



T&C connections

VAM TOP[®]

The industry reference
for premium connections



VAM TOP® is the most widely used T&C premium connection, in tubing and casing sizes. It has become the standard for OCTG premium threads over the years, with the largest field record in the industry.

VAM TOP® has long been the preferred solution for premium applications, for standard usage but even in the most severe conditions E.G. HP/HT wells.

VAM TOP® product lines benefit from the most reliable performances, demonstrated through a large number of qualification tests such as ISO13679 CAL IV (tubing size range, VAM TOP® HC™ casing line, VAM TOP® HT™ casing line, plus some derivative designs), with up to 100% PBYS compression rating.

→ Applications

Suitable for any kind of application, even the most critical:

- › Production casing
- › Tubing
- › Liner
- › Tie-back
- › HP/HT well designs

→ Options

- › Available with CLEANWELL® and CLEANWELL DRY® option.
- › Special Clearance and Special Bevel available.
- › Can be used with GRE liner option.

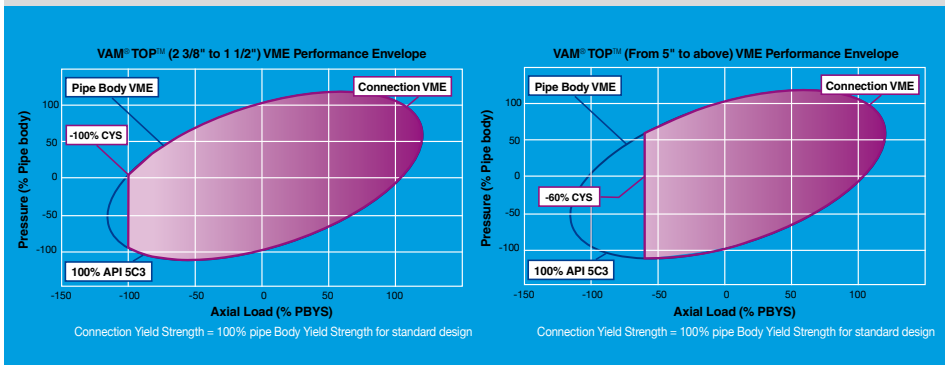
→ Benefits

- › **Field proven, easy running**, demonstrated with more than 5 million joints run to date.
- › **Excellent gas sealability**, with more than 100 customer qualification tests, as per stringent testing procedures.
- › **The premium standard for OCTG**
 - providing the best support around the world, with around 200 VAM® licensees,
 - widely used for accessories and completion equipment design.

→ Performances

- › **Tubing range** (up to 4 ½" OD) is qualified as per ISO 13679 CAL-IV, with 100% pipe body envelope.
- › **Casing sizes** (5" OD and above) are qualified as per older test protocols (NAM TEO3, URC, API 5C5 Class II procedures) prior to first release of ISO 13679. It is rated 60% PBYS in compression as a minimum requirement. The following casing derivative designs offer superior performances: derivative designs in casing sizes such as VAM TOP®-KS™, VAM TOP®-KX™, VAM TOP®-NA™... will provide higher compression and/or higher sealability performance vs. standard VAM TOP® casing.

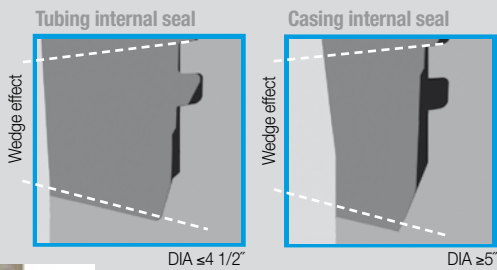
Design Features



→ Main Features

- Threaded and coupled (T&C) premium connection
- Improved hook thread design
- Energized metal-to-metal seal
- Reverse angle torque shoulder
- Extensive testing done on several standards (ISO 13679, NAM TEO 3, URC protocol...)

- Ø 2 3/8" and 2 7/8" - 8 TPI
- Ø 3 1/2" and 4 1/2" - 6 TPI
- Ø 5" and 7 3/4" - 5 TPI
- Ø 8 5/8" and above - 4 TPI
- Taper 1:16



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Joint Yield Strengths are calculated from the minimum specified material yield stress and the critical joint cross sectional area, that equals to the pipe body section.

SIZE (OD)	NOM. WEIGHT	WALL THICKNESS		API DRIFT DIAM.	SPECIAL DRIFT DIAM.	COUPLING OD (reg.)	MAKE-UP LOSS	COUPLING LENGHT	PIPE BODY SECTION	VAM TOP® REGULAR YIELD STRENGTH (1000 LB)							
		inch	mm							inch	mm	inch	inch	inch	sq. in.	55 ksi	80 ksi
2 3/8 60.33	4.60	0.190	4.83	1.901	1.910	2.677	2.444	5.906	1.304		104	117	124	130	143	163	
	5.10	0.218	5.54	1.845		2.719	2.444	5.906	1.477		118	133	140	148	162	185	
	5.80	0.254	6.45	1.773		2.746	2.891	6.772	1.692		135	152	161	169	186	212	
	6.30	0.280	7.11	1.721		2.781	2.891	6.772	1.843		147	166	175	184	203	230	
	6.60	0.295	7.49	1.691		2.801	2.891	6.772	1.928		154	174	183	193	212	241	
	7.35	0.336	8.53	1.609		2.852	2.891	6.772	2.152		172	194	204	215	237	269	
	6.40	0.217	5.51	2.347	2.370	3.222	2.519	6.024	1.812		145	163	172	181	199	227	
2 7/8 73.03	7.80	0.276	7.01	2.229		3.275	3.180	7.362	2.254		180	203	214	225	248	282	
	8.60	0.308	7.82	2.165		3.320	3.180	7.362	2.484		199	224	236	248	273	311	
	9.35	0.340	8.64	2.101		3.364	3.180	7.362	2.708		217	244	257	271	298	339	
	9.80	0.362	9.19	2.057		3.393	3.180	7.362	2.858		229	257	272	286	314	357	
	10.50	0.392	9.96	1.997		3.431	3.180	7.362	3.058		245	275	291	306	336	382	
	10.70	0.405	10.29	1.971		3.447	3.180	7.362	3.143		251	283	299	314	346	393	
	11.50	0.440	11.18	1.901		3.470	3.558	8.110	3.366		269	303	320	337	370	421	
3 1/2 88.90	6.50	0.170	4.32	3.035		3.770	3.032	7.047	1.778		142	160	169	178	196	222	
	7.70	0.216	5.49	2.943		3.846	3.032	7.047	2.228		178	201	212	223	245	279	
	9.20	0.254	6.45	2.867	2.900	3.907	3.032	7.047	2.590		207	233	246	259	285	324	
	10.20	0.289	7.34	2.797		3.961	3.032	7.047	2.915		233	262	277	292	321	364	
	12.70	0.375	9.53	2.625		4.043	3.820	8.622	3.682		295	331	350	368	405	460	
	13.70	0.413	10.49	2.549		4.095	3.820	8.622	4.005		320	360	380	401	441	501	
	14.30	0.430	10.92	2.515		4.117	3.820	8.622	4.147		332	373	394	415	456	518	
	14.70	0.449	11.40	2.477		4.142	3.820	8.622	4.304		344	387	409	430	473	538	
	15.50	0.476	12.09	2.423		4.154	4.261	9.528	4.522		362	407	430	452	497	565	
	16.70	0.510	12.95	2.355		4.196	4.261	9.528	4.791		383	431	455	479	527	599	
	18.35	0.575	14.61	2.225		4.271	4.261	9.528	5.284		423	476	502	528	581	661	
4 101.60	8.20	0.190	4.83	3.495		4.300	3.159	7.323	2.274		182	205	216	227	250	284	
	9.50	0.226	5.74	3.423		4.361	3.159	7.323	2.680		214	241	255	268	295	335	
	10.90	0.262	6.65	3.351		4.420	3.159	7.323	3.077		246	277	292	308	338	385	
	12.10	0.299	7.59	3.277		4.478	3.159	7.323	3.476		278	313	330	348	382	435	
	13.20	0.330	8.38	3.215		4.526	3.159	7.323	3.805		304	342	361	381	419	476	
	14.80	0.380	9.65	3.115		4.552	4.041	9.094	4.322		346	389	411	432	475	540	
	16.10	0.415	10.54	3.045		4.602	4.041	9.094	4.674		374	421	444	467	514	584	
	16.50	0.430	10.92	3.015		4.623	4.041	9.094	4.823		386	434	458	482	531	603	
	18.90	0.500	12.70	2.875		4.691	4.545	10.079	5.498		440	495	522	550	605	687	
	22.20	0.610	15.49	2.655		4.827	4.545	10.079	6.496		520	585	617	650	715	812	
	4 1/2 114.30	10.50	0.224	5.69	3.927	3.950	4.858	3.222	7.441	3.009		241	271	286	301	331	376
11.60		0.250	6.35	3.875	3.880	4.902	3.222	7.441	3.338		267	300	317	334	367	417	
12.60		0.271	6.88	3.833	3.880	4.937	3.222	7.441	3.600		288	324	342	360	396	450	
13.50		0.290	7.37	3.795	3.845	4.968	3.222	7.441	3.836		307	345	364	384	422	480	
15.10		0.337	8.56	3.701	3.750	5.042	3.222	7.441	4.407		353	397	419	441	485	551	
17.00		0.380	9.65	3.615		5.063	4.041	9.094	4.918		393	443	467	492	541	615	
17.70		0.402	10.21	3.571		5.096	4.041	9.094	5.175		414	466	492	518	569	647	
18.90		0.430	10.92	3.515	3.540	5.137	4.041	9.094	5.498		440	495	522	550	605	687	
21.50		0.500	12.70	3.375		5.209	4.545	10.079	6.283		503	565	597	628	691	785	
23.70	0.560	14.22	3.255		5.289	4.545	10.079	6.932		555	624	659	693	763	867		
5 127.00	13.00	0.253	6.43	4.369		5.400	4.191	10.394	3.773		208	302	340	358	377	415	472
	15.00	0.296	7.52	4.283		5.470	4.191	10.394	4.374		241	350	394	416	437	481	547
	18.00	0.362	9.19	4.151		5.577	4.191	10.394	5.275		290	422	475	501	528	580	659
	20.30	0.408	10.36	4.059		5.648	4.191	10.394	5.886		324	471	530	559	589	647	736
	20.80	0.422	10.72	4.031		5.669	4.191	10.394	6.069		334	486	546	577	607	668	759
	21.40	0.437	11.10	4.001		5.691	4.191	10.394	6.264		345	501	564	595	626	689	783
	23.20	0.478	12.14	3.919		5.750	4.191	10.394	6.791		374	543	611	645	679	747	849
	24.10	0.500	12.70	3.875		5.781	4.191	10.394	7.069		389	566	636	672	707	778	884
	14.00	0.244	6.20	4.887		5.876	4.382	10.748	4.029		222	322	363	383	403	443	504
	15.50	0.275	6.99	4.825		5.929	4.382	10.748	4.514		248	361	406	429	451	497	564
	17.00	0.304	7.72	4.767		5.978	4.382	10.748	4.962		273	397	447	471	496	546	620
5 1/2 139.70	20.00	0.361	9.17	4.653	4.700	6.071	4.382	10.748	5.828		321	466	525	554	583	641	729
	23.00	0.415	10.54	4.545	4.600	6.156	4.382	10.748	6.630		365	530	597	630	663	729	829
	26.00	0.476	12.09	4.423	4.475	6.248	4.382	10.748	7.513		413	601	676	714	751	826	939
	26.80	0.500	12.70	4.375		6.283	4.382	10.748	7.854		432	628	707	746	785	864	982
	28.40	0.530	13.46	4.315		6.327	4.382	10.748	8.275		455	662	745	786	828	910	1034
	29.70	0.562	14.27	4.251		6.372	4.382	10.748	8.718		479	697	785	828	872	959	1090
	5 3/4 146.05	18.10	0.304	7.72	5.017		6.264	3.772	9.528	5.201		286	416	468	494	520	572
6 5/8 168.28	20.00	0.288	7.32	5.924		7.081	4.427	10.866	5.734		315	459	516	545	573	631	717
	23.20	0.330	8.38	5.840		7.154	4.427	10.866	6.526		359	522	587	620	653	718	816
	24.00	0.352	8.94	5.796		7.191	4.427	10.866	6.937		382	555	624	659	694	763	867
	28.00	0.417	10.59	5.666		7.297	4.427	10.866	8.133		447	651	732	773	813	895	1017
	32.00	0.475	12.07	5.550		7.390	4.427	10.866	9.177		505	734	826	872	918	1009	1147
	36.70	0.562	14.27	5.376		7.524	4.427	10.866	10.705		589	856	963	1017	1071	1178	1338

* For 4 1/2- OD, VAM TOP® is NOT compatible with VAM TOP® HT™. A crossover must be used.

1000 lb = 4.44822 kN

External Pressure equals to collapse pressure calculated from API Bul 5C3. Internal Yield Pressure is calculated from API Bul 5C3.

		EXTERNAL PRESSURE (PSI)										MINIMUM INTERNAL YIELD PRESSURE (PSI)								NOMINAL WEIGHT	SIZE (OD)
140 ksi	150 ksi	55 ksi	80 ksi	90 ksi	95 ksi	100 ksi	110 ksi	125 ksi	140 ksi	150 ksi	55 ksi	80 ksi	90 ksi	95 ksi	100 ksi	110 ksi	125 ksi	140 ksi	150 ksi	lb./ft.	inch mm
183	196		11780	13250	13980	14720	16130	17900	19580	20660		11200	12600	13300	14000	15400	17500	19600	21000	4.60	2 3/8 60.33
207	222		13340	15010	15840	16670	18340	20840	23340	25010		12850	14460	15260	16060	17670	20080	22490	24090	5.10	
237	254		15280	17190	18150	19100	21010	23880	26740	28650		14970	16840	17780	18720	20590	23390	26200	28070	5.80	
258	276		16640	18720	19760	20800	22880	26000	29120	31200		16510	18570	19600	20630	22690	25790	28880	30950	6.30	
270	289		17410	19580	20670	21760	23930	27200	30460	32630		17390	19560	20650	21740	23910	27170	30430	32610	6.60	
301	323		19430	21860	23080	24290	26720	30360	34010	36440		19810	22280	23520	24760	27230	30950	34660	37140	7.35	
254	272		11170	12380	12940	13490	14550	16070	17490	18400		10570	11890	12550	13210	14530	16510	18490	19810	6.40	
316	338		13890	15620	16490	17360	19090	21700	24300	26040		13440	15120	15960	16800	18480	21000	23520	25200	7.80	
348	373		15300	17220	18170	19130	21040	23910	26780	28700		15000	16870	17810	18750	20620	23430	26250	28120	8.60	
379	406		16680	18770	19810	20860	22940	26070	29200	31280		16560	18630	19660	20700	22770	25870	28970	31040	9.35	
400	429		17610	19810	20910	22010	24210	27510	30820	33020		17630	19830	20930	22030	24240	27540	30850	33050	9.80	
428	459		18840	21200	22370	23550	25910	29440	32970	35330		19090	21470	22670	23860	26250	29830	33410	35790	10.50	
440	471		19360	21780	22990	24210	26630	30260	33890	36310		19720	22190	23420	24650	27120	30820	34510	36980	10.70	
471	505		20740	23330	24630	25920	28520	32410	36290	38890		21430	24100	25440	26780	29460	33480	37500	40170	11.50	
249	267		4640	4860	4950	5030	5190	5510	5740	5860		6800	7650	8080	8500	9350	10630	11900	12750	6.50	
312	334		7870	8540	8850	9160	9730	10500	11140	11510		8640	9720	10260	10800	11880	13500	15120	16200	7.70	
363	389		10540	11570	12080	12580	13530	14890	16150	16940		10160	11430	12070	12700	13970	15880	17780	19050	9.20	
408	437		12120	13640	14390	15150	16670	18940	20770	21950		11560	13010	13730	14450	15900	18060	20230	21680	10.20	
515	552		15310	17220	18180	19130	21050	23920	26790	28700		15000	16880	17810	18750	20630	23440	26250	28130	12.70	
561	601		16650	18730	19770	20820	22900	26020	29140	31220		16520	18590	19620	20650	22720	25810	28910	30980	13.70	
581	622		17240	19400	20480	21520	23710	26940	30170	32330		17200	19350	20430	21500	23650	26880	30100	32250	14.30	
603	646		17890	20130	21250	22370	24600	27960	31310	33550		17960	20210	21330	22450	24700	28060	31430	33680	14.70	
633	678		18800	21150	22330	23500	25850	29380	32900	35250		19040	21420	22610	23800	26180	29750	33320	35700	15.50	
671	719		19920	22410	23650	24900	27390	31120	34850	37340		20400	22950	24230	25500	28050	31880	35700	38250	16.70	
740	793		21970	24710	26090	27460	30210	34320	38440	41190		23000	25880	27310	28750	31630	35940	40250	43130	18.35	
318	341		4380	4560	4630	4700	4940	5230	5420	5510		6650	7480	7900	8310	9140	10390	11640	12470	8.20	
375	402		6590	7080	7310	7520	7910	8390	8730	8900		7910	8900	9390	9890	10880	12360	13840	14830	9.50	
431	462		8800	9590	9980	10350	11060	12030	12890	13400		9170	10320	10890	11460	12610	14330	16050	17190	10.90	
487	521		11070	12180	12720	13260	14290	15780	17160	18030		10470	11770	12430	13080	14390	16350	18310	19620	12.10	
533	571		12110	13620	14380	15140	16650	18910	20740	21910		11550	12990	13720	14440	15880	18050	20210	21660	13.20	
605	648		13760	15480	16340	17200	18910	21490	24070	25790		13300	14960	15790	16630	18290	20780	23280	24940	14.80	
654	701		14880	16740	17670	18600	20460	23250	26040	27900		14530	16340	17250	18160	19970	22700	25420	27230	16.10	
675	723		15350	17270	18230	19190	21110	23990	26860	28780		15050	16930	17870	18810	20690	23520	26340	28220	16.50	
770	825		17500	19690	20780	21880	24060	27340	30630	32810		17500	19690	20780	21880	24060	27340	30630	32810	18.90	
909	974		20680	23260	24560	25850	28430	32310	36190	38770		21350	24020	25350	26690	29360	33360	37360	40030	22.20	
421	451		4940	5200	5310	5410	5560	5830	6110	6250		6970	7840	8280	8710	9580	10890	12200	13070	10.50	
467	501		6360	6810	7030	7230	7580	8000	8300	8430		7780	8750	9240	9720	10690	12150	13610	14580	11.60	
504	540		7500	8120	8410	8690	9210	9890	10450	10760		8430	9490	10010	10540	11590	13170	14750	15810	12.60	
537	575		8540	9300	9660	10020	10690	11600	12400	12880		9020	10150	10710	11280	12410	14100	15790	16920	13.50	
617	661		11080	12220	12760	13300	14340	15830	17220	18100		10480	11800	12450	13110	14420	16380	18350	19660	15.10	
689	738		12370	13920	14690	15460	17010	19330	21630	22890		11820	13300	14040	14780	16260	18470	20690	22170	17.00	
725	776		13020	14640	15460	16270	17900	20340	22780	24410		12510	14070	14850	15630	17200	19540	21890	23450	17.70	
770	825		13830	15560	16420	17280	19010	21610	24200	25930		13380	15050	15890	16720	18390	20900	23410	25080	18.90	
880	942		15800	17780	18770	19750	21730	24690	27650	29630		15560	17500	18470	19440	21390	24310	27220	29170	21.50	
970	1040		17430	19610	20700	21790	23970	27240	30510	32690		17420	19600	20690	21780	23960	27220	30490	32670	23.70	
528	566	4140	5140	5430	5550	5670	5840	6050	6350	6510	4870	7080	7970	8410	8860	9740	11070	12400	13280	13.00	5 127.00
612	656	5560	7250	7830	8110	8370	8850	9480	9980	10260	5700	8290	9320	9840	10360	11400	12950	14500	15540	15.00	
739	791	7390	10500	11520	12020	12520	13470	14820	16070	16860	6970	10140	11400	12040	12670	13940	15840	17740	19010	18.00	
824	883	8240	11990	13490	14240	14990	16490	18550	20320	21470	7850	11420	12850	13570	14280	15710	17850	19990	21420	20.30	
850	910	8500	12360	13910	14680	15460	16960	19000	21610	22870	8120	11820	13290	14030	14770	16250	18460	20680	22160	20.80	
877	940	8770	12760	14360	15150	15950	17550	19940	22330	23930	8410	12240	13770	14530	15300	16820	19120	21410	22940	21.40	
951	1019	9510	13830	15560	16430	17290	19020	21620	24210	25940	9200	13380	15060	15890	16730	18400	20910	23420	25100	23.20	
990	1060	9900	14400	16200	17100	18000	19800	22500	25200	27000	9630	14000	15750	16630	17500	19250	21880	24500	26250	24.10	
564	604	3120	3610	3860	3970	4060	4230	4400	4480	4490	4270	6210	6990	7380	7760	8540	9700	10870	11650	14.00	
632	677	4040	4990	5260	5380	5480	5630	5890	6170	6320	4810	7000	7880	8310	8750	9630	10940	12250	13130	15.50	
695	744	4910	6290	6730	6940	7140	7480	7890	8170	8280	5320	7740	8710	9190	9670	10640	12090	13540	14510	17.00	
816	874	6620	8830	9630	10020	10400	11110	12090	12950	13470	6320	9190	10340	10910	11490	12640	14360	16080	17230	20.00	
928	995	7670	11160	12380	12930	13480	14540	16060	17480	18380	7260	10560	11880	12540	13200	14530	16510	18490	19810	23.00	
1052	1127	8700	12650	14230	15020	15810	17390	19760	22140	23720	8330	12120	13630	14390	15150	16660	18930	21200	22720	26.00	
1100	1178	9090	13220	14880	15700	16530	18180	20660	23140	24790	8750	12730	14320	15110	15910	17500	19890	22270	23860	26.80	
1159	1241	9580																			

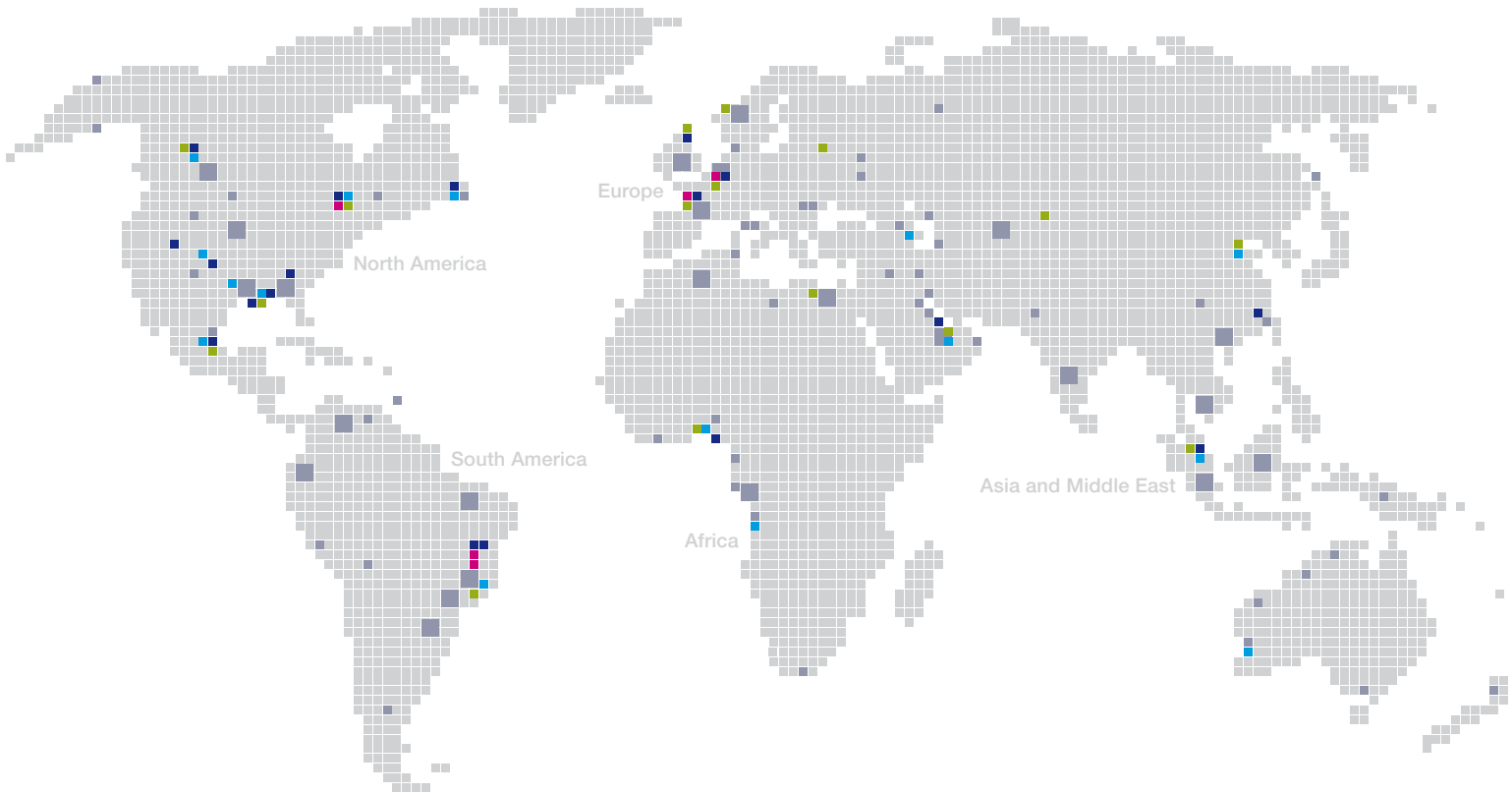
Joint Yield Strengths are calculated from the minimum specified material yield stress and the critical joint cross sectional area, that equals to the pipe body section.

SIZE (OD)	NOM. WEIGHT	WALL THICKNESS		API DRIFT DIAM.	SPECIAL DRIFT DIAM.	COUPLING OD (reg.)	MAKE-UP LOSS	COUPLING LENGHT	PIPE BODY SECTION	VAM® TOP™ REGULAR YIELD STRENGTH (1000 LB)							
		lb./ft.	inch	mm	inch	inch	inch	inch	inch	sq. in.	55 ksi	80 ksi	90 ksi	95 ksi	100 ksi	110 ksi	125 ksi
7 177.80	23.00	0.317	8.05	6.250 A		7.488	4.776	11.535	6.655	366	532	599	632	666	732	832	932
	26.00	0.362	9.19	6.151		7.565	4.776	11.535	7.549	415	604	679	717	755	830	944	1057
	29.00	0.408	10.36	6.059	6.125	7.644	4.776	11.535	8.449	465	676	760	803	845	929	1056	1183
	32.00	0.453	11.51	6.000 A		7.717	4.776	11.535	9.317	512	745	839	885	932	1025	1165	1304
	35.00	0.498	12.65	5.879	6.000	7.787	4.776	11.535	10.172	559	814	915	966	1017	1119	1272	1424
	38.00	0.540	13.72	5.795	5.875	7.852	4.776	11.535	10.959	603	877	986	1041	1096	1205	1370	1534
	41.00	0.590	14.99	5.695		7.929	4.776	11.535	11.881	653	950	1069	1129	1188	1307	1485	1663
42.70	0.625	15.88	5.625		7.980	4.776	11.535	12.517	688	1001	1127	1189	1252	1377	1565	1752	
7 5/8 193.68	26.40	0.328	8.33	6.844		8.132	4.868	11.732	7.519	414	602	677	714	752	827	940	1053
	29.70	0.375	9.53	6.750		8.213	4.868	11.732	8.541	470	683	769	811	854	940	1068	1196
	33.70	0.430	10.92	6.640	6.750	8.305	4.868	11.732	9.720	535	778	875	923	972	1069	1215	1361
	35.80	0.465	11.81	6.570		8.362	4.868	11.732	10.460	575	837	941	994	1046	1151	1308	1464
	39.00	0.500	12.70	6.500		8.419	4.868	11.732	11.192	616	895	1007	1063	1119	1231	1399	1567
	42.80	0.562	14.27	6.376		8.518	4.868	11.732	12.470	686	998	1122	1185	1247	1372	1559	1746
	45.30	0.595	15.11	6.310		8.569	4.868	11.732	13.141	723	1051	1183	1248	1314	1446	1643	1840
47.10	0.625	15.88	6.250		8.614	4.868	11.732	13.744	756	1100	1237	1306	1374	1512	1718	1924	
7 3/4 196.85	46.10	0.595	15.11	6.500A		8.693	4.915	11.850	13.374	736	1070	1204	1271	1337	1471	1672	1872
8 5/8 219.08	36.00	0.400	10.16	7.700		9.266	5.604	13.189	10.336	568	827	930	982	1034	1137	1292	1447
	40.00	0.450	11.43	7.625A		9.350	5.604	13.189	11.557	636	925	1040	1098	1156	1271	1445	1618
	44.00	0.500	12.70	7.500		9.433	5.604	13.189	12.763	702	1021	1149	1212	1276	1404	1595	1787
	49.00	0.557	14.15	7.386		9.526	5.604	13.189	14.118	776	1129	1271	1341	1412	1553	1765	1977
	52.00	0.595	15.11	7.310		9.587	5.604	13.189	15.010	826	1201	1351	1426	1501	1651	1876	2101
9 5/8 244.48	40.00	0.395	10.03	8.750A		10.264	5.589	13.189	11.454	630	916	1031	1088	1145	1260	1432	1604
	43.50	0.435	11.05	8.599	8.625	10.333	5.589	13.189	12.559	691	1005	1130	1193	1256	1381	1570	1758
	47.00	0.472	11.99	8.525	8.625	10.396	5.589	13.189	13.572	746	1086	1221	1289	1357	1493	1697	1900
	53.50	0.545	13.84	8.500A		10.520	5.589	13.189	15.546	855	1244	1399	1477	1555	1710	1943	2176
	58.40	0.595	15.11	8.375A	8.425	10.600	5.589	13.189	16.879	928	1350	1519	1604	1688	1857	2110	2363
9 7/8 250.83	62.80	0.625	15.88	8.469	8.500	10.907	5.484	12.953	18.162	999	1453	1635	1725	1816	1998	2270	2543
	65.30	0.650	16.51	8.419	8.500	10.949	5.484	12.953	18.838	1036	1507	1695	1790	1884	2072	2355	2637
	66.40	0.661	16.79	8.397	8.500	10.965	5.484	12.953	19.134	1052	1531	1722	1818	1913	2105	2392	2679
	66.90	0.668	16.97	8.383	8.500	10.978	5.484	12.953	19.322	1063	1546	1739	1836	1932	2125	2415	2705
	67.50	0.678	17.22	8.363		10.992	5.484	12.953	19.590	1077	1567	1763	1861	1959	2155	2449	2743
	68.00	0.694	17.63	8.331		11.018	5.484	12.953	20.017	1101	1601	1802	1902	2002	2202	2502	2802
	68.90	0.700	17.78	8.319		11.028	5.484	12.953	20.177	1110	1614	1816	1917	2018	2219	2522	2825
	70.50	0.720	18.29	8.279		11.059	5.484	12.953	20.708	1139	1657	1864	1967	2071	2278	2589	2899
	72.00	0.725	18.42	8.269		11.067	5.484	12.953	20.841	1146	1667	1876	1980	2084	2293	2605	2918
	76.20	0.672	17.07	8.500		11.116	5.484	12.953	19.693	1083	1575	1772	1871	1969	2166	2462	2757
10 254.000	68.70	0.688	17.48	8.468	8.500	11.142	5.484	12.953	20.127	1107	1610	1811	1912	2013	2214	2516	2818
	71.80	0.722	18.34	8.400	8.500	11.195	5.484	12.953	21.045	1157	1684	1894	1999	2105	2315	2631	2946
	73.20	0.672	17.07	9.250		11.862	5.634	13.268	21.276	1170	1702	1915	2021	2128	2340	2660	2979
10 3/4 273.05	45.50	0.400	10.16	9.875A		11.400	5.634	13.268	13.006	715	1040	1171	1236	1301	1431	1626	1821
	51.00	0.450	11.43	9.694		11.488	5.634	13.268	14.561	801	1165	1310	1383	1456	1602	1820	2039
	55.50	0.495	12.57	9.625A		11.565	5.634	13.268	15.947	877	1276	1435	1515	1595	1754	1993	2233
	60.70	0.545	13.84	9.504		11.652	5.634	13.268	17.473	961	1398	1573	1660	1747	1922	2184	2446
	65.70	0.595	15.11	9.404	9.500	11.734	5.634	13.268	18.982	1044	1519	1708	1803	1898	2088	2373	2657
	71.10	0.650	16.51	9.294		11.825	5.634	13.268	20.625	1134	1650	1856	1959	2063	2269	2578	2888
	73.20	0.672	17.07	9.250		11.862	5.634	13.268	21.276	1170	1702	1915	2021	2128	2340	2660	2979
10 7/8 276.23	72.00	0.656	16.66	10.407		11.951	5.843	13.701	21.060	1158	1685	1895	2001	2106	2317	2633	2948
11 3/4 298.45	54.00	0.435	11.05	10.724		12.463	5.713	13.425	15.463	850	1237	1392	1469	1546	1701	1933	2165
	60.00	0.489	12.42	10.625A		12.557	5.713	13.425	17.300	952	1384	1557	1644	1730	1903	2163	2422
	65.00	0.534	13.56	10.625A		12.636	5.713	13.425	18.816	1035	1505	1693	1788	1882	2070	2352	2634
	71.00	0.582	14.78	10.430		12.719	5.713	13.425	20.420	1123	1634	1838	1940	2042	2246	2553	2859
11 7/8 301.63	67.80	0.550	13.97	10.619	10.625	12.787	5.713	13.425	19.568	1076	1565	1761	1859	1957	2152	2446	2740
	71.80	0.582	14.78	10.555	10.625	12.844	5.713	13.425	20.648	1136	1652	1858	1962	2065	2271	2581	2891
13 3/8 339.73	61.00	0.430	10.92	12.359		14.085	5.698	13.386	17.487	962	1399	1574	1661	1749	1924	2186	2448
	68.00	0.480	12.19	12.259		14.175	5.698	13.386	19.445	1069	1556	1750	1847	1945	2139	2431	2722
	72.00	0.514	13.06	12.250A		14.236	5.698	13.386	20.768	1142	1661	1869	1973	2077	2284	2596	2908
	77.00	0.550	13.97	12.119		14.299	5.698	13.386	22.160	1219	1773	1994	2105	2212	2438	2770	3102
	80.70	0.580	14.73	12.059		14.350	5.698	13.386	23.314	1282	1865	2098	2215	2331	2565	2914	3264
	85.00	0.608	15.44	12.003		14.400	5.698	13.386	24.386	1341	1951	2195	2317	2439	2682	3048	3414
	86.00	0.625	15.88	11.969	12.000	14.429	5.698	13.386	25.035	1377	2003	2253	2378	2504	2754	3129	3505
	92.00	0.672	17.07	11.875		14.510	5.698	13.386	26.818	1475	2145	2414	2548	2682	2950	3352	3755
13 5/8 346.08	88.20	0.625	15.88	12.219	12.250	14.681	5.698	13.386	25.525	1404	2042	2297	2425	2553	2808	3191	3574
	118.20	0.850	21.59	11.738		15.051	5.757	13.504	34.114	1876	2729	3070	3241	3411	375		

External Pressure equals to collapse pressure calculated from API Bul 5C3. Internal Yield Pressure is calculated from API Bul 5C3.

EXTERNAL PRESSURE (PSI)										MINIMUM INTERNAL YIELD PRESSURE (PSI)										NOMINAL WEIGHT	SIZE (OD)
150 ksi	55 ksi	80 ksi	90 ksi	95 ksi	100 ksi	110 ksi	125 ksi	140 ksi	150 ksi	55 ksi	80 ksi	90 ksi	95 ksi	100 ksi	110 ksi	125 ksi	140 ksi	150 ksi	lb./ft.	inch mm	
998	3270	3830	4030	4150	4250	4430	4650	4760	4780	4360	6340	7130	7530	7930	8720	9910	11100	11890	23.00	7 177.80	
1132	4330	5410	5740	5890	6020	6230	6450	6690	6880	4980	7240	8150	8600	9050	9960	11310	12670	13580	26.00		
1267	5410	7030	7580	7840	8090	8530	9110	9560	9800	5610	8160	9180	9690	10200	11220	12750	14280	15300	29.00		
1398	6460	8610	9370	9740	10110	10780	11710	12530	13010	6230	9060	10190	10760	11330	12460	14160	15860	16990	32.00		
1526	7270	10190	11170	11650	12130	13030	14320	15490	16230	6850	9960	11210	11830	12450	13700	15560	17430	18680	35.00		
1644	7830	11390	12810	13430	14010	15130	16740	18260	19230	7430	10800	12150	12830	13500	14850	16880	18900	20250	38.00		
1782	8490	12350	13890	14660	15440	16980	19300	21560	22800	8110	11800	13280	14010	14750	16230	18440	20650	22130	41.00		
1878	8940	13010	14640	15450	16260	17890	20330	22770	24390	8590	12500	14060	14840	15630	17190	19530	21880	23440	42.70		
1128	2890	3400	3610	3710	3790	3920	4050	4080	4080	4140	6020	6780	7150	7530	8280	9410	10540	11290	26.40		
1281	3910	4790	5030	5130	5220	5350	5670	5930	6050	4730	6890	7750	8180	8610	9470	10760	12050	12910	29.70		
1458	5100	6560	7050	7270	7490	7870	8340	8690	8850	5430	7900	8880	9380	9870	10860	12340	13820	14800	33.70		
1569	5850	7690	8330	8640	8930	9480	10200	10800	11150	5870	8540	9600	10140	10670	11740	13340	14940	16010	35.80		
1679	6610	8820	9610	10000	10380	11080	12060	12920	13430	6310	9180	10330	10900	11480	12620	14340	16070	17210	39.00		
1871	7510	10820	11890	12410	12930	13930	15350	16680	17500	7090	10320	11610	12250	12900	14190	16120	18060	19350	42.80		
1971	7910	11510	12950	13670	14290	15440	17100	18670	19680	7510	10920	12290	12970	13660	15020	17070	19120	20480	45.30		
2062	8280	12040	13540	14300	15050	16550	18700	20490	21650	7890	11480	12910	13630	14340	15780	17930	20080	21520	47.10		
2006	7800	11340	12750	13320	13900	15000	16600	18090	19050	7390	10750	12090	12760	13440	14780	16790	18810	20150	46.10		
1550	3450	4100	4250	4360	4470	4680	4930	5080	5140	4460	6490	7300	7710	8120	8930	10140	11360	12170	36.00		
1734	4400	5530	5870	6020	6170	6400	6640	6830	7030	5020	7300	8220	8670	9130	10040	11410	12780	13700	40.00		
1914	5360	6950	7490	7740	7990	8420	8980	9410	9630	5580	8120	9130	9640	10140	11160	12680	14200	15220	44.00		
2118	6440	8570	9340	9700	10060	10740	11660	12460	12940	6220	9040	10170	10740	11300	12430	14130	15820	16950	49.00		
2252	7060	9660	10570	11010	11450	12280	13440	14500	15150	6640	9660	10870	11470	12070	13280	15090	16900	18110	52.00		
1718	2570	3080	3260	3330	3380	3470	3530	3530	3530	3950	5750	6460	6820	7180	7900	8980	10050	10770	40.00		
1884	3250	3810	4010	4130	4230	4410	4620	4730	4750	4350	6330	7120	7510	7910	8700	9890	11070	11860	43.50		
2036	3890	4760	4990	5090	5180	5300	5630	5880	6010	4720	6870	7720	8150	8580	9440	10730	12010	12870	47.00		
2332	5130	6620	7110	7340	7560	7950	8440	8790	8960	5450	7930	8920	9410	9910	10900	12390	13870	14860	53.50		
2532	5990	7900	8560	8880	9200	9770	10540	11190	11560	5950	8650	9740	10280	10820	11900	13520	15150	16230	58.40		
2724	6230	8260	8980	9320	9650	10290	11140	11870	12290	6090	8860	9970	10520	11080	12180	13840	15510	16610	62.80		
2826	6650	8880	9680	10070	10460	11170	12160	13040	13560	6340	9220	10370	10940	11520	12670	14400	16130	17280	65.30		
2870	6830	9150	10000	10400	10810	11560	12610	13550	14120	6440	9370	10540	11130	11710	12890	14640	16400	17570	66.40		
2898	6940	9330	10190	10610	11030	11810	12900	13880	14480	6510	9470	10650	11250	11840	13020	14800	16570	17760	66.90		
2939	7030	9580	10480	10910	11350	12160	13310	14350	14990	6610	9610	10810	11410	12020	13220	15020	16820	18020	67.50		
3003	7190	9970	10930	11400	11850	12730	13960	15100	15800	6760	9840	11070	11680	12300	13530	15370	17220	18450	68.00		
3027	7240	10120	11100	11580	12050	12940	14210	15370	16090	6820	9920	11160	11780	12410	13650	15510	17370	18610	68.90		
3106	7440	10620	11670	12180	12680	13650	15030	16310	17110	7020	10210	11480	12120	12760	14040	15950	17860	19140	70.50		
3126	7480	10750	11810	12330	12840	13830	15240	16540	17360	7070	10280	11560	12210	12850	14130	16060	17990	19270	72.00		
2954	6870	9220	10070	10480	10880	11650	12720	13680	14260	6470	9410	10580	11170	11760	12940	14700	16460	17640	67.20		
3019	7050	9610	10520	10960	11390	12210	13370	14420	15060	6620	9630	10840	11440	12040	13240	15050	16860	18060	68.70		
3157	7370	10440	11470	11970	12460	13400	14740	15990	16760	6950	10110	11370	12000	12640	13900	15790	17690	18950	71.80		
1951	2090	2470	2560	2590	2600	2610	2610	2610	2610	3580	5210	5860	6190	6510	7160	8140	9120	9770	45.50		
2184	2700	3210	3410	3490	3550	3660	3740	3750	3750	4030	5860	6590	6960	7330	8060	9160	10260	10990	51.00		
2392	3390	4020	4170	4290	4400	4610	4850	4990	5030	4430	6450	7250	7660	8060	8860	10070	11280	12090	55.50		
2621	4160	5160	5460	5580	5700	5880	6070	6390	6550	4880	7100	7980	8430	8870	9760	11090	12420	13310	60.70		
2847	4920	6310	6760	6960	7160	7510	7920	8200	8330	5330	7750	8720	9200	9690	10650	12110	13560	14530	65.70		
3094	5770	7560	8190	8480	8770	9300	9990	10560	10880	5820	8470	9520	10050	10580	11640	13230	14810	15870	71.10		
3191	6100	8060	8760	9090	9410	10010	10820	11520	11910	6020	8750	9850	10390	10940	12030	13670	15320	16410	73.20		
3159	5740	7530	8150	8440	8720	9250	9940	10510	10820	5810	8450	9500	10030	10560	11610	13200	14780	15830	72.00		
2319	2070	2440	2530	2550	2560	2570	2570	2570	2570	3560	5180	5830	6150	6480	7130	8100	9070	9720	54.00		
2595	2660	3170	3360	3440	3500	3610	3680	3680	3680	4010	5830	6550	6920	7280	8010	9100	10200	10920	60.00		
2822	3290	3870	4060	4180	4280	4470	4690	4800	4840	4370	6360	7160	7560	7950	8750	9940	11130	11930	65.00		
3063	3970	4880	5130	5240	5330	5470	5760	6030	6170	4770	6930	7800	8230	8670	9530	10840	12140	13000	71.00		
2935	3440	4080	4230	4340	4460	4670	4920	5070	5120	4460	6480	7290	7700	8110	8920	10130	11350	12160	67.80		
3097	3880	4750	4980	5080	5170	5290	5630	5880	6000	4720	6860	7720	8150	8580	9430	10720	12010	12870	71.80		
2623	1540	1670	1670	1670	1670	1670	1670	1670	1670	3090	4500	5060	5340	5630	6190	7030	7880	8440	61.00		
2917	1950	2260	2320	2330	2330	2330	2330	2330	2330	3450	5020	5650	5970	6280	6910	7850	8790	9420	68.00		
3115	2230	2660	2790	2820	2850	2880	2880	2880	2880	3700	5380	6050	6390	6730	7400	8410	9420	10090	72.00		
3324	2580	3090	3270	3340	3400	3490	3550	3550	3550	3960	5760	6480	6840	7200	7920	9000	10070	10790	77.00		
3497	2950	3450	3680	3780	3860	4000	4140	4180	4180	4170	6070	6830	7210	7590	8350	9490	10620	11380	80.70		
3658	3300	3880	4060	4180	4280	4470	4690	4810	4840	4380	6360	7160	7560	7960	8750	9940	11140	11930	85.00		
3755	3510	4190	4350	4420	4540	4760	5030	5190	5250	4500	6540	7360	7770	8180	9000	10220	11450	12270	86.00		
4023	4080	5050	5330	5450	5550	5720	5950	6250	6400	4840	7030	7910	8350	8790	9670	10990	12310	13190	92.00		
3829	3360	3980	4140	4260	4370	4570	4800	4930	4970	4420	6420	7220	7630	8030	8830	10030	11240	12040			

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