



Offshore Design Section
Engineering Services
ISO – 9001:2000

**ADDENDUM-2 TO FUNCTIONAL
SPECIFICATION FOR
CARBON STEEL SEAMLESS
LINEPIPE FOR SUBMARINE
PIPELINES (SOUR SERVICE)**

Spec. No.	ADDENDUM TO SPEC 2020 B, REV 5
Rev. No.	0
Discipline	PIPELINE
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ADDENDUM-2 TO FUNCTIONAL SPECIFICATION FOR CARBON STEEL SEAMLESS LINEPIPE FOR SUBMARINE PIPELINES (SOUR SERVICE)

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Reviewed By	Approved By	Total No. of Pages	Date	Rev. No.
BPM	AKM	02	06.01.2021	0

FORMAT No.	Ref. PROCEDURE No.	ISSUE No.	REV. No.	REV. DATE:
ODS/SOF/004A	ODS/SOP/008 to 015	02	02	29.08.2008



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Page: 2 OF 2

Sl. No.	Clause Reference, page no.	Existing provision in spec.	Modified Clause in spec.																											
1	8.3.2 Amend Page no. 11 of 39	<p>Pipes furnished to this specification shall be made from basic-oxygen steel or electric arc furnace steel. Steel shall be vacuum degassed. 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. Pipes shall be seamless construction.</p> <p>Manufacturing procedure as mentioned in Annex B (Substituted) 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 from basic-oxygen steel or electric arc furnace steel. Steel shall be vacuum degassed. 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>Pipes shall be seamless construction.</i></p> <p><i>Manufacturing procedure as mentioned in Annex B (Substituted) 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)																							
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