



Offshore Design Section
Engineering Services
ISO – 9001:2000

ADDENDUM-2 TO FUNCTIONAL
SPECIFICATION FOR
LONGITUDINAL SUBMERGED
ARC WELDED LINE PIPE FOR
SUBMARINE PIPELINES (SOUR
SERVICE)

Spec. No.	ADDENDUM TO SPEC 2020 D, REV 2
Rev. No.	0
Discipline	PIPELINE
Page: 1 OF 2	

ADDENDUM-2 TO FUNCTIONAL SPECIFICATION FOR LONGITUDINAL SUBMERGED ARC WELDED LINE PIPE FOR SUBMARINE PIPELINES (SOUR SERVICE)

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Page: 2 OF 2	

Sl. No.	Clause Reference, page no.	Existing provision in spec.	Modified Clause																											
1	8.3.2 Amend Page no. 10 of 40	<p>Pipes furnished to this specification shall be made to a clean steel practice using either basic-oxygen steel or electric arc furnace steel. Steel shall be vacuum degassed or alternative processes shall be applied. The material shall be treated for inclusion shape control to increase resistance to hydrogen-induced blistering and stepwise) cracking.</p> <p>Steel shall be made by continuous casting only.</p> <p>Manufacturing procedure as mentioned in Annex B (Amended) of this specification shall be prepared and submitted to Company for approval prior to start of production.</p>	<p>To be read as :</p> <p><i>Pipes furnished to this specification shall be made to a clean steel practice using either basic-oxygen steel or electric arc furnace steel. Steel shall be vacuum degassed or alternative processes shall be applied. The material shall be treated for inclusion shape control to increase resistance to hydrogen-induced (blistering and stepwise) Cracking</i></p> <p><i>Steel shall be made by continuous casting only.</i></p> <p><i>Steel shall be sampled for inclusion content as per ASTM E-45 and tested for Inclusion Content by JK-type inclusion ratings procedure using automatic image analysis in accordance with microscopic Method -A of ASTM E-45 and reported as per ASTM E-45.</i></p> <p><i>Maximum limit of inclusion severity level in steel, as per ASTM E-45 Standard, method A, shall be as under:</i></p> <table><tr><th>Inclusion Type</th><th colspan="2">Type A (Sulphide)</th><th colspan="2">Type B (Alumina)</th><th colspan="2">Type C (Silicate)</th><th colspan="2">Type D (Globular Oxide)</th></tr><tr><th>Severity Level</th><th>Thin</th><th>Heavy</th><th>Thin</th><th>Heavy</th><th>Thin</th><th>Heavy</th><th>Thin</th><th>Heavy</th></tr><tr><td></td><td>1.5</td><td>1.0</td><td>1.5</td><td>1.0</td><td>1.5</td><td>1.0</td><td>1.5</td><td>1.0</td></tr></table> <p><i>Manufacturing procedure as mentioned in Annex B (Amended) of this specification shall be prepared and submitted to Company for approval prior to start of production.</i></p>	Inclusion Type	Type A (Sulphide)		Type B (Alumina)		Type C (Silicate)		Type D (Globular Oxide)		Severity Level	Thin	Heavy	Thin	Heavy	Thin	Heavy	Thin	Heavy		1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0
Inclusion Type	Type A (Sulphide)		Type B (Alumina)		Type C (Silicate)		Type D (Globular Oxide)																							
Severity Level	Thin	Heavy	Thin	Heavy	Thin	Heavy	Thin	Heavy																						
	1.5	1.0	1.5	1.0	1.5	1.0	1.5	1.0																						