

CEO MESSAGE

From the vision of becoming a leading steel pipe manufacturer in ASEAN region and being a reliable and well-known brand in the world, our missions are:

- Supplying the steel pipes with international quality standard for the oil & gas pipeline, steel structures, offshore platforms and other structural bases'
- Meeting customer satisfaction,
- Developing a new product range and expanding the market,
- Creating an equitable, dynamic and creative working environment for workers in order to bring new values to customers, the company and the community, and
- Ensuring safety and environmental sanitation.

To achieve the goals, PVPIPE is committed to maintain and develop the following core values:

- Safety and quality of products,
- Efficiency of production and business activities,
- Unity, mutual support and teamworking spirit,
- Being proactive, creative and self-motivated to generate new values, and
- Being responsible for customers, partners, the community and staff.





Apr.: Founded PVP PIPE

Oct.: Constructed the Pipe Mill at Tien Giang.

2011



Mar.: Achieved API Spec Q1 Certificate No. Q1- 1487, ISO/TS 29001 Certificate No. 1376, API Spec 5L Certificate No. 5L-0911.

2013

2010

Sep.: Achieved ISO 9001:2009 QMS Certificate No. CL-K-Q-1613 (certified by HSB).

2012

Feb.: Achieved API Spec 2B Certificate No. 2B-0148, ISO 14001:2004 Certificate No. THA 000619 certified by Bureau Veritas, OHSAS 18001:2007 Certificate No. VN.3014342 certified by Bureau Veritas





Aug.: Completely produced and delivered 4.000 tons for the Upgrading infrastructure at Bach Ho Field project



May: Completely produced and delivered 765 tons for Giant Wheel project

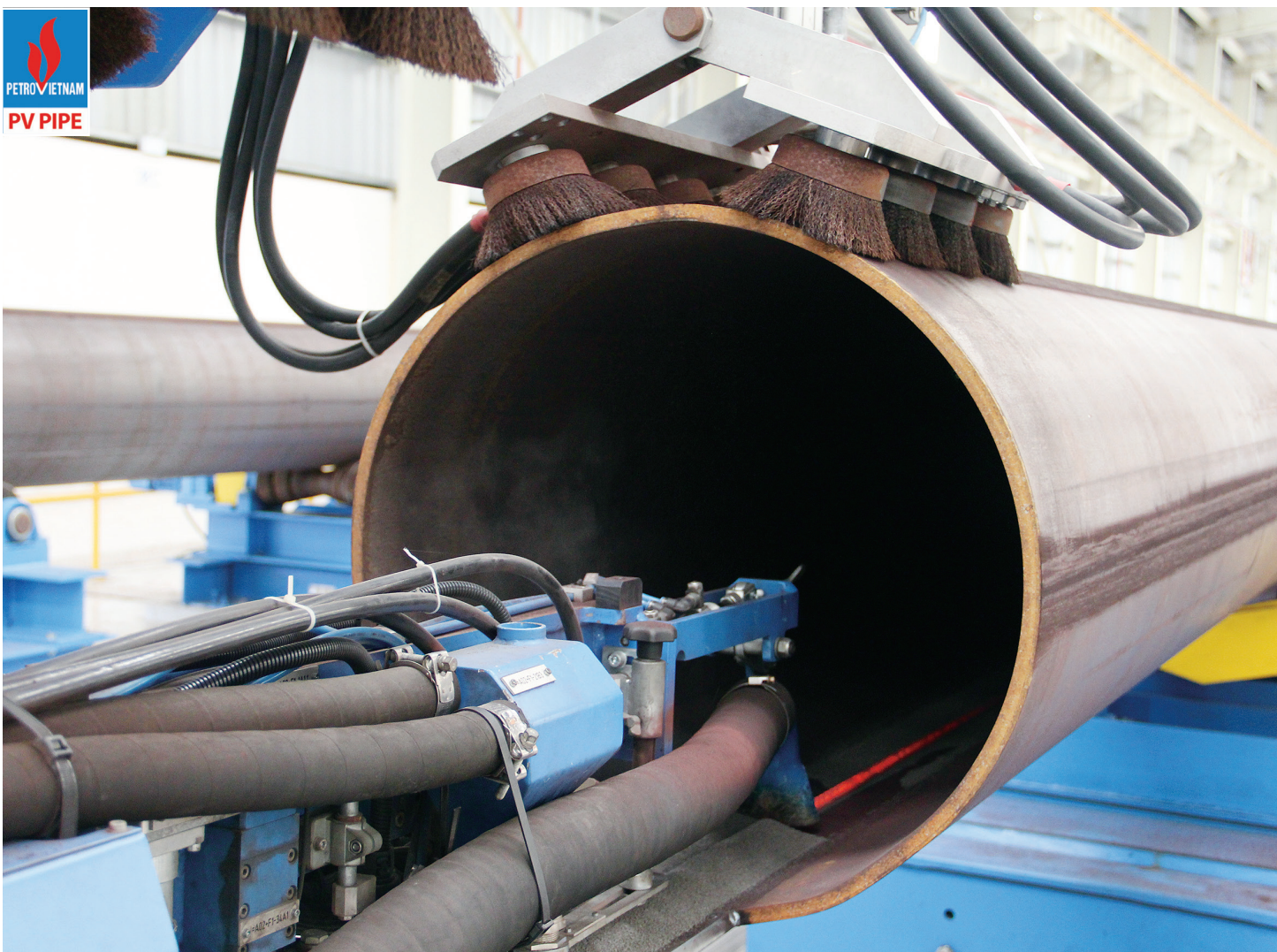
2015

2014

2016

Feb.: Completely produced and delivered 47.000 tons for Nam Con Son 2-Phase 1 gas pipeline project





Product Size

Steel Grade	Maximum Yield strength	Range thickness									
			(in)	16	18	20	22	24	26	28	30
			(mm)	406,4	457,2	508,0	558,8	609,6	660,4	711,2	762,0
	MPa (psi)	Min.	(in)	0,256	0,256	0,256	0,256	0,256	0,256	0,256	0,433
			(mm)	6,5	6,5	6,5	6,5	6,5	6,5	6,5	6,5
B	330 (48 000)	Max.	(in)	0,823	0,835	0,846	0,858	1,000	1,063	1,126	1,055
			(mm)	20,9	21,2	21,5	21,8	25,4	27,0	28,6	26,8
X52	440 (64 000)		(in)	0,752	0,764	0,776	0,783	0,909	0,969	1,024	0,913
			(mm)	19,1	19,4	19,7	19,9	23,1	24,6	26,0	23,2
X60	495 (72 000)		(in)	0,717	0,728	0,736	0,748	0,870	0,929	0,984	0,866
			(mm)	18,2	18,5	18,7	19,0	22,1	23,6	25,0	22,0
X65	530 (77 000)		(in)	0,697	0,705	0,717	0,724	0,835	0,886	0,933	0,843
			(mm)	17,7	17,9	18,2	18,4	21,2	22,5	23,7	21,4
X70	600 (87 000)		(in)	0,661	0,669	0,677	0,689	0,799	0,850	0,902	0,783
			(mm)	16,8	17,0	17,2	17,5	20,3	21,6	22,9	19,9
X80	700 (102 000)		(in)	0,630	0,638	0,646	0,657	0,776	0,831	0,886	
			(mm)	16,0	16,2	16,4	16,7	19,7	21,1	22,5	

Blank denote that out-of-capacity

Maximum length: 12.2m

MAJOR PRODUCTS (LSAW – Longitudinal Submerged Arc Welded Pipes)

Classification	Product name	Usage	Applicable Standards	OD	Production capacity (ton/year)
Steel pipe for pipeline	Oil & Gas line pipe	Oil and Gas transportation	API 5L, ISO 3183, DNV-OS-F101	(406~1524) mm	200,000 tons
	Other special purpose steel pipe	Water pipe, cooling water and sewage treatment	AWWA C - 200	(406~1524) mm	200,000 tons
Structural steel pipe	Steel pipe for general structural purpose	Offshore platform (Jacket), pipe for the plant, etc., Civil work, steel architecture, Pile, harbor construction, Other various structural bases,	API 2B, ASTM A-252, 671, 672	(406~1524) mm	200,000 tons

PIPE DIAMETER

32	34	36	38	40	42	44	46	48	52	56	60
812,8	863,6	914,4	965,2	1.016,0	1.066,8	1.117,6	1.168,4	1.219,2	1.320,8	1.422,4	1.524,0
0,402	0,406	0,409	0,413	0,417	0,421	0,417	0,425	0,429	0,433	0,433	0,441
10,2	10,3	10,4	10,5	10,6	10,7	10,6	10,8	10,9	11,0	11,0	11,2
1,071	1,083	1,134	1,146	1,157	1,165	1,213	1,220	1,228	1,280	1,295	1,307
27,2	27,5	28,8	29,1	29,4	29,6	30,8	31,0	31,2	32,5	32,9	33,2
0,925	0,929	0,945	0,988	0,996	1,004	1,043	1,051	1,059	1,102	1,114	1,126
23,5	23,6	24,0	25,1	25,3	25,5	26,5	26,7	26,9	28,0	28,3	28,6
0,878	0,890	0,898	0,937	0,945	0,957	0,992	1,000	1,004	1,035	1,047	1,059
22,3	22,6	22,8	23,8	24,0	24,3	25,2	25,4	25,5	26,3	26,6	26,9
0,854	0,866	0,874	0,913	0,921	0,929	0,965	0,972	0,976	1,020	1,028	1,039
21,7	22,0	22,2	23,2	23,4	23,6	24,5	24,7	24,8	25,9	26,1	26,4
0,795	0,807	0,815	0,850	0,858	0,866	0,898	0,906	0,909	0,949	0,957	0,969
20,2	20,5	20,7	21,6	21,8	22,0	22,8	23,0	23,1	24,1	24,3	24,6
0,740	0,748	0,756	0,787	0,795	0,803	0,835	0,839	0,846	0,882	0,890	0,898
18,8	19,0	19,2	20,0	20,2	20,4	21,2	21,3	21,5	22,4	22,6	22,8

Chemical composition for PSL 1 pipe with $t \leq 25,0$ mm

STEEL GRADE (STEEL NAME)	MASS FRACTION, BASED UPON HEAT AND PRODUCT ANALYSES ^{a,9}							
	C	Mn	P		S	V	Nb	Ti
	Max. ^b	Max. ^b	Min.	Max.	Max.	Max.	Max.	Max.
L175 or A25	0.21	0.60	-	0.030	0.030	-	-	-
L175P or A25P	0.21	0.60	0.045	0.080	0.030	-	-	-
L210 or A	0.22	0.90	-	0.030	0.030	-	-	-
L245 or B	0.26	1.20	-	0.030	0.030	c, d	c, d	d
L290 or X42	0.26	1.30	-	0.030	0.030	d	d	d
L320 or X46	0.26	1.40	-	0.030	0.030	d	d	d
L360 or X52	0.26	1.40	-	0.030	0.030	d	d	d
L390 or X56	0.26	1.40	-	0.030	0.030	d	d	d
L415 or X60	0.26 ^e	1.40 ^e	-	0.030	0.030	f	f	f
L450 or X65	0.26 ^e	1.45 ^e	-	0.030	0.030	f	f	f
L485 or X70	0.26 ^e	1.65 ^e	-	0.030	0.030	f	f	f

Chemical composition for PSL 2 pipe with $t \leq 25.0$ mm

STEEL GRADE (STEEL NAME)	MASS FRACTION, BASED UPON HEAT AND PRODUCT ANALYSES (% MAXIMUM)									CARBON EQUIVALENT ^a % MAXIMUM	
	C ^b	Si	Mn ^b	P	S	V	Nb	Ti	Other	CE _{IW}	CE _{Pcm}
L245R or BR	0.24	0.40	1.20	0.025	0.015	c	c	0.04	e, l	0.43	0.25
L290R or X42R	0.24	0.40	1.20	0.025	0.015	0.06	0.05	0.04	e, l	0.43	0.25
L245N or BN	0.24	0.40	1.20	0.025	0.015	c	c	0.04	e, l	0.43	0.25
L290N or X42N	0.24	0.40	1.20	0.025	0.015	0.06	0.05	0.04	e, l	0.43	0.25
L320N or X46N	0.24	0.40	1.40	0.025	0.015	0.07	0.05	0.04	d, e, l	0.43	0.25
L360N or X52N	0.24	0.45	1.40	0.025	0.015	0.10	0.05	0.04	d, e, l	0.43	0.25
L390N or X56N	0.24	0.45	1.40	0.025	0.015	0.10 ^f	0.05	0.04	d, e, l	0.43	0.25
L415N or X60N	0.24 ^f	0.45 ^f	1.40 ^f	0.025	0.015	0.10 ^f	0.05 ^f	0.04 ^f	g, h, l	as agreed	
L245Q or BQ	0.18	0.45	1.40	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L290Q or X42Q	0.18	0.45	1.40	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L320Q or X46Q	0.18	0.45	1.40	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L360Q or X52Q	0.18	0.45	1.50	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L390Q or X56Q	0.18	0.45	1.50	0.025	0.015	0.07	0.05	0.04	d, e, l	0.43	0.25
L415Q or X60Q	0.18 ^f	0.45 ^f	1.70 ^f	0.025	0.015	g	g	g	h, l	0.43	0.25
L450Q or X65Q	0.18 ^f	0.45 ^f	1.70 ^f	0.025	0.015	g	g	g	h, l	0.43	0.25
L485Q or X70Q	0.18 ^f	0.45 ^f	1.80 ^f	0.025	0.015	g	g	g	h, l	0.43	0.25
L245M or BM	0.22	0.45	1.20	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L290M or X42M	0.22	0.45	1.30	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L320M or X46M	0.22	0.45	1.30	0.025	0.015	0.05	0.05	0.04	e, l	0.43	0.25
L360M or X52M	0.22	0.45	1.40	0.025	0.015	d	d	d	e, l	0.43	0.25
L390M or X56M	0.22	0.45	1.40	0.025	0.015	d	d	d	e, l	0.43	0.25
L415M or X60M	0.12 ^f	0.45 ^f	1.60 ^f	0.025	0.015	g	g	g	h, l	0.43	0.25
L450M or X65M	0.12 ^f	0.45 ^f	1.60 ^f	0.025	0.015	g	g	g	h, l	0.43	0.25
L485M or X70M	0.12 ^f	0.45 ^f	1.70 ^f	0.025	0.015	g	g	g	h, l	0.43	0.25

Tensile properties for PSL 1 pipe with t ≤ 25,0 mm

TENSILE REQUIREMENTS				
Yield strength		Tensile strength		Elongation, %, min. GL = 2 in. (50.8 mm)
MPa	psi	MPa	psi	
175	25 400	310	45 000	U.S Customary Unit Equation $e=625\,000\ A^{0.2}/U^{0.9}$ SI Unit Equation $e=1944\ A^{0.2}/U^{0.9}$ e = minimum elongation in 2 in. (50.8mm) in percent rounded to nearest percent A= cross sectional area of the tensile test specimen (in. ²) (mm ²) U = specified tensile strength (psi) (MPa)
175	25 400	310	45 000	
210	30 500	335	48 600	
245	35 500	415	60 200	
290	42 100	415	60 200	
320	46 400	435	63 100	
360	52 200	460	66 700	
390	56 600	490	71 100	
415	60 200	520	75 400	
450	65 300	535	77 600	
485	70 300	570	82 700	

a. Cu ≤ 0.50 %; Ni ≤ 0.50 %; Cr ≤ 0.50 % and Mo ≤ 0.15%

b. For each reduction of 0.01 % below the specified maximum concentration for carbon, an increase of 0.05 % above the specified maximum concentration for Mn is permissible, up to a maximum of 1.65 % for grades ≥ L245 or B, but ≤ L360 or X52; up to a maximum of 1.75 % for grades > L360 or X52, but < L485 or X70; and up to a maximum of 2.00 % for grade L485 or X70.

c. Unless otherwise agreed, Nb + V ≤ 0.06 %.

d. Nb + V + Ti ≤ 0.15 %.

e. Unless otherwise agreed.

f. Unless otherwise agreed, Nb + V + Ti ≤ 0.15 %.

Tensile properties for PSL 1 pipe with t ≤ 25,0 mm

TENSILE REQUIREMENTS				
Yield strength		Tensile strength		Elongation, %, min. GL = 2 in. (50.8 mm)
245-450	35 500-65 300	415-655	60 200-95 000	
290-495	42 100-71 800	415 -655	60 200- 95 000	
245-450	35 500-65 300	415-655	60 200-95 000	
290-495	42 100-71 800	415 -655	60 200- 95 000	
320-525	63 100-76 100	435-655	63 100-95 000	
360-530	52 200-76 900	460-760	66 700-110 200	
390-545	56 600-79 000	490-760	71 100-110 200	
415-565	60 200-81 900	520-760	75 400-110 200	
245- 450	35 500-65 300	415-655	60 200-95 000	
290-495	42 100-71 800	415 -655	60 200- 95 000	
320-525	63 100-76 100	435-655	63 100-95 000	
360-530	52 200-76 900	460-760	66 700-110 200	
390-545	56 600-79 000	490-760	71 100-110 200	
415-565	60 200-81 900	520-760	75 400-110 200	
450-600	65 300-87 000	535-760	77 600-110 200	
485-635	70 300-92 100	570-760	82 700-110 200	
245-450	35 500-65 300	415-655	60 200-95 000	
290-495	42 100-71 800	415 -655	60 200- 95 000	
320-525	63 100-76 100	435-655	63 100-95 000	
360-530	52 200-76 900	460-760	66 700-110 200	
390-545	56 600-79 000	490-760	71 100-110 200	
415-565	60 200-81 900	520-760	75 400-110 200	
450-600	65 300-87 000	535-760	77 600-110 200	
485-635	70 300-92 100	570-760	82 700-110 200	

a. Based upon product analysis. For seamless pipe with t > 20.0 mm, the CE limits shall be as agreed. The CEIIW limits apply if C > 0.12 % and the CEPcm limits apply if C ≤ 0.12 %.

b. For each reduction of 0.01 % below the specified maximum for C, an increase of 0.05 % above the specified maximum for Mn is permissible, up to a maximum of 1.65 % for grades ≥ L245 or B, but ≤ L360 or X52; up to a maximum of 1.75 % for grades > L360 or X52, but < L485 or X70; up to a maximum of 2.00 % for grades ≥ L485 or X70, but ≤ L555 or X80; and up to a maximum of 2.20 % for grades > L555 or X80.

c. Unless otherwise agreed, Nb + V ≤ 0.06 %.

d. Nb + V + Ti ≤ 0.15 %.

e. Unless otherwise agreed, Cu ≤ 0.50 %; Ni ≤ 0.30 %; Cr ≤ 0.30% and Mo ≤ 0.15 %.

f. Unless otherwise agreed.

g. Unless otherwise agreed, Nb + V + Ti ≤ 0.15 %.

h. Unless otherwise agreed, Cu ≤ 0.50 %; Ni ≤ 0.50 %; Cr ≤ 0.50% and Mo ≤ 0.50 %.

i. Unless otherwise agreed, Cu ≤ 0.50 %; Ni ≤ 1.00 %; Cr ≤ 0.50% and Mo ≤ 0.50 %.

j. B ≤ 0.004 %.

k. Unless otherwise agreed, Cu ≤ 0.50 %; Ni ≤ 1,00 %; Cr ≤ 0.55% and Mo ≤ 0.80 %.

l. Unless otherwise agreed, Cu ≤ 0,50 %; Ni ≤ 1,00 %; Cr ≤ 0,55% and Mo ≤ 0, 80 %.

m. For all PSL 2 pipe grades except those grades to which footnote j already applies, the following applies. Unless otherwise agreed no intentional addition of B is permitted and residual B ≤ 0.001%.

Chemical composition for offshore pipe with $t \leq 25.0$ mm

STEEL GRADE	MASS FRACTION, BASED UPON HEAT AND PRODUCT ANALYSES (MAXIMUM)%									CARBON EQUIVALENT ^a (MAXIMUM) %		MPa
	c ^b	Si	Mn ^b	P	S	V	Nb	Ti	Other ^c	CE _{IW}	CE _{Pcm}	
	L245NO or BNO	0.14	0.40	1.35	0.020	0.010	d	d	0.04	e,f	0.36	
L290NO or X42NO	0.14	0.40	1.35	0.020	0.010	0.05	0.05	0.04	f	0.36	0.19 ^g	290-495
L320NO or X46NO	0.14	0.40	1.40	0.020	0.010	0.07	0.05	0.04	e,f	0.38	0.20 ^g	320-520
L360NO or X52NO	0.16	0.45	1.65	0.020	0.010	0.10	0.05	0.04	e	0.43	0.22 ^g	360-525
L245QO or BQO	0.14	0.40	1.35	0.020	0.010	0.04	0.04	0.04	f	0.34	0.19 ^g	245-450
L290QO or X42QO	0.14	0.40	1.35	0.020	0.010	0.04	0.04	0.04	f	0.34	0.19 ^g	290-495
L320QO or X46QO	0.15	0.45	1.40	0.020	0.010	0.05	0.05	0.04	f	0.36	0.20 ^g	320-520
L360QO or X52QO	0.16	0.45	1.65	0.020	0.010	0.07	0.05	0.04	e,h	0.39	0.20 ^g	360-525
L390QO or X56QO	0.16	0.45	1.65	0.020	0.010	0.07	0.05	0.04	e,h	0.40	0.21 ^g	390-540
L415QO or X60QO	0.16	0.45	1.65	0.020	0.010	0.08	0.05	0.04	e,h	0.41	0.22 ^g	415-565
L450QO or X65QO	0.16	0.45	1.65	0.020	0.010	0.09	0.05	0.06	e,h	0.42	0.22 ^g	450-570
L485QO or X70QO	0.17	0.45	1.75	0.020	0.010	0.10	0.05	0.06	e,h	0.42	0.23 ^g	485-605
L245MO or BMO	0.12	0.40	1.25	0.020	0.010	0.04	0.04	0.04	f	—	0.19	245-450
L290MO or X42MO	0.12	0.40	1.35	0.020	0.010	0.04	0.04	0.04	f	—	0.19	290-495
L320MO or X46MO	0.12	0.45	1.35	0.020	0.010	0.05	0.05	0.04	f	—	0.20	320-520
L360MO or X52MO	0.12	0.45	1.65	0.020	0.010	0.05	0.05	0.04	e, h	—	0.20	360-525
L390MO or X56MO	0.12	0.45	1.65	0.020	0.010	0.06	0.08	0.04	e, h	—	0.21	390-540
L415MO or X60MO	0.12	0.45	1.65	0.020	0.010	0.08	0.08	0.06	e, h	—	0.21	415-565
L450MO or X65MO	0.12	0.45	1.65	0.020	0.010	0.10	0.08	0.06	e, h	—	0.22	450-570
L485MO or X70MO	0.12	0.45	1.75	0.020	0.010	0.10	0.08	0.06	e, h	—	0.22	485-605

Chemical composition for sour service pipe with $t \leq 25.0$ mm

STEEL GRADE	MASS FRACTION, BASED UPON HEAT AND PRODUCT ANALYSES %									CARBON EQUIVALENT ^a %		MPa
	maximum									maximum		
	c ^b	Si	Mn ^b	P	S	V	Nb	Ti	Other ^{c,d}	CE _{IW}	CE _{Pcm}	
L245NS or BNS	0.14	0.40	1.35	0.020	0.003 ^e	f	f	0.04	g	0.36	0.19 ^h	245-450
L290NS or X42NS	0.14	0.40	1.35	0.020	0.003 ^e	0.05	0.05	0.04	-	0.36	0.19 ^h	290-495
L320NS or X46NS	0.14	0.40	1.40	0.020	0.003 ^e	0.07	0.05	0.04	g	0.38	0.20 ^h	320-525
L360NS or X52NS	0.16	0.45	1.65	0.020	0.003 ^e	0.10	0.05	0.04	g	0.43	0.22 ^h	360-530
L245QS or BQS	0.14	0.40	1.35	0.020	0.003 ^e	0.04	0.04	0.04	-	0.34	0.19 ^h	245-450
L290QS or X42QS	0.14	0.40	1.35	0.020	0.003 ^e	0.04	0.04	0.04	-	0.34	0.19 ^h	290-495
L320QS or X46QS	0.15	0.45	1.40	0.020	0.003 ^e	0.05	0.05	0.04	-	0.36	0.20 ^h	320-525
L360QS or X52QS	0.16	0.45	1.65	0.020	0.003 ^e	0.07	0.05	0.04	g	0.39	0.20 ^h	360-530
L390QS or X56QS	0.16	0.45	1.65	0.020	0.003 ^e	0.07	0.05	0.04	g	0.40	0.21 ^h	390-545
L415QS or X60QS	0.16	0.45	1.65	0.020	0.003 ^e	0.08	0.05	0.04	g, i, k	0.41	0.22 ^h	415-565
L450QS or X65QS	0.16	0.45	1.65	0.020	0.003 ^e	0.09	0.05	0.06	g, i, k	0.42	0.22 ^h	450-600
L485QS or X70QS	0.16	0.45	1.65	0.020	0.003 ^e	0.09	0.05	0.06	g, i, k	0.42	0.22 ^h	485-635
L245MS or BMS	0.10	0.40	1.25	0.020	0.002 ^e	0.04	0.04	0.04	-	-	0.19	245-450
L290MS or X42MS	0.10	0.40	1.25	0.020	0.002 ^e	0.04	0.04	0.04	-	-	0.19	290-495
L320MS or X46MS	0.10	0.45	1.35	0.020	0.002 ^e	0.05	0.05	0.04	-	-	0.20	320-525
L360MS or X52MS	0.10	0.45	1.45	0.020	0.002 ^e	0.05	0.06	0.04	-	-	0.20	360-530
L390MS or X56MS	0.10	0.45	1.45	0.020	0.002 ^e	0.06	0.08	0.04	g	-	0.21	390-545
L415MS or X60MS	0.10	0.45	1.45	0.020	0.002 ^e	0.08	0.08	0.06	g, i	-	0.21	415-565
L450MS or X65MS	0.10	0.45	1.60	0.020	0.002 ^e	0.10	0.08	0.06	g, i, j	-	0.22	450-600
L485MS or X70MS	0.10	0.45	1.60	0.020	0.002 ^e	0.10	0.08	0.06	g, i, j	-	0.22	485-635

Tensile properties for PSL 1 pipe with t ≤ 25,0 mm

TENSILE REQUIREMENTS				
Yield strength		Tensile strength		Elongation, %, min. GL = 2 in. (50.8 mm)
psi	MPa	psi	MPa	
35 500-65 300	415-655	60 200- 95 000	415-655	
42 100-71 800	415-655	60 200-95 000	415-655	
46 400-75 000	435-655	63 100-95 000	435-655	
52 200-76 000	460-760	66 700-110 200	460-760	
35 500-65 300	415-655	60 200- 95 000	415-655	
42 100-71 800	415-655	60 200-95 000	415-655	
46 400-75 000	435-655	63 100-95 000	435-655	
52 200-76 000	460-760	66 700-110 200	460-760	
56 600-78 300	490-760	71 100-110 200	490-760	
60 200-81 900	520-760	75 400-110 200	520-760	
65 300 -82 700	535-760	77 600-110 200	535-760	
70 300-87 700	570-760	82 700-110 200	570-760	
35 500-65 300	415-655	60 200- 95 000	415-655	
42 100-71 800	415-655	60 200-95 000	415-655	
46 400-75 000	435-655	63 100-95 000	435-655	
52 200-76 000	460-760	66 700-110 200	460-760	
56 600-78 300	490-760	71 100-110 200	490-760	
60 200-81 900	520-760	75 400-110 200	520-760	
65 300 -82 700	535-760	77 600-110 200	535-760	
70 300-87 700	570-760	82 700-110 200	570-760	

a. Based upon product analysis. The CEIIW limits apply if C - 0.12 % and the CEPcm limits apply if C ≤ 0.12%

b. For each reduction of 0.01 % below the specified maximum for C, an increase of 0.05 % above the specified maximum for Mn is permissible, up to a maximum increase of 0.20 %, but up to a maximum of 2.20% for grades ≥ L625 or X90.

c. $Al_{total} \leq 0.060 \%$; $N \leq 0.012 \%$; $Al/N \geq 2:1$ (not applicable to titanium-killed steel or titanium-treated steel).

d. Unless otherwise agreed, $Nb + V \leq 0.06 \%$.

e. $Nb + V + Ti \leq 0.15 \%$.

f. $Cu \leq 0.35 \%$; $Ni \leq 0.30 \%$; $Cr \leq 0.30 \%$; $Mo \leq 0.10 \%$; $B \leq 0.0005 \%$.

h. $Cu \leq 0.50 \%$; $Ni \leq 0.50 \%$; $Cr \leq 0.50 \%$; $Mo \leq 0.50 \%$; $B \leq 0.0005 \%$.

U.S Customary Unit Equation

$$e = 625\,000 A^{0.2} / U^{0.9}$$

SI Unit Equation

$$e = 625\,000 A^{0.2} / U^{0.9}$$

e = minimum elongation in 2 in. (50.8mm) in percent rounded to nearest percent

A = cross sectional area of the tensile test specimen (in.²) (mm²)

U = specified tensile strength (psi) (MPa)

Tensile properties for PSL 1 pipe with t ≤ 25,0 mm

TENSILE REQUIREMENTS				
Yield strength		Tensile strength		Elongation, %, min. GL = 2 in. (50.8 mm)
psi	MPa	psi	MPa	
35 500-65 300	415-655	60 200-95 000	415-655	
42 100-71 800	415-655	60 200-95 000	415-655	
46 400-76 100	435-655	63 100 -95 000	435-655	
52 200-76 900	460-760	66 700-110 200	460-760	
35 500-65 300	415-655	60 200-95 000	415-655	
42 100-71 800	415-655	60 200-95 000	415-655	
46 400-76 100	435-655	63 100 -95 000	435-655	
52 200-76 900	460-760	66 700-110 200	460-760	
56 600-79 000	490-760	71 100-110 200	490-760	
60 200-81 900	520-760	75 400 -110 200	520-760	
65 300-87 000	535-760	77 600-110 200	535-760	
70 300-92 100	570-760	82 700-110 200	570-760	
35 500-65 300	415-655	60 200-95 000	415-655	
42 100-71 800	415-655	60 200-95 000	415-655	
46 400-76 100	435-655	63 100 -95 000	435-655	
52 200-76 900	460-760	66 700-110 200	460-760	
56 600-79 000	490-760	71 100-110 200	490-760	
60 200-81 900	520-760	75 400 -110 200	520-760	
65 300-87 000	535-760	77 600-110 200	535-760	
70 300-92 100	570-760	82 700-110 200	570-760	

a. Based upon product analysis. The CEIIW limits apply if C > 0.12 % and the CEPcm limits apply if C ≤ 0.12 %.

b. For each reduction of 0.01 % below the specified maximum for C, an increase of 0.05 % above the specified maximum for Mn is permissible, up to a maximum increase of 0.20 %.

c. $Al_{total} \leq 0.060 \%$; $N \leq 0.012 \%$; $Al/N \geq 2:1$ (not applicable to titanium-killed or titanium-treated steel); $Cu \leq 0.35 \%$ (if agreed, $Cu \leq 0.10 \%$); $Ni \leq 0.30 \%$; $Cr \leq 0.30 \%$; $Mo \leq 0.15 \%$; $B \leq 0.0005 \%$.

d. For welded pipe where calcium is intentionally added, unless otherwise agreed, $Ca/S \geq 1.5$ if $S > 0.0015 \%$.

e. The maximum limit for S may be increased to ≤ 0.008 % for SMLS pipe and, if agreed, to ≤ 0.006 % for welded pipe. For such higher S levels in welded pipe, lower Ca/S ratios may be agreed.

f. Unless otherwise agreed, $Nb + V \leq 0.06 \%$.

g. $Nb + V + Ti \leq 0.15 \%$.

i. If agreed, $Mo \leq 0.35 \%$.

j. If agreed, $Cr \leq 0.45 \%$.

U.S Customary Unit Equation

$$e = 625\,000 A^{0.2} / U^{0.9}$$

SI Unit Equation

$$e = 625\,000 A^{0.2} / U^{0.9}$$

e = minimum elongation in 2 in. (50.8mm) in percent rounded to nearest percent

A = cross sectional area of the tensile test specimen (in.²) (mm²)

U = specified tensile strength (psi) (MPa)

ITEM		PSL1, PSL2 AND SOUR SERVICE	
		Optional mm (in.)	Dimensional Tolerances mm (in.)
		Outside diameter (D)	Pipe body
> 610 (24.000) to 1422 (56.000)	± 0.005 D. but maximum of ± 4.0 (0.160)		
> 1 422 (56.000)	as agreed		
Pipe ends	> 168.3 (6.625) to 610 (24.000)		± 0.005 D. but maximum of ± 1.6 (0.063)
	> 610 (24.000) to 1422 (56.000)		± 1.6 (0.063)
	> 1 422 (56.000)		as agreed
Wall thickness (t)	At any point inspection	≤ 5.0 (0.197)	± 0.5 (0.020)
		> 5.0 (0.197) to < 15.0 (0.591)	± 0.1t
		≥ 15.0 (0.591)	± 1.5 (0.060)
Weight	Individual length		+ 10%/- 3.5%
Straightness	Full length (L)		≤ 0.002L
	End straightness		≤ 4.0 (0.156) per 1.0 m from end
Out of roundness	Pipe body	> 168.3 (6.625) to 610 (24.000)	0.020 D
		> 610 (24.000) to 1422 (56.000)	0.015 D. but maximum of 15 (0.6) for D/t ≤ 75; by agreement for D/t > 75
		> 1 422 (56.000)	as agreed
	Pipe ends	> 168.3 (6.625) to 610 (24.000)	0.015 D
		> 610 (24.000) to 1422 (56.000)	0.01 D. but maximum of 13 (0.5) for D/t ≤ 75; by agreement for D/t > 75
		> 1 422 (56.000)	as agreed
Pipe end preparation	Bevel angle		30° + 5°/-0°
	Root face		1.6 mm (0.063 in) ± 0.8 mm (0.031 in)
	Squareness		≤ 1.6 mm (0.063 in)
Length			Purchase order and minimum comply with API 5L

API 5L 45TH EDITION		API 2B 6TH EDITION	
OFFSHORE SERVICE		Optional mm (in.)	Dimensional Tolerances mm (in.)
Optional mm (in.)	Dimensional Tolerances mm (in.)	Optional mm (in.)	Dimensional Tolerances mm (in.)
≥ 60.3 (2.375) to 610 (24.000)	± 0.5 (0.020) or ± 0.0075 D, whichever is the greater, but maximum of ± 3.2 (0.125)	Circumference controlled	± 1 % of the nominal circumference or within ± 12.7 (1/2 in.), whichever is less.
> 610 (24.000) to 1422 (56.000)	± 0,005 D, but maximum of ± 4,0 (0.160)		
> 1 422 (56.000)	as agreed		
≥ 60.3 (2.375) to 610 (24.000)	± 0.5 (0.020) or ± 0.005 D, whichever is the greater, but maximum of ± 1.6 (0.063)		
> 610 (24.000) to 1422 (56.000)	± 1.6 (0.063)		
> 1 422 (56.000)	as agreed		
≤ 6.0 (0.236)	± 0.5 (0.020)	At any point inspection	as agreed
> 6.0 (0.236) to 10.0 (0.394)	± 0.7 (0.028)		
> 10.0 (0.394) to 20.0 (0.787)	± 1.0 (0.039)		
> 20.0 (0.787)	+ 1.5 (0.06)/-1.0 (0.039)		
	+ 10%/- 3.5%		
	≤ 0.002L		Max. 3.2 (1/8 in.) per 3048 (10 ft) length and, 1/8 in.* (Total length in ft)/(10 ft) and, Max. 9.5 (3/8 in.) in any 12192 (40 ft)
	≤ 4.0 (0.156) per 1.0 m from end		
≥ 60.3 (2.375) to 610 (24.000)	0.015 D for D/t ≤ 75; by agreement for D/t > 75	for wall thicknesses up to and including 50 (2 in.)	1% of the nominal diameter or 6.4 (1/4 in.)
> 610 (24.000) to 1422 (56.000)	0.01 D but maximum of 10 (0.4), for D/t ≤ 75; by agreement for D/t > 75		
> 1 422 (56.000)	as agreed		
≥ 60.3 (2.375) to 610 (24.000)	0.01 D for D/t ≤ 75; by agreement for D/t > 75		
> 610 (24.000) to 1422 (56.000)	0.007 5 D but maximum of 8 (0.3), for D/t ≤ 75 by; agreement for D/t > 75		
> 1 422 (56.000)	as agreed		
	30° + 5°/-0°		30.0° ± 2.5°
	1.6 mm (0.063 in) ± 0.8 mm (0.031 in)		1.6 mm (1/16 in.) ± 0.8 mm (1/32 in.)
	≤ 1.6 mm (0.063 in)		≤ 1.6 mm (1/16 in.) per 304.8 (1 ft) of diameter and max. 6.4 (1/4 in.)
	Purchase order and minimum comply with API 5L		± 38.1 (1 1/2 in.) per 3048 (10 ft) of length

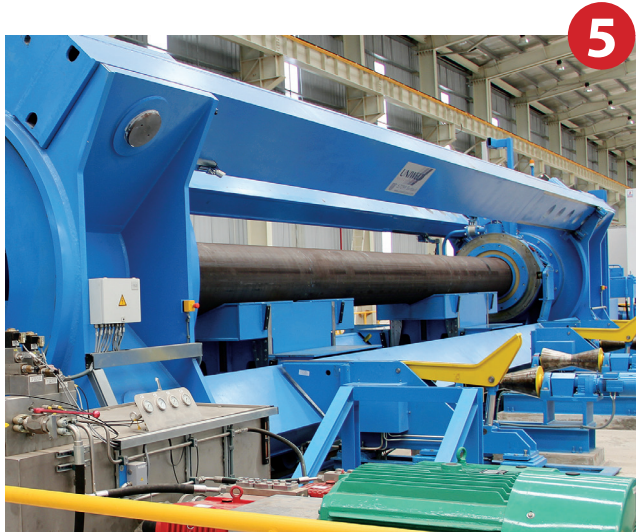
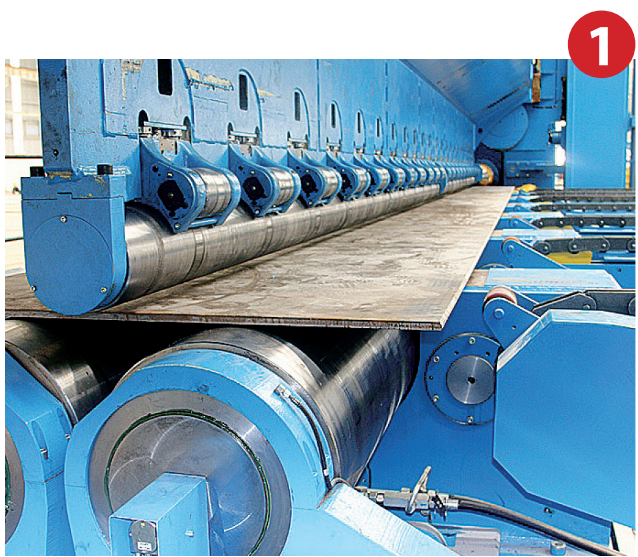
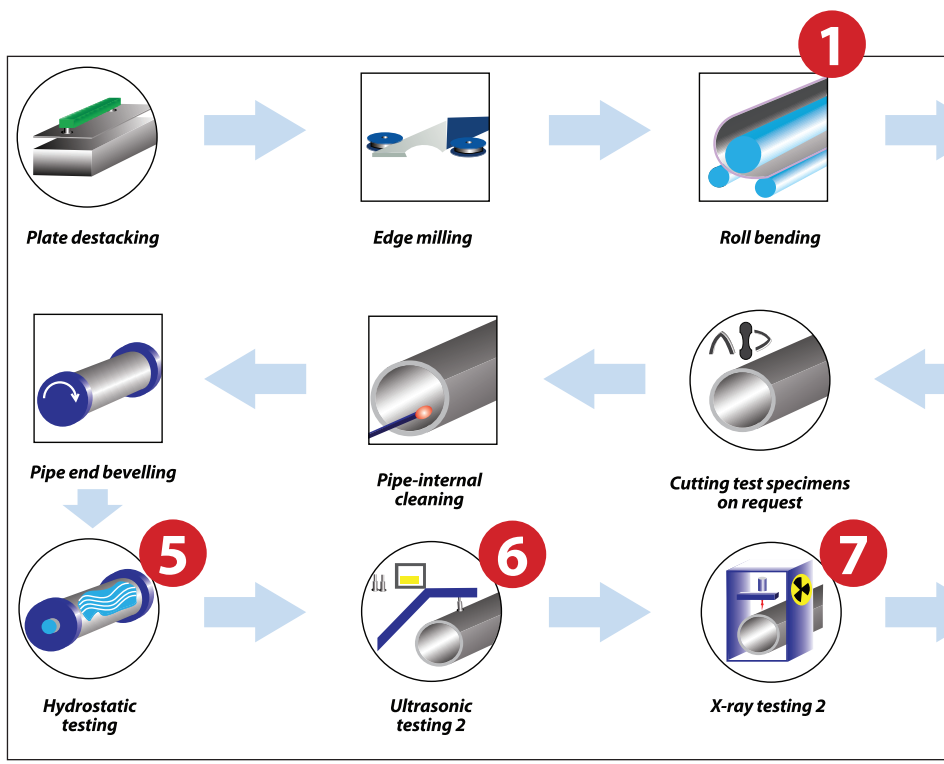
Technology
 Longitudinal Submerged Arc Welding - 3
 Roll Bending

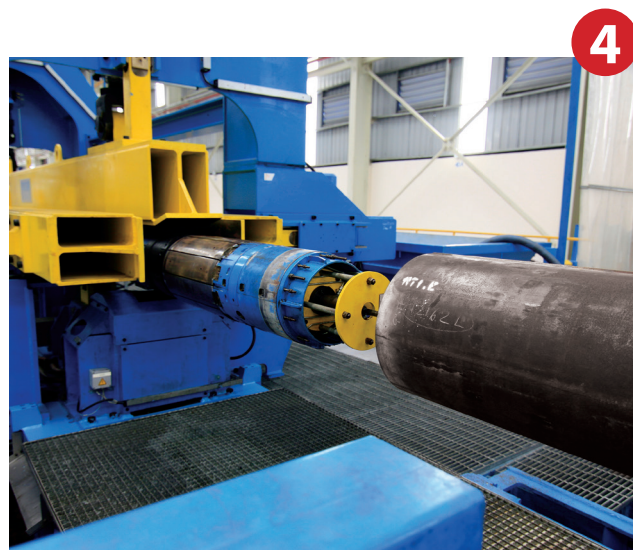
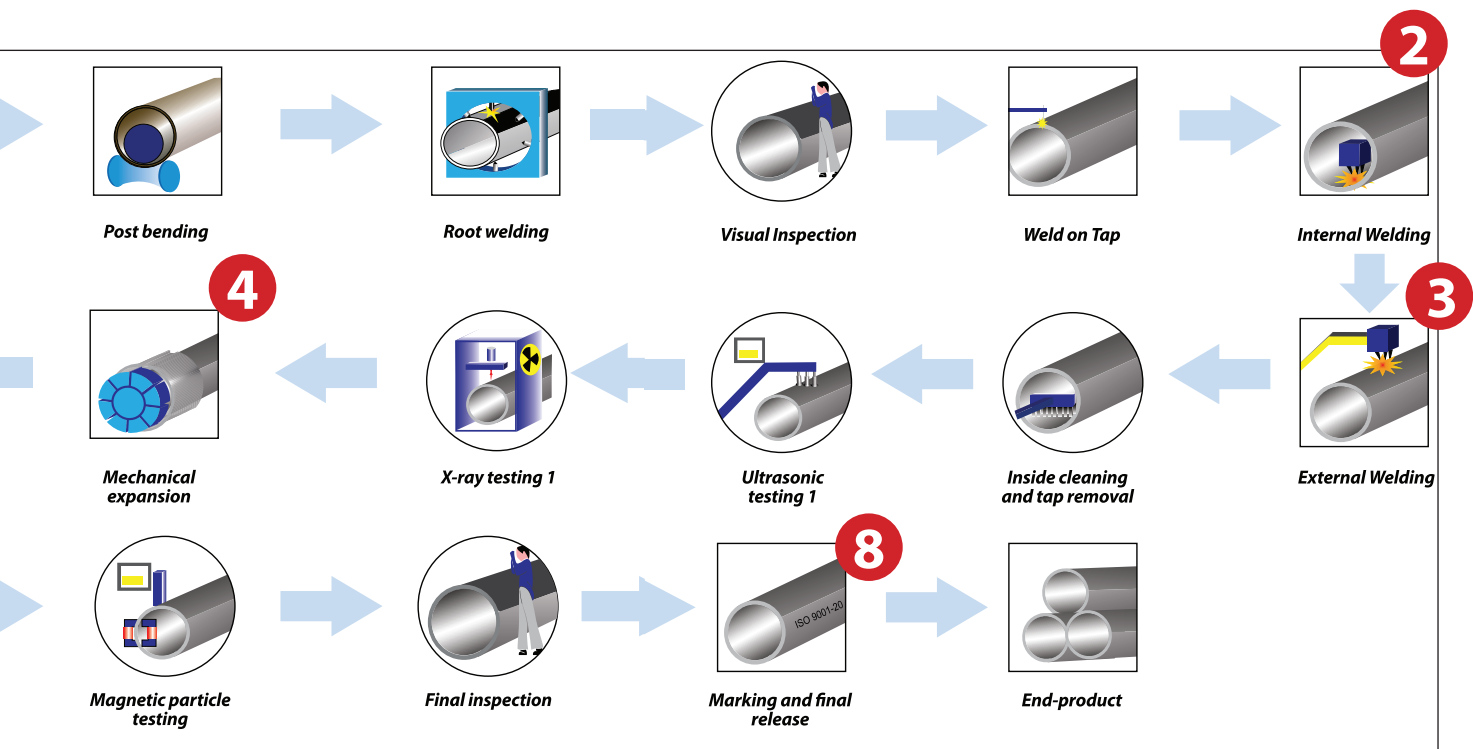
Capacity
 200.000 tons/1 year/2 shifts

Manufacturer
 Hausler

Origin
 Germany-Switzerland

Time to start the production
 2013





NDE SERVICE

PVPIPE provides automatic and manual NDE service with dependable results according to the latest standards and the criteria specified by the customer.

We are willing to respond to all your needs by quickly and professionally utilizing our modern technology and qualified NDE engineers.

Technical services

- Manual Ultrasonic Examination
- Auto Ultrasonic Examination
- Auto Radiographic Examination
- Magnetic Particle Examination
- Visual Examination

Application

- Steel Plate Inspection
- Inspection of Basic Metal, Pipe and Welding Seams
- Inspection of Accessories and Fitting in Oil and Gas Industry



WELDING SERVICE

Welding quality is our first concern. PV Pipe is committed to provide Welding service with the best quality in various heavy industries. This is assured by our investment in the latest equipment available and our well trained and skilled operators, combined with years of experience.

Technical service

Automatic SAWL (Longitudinal Submerged Arc Welding)
SMAW (Shielded Metal Arc Welding)
GMAW (Gas Metal Arc Welding)

Application

Longitudinal Welding Seam for Onshore/Offshore line Pipes
Welding for Structural Steel Pipe
Welding for Piping
Welding for Fittings (Tee-joint, Elbow, Reducer, Cross...)
Welding for Metal Structure or Ship Building Industries



CHEMICAL ANALYSIS AND MECHANICAL TESTING SERVICE

Our high-tech lab is furnished with the latest test equipment and machines in order to provide services such as Chemical composition analysis and Mechanical property testing of base metal and weld seam to completely meet the requirements of API, DNV and customer special requirements (Offshore service/Sour Service).

Technical services

- Chemical Composition Test
- Tensile Test
- Toughness Test
- DWTT (Drop Weight Tear Test)
- CTOD (Crack Tip Opening Displacement)
- Charpy-V Impact Test
- Macro/Hardness Test
- Bend Test
- HIC (Hydrogen Induced Cracking) Test
- SSCC (Sulfide Stress Corrosion Cracking) Test

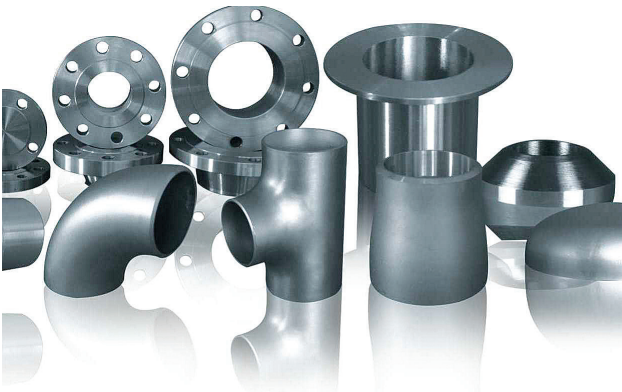
Application

- Chemical composition analysis of base metal and welding
- Mechanical Testing of Base Metal and Welding Seam



SUPPLYING STEEL STRUCTURES AND EQUIPMENTS

PV PIPE provides various types of steel plates, shape steels, welded pipes, seamless pipes, fittings, valves, etc. in accordance with customer's requirements, meeting international standards from the notable manufacturers and partners from Korea, Japan and EU.



Item	Project	Location	Client	Material Grade	Pipe Standard	Quantity (ton)	Delivery Time
1	N/A	Vietnam	Công Nghiệp	SS400	PV PIPE	68	T4/2013
2	BK 16 & BK 17	Vietnam	Vietsovpetro	API 5L Gr. X52M PSL 2	API 2B	900	T7/2013
3	N/A	Vietnam	Nhật Trường Vinh	SS400	PV PIPE	27	T5/2013
4	N/A	Vietnam	Nhật Trường Vinh	SS400B	PV PIPE	180	T8/2013
5	N/A	Vietnam	Bách Cường	A36	PV PIPE	42	T8/2013
6	Su Tu Nau Field Development	Vietnam	PTSC M&C	DNV450	DNV450	1.800	T12/2013
7	N/A	Vietnam	Thép Petro	SS400B & A36	PV PIPE	19	T9/2013
8	N/A	Vietnam	Nhật Trường Vinh	SS400B	PV PIPE	26	T10/2013
9	N/A	Vietnam	Kiên Thành	SS400	PV PIPE	43	T12/2013
10	P3 & P4	Vietnam	PVC-MS	X52M PSL 2	API 2B	510	T2/2014
11	N/A	Vietnam	Thép Petro	SS400B	PV PIPE	333	T2/2014
12	N/A	Vietnam	FE Quốc Dũng	SS400B	PV PIPE	26	T3/2014
13	Bach Ho Field Development	Vietnam	Vietsovpetro	API5L X65M PSL2	API 5L	4.000	T6/2014
14	Nam Con Son Pipeline - Stage 2	Vietnam	PVGAS	API5L X65M PSL2	API 5L	47.000	T9/2014 đến T2/2015



NHẬT TRƯỜNG VINH
 “ TIN CẬY - ĐỒNG HÀNH - PHÁT TRIỂN ”

STT	Dự án	Khu vực	Khách hàng	Mác vật liệu	Tiêu chuẩn ống	Số lượng (tấn)	Thời gian giao hàng
15	BKT Project	Vietnam	Vietsovpetro	API 2H Gr. 50, API 2W Gr.50Z, API 5L X52	API 2B	1958	T4/2015
16	BK TNG Project	Vietnam	Vietsovpetro	API 2H Gr. 50, API 2W Gr.50Z, API 5L X52	API 2B	775	T5/2015
17	BK –Thien Ung Project	Vietnam	Vietsovpetro	API 2W Gr.60, API 5L X60	API 2B	21	T5/2015
18	N/A	Vietnam	Toyota Tsusho	Q345B	PV PIPE	30	T6/2015
19	N/A	Vietnam	Toyota Tsusho	Q345B	PV PIPE	53	T10/2015
20	P7,P8,P9,P10	Vietnam	PVC MS	API 5L Gr X52/ API 2W Gr.50	API 2B	256	T12/2015
21	P7,P8,P9,P10	Vietnam	Alpha ECC	API 5L Gr X52/ API 2W Gr.50	API 2B	63	T12/2015
22	N/A	Vietnam	Toyota Tsusho	Q345B, A36	PV PIPE	116	T3/2016
23	N/A	Vietnam	Toyota Tsusho	Q345B, A36	PV PIPE	138	T4/2016
24	Giant wheel	ViVietnam	Intamin Amusement Rides	S355J2H (1.0576)	S355J2H (1.0576)	765	T5/2016
25	N/A	Vietnam	Toyota Tsusho	A36	PV PIPE	30	T8/2016

 TOYOTA TSUSHO





PV PIPE MISSION

1. Customer's satisfaction
2. Highest Quality Product
3. Continual Improvement
4. HSE

