



# VAM® TOP AE

## At the TOP in Fatigue Performance



VAM TOP  
VAM TOP HC  
VAM TOP HT  
VAM TOP FE  
Drilling Riser  
Production Riser

NEW VAM  
VAM ACE  
VAM PRO  
VAM HW ST  
VAM SLIJ II  
VAM FJL  
VAM MUST  
DINO VAM  
BIG OMEGA

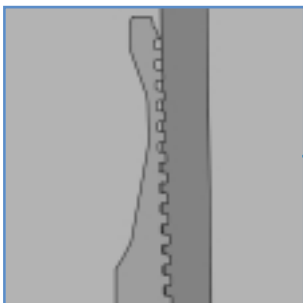


VALLOUREC & MANNESMANN TUBES  
OCTG DIVISION

WORLD LEADER IN PREMIUM CONNECTIONS

**VAM**® *TOP AE*

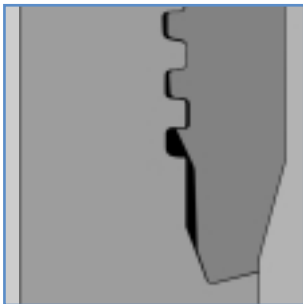
Swoosh



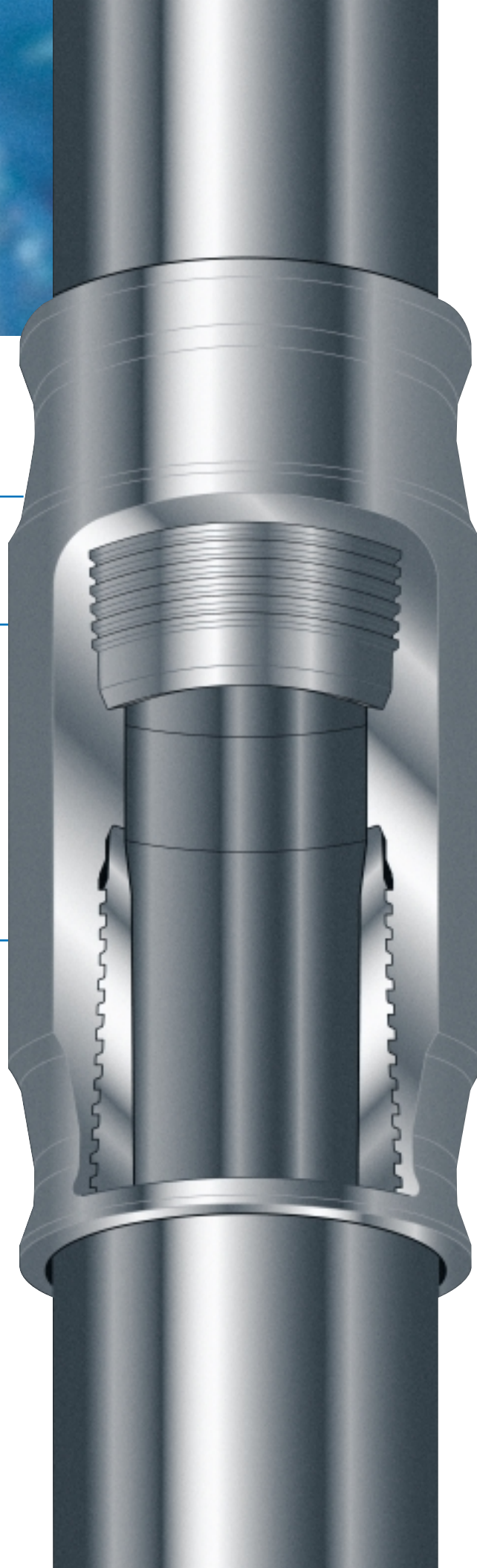
Fatigue enhanced  
thread form



Increased coupling O.D.



Seal geometry



Application designed for ...



**Drilling Riser**

- Typical life time: couple of weeks, re-usable, 'run & bury'
- Typical sizes: 9 5/8", 13 3/8", 16"
- Typical grades: L-80, P-110

**Production / Inner Riser**

- Typical life time: 25 years
- Typical sizes: 9 5/8", 10 3/4", 11 7/8", 13 3/8", 13 5/8", 16"
- Special proprietary grades: such as 110 Sour Service



**Services & capacities**

When fatigue performance reaches the TOP

Capacities you should know about

- Sizes » 4 1/2" - 16" «
- Grades » all up to high strength 125 ksi « high collapse HC or sour service
- ask also for CTOD and full string in P-110

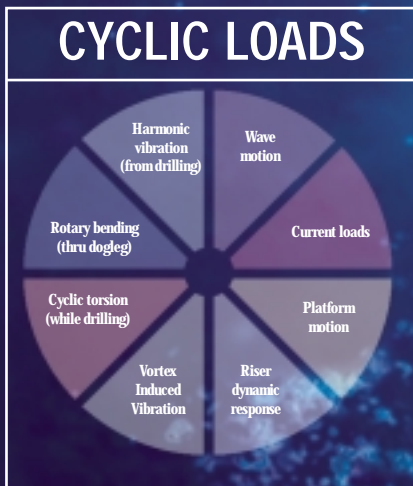
Services to take advantage of

- riser team - design specialty parts
- field assistance - running, inspection
- VAM® LICENSEE worldwide network
- local threading and production



... seeing the from a

... and field proven.



VAM® TOP FE  
The formular of success based on

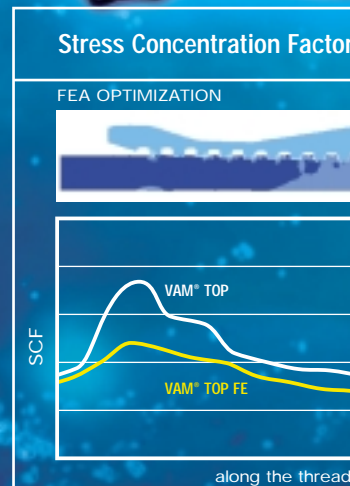
- VAM® TOP
- the industry reference standard
  - extensive qualification tests
  - excellent running and reliability

- FE package
- optimized coupling geometry
  - flexible coupling OD - swoosh design
  - extended overall fatigue performance

- Engineering expertise
- understanding of customer fatigue application
  - a combination of material, connection and fatigue
  - combined R&D and testing resources



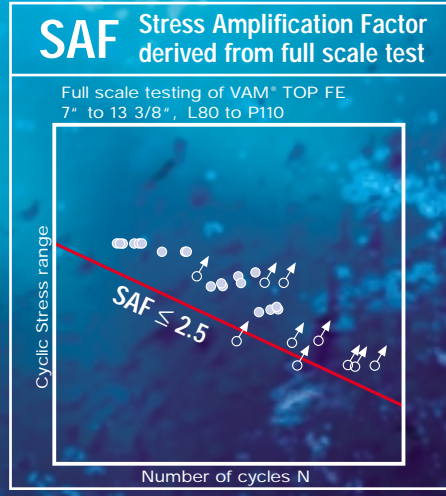
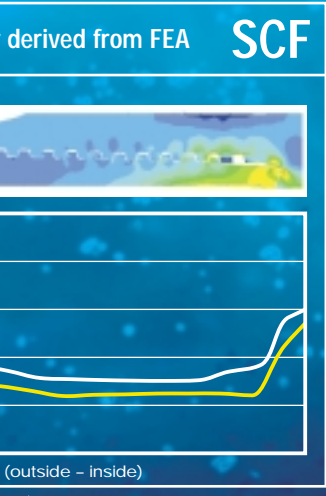
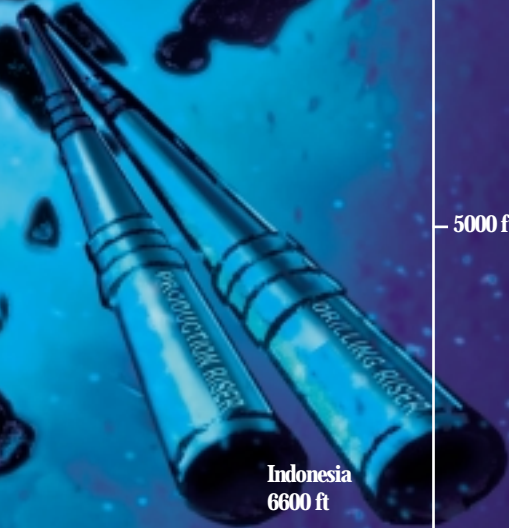
Development / optimization  
Qualification / validation



✓ State-of-the-art FEA techniques for Stress Concentration evaluation

✓ Parameters and conditions adapted to each customer needs

# riser world different point of view



♂ = run out (not failed)

✓ 30% to 40% reduction of SCF over standard VAM® TOP

meet your target

Size O.D.	Nominal weight	Plain End weight	Wall thickness		Drift diameter	Coupling O.D.	Make-up loss	Weight gain (ew)	Coupling length	Pipe body section	VAM® TOP FE				80	80 HC*
			inch	mm							Regular yield strength (1000lb.)					
inch mm	lb/ft	lb/ft	inch	mm	inch	inch	inch	lb/joint	inch	sq.in.	80	95	110	125	80	80 HC*
7 177.80	23.00	22.60	0.317	8.05	6.250 A	7.601	4.776	16.7	11.535	6.655	532	632	732	832	3830	5880
	26.00	25.70	0.362	9.19	6.151	7.691	4.776	18.8	11.535	7.549	604	717	830	944	5410	7350
	29.00	28.70	0.408	10.36	6.059	7.782	4.776	20.9	11.535	8.449	676	803	929	1056	7030	8850
	32.00	31.70	0.453	11.51	6.000 A	7.868	4.776	22.8	11.535	9.317	745	885	1025	1165	8600	10320
	35.00	34.60	0.498	12.65	5.879	7.952	4.776	24.7	11.535	10.172	814	966	1119	1272	10180	11790
	38.00	37.30	0.540	13.72	5.795	8.029	4.776	26.5	11.535	10.959	877	1041	1205	1370	11390	13160
	41.00	40.40	0.590	14.99	5.695	8.117	4.776	28.4	11.535	11.881	950	1129	1307	1485	12350	14790
42.70	42.60	0.625	15.88	5.625	8.178	4.776	29.7	11.575	12.517	1001	1189	1377	1565	13010	15930	
7 5/8 193.68	26.40	25.60	0.328	8.33	6.844	8.248	4.868	19.1	11.732	7.519	602	714	827	940	3400	5210
	29.70	29.00	0.375	9.53	6.750	8.344	4.868	21.6	11.732	8.541	683	811	940	1068	4790	6770
	33.70	33.00	0.430	10.92	6.640	8.452	4.868	24.3	11.732	9.720	778	923	1069	1215	6560	8420
	35.80	35.60	0.465	11.81	6.570	8.520	4.868	26.1	11.732	10.460	837	994	1151	1308	7690	10520
	39.00	38.00	0.500	12.70	6.500	8.587	4.868	27.8	11.732	11.192	895	1063	1231	1399	8820	11620
	42.80	42.40	0.562	14.27	6.376	8.701	4.868	30.6	11.732	12.470	998	1185	1372	1559	10810	12370
	45.30	44.70	0.595	15.11	6.310	8.761	4.868	32.0	11.732	13.141	1051	1248	1446	1643	11510	13360
47.10	46.70	0.625	15.88	6.250	8.815	4.868	33.3	11.732	13.744	1100	1306	1512	1718	12040	14260	
7 3/4 196.85	46.10	45.50	0.595	15.11	6.500 A	8.886	4.915	33.0	11.850	13.374	1070	1271	1471	1672	11340	13070
8 5/8 219.08	36.00	35.10	0.400	10.16	7.700	9.406	5.604	31.1	13.189	10.336	827	982	1137	1292	4100	6130
	40.00	39.30	0.450	11.43	7.625 A	9.506	5.604	34.0	13.189	11.557	925	1098	1271	1445	5520	7460
	44.00	43.40	0.500	12.70	7.500	9.604	5.604	36.8	13.189	12.763	1021	1212	1404	1595	6950	8780
	49.00	48.00	0.557	14.15	7.386	9.713	5.604	40.0	13.189	14.118	1129	1341	1553	1765	8570	10290
	52.00	51.00	0.595	15.11	7.310	9.784	5.604	42.0	13.189	15.010	1201	1426	1651	1876	9650	11300
9 5/8 244.48	40.00	38.90	0.395	10.03	8.750 A	10.404	5.589	34.4	13.189	11.454	916	1088	1260	1432	3090	4480
	43.50	42.70	0.435	11.05	8.599	10.486	5.589	37.1	13.189	12.559	1005	1193	1381	1570	3810	5860
	47.00	46.10	0.472	11.99	8.525	10.561	5.589	39.5	13.189	13.572	1086	1289	1493	1697	4750	6740
	53.50	52.90	0.545	13.84	8.500 A	10.705	5.589	44.1	13.189	15.546	1244	1477	1710	1943	6620	8470
	58.40	57.40	0.595	15.11	8.375 A	10.801	5.589	47.0	13.189	16.879	1350	1604	1857	2110	7890	9660
9 7/8 250.83	62.80	61.70	0.625	15.88	8.469	11.118	5.484	48.9	12.953	18.162	1453	1725	1998	2270	8260	10000
	65.30	64.00	0.650	16.51	8.419	11.165	5.484	50.2	12.953	18.838	1507	1790	2072	2355	8880	10570
	66.40	65.00	0.661	16.79	8.397	11.186	5.484	50.9	12.992	19.134	1531	1818	2105	2392	9150	10830
	66.90	65.70	0.668	16.97	8.383	11.199	5.484	51.3	13.031	19.322	1546	1836	2125	2415	9320	10990
	67.50	66.60	0.678	17.22	8.363	11.217	5.484	51.9	13.031	19.590	1567	1861	2155	2449	9570	11220
	68.00	68.00	0.694	17.63	8.331	11.247	5.484	52.7	13.071	20.017	1601	1902	2202	2502	9970	11590
	68.90	68.60	0.700	17.78	8.319	11.258	5.484	53.0	13.110	20.177	1614	1917	2219	2522	10120	11730
	70.50	70.40	0.720	18.29	8.279	11.294	5.484	54.1	13.150	20.708	1657	1967	2278	2589	10620	12190
	72.00	70.80	0.725	18.42	8.269	11.304	5.484	54.4	13.189	20.841	1667	1980	2293	2605	10740	12310
10 3/4 273.05	45.50	44.20	0.400	10.16	9.875 A	11.544	5.634	39.2	13.268	13.006	1040	1236	1431	1626	2470	3330
	51.00	49.50	0.450	11.43	9.694	11.648	5.634	42.9	13.268	14.561	1165	1383	1602	1820	3220	4790
	55.50	54.20	0.495	12.57	9.625 A	11.740	5.634	46.1	13.268	15.947	1276	1515	1754	1993	4020	6060
	60.70	59.40	0.545	13.84	9.504	11.840	5.634	49.7	13.268	17.473	1398	1660	1922	2184	5160	7120
	65.70	64.50	0.595	15.11	9.404	11.939	5.634	53.1	13.268	18.982	1519	1803	2088	2373	6300	8180
	71.10	70.10	0.650	16.51	9.294	12.045	5.634	56.7	13.268	20.625	1650	1959	2269	2578	7560	9350
11 3/4 298.45	54.00	52.60	0.435	11.05	10.724	12.618	5.713	46.4	13.425	15.463	1237	1469	1701	1933	2440	3280
	60.00	58.80	0.489	12.42	10.625 A	12.731	5.713	50.7	13.425	17.300	1384	1644	1903	2163	3180	4710
	65.00	64.00	0.534	13.56	10.625 A	12.823	5.713	54.4	13.425	18.816	1505	1788	2070	2352	3870	5920
	71.00	69.40	0.582	14.78	10.430	12.920	5.713	58.0	13.425	20.420	1634	1940	2246	2553	4880	6850
11 7/8 301.63	67.80	66.50	0.550	13.97	10.619	12.982	5.713	56.2	13.425	19.568	1565	1859	2152	2446	4090	6120
	71.80	70.20	0.582	14.78	10.555	13.046	5.713	58.7	13.425	20.648	1652	1962	2271	2581	4750	6730
13 3/8 339.73	61.00	59.40	0.430	10.92	12.359	14.241	5.698	52.2	13.386	17.487	1399	1661	1924	2186	1670	2130
	68.00	66.10	0.480	12.19	12.259	14.348	5.698	56.9	13.386	19.445	1556	1847	2139	2431	2260	2980
	72.00	70.60	0.514	13.06	12.250 A	14.420	5.698	60.0	13.386	20.768	1661	1973	2284	2596	2670	3900
	77.00	75.30	0.550	13.97	12.119	14.494	5.698	63.2	13.386	22.160	1773	2105	2438	2770	3100	4540
	80.70	79.30	0.580	14.73	12.059	14.556	5.698	65.9	13.386	23.314	1865	2215	2565	2914	3460	5350
	85.00	82.90	0.608	15.44	12.003	14.613	5.698	68.3	13.386	24.386	1951	2317	2682	3048	3870	5920
86.00	85.10	0.625	15.88	11.969	14.648	5.698	69.8	13.386	25.035	2003	2378	2754	3129	4190	6210	
13 5/8 346.08	88.20	86.80	0.625	15.88	12.219	14.900	5.698	71.1	13.386	25.525	2042	2425	2808	3191	3980	6010
	109.40	103.10	0.750	19.05	11.938	15.148	5.698	81.5	13.386	30.336	2427	2882	3337	3792	6230	8110

A: Alternate drift (special drift available upon request)

1000 lb. = 4.44822 kN

All API / proprietary grades are available upon request.

Additional sizes: please ask for VAM® TOP FE in the size range 4 1/2" to 6 5/8" and special sizes in 14" to 16".

VAM® TOP FE is NOT compatible with VAM® TOP.

External pressure equal to collapse pressure calculated from API Bul. 5 C 3 Section 2. Minimum internal Yield Pressure are calculated from API Bul 5C 3 section 4, formula 3.1.1.  
 \* The given HC (High Collapse) values are based on V&M proprietary grades.

External pressure (psi)						Minimum internal yield pressure (psi)				Make-up torque (ft-lb)				Nominal weight	Size O.D.
95	95 HC*	110	110 HC*	125	125 HC*	80	95	110	125	80	95	110	125	lb/ft	inch mm
4140	6110	4440	6110	4650	6110	6340	7530	8720	9910	9790	10770	11750	12760	23.00	7
5890	8230	6230	8620	6450	9230	7240	8600	9960	11310	10420	11400	12380	13390	26.00	177.80
7840	10250	8530	11070	9110	11750	8160	9690	11220	12750	10890	11870	12850	13860	29.00	
9740	12150	10780	13060	11710	13900	9060	10760	12460	14160	13630	14970	16300	17680	32.00	
11650	13800	13030	15160	14310	16070	9960	11830	13700	15560	16110	17800	19470	21200	35.00	
13430	15070	15130	16900	16740	18090	10800	12830	14850	16880	18400	20410	22400	24450	38.00	
14660	16990	16980	19110	19300	20490	11800	14010	16230	18440	21120	23510	25890	28330	41.00	
15450	18330	17890	20660	20330	22180	12500	14840	17190	19530	23240	25900	28540	31250	42.70	
3710	5210	3920	5210	4050	5210	6020	7150	8280	9410	11910	13270	14620	16000	26.40	7 5/8
5130	7550	5350	7890	5670	7890	6890	8180	9470	10760	12600	13960	15310	16700	29.70	193.68
7280	9490	7870	10480	8340	11100	7900	9380	10860	12340	13370	14730	16080	17480	33.70	
8640	11960	9480	13320	10200	14190	8540	10140	11740	13340	15600	17290	18960	20690	35.80	
10000	13260	11080	14830	12060	15830	9180	10900	12620	14340	17820	19830	21820	23880	39.00	
12410	14140	13930	15840	15350	16930	10320	12250	14190	16120	21670	24250	26810	29430	42.80	
13670	15310	15440	17180	17100	18390	10920	12970	15020	17070	23770	26660	29530	32470	45.30	
14300	16360	16550	18400	18700	19710	11480	13630	15780	17930	25810	28980	32130	35360	47.10	
13320	14970	15000	16790	16590	17960	10750	12760	14780	16790	24220	27150	30050	33030	46.10	7 3/4
															196.85
4350	6580	4690	6580	4930	6580	6490	7710	8930	10140	12610	13590	14560	15570	36.00	8 5/8
6020	8360	6390	9180	6630	9490	7300	8670	10040	11410	16730	18300	19860	21480	40.00	219.08
7740	9920	8420	10970	8980	11630	8120	9640	11160	12680	20870	23040	25190	27410	44.00	
9700	11690	10730	13020	11660	13860	9040	10740	12430	14130	25540	28380	31210	34110	49.00	
11010	12880	12280	14380	13440	15340	9660	11470	13280	15090	28580	31860	35130	38490	52.00	
3330	4480	3470	4480	3530	4480	5750	6820	7900	8980	12230	13180	14130	15110	40.00	9 5/8
4130	6080	4420	6080	4620	6080	6330	7510	8700	9890	16130	17670	19200	20780	43.50	244.48
5090	7420	5300	7660	5630	7820	6870	8150	9440	10730	19760	21840	23920	26060	47.00	
7340	9850	7950	10550	8440	11180	7930	9410	10900	12390	26930	30110	33270	36530	53.50	
8890	11390	9770	12160	10540	12930	8650	10280	11900	13520	31760	35680	39570	43570	58.40	
9320	11780	10280	12620	11140	13420	8860	10520	12180	13840	36900	41740	46550	≥ 50000	62.80	9 7/8
10070	12030	11170	13400	12160	14270	9220	10940	12670	14400	39430	44680	49880	≥ 50000	65.30	250.83
10400	12320	11560	13740	12610	14650	9370	11130	12890	14640	40540	45960	≥ 50000	≥ 50000	66.40	
10610	12520	11810	13960	12900	14890	9470	11250	13020	14800	41210	46730	≥ 50000	≥ 50000	66.90	
10920	12790	12160	14280	13310	15230	9610	11410	13220	15020	42210	47890	≥ 50000	≥ 50000	67.50	
11400	13220	12730	14780	13960	15770	9840	11680	13530	15370	43860	49790	≥ 50000	≥ 50000	68.00	
11580	13390	12940	14970	14210	15980	9920	11780	13650	15510	44400	≥ 50000	≥ 50000	≥ 50000	68.90	
12180	13930	13650	15590	15030	16660	10210	12120	14040	15950	46480	≥ 50000	≥ 50000	≥ 50000	70.50	
12330	14070	13830	15750	15230	16830	10280	12210	14130	16060	46940	≥ 50000	≥ 50000	≥ 50000	72.00	
2590	3330	2610	3330	2610	3330	5210	6190	7160	8140	14600	15970	17340	18740	45.50	10 3/4
3480	4790	3660	4790	3740	4790	5860	6960	8060	9160	20510	22810	25090	27440	51.00	273.05
4290	6440	4610	6440	4850	6440	6450	7660	8860	10070	25830	28960	32080	35300	55.50	
5580	7960	5880	8680	6070	8680	7100	8430	9760	11090	31710	35780	39800	43980	60.70	
6970	9210	7500	10160	7920	10750	7750	9200	10650	12110	37680	42700	47680	≥ 50000	65.70	
8480	10590	9290	11740	9990	12470	8470	10050	11640	13230	44290	≥ 50000	≥ 50000	≥ 50000	71.10	
2550	3280	2570	3280	2570	3280	5180	6150	7130	8100	19540	21650	23760	25930	54.00	11 3/4
3440	4710	3610	4710	3680	4710	5830	6920	8010	9100	27010	30320	33610	36990	60.00	298.45
4170	6180	4480	6180	4690	6180	6360	7560	8750	9940	33190	37490	41800	46230	65.00	
5240	7650	5470	8070	5760	8070	6930	8230	9530	10840	39880	45290	≥ 50000	≥ 50000	71.00	
4340	6550	4670	6550	4920	6550	6480	7700	8920	10130	35390	40060	44730	49540	67.80	11 7/8
5080	7510	5290	7810	5630	7810	6860	8150	9430	10720	39880	45290	≥ 50000	≥ 50000	71.80	301.63
1670	2130	1670	2130	1670	2130	4500	5340	6190	7030	23400	26260	29100	32030	61.00	13 3/8
2330	2980	2330	2980	2330	2980	5020	5970	6910	7850	32180	36510	40800	45250	68.00	339.73
2820	3900	2880	3900	2880	3900	5380	6390	7400	8410	38160	43500	48800	≥ 50000	72.00	
3340	4540	3490	4540	3550	4540	5760	6840	7920	9000	44550	≥ 50000	≥ 50000	≥ 50000	77.00	
3770	5350	4000	5350	4140	5350	6070	7210	8350	9490	≥ 50000	≥ 50000	≥ 50000	≥ 50000	80.70	
4180	6190	4480	6190	4690	6190	6360	7560	8750	9940	≥ 50000	≥ 50000	≥ 50000	≥ 50000	85.00	
4420	6560	4770	6560	5030	6560	6540	7770	9000	10220	≥ 50000	≥ 50000	≥ 50000	≥ 50000	86.00	
4260	6360	4570	6370	4800	6370	6420	7630	8830	10030	≥ 50000	≥ 50000	≥ 50000	≥ 50000	88.20	13 5/8
6880	9130	7400	10070	7800	10650	7710	9150	10600	12040	≥ 50000	≥ 50000	≥ 50000	≥ 50000	109.40	346.08

1 ksi = 1000 psi

1 psi = 0.006895 Mpa  
0.06895 bar

1 ft-lb = 1.355818 Nm

*The VAM® TOP FE – Fatigue Enhanced Threaded & Coupled Riser – Best in Class for Drilling and Production to reach your next water depth down to 10000 ft*



**BENEFITS FROM**

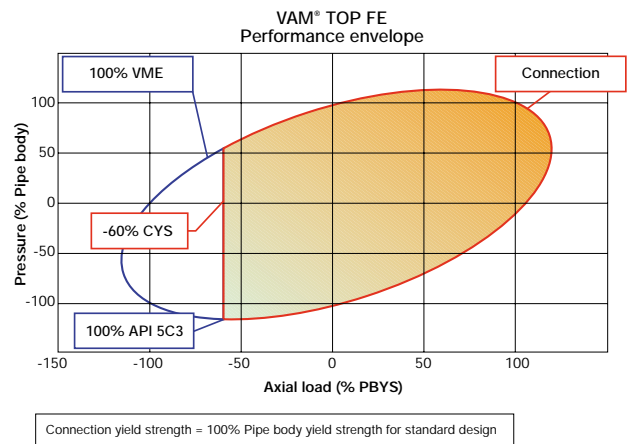
- field proven design in record setting projects
- fatigue performance based on full scale test
- choosing higher strength material such as 110 grade also for your Sour Service and High Collapse application

**Based on VAM® TOP**

- The industry reference for premium connections
- Used in highest profile projects throughout the world
- Considered by all our customers as BEST IN CLASS

**Structural Integrity** >Tension = 100% PBYS  
 >Compression = up to 60%  
 >Bending = 30 deg/100ft  
 >Higher torque can be applied upon request

**Pressure Sealability** >Internal Pressure = 100% PBYS  
 >External Pressure = 100% API



**T&C opens the door for all grades in seamless**

- Taking higher grades than 80 ksi you reach same or higher pipe performance with thinner wall thicknesses
- Thinner wall thicknesses save you string weight, therewith cost and helping to reach your deeper goal
- Even for Sour Service environment

**Fatigue compliant connection design and riser material**

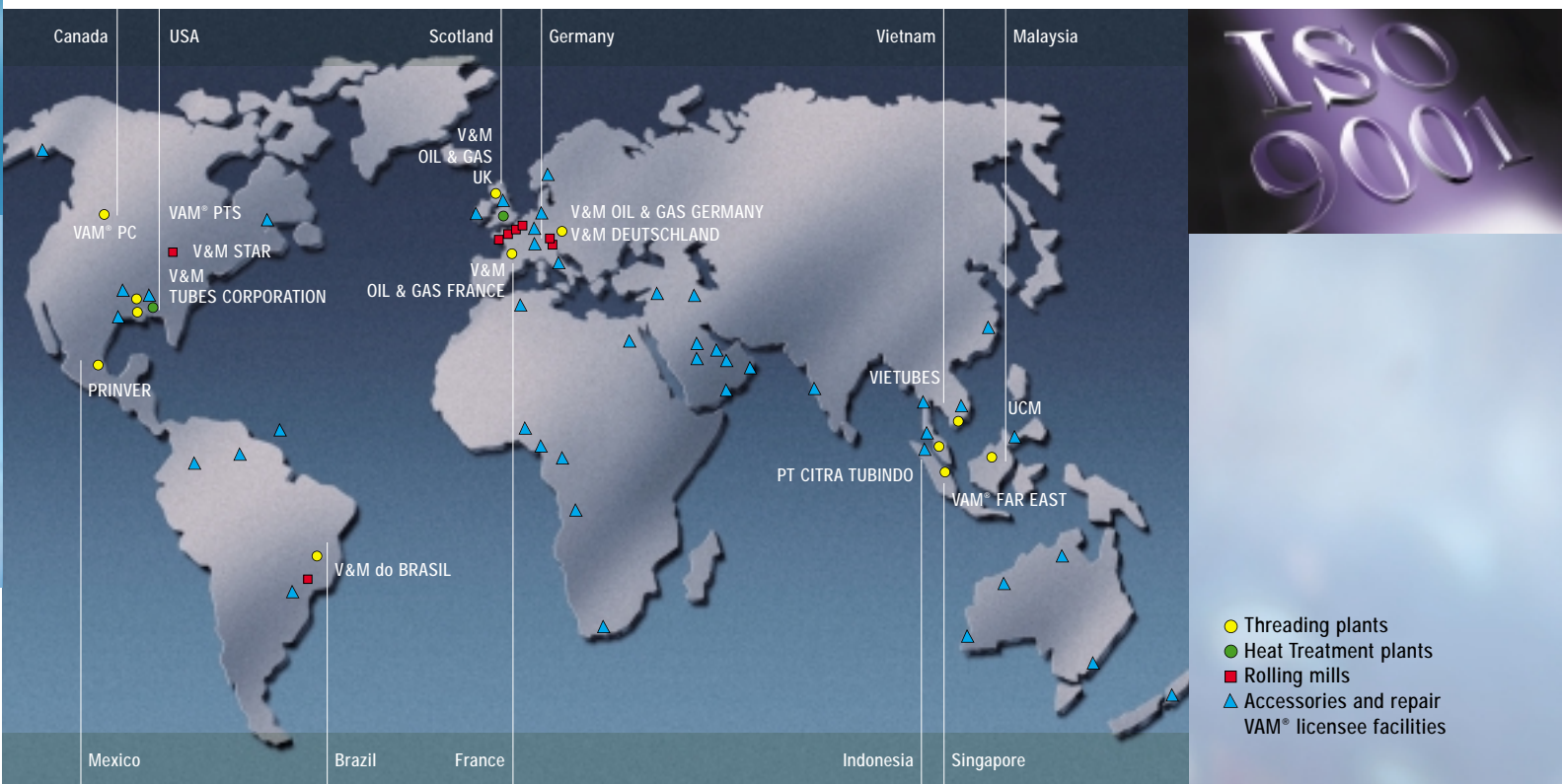
- The excellent fatigue performance of VAM® TOP FE leads to a new industry standard
- Fatigue performance of the whole product line with SAF 2.5 or better
- Extensive qualification tests\* done by independent engineering companies, JIPs and in-house

**Riser production and services from one single source**

- Worldwide manufacturing capacities and services are available for the increasing riser properties
- VAM® TOP FE design is applicable to specialty parts such as crossovers and keel joints

\* in-house full scale fatigue tests can be performed on resonant rigs

# Our worldwide network for your success



## Contact your closest riser expertise division:

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VALLOUREC & MANNESMANN TUBES  
OCTG DIVISION