

MATERIAL DATA SHEET			MDS D41	Rev. 4
TYPE OF MATERIAL: Ferritic/Austenitic Stainless Steel, Type 22Cr duplex				
PRODUCT	STANDARD	GRADE	ACCEPT. CLASS	SUPPL. REQ.
Seamless pipes	ASTM A 790	UNS S31803 UNS S32205	-	-
1. SCOPE	This MDS specifies the selected options in the referred standard and additional requirements which shall be added or supersede the corresponding requirements in the referred standard.			
2. QUALIFICATION	Manufacturers and the manufacturing process used for manufacturing of product to this MDS shall be qualified in accordance with NORSOK Standard M-650.			
3. MANUFACTURING PROCESS	The manufacturing of products according to this MDS shall be carried out according to the M-650 qualified Manufacturing Procedure.			
4. STEEL MAKING	The steel melt shall be refined with AOD or equivalent.			
5. CHEMICAL COMPOSITION	UNS S31803: N = 0.14 - 0.20 %			
6. IMPACT TESTING	Charpy V-notch testing (3 specimens) according to ASTM A 370 at - 46 °C is required for the thickness ≥ 6 mm. The minimum absorbed energy shall be 45 J average / 35 J single. Reduction factors for sub-size specimens shall be: 7.5 mm - 5/6 and 5 mm - 2/3. Impact test specimens shall be taken from mid-thickness position.			
7. MICROGRAPHIC EXAMINATION	The micrographic examination shall cover the near surfaces and mid-thickness region of the pipe. The ferrite content shall be determined according to ASTM E 562 or equivalent and shall be within 35-55 %. The microstructure, as examined at minimum 400 X magnification on a suitably etched specimen, shall be free from intermetallic phases and precipitates.			
8. EXTENT OF TESTING	Charpy V-notch impact, microstructure, hardness and tensile testing shall be carried out for each lot as defined in the referred standard.			
9. SURFACE FINISH	White pickled.			
10. REPAIR OF DEFECTS	Weld repair is not acceptable.			
11. MARKING	The component shall be marked to ensure full traceability to melt and heat treatment lot.			
12. CERTIFICATION	The material manufacturer shall have a quality system certified in accordance with ISO 9001 and the system shall have undergone a specific assessment for the relevant materials. The material certificate shall be in accordance with EN 10204 Type 3.1, and shall include the following information: <ul style="list-style-type: none"> - Steel manufacturer. - Steel melting and refining practice. - Heat treatment condition (Solution annealing temperature and holding times shall be stated). 			