

Questionnaire AVME 6.1 PIPE MILLS

Section	Requested Information	<i>Answer (to be provided below, or direct reference made as to where information can be found in vendor response, please forward attachments in electronic form)</i>
1.	General information	
1.1	Addresses	
	State for the mill and for the head office (in case this is different):	
	a) Postal address,	
	b) Telephone number,	
	c) Fax number	
	d) E-mail address/internet site (URL)	
1.2	Organisational	
	a) Provide an organisation chart for the pipe mill showing the names of management personnel	
	b) Indicate the names of: works manager, technical manager, QA manager, sales manager, works NDT specialist, assistant NDT specialist	
	c) Indicate the name of the specific contact person (focal point) (1) for the completion of this questionnaire and (2) for the appraisal. Indicate address, tel number and e-mail address if different from above	
	d) Indicate if future communication can occur in the	

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	English language	
	e) Indicate the number of employees in the following categories: (1) Workers (2) Office Staff (3) Laboratory staff	
1.3	Product Range	
	a) Provide the product range of each linepipe production line in terms of diameter, wall thickness and grade.	
	b) State the capacity of each linepipe production line	
	c) Provide the production capacity of each coating plant	
1.4	Subcontractors	
	a) State the name, location and the scope of supply of any subcontractors (e.g. steel, plate/coil, welding consumables, coating)	
1.5	Shipping/Storage	
	a) How is the site located with respect to road, railway and/or waterway connections, give details	
	b) Is closed storage facilities available on the premises? If yes, give dimensions and capacity	

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	c) State the dimensions and capacity of the open storage facilities available on the premises	
2	Technical information	
2.1	Standards/specifications	
2.1.1	Linepipe	
	a) Confirm for each production line your ability to produce SMLS, HFW, SAWH and/or SAWL pipe according to DEP 31.40.20.37-Gen. Feb 2013 (PSL2) latest edition.	
	b) Compliance with SP-2041 (Jul 2013). Please indicate the section number and the specific nature of the deviation giving full justification.	
	c) List for each production line any deviations from DEP 31.40.20.37-Gen. Feb 2013, that you anticipate. Please indicate the section number and the specific nature of the deviation giving full justification.	
2.1.2	Coatings	
	a) List for each coating line any deviations from DEP 31.40.30.31-Gen. Feb 2011 (PE/PP coating), that you anticipate. Please indicate the section number and the specific nature of the deviation giving full justification.	
	b) List for each coating line any deviations from DEP 31.40.30.32-Gen. Feb 2011 (FBE coating), that you	

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	anticipate. Please indicate the section number and the specific nature of the deviation giving full justification.	
	c) List for each coating line any deviations from DEP 31.40.30.35-Gen. Sep 2012 (Flow coating), that you anticipate. Please indicate the section number and the specific nature of the deviation giving full justification.	
2.2	Outline of manufacturing process	
	a) Provide a sketch of the complete layout of the site	
	b) Provide a process flow scheme for steel/plate/coil production including the quality check points	
	c) Provide a process flow scheme for each pipe production line including the quality check points	
	d) Provide a process flow scheme for each pipe coating line/type including the quality check points	
	e) State the manufacturing range of each pipe making process in terms of ISO grade, outside diameter and wall thickness. Provide a graph with OD, wall thickness and grade information.	
	f) What is the maximum pipe manufacturing throughput capacity in terms of tonnes per annum for each production line	
	h) What is the range and maximum pipe joint length that can be produced for each production line	

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	i) For the main equipment items in use for the activities below, state the equipment name, the name of the manufacturer and the age of the equipment:	
	- Steel making	
	- Plate/Strip/Coil rolling	
	- Pipe production	
	- Welding	
	- Heat treatment (if applicable) Provide details as: a. Type of furnace (e.g., batch, walking beam, etc.); b. Method of heating and fuel (if applicable); c. Number, position of thermocouples and controlled heating zones; d. Calibration frequency of the thermocouples e. Arrangement of pipes with furnace; f. Identification and control of individual pipes throughout the heat treatment cycle.	
	- Automatic NDT	
	- Mechanical testing / laboratory. Confirm type of accreditation/certification of the laboratory	
	- Describe the HIC and SSC testing facilities Confirm type of accreditation/certification of the laboratory	

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	- Describe the coating testing facilities. Confirm type of accreditation/certification of the laboratory	
2.3	Steel production and plate/coil rolling	
	a) Name of steel producer and location (if different from pipe manufacturer)	
	Give a short description of the following (for each steel producer if different from pipe manufacturer):	
	b) Steel making process	
	c) Plate/Coil rolling including any heat treatment	
	d) Process control facilities on the above	
	e) What is the nominal weight of each heat of steel?	
	f) Will the steel be de-sulphurised in the ladle?	
	g) Will vacuum degassing be employed before casting?	
	h) What is the casting method for pipe steels? (continuous or ingot, indicate percentage of total production for each method)	
	l) What method is employed to avoid/reduce centreline segregation?	
	j) Will the surfaces of the slab/ingot be scarfed in order to remove excess oxides and/or surface	

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	defects?	
	k) What is the typical target chemical composition (product analyses) per grade (acc. to clause 9.2 of DEP 31.40.20.37 Feb 2013); elements to be given: C, Mn, Si, Ni, Cu, V, Nb, Al, Ti, Mo, Cr.	
	l) Are the plates that are used for SAWL pipe thermo-mechanically controlled rolled (TMCP) and/or accelerated cooled (AC)?	
	m) Provide a typical specification for the procurement of plate/coil based on DEP 31.40.20.37, if procured from elsewhere	
	n) Provide a copy of the inspection procedure for the plate/coil employed at the rolling mill	
2.4	Pipe fabrication SMLS	
	a) What is the range of temperatures used for billet reheating?	
	b) Describe the pipe forming process(es) used.	
	c) What temperature measurement equipment is utilised to ensure that each pipe production step is performed at the correct temperature?	
	d) What is the normal finish rolling temperature?	
	e) Describe the heat treatment procedure given to pipe (where appropriate)	

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2.5	Pipe fabrication SAWL	
	Give a short description of the following pipe fabrication steps:	
	a) Pipe forming	
	b) Plate edge preparation	
	c) Seam welding	
	d) Pipe sizing/cold expansion	
	e) Process control facilities for the steps above	
2.5.1	Detailed questions on seam welding SAWL	
	a) Describe the tack welding procedure.	
	b) Provide a copy of a typical seam welding procedure specification(s) (WPS) used for SAWL	
	c) Provide a copy of the seam welding procedure qualification (WPQ) for the WPS above	
	d) What welding parameter control and monitoring is applied	
	e) Describe the handling system of the welding flux to avoid moisture pick-up.	
	f) Describe the seam tracking system	
2.6	Pipe fabrication SAWH	

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Section	Requested Information	<i>Answer (to be provided below, or direct reference made as to where information can be found in vendor response, please forward attachments in electronic form)</i>
	Give a short description of the following pipe fabrication steps:	
	a) Uncoiling and skelp welding	
	b) Levelling and coil edge preparation	
	c) Skelp end welding	
	d) Seam welding	
	e) Pipe sizing/cold expansion	
	d) Process control facilities for the steps above	
2.6.1	Detailed questions on seam welding SAWH	
	a) What inspection is carried out during/after uncoiling	
	b) How are the coil edges trimmed on line, how is the square perpendicular cut guaranteed, any statistical record	
	c) What welding procedure is adopted for skelp welding, are the edges cut, machined, bevelled. Is the weld reinforcement removed prior to levelling?	
	d) Are the coils bevelled after trimming, describe the bevelling operation, what are the typical bevel dimensions	
	e) How much offset is typically obtained between the two edges to be welded and how is this controlled	

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	f) Are the coil edges crimped, any additional control of “bamboo” shape effect	
	g) Which system is adopted to bend the coil into pipe	
	h) How is the diameter checked and tolerances guaranteed	
	i) How is the gap between the two edges to be welded controlled	
	j) Is tack welding adopted, if so which welding process	
	k) Provide a copy of a typical seam welding procedure specification (WPS); provide a copy of a typical welding procedure qualification (WPQ) of the above WPS.	
	l) What welding parameter control and monitoring/recording is applied	
	m) Describe the handling system of the welding flux to avoid moisture pick-up	
	n) Describe the seam tracking system.	
	o) How is the hot cracking at the centre of the weld metal prevented (e.g. caused by movement of the edges just prior to complete solidification)	
	p) Is an on line UT inspection available for mill control	

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Section	Requested Information	<i>Answer (to be provided below, or direct reference made as to where information can be found in vendor response, please forward attachments in electronic form)</i>
	q) Which kind of flying cutting machine is operated	
	r) Is the skelp weld intended to be left in the pipe. If so, provide a copy of a typical skelp end welding procedure (WPS); provide a copy of a typical welding procedure qualification (WPQ) of the above WPS.	
	s) Any measures to control/reduce the spring back (residual stresses) after ring cutting	
2.7	Pipe fabrication HFW	
	Give a short description of the following pipe fabrication steps:	
	a) Uncoiling and skelp welding	
	b) Pipe forming	
	c) Pipe sizing	
	d) Is an accumulator in use?	
2.7.1	Detailed questions on seam welding HFW	
	a) What inspection is carried out during/after uncoiling	
	b) Are the coil edges trimmed in line, how is the square perpendicular cut guaranteed, any statistical record	
	c) What welding procedure is adopted for skelp welding, are the edges cut, machined, bevelled. Is the	

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Section	Requested Information	<i>Answer (to be provided below, or direct reference made as to where information can be found in vendor response, please forward attachments in electronic form)</i>
	weld reinforcement removed prior to levelling.	
	d) Are the coil edges prepared after trimming, describe the edge preparation operation	
	e) How much offset is typically obtained between the two edges to be welded and how is this controlled	
	f) Are the coil edges crimped	
	g) How is the diameter checked and tolerances guaranteed	
	h) How is the energy for welding transferred to the weld area - through contact tips or induction coil? What frequency is employed for induction/resistance welding	
	i) What welding parameter control and monitoring is applied	
	j) Provide a copy of a typical seam welding procedure (WPS), provide a copy of a typical welding procedure qualification (WPQ) of the above WPS.	
	k) Describe the on-line heat treatment facilities and procedure inclusive the monitoring	
	m) Is an on line UT inspection available for mill control	
	n) What kind of flying cutting machine is operated	
2.8	Hydrostatic testing (SAWL, SAWH, HFW, SMLS)	

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	a) Describe the hydrostatic testing facility and the test procedure	
	b) Describe the test pressure and duration monitoring and recording system	
2.9	Pipe coating	
	a) State name and location of the pipe coating facility (if not on the pipe fabricators site)	
	b) Which coating types can be offered?	
	c) Provide short description on the testing facilities with respect to all tests required, as per applicable Shell DEPs	
3	Quality Assurance/Control information	
3.1	General	
	a) State the total number of personnel assigned to the quality assurance/control organisation	
	b) State the total number of personnel assigned to non-destructive inspection (NDI)	
	c) How many NDI specialists with the following qualification are employed, state UT, radiography, MPI etc: (1) Level I qualification (2) Level II qualification (3) Level III qualification	

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	(4) no qualification	
	d) Please provide a QA/QC organisation Chart	
	e) Describe your methods of appraising and approving suppliers and subcontractors	
	f) Describe the methods / systems you employ to ensure adherence to schedule	
	g) Do you have a quality improvement process in place? Is yes, please describe.	
	h) Does your firm have a corporate mission statement or quality policy? If yes, attach a copy	
	i) Do you utilise statistical process control	
	j) What is your on-time delivery percentage	%
	k) Have your employees been trained in total quality management.	
3.2	Non destructive inspection (NDI)	
	a) Please complete the applicable tables given below concerning the technical details of the NDI hardware	
	b) Provide a copy of the plate body / coil inspection procedure	
	c) Provide a copy of the plate / coil edge inspection procedure	

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	d) Provide a copy of the pipe full body inspection procedure	
	e) Provide a copy of the seam weld inspection procedure	
	f) Provide a copy of the pipe end seam weld inspection	
	g) Provide a copy of the pipe end (bevel) inspection procedure	
	h) Provide a copy of the residual magnetism inspection procedure.	
	i) Provide a drawing of the calibration / test pipe for the final UT testing. Clearly indicate the nature, location and the size of the artificial defects.	
3.3	Material/Pipe Tracing	
	Indicate which tracing system is in use for the pipe fabrication:	
	a) Computerised (describe the system)	
	b) Material sheet based (describe the system)	
	c) Other (describe the system)	
	d) Is the tracing system incorporated in the mills QA/QC control system (describe the system)	

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3.4	Final inspection	
	a) Describe the Final Inspection steps in use	
3.5	Coating inspection	
	a) Testing and inspection steps	
3.6	Documentation	
	Provide a copy of the following (in the English language):	
	a) Mill standard quality plan (including an inspection and test plan) for plate/coil production	
	b) Mill standard quality plan (including an inspection and test plan) for pipe fabrication	
	c) Provide a copy of any quality assurance system accreditation certificates i.e. ISO 9001	
	d) Provide a copy of the last external quality system audit report from the accreditation body	
	e) Provide a copy of a typical Manufacturing Procedure Specification based on DEP 31.40.20.37-Gen.	
4	Health, Safety and Environment (HSE)	
	a) Do you have a documented HSE system	

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	b) Are you certified to ISO 14001 or equivalent? If so please provide copy of certificate		
	c) Please advise your last two year statistics for number of injuries	2012	2013
	<ul style="list-style-type: none"> - Lost workday cases - Restricted workday cases - Medical attention only cases - Fatalities 		
	d) Who has responsibilities for safety at your facilities		
	safety supervisor personnel department foreman other		
	e) Do you have a written safety / loss prevention program		
	f) What steps do you take to ensure compliance with safety rules		
	g) Do you have an orientation program for new personnel		
	h) Do you have an ongoing safety training program		
	If yes: does it include instructions in the following	yes	no

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Section	Requested Information	<i>Answer (to be provided below, or direct reference made as to where information can be found in vendor response, please forward attachments in electronic form)</i>	
	<ul style="list-style-type: none"> - safe working practises - implementation and enforcement of the safety program - safety meetings - emergency procedures - accident investigation - fire prevention/protection - new worker orientation - visual aids/safety posters - safety equipment/protection - equipment maintenance - administrative and technical matters 		
	i) Do you have any organised, written safety recognition or other motivational program for safety		
5	Supply History		
	a) Please complete the following table on supply history for oil and gas projects supplied in the last 5 years, extent the table as required		
	b)Any supply record for HIC resistant line pipe (sour service tested in solution A), supply copy of HIC test report(s)		

Supply history

Customer	Project	Year	Grade	Dimensions (diam., WT, length)	Amount supplied (tonnes)	Coating type/applicator	Service type (oil, gas, sour, non-sour)

Specific Non Destructive Inspection (NDI) questionnaires

3.2.1	Plate body inspection	
	ultrasonic inspection	
3.2.1.1	location of test set-up in process stream	
3.2.1.2	identification of test-stand	
3.2.1.3	equipment manufacturer and equipment type	

3.2.1.4	inspection method	Reflection (Pulse-echo) / Continuous / Transmission
3.2.1.5	overall P.R.F. in Hz.	Hz
3.2.1.6	scan speed in millimetre per second	
3.2.1.7	pulse pitch in mm/pulse	
3.2.1.8	probe manipulation	Manual / Automated
3.2.1.9	mechanical construction	
3.2.1.10	guiding principle	
3.2.1.11	please provide a drawing of the probe arrangement and scan pattern	
3.2.1.12	probe manufacturer and probe type	
3.2.1.13	sound frequency in MHz.	MHz
3.2.1.14	probe dimensions in mm	mm
3.2.1.15	Water path length in mm	mm
3.2.1.16	coupling check present	Yes / No
3.2.1.17	type of coupling check if present	Transmission / Surface Scattering
3.2.1.18	coupling control present	Yes / No
3.2.1.19	dynamic range of coupling control if present	dB
3.2.1.20	alarm monitor present	Yes / No
3.2.1.21	warning signals	Optical / Acoustical / Paint spray / Grinding / None
3.2.1.22	place of mark if present	

3.2.1.23	is a record present	Yes / No
3.2.1.24	can this record be retrieved	Yes / No
3.2.1.25	* monitor gate start	Micro-seconds
3.2.1.26	* monitor gate end	Micro-seconds
3.2.1.27	number of echoes needed for an alarm	1 / 2 / 3 / 4 /
3.2.1.28	* reset time of the alarm monitor	Milli-seconds
3.2.1.29	* dynamic triggering	dB compared to static triggering
3.2.1.30	* linearity of the amplifiers	
3.2.1.31	zero suppression	On / Not in use / Not present
3.2.1.32	* linearity of time base	
3.2.1.33	time dependent gain	On / Not in use / Not present
3.2.1.34	interference suppression	On / Not in use / Not present
3.2.1.35	damping control	On / Not in use / Not present
3.2.1.36	voltage supply stabilisation	Yes / No
3.2.1.37	effect of crane on alarm circuits	
3.2.1.38	effect of crane on screen image	
3.2.1.39	electronic construction	
3.2.1.40	equipment check	Times per year
3.2.1.41	calibration procedure to be provided if available	
3.2.1.42	calibration check	Times per shift

3.2.1.43	reference targets	
3.2.1.44	acceptance / rejection criterion	
3.2.1.45	other remarks	

3.2.2	edge inspection	
	ultrasonic inspection	
3.2.2.1	location of test set-up in process stream	
3.2.2.2	identification of test-stand	
3.2.2.3	equipment manufacturer and equipment type	
3.2.2.4	inspection method	Reflection (Pulse-echo) / Continuous / Transmission
3.2.2.5	overall P.R.F. in Hz	Hz
3.2.2.6	scan speed in 22millimetre per second	mm/s
3.2.2.7	pulse pitch in mm/pulse	mm/pulse
3.2.2.8	probe manipulation	Manual / Automated
3.2.2.9	mechanical construction	
3.2.2.10	guiding principle	
3.2.2.11	please provide a drawing of the probe arrangement	
3.2.2.12	probe manufacturer and probe type	
3.2.2.13	sound frequency in MHz.	MHz
3.2.2.14	probe dimensions in mm	mm

3.2.2.15	Water path length in mm	mm
3.2.2.16	coupling check present	Yes / No
3.2.2.17	type of coupling check if present	Transmission / Surface Scattering
3.2.2.18	coupling control present	Yes / No
3.2.2.19	dynamic range of coupling control if present	dB
3.2.2.20	alarm monitor present	Yes / No
3.2.2.21	warning signals	Optical / Acoustical / Paint spray / Grinding
3.2.2.22	place of mark if present	
3.2.2.23	is a record present	Yes / No
3.2.2.24	can this record be retrieved	Yes / No
3.2.2.25	* monitor gate start	Micro-seconds
3.2.2.26	* monitor gate end	Micro-seconds
3.2.2.27	* number of echoes needed for an alarm	1 / 2 / 3 / 4 /
3.2.2.28	* reset time of the alarm monitor	Milli-seconds
3.2.2.29	* static triggering	dB
3.2.2.30	* dynamic triggering	dB
3.2.2.31	* linearity of the amplifiers	
3.2.2.32	zero suppression	On / Not in use / Not present
3.2.2.33	* linearity of time base	
3.2.2.34	time dependent gain	On / Not in use / Not present

3.2.2.35	interference suppression	On / Not in use / Not present
3.2.2.36	damping control	On / Not in use / Not present
3.2.2.37	voltage supply stabilisation	Yes / No
3.2.2.38	effect of crane on alarm circuits	
3.2.2.39	effect of crane on screen image	
3.2.2.40	electronic construction	
3.2.2.41	equipment check	Times per year
3.2.2.42	calibration procedure to be provided if available	
3.2.2.43	calibration check	Times per shift
3.2.2.44	reference targets	
3.2.2.45	acceptance / rejection criterion	
3.2.2.46	zone inspected	mm
3.2.2.47	other remarks	

3.2.3	rotative (full body) inspection	
	ultrasonic inspection	
3.2.3.1	location of test set-up in process stream	
3.2.3.2	identification of test stand	
3.2.3.3	equipment manufacturer and equipment type	
3.2.3.4	rotation of	Pipe / Probes

3.2.3.5	circumferential speed in mm/s	mm/s
3.2.3.6	pitch (advancement per revolution)	mm
3.2.3.7	probe location on pipe circumference	Top / Bottom
3.2.3.8	mechanical construction	
3.2.3.8	guiding principle	
3.2.3.9	pipe length not inspected	mm
3.2.3.10	please provide a drawing of the probe arrangement	
3.2.3.11	please fill in the table on next page!	
3.2.3.12	voltage supply stabilization	Yes / No
3.2.3.13	effect of crane on alarm circuits	
3.2.3.14	effect of crane on screen image	
3.2.3.15	electronic construction	
3.2.3.16	equipment check:	Times per year
3.2.3.17	calibration procedure to be provided if available	
3.2.3.18	calibration check	Times per shift
3.2.3.19	reference targets	
3.2.3.20	acceptance / rejection! criterion	
3.2.3.21	is a record present	Yes / No
3.2.3.22	can this record be retrieved	Yes / No
3.2.3.23	other remarks	

SCAN (extend table when required)									
number of probes									
probe manufacturer									
probe type									
angle of incidence in water									
angle of incidence in steel									
sound frequency [MHz]									
probe diameter or length [mm]									
probe width [mm]									
water path [mm]									
water temperature [°C]									
type of coupling check									
dynamic range coupling control [dB]									
P.R.F. [Hz]									
pulse pitch [mm/pulse]									
monitor present									
warning signals:									
optical									
acoustical									

paint spray, manual									
grinding									
paint spray, automatic									
place of mark if present									
linearity screen [dB]									
linearity timebase [dB]									
number of echoes for an alarm									
alarm pitch [mm/alarm]									
reset time of monitor [milli-seconds]									
skip distance inside defect monitor									
skip distance outside defect monitor									
gate start, inside [micro-seconds]									
gate end, inside [micro-seconds]									
gate start, outside [micro-seconds]									
gate end, outside [micro-seconds]									
static triggering [dB] (to API)									
dynamic triggering [dB] (to static)									
time dependent gain									
zero suppression									
interference suppression									

damping control									
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3.2.4	longitudinal weld inspection	
	ultrasonic inspection	
3.2.4.1	location of test set-up in process stream	
3.2.4.2	identification of test stand	
3.2.4.3	equipment manufacturer and equipment type	
3.2.4.4	axial speed	mm/s
3.2.4.5	probe location on pipe circumference	Top / Bottom
3.2.4.6	mechanical construction	
3.2.4.7	guiding principle	
3.2.4.8	pipe length not inspected	mm
3.2.4.9	please provide a drawing of the probe arrangement	
3.2.4.10	please fill in the table on next page!	
3.2.4.11	voltage supply stabilization	Yes / No
3.2.4.12	effect of crane on alarm circuits	
3.2.4.13	effect of crane on screen image	
3.2.4.14	electronic construction	
3.2.4.15	equipment check	Times per year

3.2.4.16	calibration procedure to be provided if available	
3.2.4.17	calibration check	Times per shift
3.2.4.18	reference targets	
3.2.4.19	acceptance / rejection criterion	
3.2.4.20	is a record present	Yes / No
3.2.4.21	can this record re retrieved	Yes / No
3.2.4.22	other remarks	

SCAN (extend table when required)									
number of probes									
probe manufacturer									
probe type									
angle of incidence in water									
angle of incidence in steel									
sound frequency [MHz]									
probe diameter or length [mm]									
probe width [mm]									
water path [mm]									
water temperature [°C]									
type of coupling check									

dynamic range coupling control [dB]									
P.R.F. [Hz]									
pulse pitch [mm/pulse]									
monitor present									
warning signals:									
optical									
acoustical									
paint spray, manual									
grinding									
paint spray, automatic									
place of mark if present									
linearity screen [dB]									
linearity timebase [dB]									
number of echoes for an alarm									
alarm pitch [mm/alarm]									
reset time of monitor [milli-seconds]									
skip distance inside defect monitor									
skip distance outside defect monitor									
gate start, inside [micro-seconds]									
gate end, inside [micro-seconds]									

gate start, outside [micro-seconds]									
gate end, outside [micro-seconds]									
static triggering [dB] (to API)									
dynamic triggering [dB] (to static)									
time dependent gain									
zero suppression									
interference suppression									
damping control									

3.2.5	pipe end (weld) inspection	
	ultrasonic inspection	
3.2.5.1	location of test set-up in process stream	
3.2.5.2	identification of test stand	
3.2.5.3	equipment manufacturer and equipment type	
3.2.5.4	overall P.R.F. in Hz	Hz
3.2.5.5	scan speed in 31millimetre per second	mm/s
3.2.5.6	pulse pitch in mm/pulse	mm/pulse
3.2.5.7	probe manipulation	Manual / Automated
3.2.5.8	mechanical construction	

3.2.5.9	guiding principle	
3.2.5.10	please provide a drawing of the probe arrangement	
3.2.5.11	probe manufacturer and probe type	
3.2.5.12	sound frequency in MHz	MHz
3.2.5.13	probe dimensions in mm	mm
3.2.5.14	Water path length in mm	mm
3.2.5.15	coupling check present	Yes / No
3.2.5.16	type of coupling check if present	Transmission / Surface Scattering
3.2.5.17	coupling control present	Yes / No
3.2.5.18	dynamic range of coupling control if present	dB
3.2.5.19	alarm monitor present	No / Yes
3.2.5.20	warning signals	Optical / Acoustical / Paint spray / Grinding
3.2.5.21	place of mark if present	
3.2.5.22	is a record present	Yes / No
3.2.5.23	can this record be retrieved	Yes / No
3.2.5.24	* monitor gate start	Micro-seconds
3.2.5.25	* monitor gate end	Micro-seconds
3.2.5.26	* number of echoes needed for an alarm	1 / 2 / 3 / 4 /
3.2.5.27	* reset time of the alarm monitor	Milli-seconds
3.2.5.28	* dynamic triggering	dB compared to Static triggering

3.2.5.29	* linearity of the amplifiers	
3.2.5.30	zero suppression	On / Not in use / Not present
3.2.5.31	* linearity of time base	
3.2.5.32	time dependent gain	On / Not in use / Not present
3.2.5.33	interference suppression	On / Not in use / Not present
3.2.5.34	damping control	On / Not in use / Not present
3.2.5.35	voltage supply stabilization	Yes / No
3.2.5.36	effect of crane on alarm circuits	
3.2.5.37	effect of crane on screen image	
3.2.5.38	electronic construction	
3.2.5.39	equipment check	Times per year
3.2.5.40	calibration procedure to be provided if available	
3.2.5.41	calibration check	Times per shift
3.2.5.42	reference targets	
3.2.5.43	acceptance / rejection criterion	
3.2.5.44	other remarks	

3.2.6	pipe end (bevel) inspection	
	ultrasonic inspection	
3.2.6.1	location of test set-up in process stream	

3.2.6.2	identification of test stand	
3.2.6.3	equipment manufacturer and equipment type	
3.2.6.4	overall P.R.F. in Hz	Hz
3.2.6.5	scan speed in millimetre per second	mm/s
3.2.6.6	pulse pitch in mm/pulse	mm/pulse
3.2.6.7	probe manipulation	Manual / Automated
3.2.6.8	mechanical construction	
3.2.6.9	guiding principle	
3.2.6.10	please provide a drawing of the probe arrangement	
3.2.6.11	probe manufacturer and probe type	
3.2.6.12	sound frequency in MHz	MHz
3.2.6.13	probe dimensions in mm	mm
3.2.6.14	Water path length in mm	mm
3.2.6.15	coupling check present	Yes / No
3.2.6.16	type of coupling check if present	Transmission / Surface Scattering
3.2.6.17	coupling control present	Yes / No
3.2.6.18	dynamic range of coupling control if present	dB
3.2.6.19	alarm monitor present	No / Yes
3.2.6.20	warning signals	Optical / Acoustical / Paint spray / Grinding
3.2.6.21	place of mark if present	

3.2.6.22	is a record present	Yes / No
3.2.6.23	can this record be retrieved	Yes / No
3.2.6.24	* monitor gate start	Micro-seconds
3.2.6.25	* monitor gate end	Micro-seconds
3.2.6.26	* number of echoes needed for an alarm	1 / 2 / 3 / 4 /
3.2.6.27	* reset time of the alarm monitor	Milli-seconds
3.2.6.28	* dynamic triggering	dB compared to Static triggering
3.2.6.29	* linearity of the amplifiers	
3.2.6.30	zero suppression	On / Not in use / Not present
3.2.6.31	* linearity of time base	
3.2.6.32	time dependent gain	On / Not in use / Not present
3.2.6.33	interference suppression	On / Not in use / Not present
3.2.6.34	damping control	On / Not in use / Not present
3.2.6.35	voltage supply stabilization	Yes / No
3.2.6.36	effect of crane on alarm circuits	
3.2.6.37	effect of crane on screen image	
3.2.6.38	electronic construction	
3.2.6.39	equipment check	Times per year
3.2.6.40	calibration procedure to be provided if available	
3.2.6.41	calibration check	Times per shift

3.2.6.42	reference targets	
3.2.6.43	acceptance / rejection criterion	
3.2.6.44	other remarks	

3.2.7	Skelp end weld inspection	Only for SAWH pipe in case skelp end weld is left in the pipe
	ultrasonic inspection	
3.2.7.1	location of test set-up in process stream	
3.2.7.2	identification of test stand	
3.2.7.3	equipment manufacturer and equipment type	
3.2.7.4	axial speed	mm/s
3.2.7.5	probe location on pipe circumference	Top / Bottom
3.2.7.6	mechanical construction	
3.2.7.7	guiding principle	
3.2.7.8	pipe length not inspected	mm
3.2.7.9	please provide a drawing of the probe arrangement	
3.2.7.10	please fill in the table on next page!	
3.2.7.11	voltage supply stabilization	Yes / No
3.2.7.12	effect of crane on alarm circuits	
3.2.7.13	effect of crane on screen image	
3.2.7.14	electronic construction	

3.2.7.15	equipment check	Times per year
3.2.7.16	calibration procedure to be provided if available	
3.2.7.17	calibration check	Times per shift
3.2.7.18	reference targets	
3.2.7.19	acceptance / rejection criterion	
3.2.7.20	is a record present	Yes / No
3.2.7.21	can this record re retrieved	Yes / No
3.2.7.22	other remarks	

SCAN (extend table when required)									
number of probes									
probe manufacturer									
probe type									
angle of incidence in water									
angle of incidence in steel									
sound frequency [MHz]									
probe diameter or length [mm]									
probe width [mm]									
water path [mm]									
water temperature [°C]									

type of coupling check									
dynamic range coupling control [dB]									
P.R.F. [Hz]									
Pulse pitch [mm/pulse]									
monitor present									
warning signals:									
optical									
acoustical									
paint spray, manual									
grinding									
paint spray, automatic									
Place of mark if present									
linearity screen [dB]									
linearity timebase [dB]									
number of echoes for an alarm									
Alarm pitch [mm/alarm]									
Reset time of monitor [milli-seconds]									
skip distance inside defect monitor									
skip distance outside defect monitor									
gate start, inside [micro-seconds]									

gate end, inside [micro-seconds]									
gate start, outside [micro-seconds]									
gate end, outside [micro-seconds]									
static triggering [dB] (to API)									
dynamic triggering [dB] (to static)									
time dependent gain									
zero suppression									
interference suppression									
damping control									