

# USS-LIBERTY TC<sup>®</sup>



PROPRIETARY TIGHTFIT<sup>™</sup> THREAD CASING CONNECTION



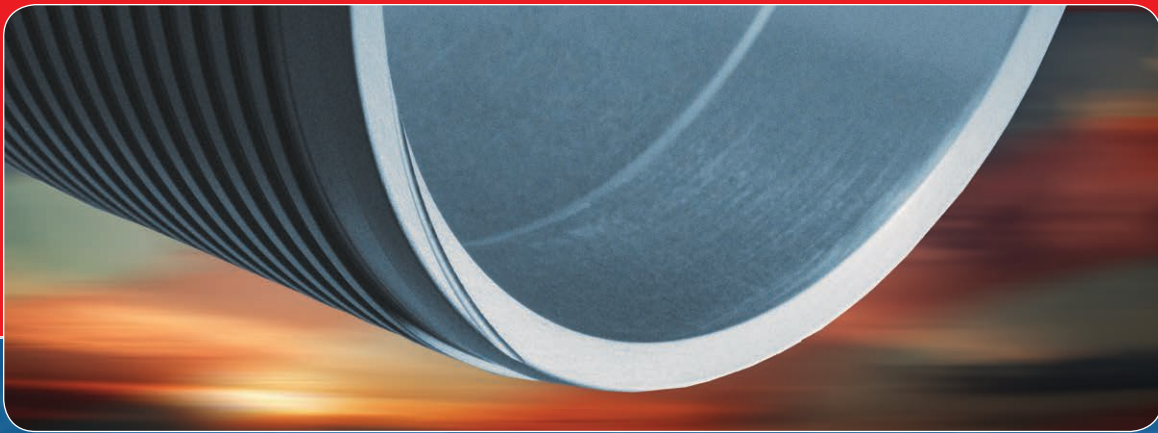
U. S. Steel Tubular Products

# USS-LIBERTY TC<sup>®</sup>

PROPRIETARY TIGHTFIT<sup>™</sup> THREAD CASING CONNECTION







**D**esigned, tested and manufactured in America, the USS-LIBERTY TC® premium casing connection delivers ultimate design flexibility. This rugged, new-generation connection provides increased efficiency, trouble-free operations and reduced costs across a wide range of challenging applications. Tested to the most rigorous standards in the industry, this connection, with patent-pending features, is ideal for horizontal and extended reach wells, high-pressure hydraulic fracturing, sour service and more. The unique features of the USS-LIBERTY TC® connection offer freedom to choose in casing design by providing connection capacity equivalent to the full pipe body load envelope.

**Proprietary TightFit™ thread form** combined with primary metal-to-metal seal and shoulder configuration improves performance in collapse, compression and torque

**Unique features isolate seal** to prevent effects of pressure caused by thread compound

**Rigorous testing** to API RP 5C5:2014 CAL IV

**Available in 4-1/2" to 10-3/4" pipe outside diameter** with future testing up to 14" pipe outside diameter sizes



**U. S. Steel Tubular Products**

# PERFORMANCE PROPERTIES

									SMYS = 80,000 psi		
Size OD	Nominal Weight	Wall Thickness	Nominal ID	API Drift Diameter	Nominal Pipe Body Area	Coupling Turned OD	Connection Bored ID	Makeup Loss	Tensile and Compressive Strength	Reference Depth DF=1.5	Connection Max Operating Torque
in.	lb/ft	in.	in.	in.	in. <sup>2</sup>	in.	in.	in.	1000 lbs	ft	ft-lb
4 1/2	11.6	0.250	4.000	3.875	3.338	4.961	3.938	3.63	267	15,340	5,600
4 1/2	12.6	0.271	3.958	3.833	3.600	5.002	3.896	3.63	288	15,240	6,400
4 1/2	13.5	0.290	3.920	3.795	3.836	5.037	3.858	3.63	307	15,160	7,100
4 1/2	15.1	0.337	3.826	3.701	4.407	5.123	3.764	3.63	353	15,580	8,700
4 1/2	17.0	0.380	3.740	3.615	4.918	5.199	3.678	3.63	393	15,410	10,200
5	13.0	0.253	4.494	4.369	3.773	5.466	4.431	3.77	302	15,490	6,900
5	15.0	0.296	4.408	4.283	4.374	5.549	4.345	3.77	350	15,560	8,900
5	18.0	0.362	4.276	4.151	5.275	5.672	4.213	3.77	422	15,630	11,900
5	20.3	0.408	4.184	4.059	5.886	5.753	4.121	3.77	471	15,470	13,900
5	20.8	0.422	4.156	4.031	6.069	5.751	4.093	4.37	486	15,580	13,900
5	21.4	0.437	4.126	4.001	6.264	5.777	4.063	4.37	501	15,610	14,500
5	23.2	0.478	4.044	3.919	6.791	5.846	3.981	4.37	543	15,600	16,200
5	24.1	0.500	4.000	3.875	7.069	5.882	3.937	4.37	566	15,660	17,100
5 1/2	17.0	0.304	4.892	4.767	4.962	6.045	4.828	4.30	397	15,570	10,600
5 1/2	20.0	0.361	4.778	4.653	5.828	6.154	4.714	4.30	466	15,530	13,800
5 1/2	23.0	0.415	4.670	4.545	6.630	6.252	4.606	4.30	530	15,360	16,700
5 1/2	26.0	0.476	4.548	4.423	7.513	6.359	4.484	4.30	601	15,410	19,900
6 5/8	20.0	0.288	6.049	5.924	5.734	7.173	5.983	3.75	459	15,300	15,100
6 5/8	23.2	0.330	5.965	5.840	6.526	7.257	5.899	3.75	522	15,000	18,700
6 5/8	24.0	0.352	5.921	5.796	6.937	7.300	5.855	3.75	555	15,420	20,500
6 5/8	28.0	0.417	5.791	5.666	8.133	7.424	5.725	3.75	651	15,500	25,800
7	23.0	0.317	6.366	6.250*	6.655	7.602	6.309	3.90	532	15,420	18,900
7	24.8	0.343	6.314	6.189	7.173	7.653	6.248	3.90	574	15,430	21,800
7	26.0	0.362	6.276	6.151	7.549	7.691	6.210	3.90	604	15,490	23,600
7	29.0	0.408	6.184	6.125*	8.449	7.780	6.184	3.90	676	15,540	25,000
7	32.0	0.453	6.094	6.000*	9.317	7.865	6.059	3.90	745	15,520	30,600
7 5/8	29.7	0.375	6.875	6.750	8.541	8.322	6.832	4.41	683	15,330	26,200
7 5/8	33.7	0.430	6.765	6.640	9.720	8.430	6.722	4.41	778	15,390	32,100
7 5/8	35.8	0.465	6.695	6.570	10.460	8.497	6.652	4.41	837	15,590	35,800
7 5/8	39.0	0.500	6.625	6.500	11.192	8.562	6.582	4.41	895	15,300	39,500
7 3/4	46.1	0.595	6.560	6.500*	13.374	8.837	6.613	5.42	1,070	15,470	37,400
8 5/8	32.0	0.352	7.921	7.875*	9.149	9.309	7.986	5.71	732	15,250	21,000
8 5/8	36.0	0.400	7.825	7.700	10.336	9.406	7.811	5.71	827	15,310	32,400
8 5/8	40.0	0.450	7.725	7.625*	11.557	9.505	7.736	5.71	925	15,420	37,400
8 5/8	44.0	0.500	7.625	7.500	12.763	9.601	7.611	5.71	1,021	15,470	45,300
8 5/8	49.0	0.557	7.511	7.386	14.118	9.616	7.497	6.17	1,129	15,360	43,200
8 5/8	52.0	0.595	7.435	7.310	15.010	9.686	7.421	6.17	1,201	15,400	47,900
8 5/8	54.0	0.625	7.375	7.250	15.708	9.741	7.361	6.17	1,257	15,520	51,500
9 5/8	40.0	0.395	8.835	8.750*	11.454	10.398	8.860	5.96	916	15,270	34,600
9 5/8	43.5	0.435	8.755	8.625*	12.559	10.479	8.735	5.96	1,005	15,400	44,700
9 5/8	47.0	0.472	8.681	8.625*	13.572	10.553	8.735	5.96	1,086	15,400	45,000
9 5/8	53.5	0.545	8.535	8.500*	15.546	10.695	8.610	5.96	1,244	15,500	55,100
9 7/8	62.8	0.625	8.625	8.500*	18.162	10.979	8.610	6.92	1,453	15,420	56,600
9 7/8	65.1	0.650	8.575	8.500*	18.838	11.026	8.610	6.92	1,507	15,430	56,600
10 3/4	51.0	0.450	9.850	9.694	14.561	11.556	9.803	6.42	1,165	15,230	42,700
10 3/4	55.5	0.495	9.760	9.625*	15.947	11.648	9.734	6.42	1,276	15,330	49,300
10 3/4	60.7	0.545	9.660	9.563*	17.473	11.747	9.672	6.42	1,398	15,350	55,100
10 3/4	65.7	0.595	9.560	9.500*	18.982	11.845	9.609	6.42	1,519	15,410	61,000
10 3/4	71.1	0.650	9.450	9.294	20.625	11.950	9.403	6.42	1,650	15,470	79,900

## NOTES:

USS-LIBERTY TC® tensile and compressive strength calculations are based on nominal pipe body area and specified minimum yield strength.

Reference depth calculations are based on connection tensile joint strength, nominal weight in air and a design factor. These values are provided for reference only. Bending, buoyancy, temperature, and other factors are not included. Tubular design should use an appropriate design factor.

Connection maximum operating torque is based on material minimum yield strength.

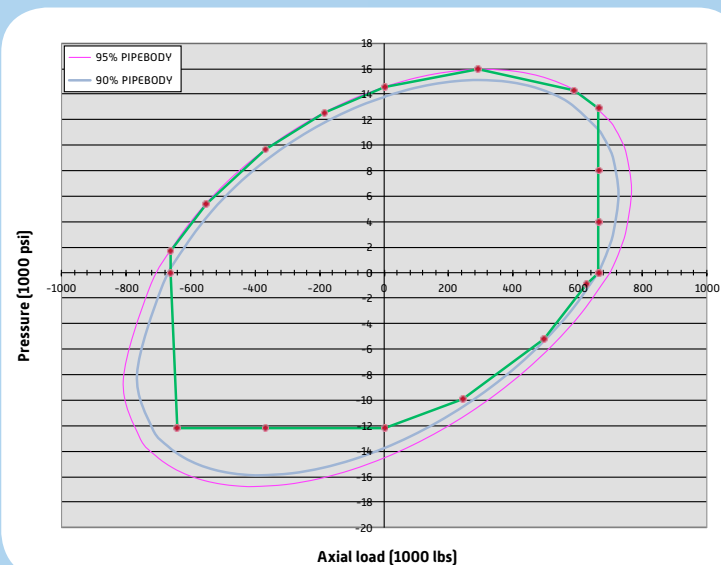
SMYS = Specified Minimum Yield Strength.

USS-LIBERTY TC® connections are interchangeable with other weights of the same group.

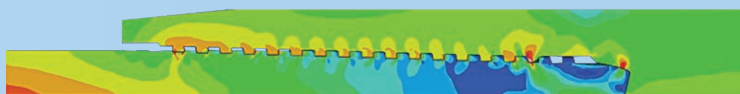
\*Alternate Drift Diameter

Contact U. S. Steel Tubular Products to receive information for grades not listed.

SMYS = 110,000 psi			SMYS = 125,000 psi		
Tensile and Compressive Strength	Reference Depth DF=1.5	Connection Max Operating Torque	Tensile and Compressive Strength	Reference Depth DF=1.5	Connection Max Operating Torque
1000 lbs	ft	ft-lb	1000 lbs	ft	ft-lb
367	21,090	7,300	417	23,970	8,100
396	20,950	8,300	450	23,810	9,300
422	20,840	9,200	480	23,700	10,300
485	21,410	11,500	551	24,330	12,800
541	21,220	13,400	615	24,120	15,000
415	21,280	9,000	472	24,210	10,100
481	21,380	11,700	547	24,310	13,100
580	21,480	15,600	659	24,410	17,500
647	21,250	18,200	736	24,170	20,400
668	21,410	18,200	759	24,330	20,300
689	21,460	19,000	783	24,390	21,200
747	21,470	21,200	849	24,400	23,700
778	21,520	22,400	884	24,450	25,000
546	21,410	13,900	620	24,310	15,500
641	21,370	18,100	729	24,300	20,200
729	21,130	21,900	829	24,030	24,500
826	21,180	26,100	939	24,080	29,200
631	21,030	20,000	717	23,900	22,400
718	20,630	24,700	816	23,450	27,700
763	21,190	27,100	867	24,080	30,400
895	21,310	34,100	1,017	24,210	38,300
732	21,220	25,000	832	24,120	28,000
789	21,210	28,800	897	24,110	32,300
830	21,280	31,200	944	24,210	35,000
929	21,360	33,000	1,056	24,280	37,000
1,025	21,350	40,400	1,165	24,270	45,300
940	21,100	34,700	1,068	23,970	39,000
1,069	21,150	42,700	1,215	24,040	48,000
1,151	21,430	47,600	1,308	24,360	53,500
1,231	21,040	52,500	1,399	23,910	59,000
1,471	21,270	49,200	1,672	24,180	55,000
1,006	20,960	27,400	1,144	23,830	30,600
1,137	21,060	42,700	1,292	23,930	47,800
1,271	21,180	49,300	1,445	24,080	55,200
1,404	21,270	59,800	1,595	24,170	67,000
1,553	21,130	56,700	1,765	24,010	63,400
1,651	21,170	62,900	1,876	24,050	70,300
1,728	21,330	67,700	1,964	24,250	75,700
1,260	21,000	45,800	1,432	23,870	51,400
1,381	21,160	59,200	1,570	24,060	66,500
1,493	21,180	59,600	1,697	24,070	66,900
1,710	21,310	73,000	1,943	24,210	82,000
1,998	21,210	76,800	2,270	24,100	86,800
2,072	21,220	76,800	2,355	24,120	86,800
1,602	20,940	57,900	1,820	23,790	65,500
1,754	21,070	66,800	1,993	23,940	75,600
1,922	21,110	74,700	2,184	23,990	84,500
2,088	21,190	82,700	2,373	24,080	93,500
2,269	21,280	108,100	2,578	24,170	122,300



API RP 5C5 2014 CAL IV Test Load Envelope



USS-LIBERTY TC® Capped End FEA



USS-LIBERTY TC® Make-Up FEA



U. S. Steel Tubular Products



## RIG SITE SERVICES

U. S. Steel Oilwell Services recognizes the value of quality rig site services, particularly when running premium connections such as USS-LIBERTY TC® connections.

Trained, experienced U. S. Steel employees are available to assist in running casing and tubing connections worldwide, both onshore and offshore. Rig site personnel will inspect U. S. Steel connections in the storage yard or at the rig site, and are trained to perform minor field repairs. Rig site services and benefits include:

- 24/7/365 service, onshore or offshore
- Assurance that correct running procedures are followed
- Visual inspection of connections
- Tools and training required to perform field repair
- Knowledge of full technical specifications and product performance data
- Ongoing training and direct access to engineering and technical staff
- Direct contact with licensed repair facilities



**U. S. Steel Oilwell Services  
Rig Site Services**

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**[rigsiteservices@uss.com](mailto:rigsiteservices@uss.com)**

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Casper

Pittsburgh

Oklahoma City

Midland

Dallas

Houston

Rig Site Services  
Field Locations



U. S. Steel Oilwell Services





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