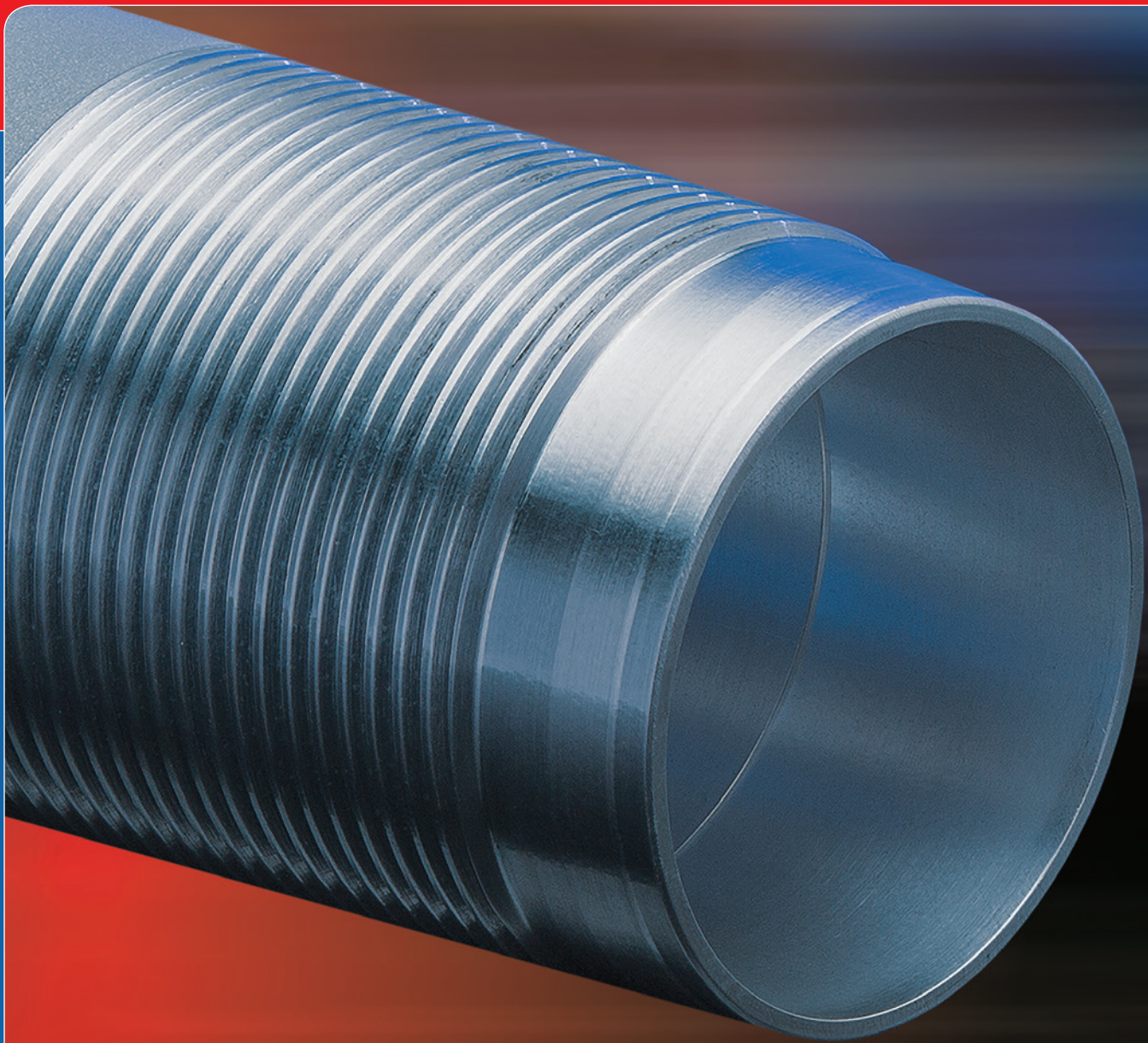


USS-PATRIOT EBM[®]



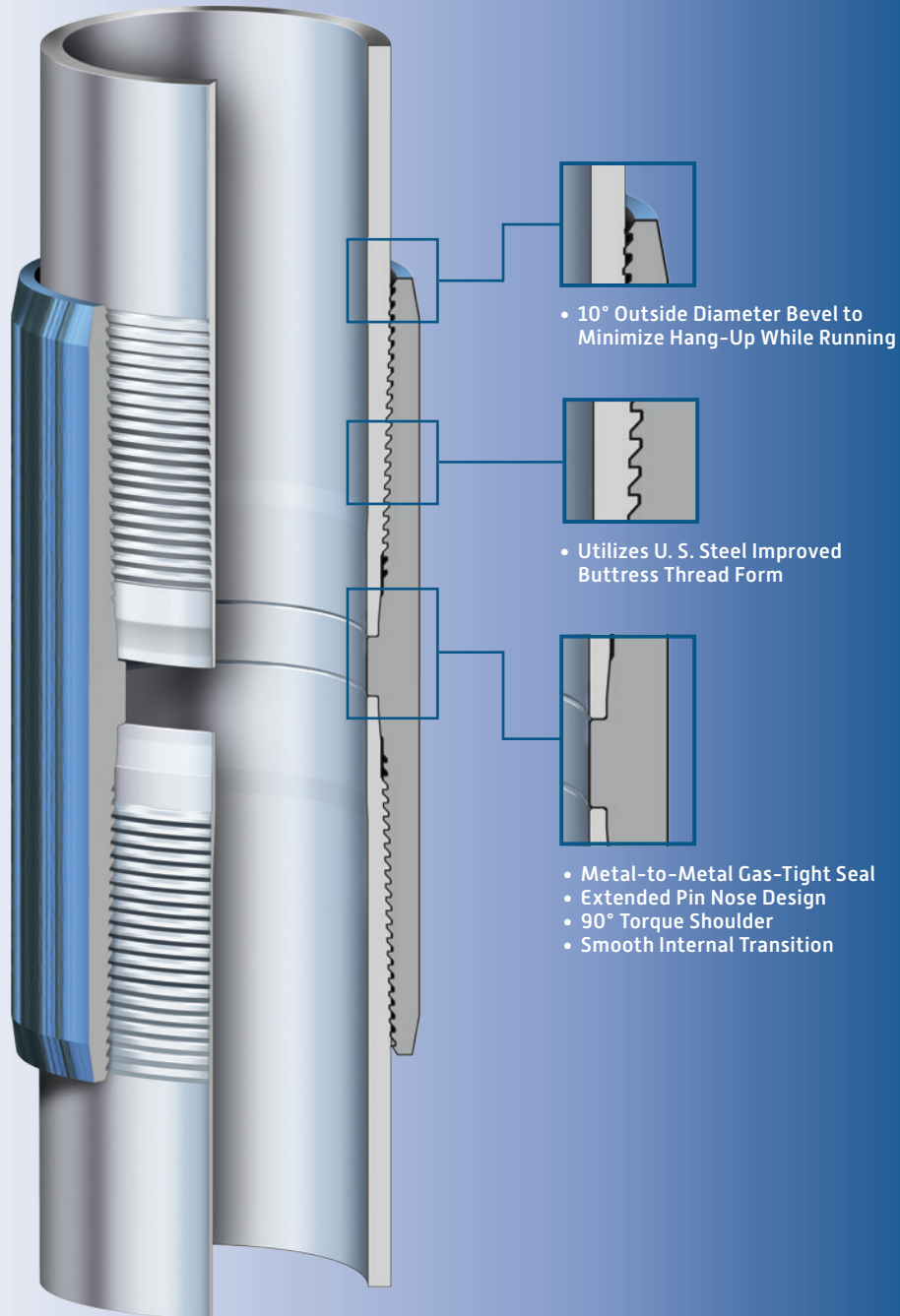
PREMIUM TUBING CONNECTION FOR COMPLEX APPLICATIONS



U. S. Steel Tubular Products

USS-PATRIOT EBM[®]

PREMIUM TUBING CONNECTION FOR COMPLEX APPLICATIONS





The USS-PATRIOT EBM® premium tubing connection was designed to perform in the most severe conditions, including high-pressure gas, high temperatures, corrosive service and thermal wells. This premium connection, offered in multiple material grades, has been successfully tested in accordance with API RP 5C5:2013 CAL IV connection requirements. Using the proven U. S. Steel Improved Buttress thread form, the connection is threaded and coupled, featuring a primary internal metal-to-metal seal. This gas-tight seal delivers 100% internal pressure ratings ideal for deep horizontal and vertical wells. Sizes range from 2 3/8 to 4 1/2 inches and are interchangeable with a wide variety of wall thicknesses in the same size range.

Improved Buttress thread form was developed by U. S. Steel in the 1950s and maintains an excellent track record and extensive experience in the industry worldwide.

Metal-to-metal gas-tight seal provides an internal yield pressure rating equal to API pipe body rating.

Extended pin nose design provides seal-damage protection during assembly and allows racking back in the derrick without damaging pin nose.

Smooth internal transition helps avoid flow interference.

Plain-end threaded and coupled premium connection enables rework without upset ends for repairs at local service centers and ease of manufacture for accessories.



U. S. Steel Tubular Products

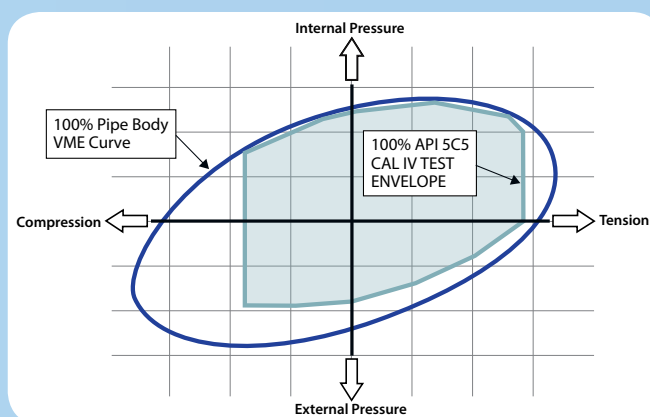
PERFORMANCE PROPERTIES

Pipe Nominal OD	Nominal Weight	Plain-End Weight	Nominal Wall	Drift Diameter	Coupling Turned OD	Connection Bored ID	Makeup Loss	55 KSI Connection		80 KSI Connection	
								Joint Strength	Reference Depth	Joint Strength	Reference Depth
inches	lbs/ft	lbs/ft	inches	inches	inches	inches	inches	1,000 lbs	feet	1,000 lbs	feet
2 3/8	4.60	4.44	0.190	1.901	2.775	1.976	3.38	72	10435	104	15072
2 3/8	5.10	5.03	0.218	1.845	2.775	1.920	3.38	81	10588	118	15425
2 3/8	5.80	5.76	0.254	1.773	2.775	1.848	3.38	93	10690	135	15517
2 3/8	6.00	5.90	0.261	1.759	2.775	1.834	3.38	95	10556	139	15444
2 3/8	6.30	6.27	0.280	1.721	2.775	1.796	3.38	101	10688	147	15556
2 3/8	6.60	6.56	0.295	1.691	2.775	1.766	3.38	106	10707	154	15556
2 3/8	7.35	7.32	0.336	1.609	2.775	1.758	3.38	118	10703	172	15601
2 7/8	6.40	6.17	0.217	2.347	3.400	2.422	3.38	100	10417	145	15104
2 7/8	7.80	7.67	0.276	2.229	3.400	2.304	3.38	124	10598	180	15385
2 7/8	8.60	8.45	0.308	2.165	3.400	2.240	3.38	137	10620	199	15426
2 7/8	9.35	9.21	0.340	2.101	3.400	2.250	3.38	149	10624	217	15472
2 7/8	9.80	9.72	0.362	2.057	3.400	2.207	3.38	157	10680	229	15578
2 7/8	10.50	10.40	0.392	1.997	3.400	2.149	3.38	168	10667	245	15556
2 7/8	11.00	10.69	0.405	1.971	3.400	2.124	3.38	173	10485	251	15212
3 1/2	7.70	7.58	0.216	2.943	4.150	3.049	3.38	123	10649	178	15411
3 1/2	9.20	8.81	0.254	2.867	4.150	2.973	3.38	142	10290	207	15000
3 1/2	10.20	9.92	0.289	2.797	4.150	2.903	3.38	160	10458	233	15229
3 1/2	12.60	12.32	0.368	2.639	4.150	2.821	3.38	199	10529	290	15344
3 1/2	12.70	12.53	0.375	2.625	4.150	2.807	3.38	202	10604	295	15486
3 1/2	13.70	13.63	0.413	2.549	4.150	2.734	3.38	220	10706	320	15572
3 1/2	14.30	14.11	0.430	2.515	4.150	2.701	3.38	228	10629	332	15478
3 1/2	14.90	14.64	0.449	2.477	4.150	2.664	3.38	237	10604	344	15391
3 1/2	15.40	15.39	0.476	2.423	4.150	2.612	3.38	249	10779	362	15671
4	8.20	7.74	0.190	3.495	4.650	3.601	3.50	125	10163	182	14797
4	9.50	9.12	0.226	3.423	4.650	3.529	3.50	147	10316	214	15018
4	10.90	10.47	0.262	3.351	4.650	3.457	3.50	169	10336	246	15046
4	11.60	11.35	0.286	3.303	4.650	3.409	3.50	184	10575	267	15345
4	12.10	11.83	0.299	3.277	4.650	3.383	3.50	191	10523	278	15317
4	13.20	12.95	0.330	3.215	4.650	3.394	3.50	209	10556	304	15354
4	14.80	14.71	0.380	3.115	4.650	3.298	3.50	238	10721	346	15586
4	16.10	15.90	0.415	3.045	4.650	3.230	3.50	257	10642	374	15487
4	16.50	16.41	0.430	3.015	4.650	3.201	3.50	265	10707	386	15596
4 1/2	10.50	10.24	0.224	3.927	5.150	4.033	3.50	166	10540	241	15302
4 1/2	11.60	11.36	0.250	3.875	5.150	3.981	3.50	184	10575	267	15345
4 1/2	12.60	12.25	0.271	3.833	5.150	3.939	3.50	198	10476	288	15238
4 1/2	13.50	13.05	0.290	3.795	5.150	3.901	3.50	211	10420	307	15160
4 1/2	15.20	15.00	0.337	3.701	5.150	3.881	3.50	242	10614	353	15482
4 1/2	16.60	16.54	0.375	3.625	5.150	3.807	3.50	267	10723	389	15622
4 1/2	17.00	16.74	0.380	3.615	5.150	3.798	3.50	271	10627	393	15412
4 1/2	17.70	17.61	0.402	3.571	5.150	3.755	3.50	285	10734	414	15593
4 1/2	18.90	18.71	0.430	3.515	5.150	3.701	3.50	302	10653	440	15520

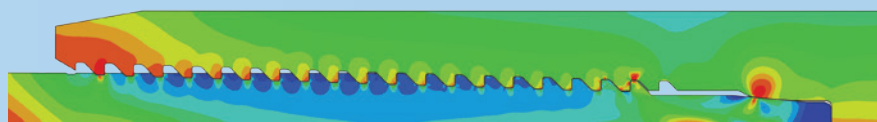
NOTES

1. USS-PATRIOT EBM® connection joint strength calculations were based on nominal pipe body area and specified minimum yield strength.
2. Reference depth calculations were based on connection 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 of 1.5.
3. All USS-PATRIOT EBM® connections are interchangeable with other weights of the same OD.
4. Contact U. S. Steel Tubular Products to receive information for grades not listed.

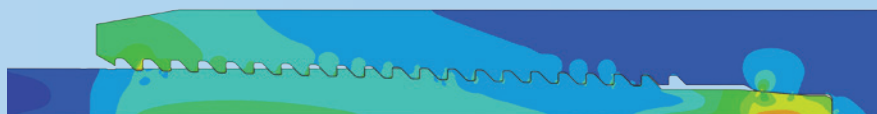
95 KSI Connection		110 KSI Connection	
Joint Strength	Reference Depth	Joint Strength	Reference Depth
1,000 lbs	feet	1,000 lbs	feet
124	17971	143	20725
140	18301	162	21176
161	18506	186	21379
165	18333	191	21222
175	18519	203	21481
183	18485	212	21414
204	18503	237	21497
172	17917	199	20729
214	18291	248	21197
236	18295	273	21163
257	18324	298	21248
272	18503	314	21361
290	18413	336	21333
299	18121	346	20970
212	18355	245	21212
246	17826	285	20652
277	18105	321	20980
344	18201	398	21058
350	18373	405	21260
381	18540	441	21460
394	18368	456	21259
409	18300	473	21163
430	18615	497	21515
216	17561	250	20325
255	17895	295	20702
292	17859	338	20673
317	18218	367	21092
330	18182	382	21047
361	18232	419	21162
411	18514	475	21396
444	18385	514	21284
458	18505	530	21414
286	18159	331	21016
317	18218	367	21092
342	18095	396	20952
364	17975	422	20840
419	18377	485	21272
462	18554	535	21486
467	18314	541	21216
492	18531	569	21431
522	18413	605	21340



USS-PATRIOT EBM® Connection is API RP 5C5:2013 CAL IV Qualified



USS-PATRIOT EBM® Make-Up FEA



USS-PATRIOT EBM® Capped End FEA

RIG SITE SERVICES

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



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U. S. Steel Oilwell Services provides rig site services throughout North America and the Gulf of Mexico. Contact us for a list of international rig site services locations.

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Rig Site Services
Field Locations



U. S. Steel Oilwell Services



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08/15
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