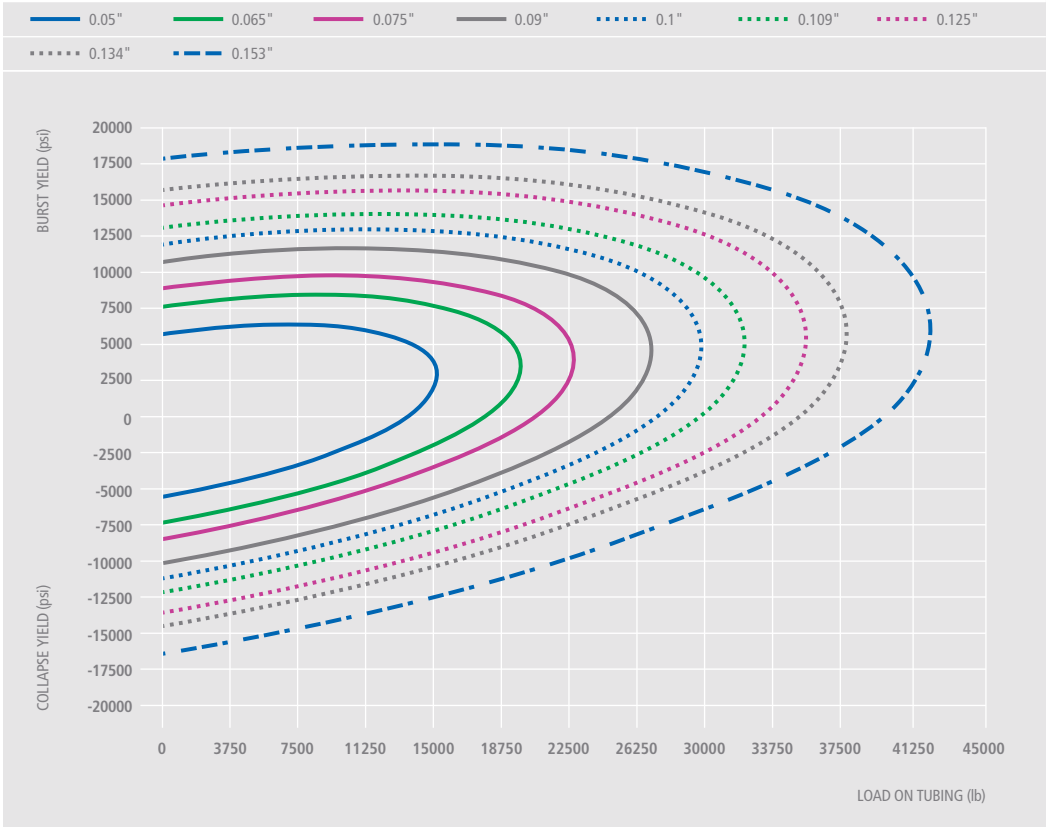
HS-80 CRA™ | 0.875" OD



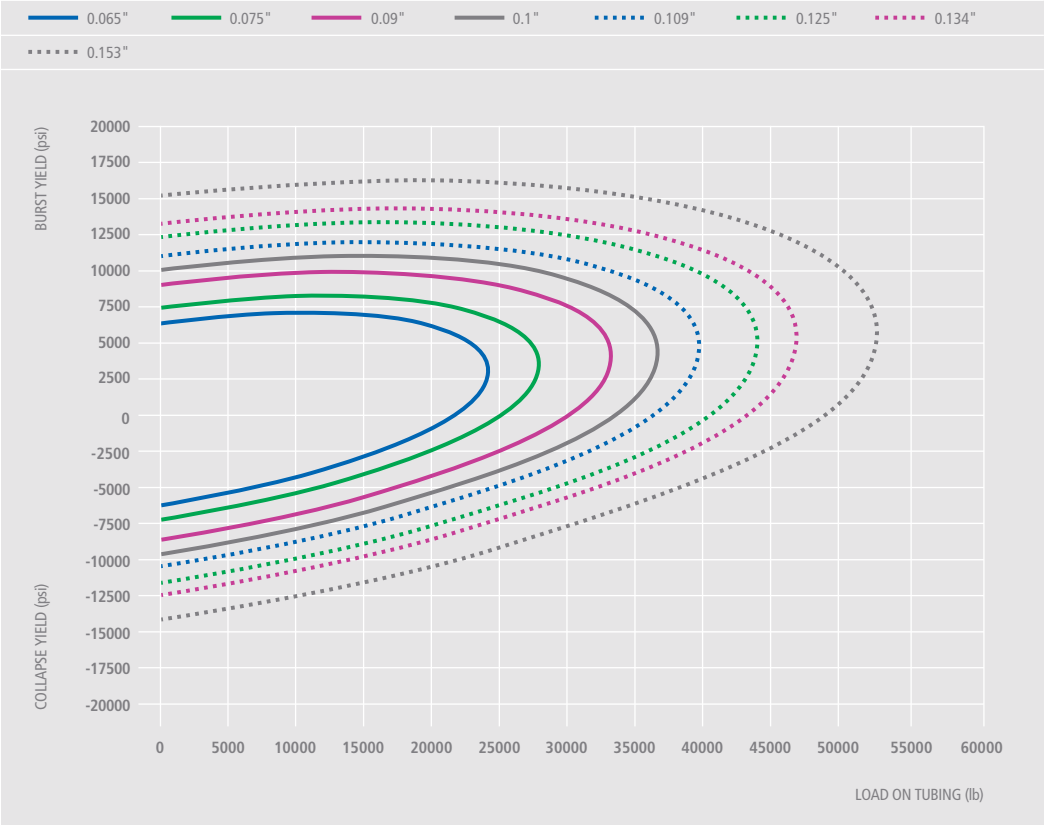
HS-80 CRA™ | 1.00" OD



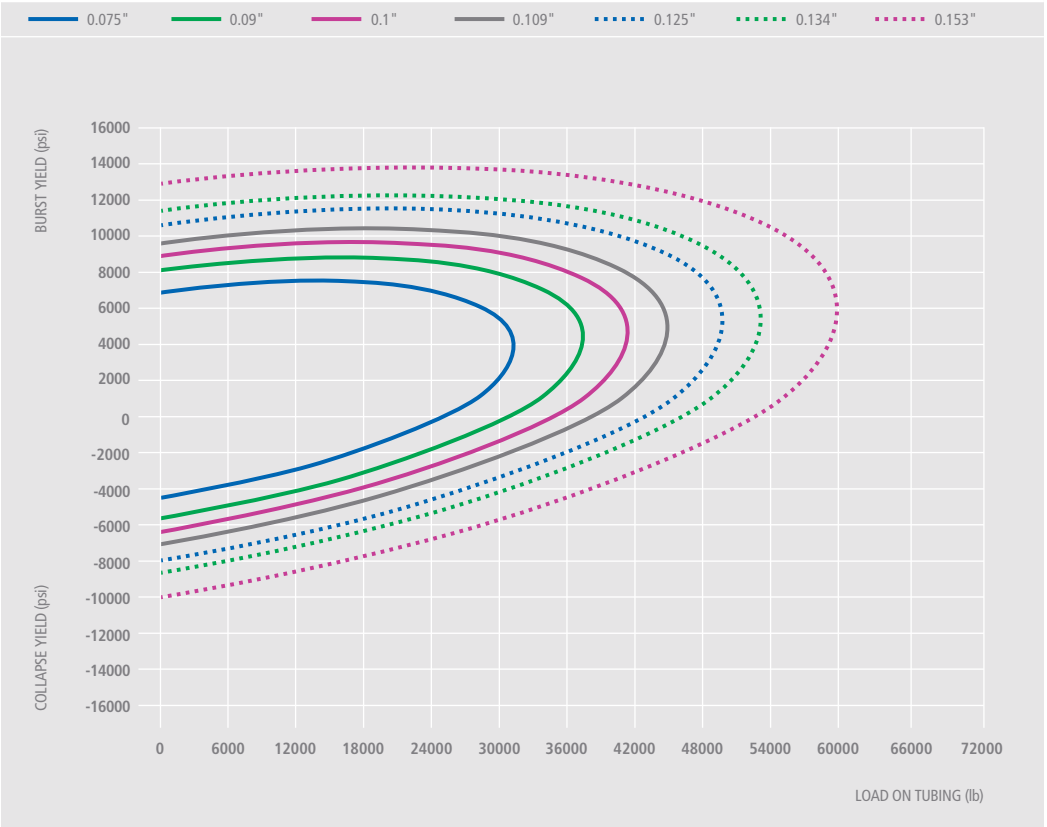
HS-80 CRA™ | 1.25" OD



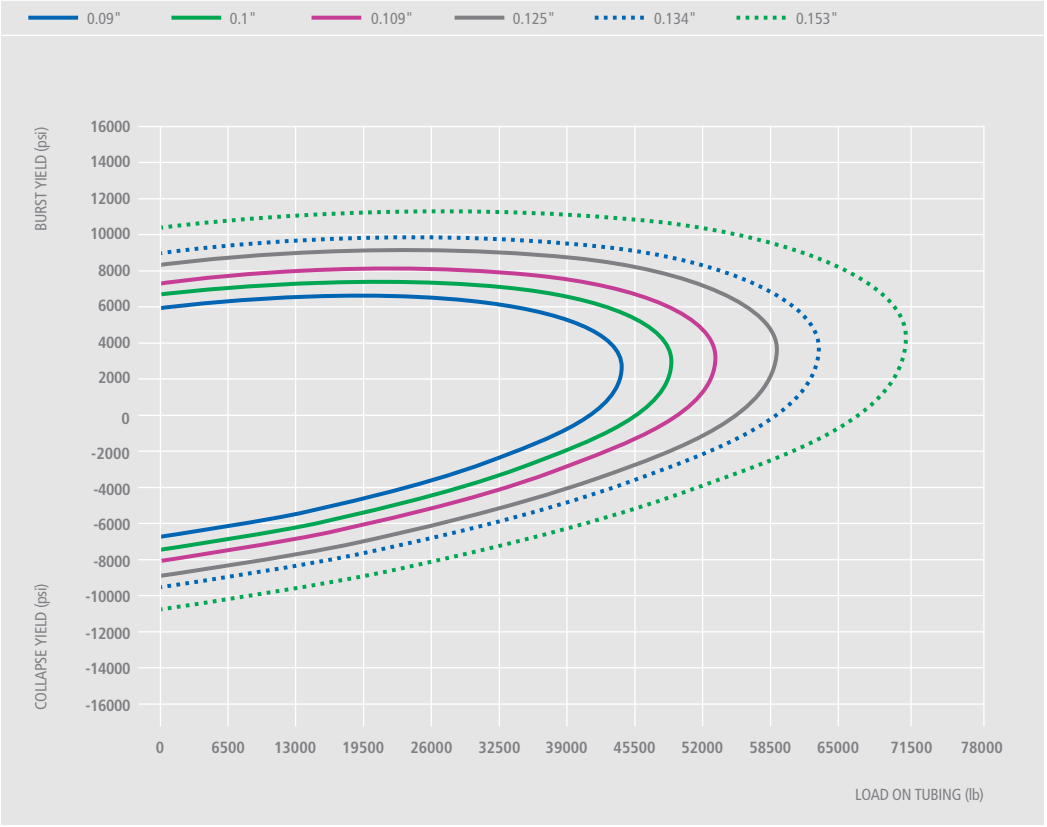
HS-80 CRA™ | 1.50" OD



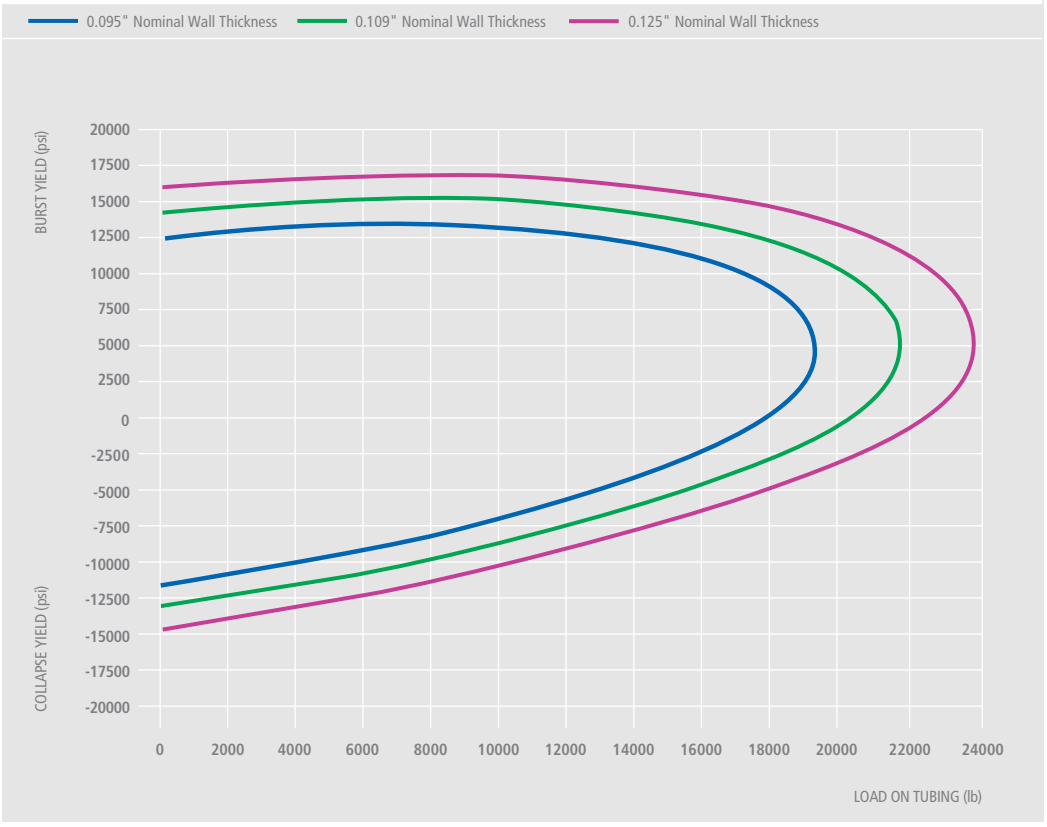
HS-80 CRA™ | 1.75" OD



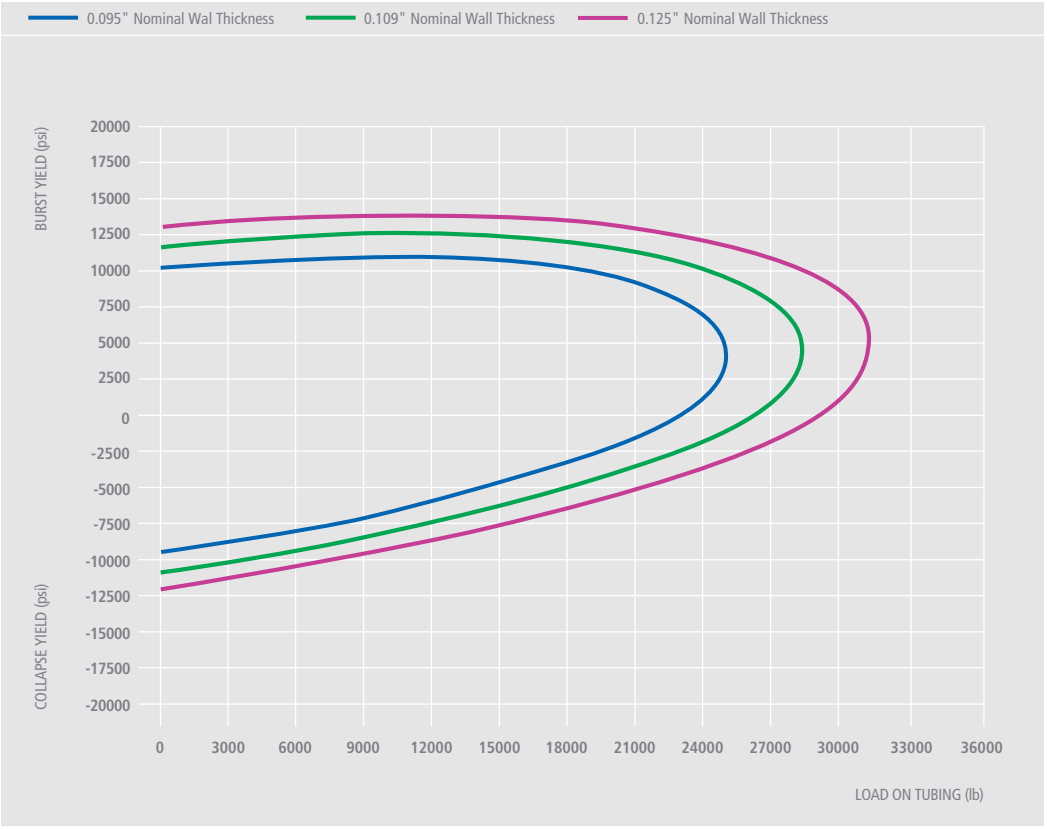
HS-80 CRA™ | 2.00" OD



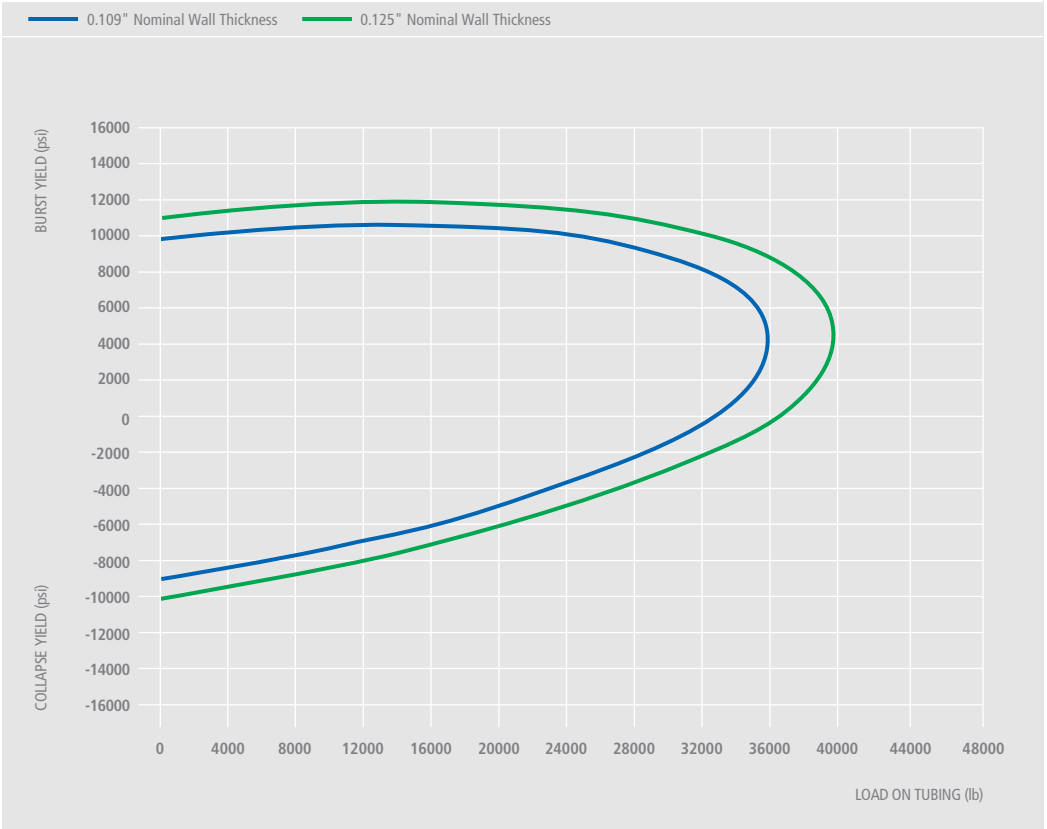
HV-70™ (CT70) | 1.00" OD



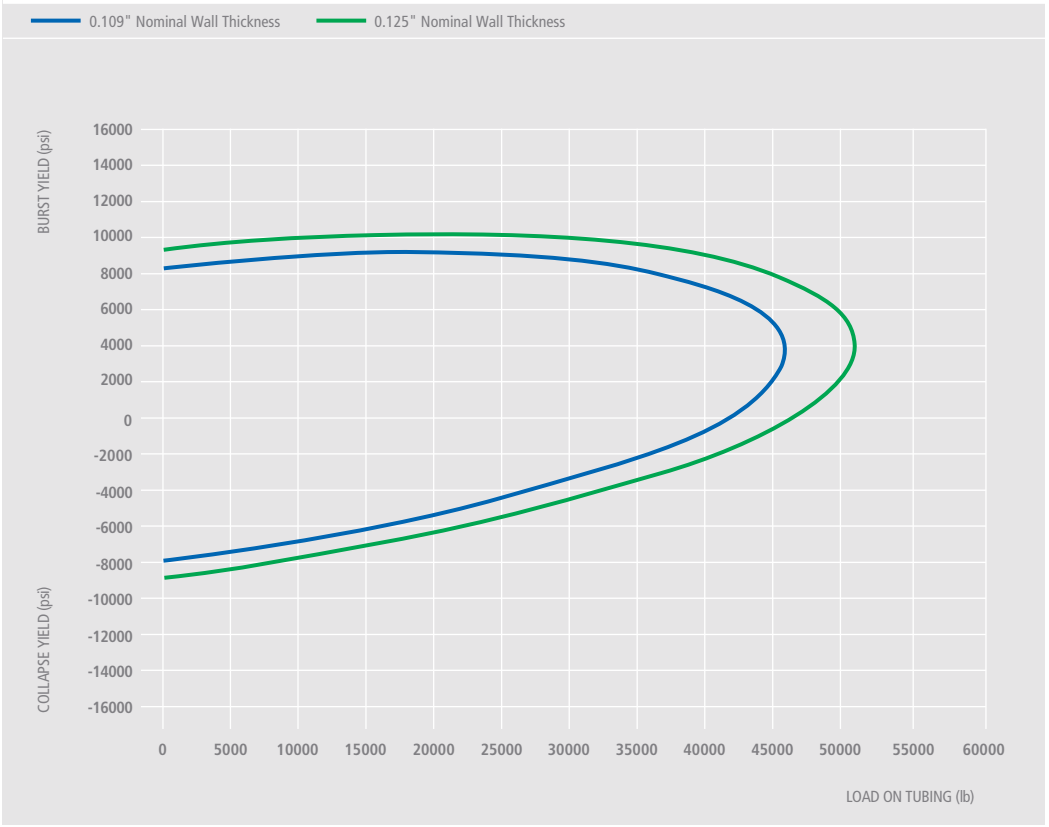
HV-70™ (CT70) | 1.25" OD



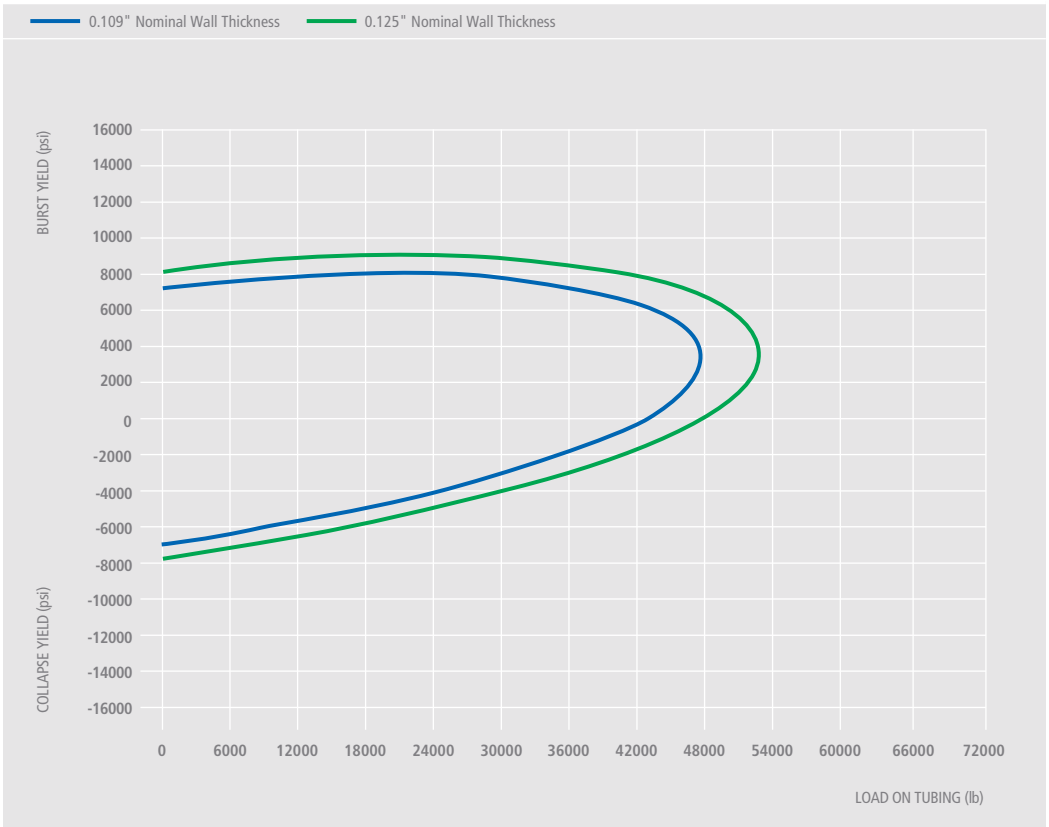
HV-70™ (CT70) | 1.50" OD



HV-70™ (CT70) | 1.75" OD



HV-70™ (CT70) | 2.00" OD



Buoyancy Factors

Immersed weight = air weight x bouyancy factor.

FLUID WEIGHT	BUOYANCY FACTOR	FLUID WEIGHT	BUOYANCY FACTOR
lb/gal		lb/gal	
6.0	0.9083	13.0	0.8013
6.2	0.9053	13.2	0.7983
6.4	0.9022	13.4	0.7952
6.6	0.8991	13.6	0.7922
6.8	0.8961	13.8	0.7891
7.0	0.8930	14.0	0.7861
7.2	0.8900	14.2	0.7830
7.4	0.8869	14.4	0.7800
7.6	0.8839	14.6	0.7769
7.8	0.8808	14.8	0.7738
8.0	0.8778	15.0	0.7708
8.2	0.8747	15.2	0.7677
8.3	0.8727	15.4	0.7647
8.4	0.8716	15.6	0.7616
8.6	0.8686	15.8	0.7586
8.8	0.8655	16.0	0.7555
9.0	0.8625	16.2	0.7524
9.2	0.8594	16.4	0.7494
9.4	0.8564	16.6	0.7463
9.6	0.8533	16.8	0.7433
9.8	0.8502	17.0	0.7402
10.0	0.8472	17.2	0.7372
10.2	0.8441	17.4	0.7341
10.4	0.8411	17.6	0.7311
10.6	0.8380	17.8	0.7280
10.8	0.8350	18.0	0.7249
11.0	0.8319	18.2	0.7219
11.2	0.8289	18.4	0.7188
11.4	0.8258	18.6	0.7158
11.6	0.8227	18.8	0.7127
11.8	0.8197	19.0	0.7097
12.0	0.8166	19.2	0.7066
12.2	0.8136	19.4	0.7035
12.4	0.8105	19.6	0.7005
12.6	0.8075	19.8	0.6974
12.8	0.8044	20.0	0.6944

Buoyancy Factor compensates for loss of weight due to immersion in fluid.
Data applies only when tubing is completely filled with fluid.