



DET NORSKE VERITAS

Ref.: ANT10-1091-1

**WELDING PROCEDURE QUALIFICATION TEST**

According to (code, standard)

EN-ISO15614-1 & DNV Rules for Ships

Manufacturer's welding procedure No.  
NAV-PF-DNV-1.4462

Manufacturer <b>Navitec Marine Services n.v.</b>		Place and date <b>Antwerpen</b>													
Purchaser's spec. No. _____		Project <b>Duplex</b>													
Requirements beyond code/standard															
Joint preparation and welding sequence (Sketch). State rolling direction, if applicable		<b>BASE MATERIAL SPECIFICATION AND GROUPING</b>													
		<b>UNS S31803 to UNS S31803</b>													
		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th>Grade</th> <th>C, %</th> <th>C eq %</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Grade	C, %	C eq %				<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <th>Grade</th> <th>C, %</th> <th>C eq %</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Grade	C, %	C eq %			
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If applicable, the following C eq based on ladle analysis is to be calculated:															
$C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Cu+Ni}{15} \%$															
Welding process(es) <b>111 (SMAW)</b>		Welding position <b>PF (3G)</b>													
		Single-/double sided welding <b>Single</b>													
<b>WELDING CONSUMABLES:</b>															
Index	Consumable(s), trade name		Code designation												
A	<b>Lexal E2293</b>		<b>EN 1600 E 22 9 3 N L R 1 2</b>												
B															
C															
<b>WELDING PARAMETERS</b>															
Pass No.	Index	Diam. mm	Gas composition	Gas L/min	Current polarity	Amps	Volts	Travel speed mm/min	Wire feed mm/min	Heat input kJ/mm					
1	A	2.5	-	-	DC+	55-65	42	60	-	-					
2	A	2.5	-	-	DC+	55-65	42	70	-	-					
3	A	3.25	-	-	DC+	95-115	42	70	-	-					
4	A	3.25	-	-	DC+	95-115	42	70	-	-					
Other information (weaving, backing, groove preparation, gouging, grinding, etc.):															
SPECIAL REQUIREMENTS: Preheat min. --°C      Interpass max <b>150°C</b> PWHT --°C      Time -- Hr(s)															
Heating/cooling rate --      Baking of electrodes      Others															
WELDING CARRIED OUT BY <b>Lobo Gomes F.</b> TEST PIECE MARKED <b>NV test stamp</b>															
EXTENT OF APPROVAL: Base material(s) <b>UNS S31803</b> Positions: <b>PF(3G)</b>															
Plate /wall thickness <b>3 - 20 mm.</b> Diam. -- mm      Other limitations --															
--															
We certify that the statements in this record are correct and that the test weld was prepared, welded and heat treated in accordance with the specified Code/Standard and/or purchaser's requirements.															
Manufacturer's signature and stamp						DNV's survey station and surveyor's signature									
						<b>Antwerp, BE.</b>									
<small>If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his/her actual loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.</small>															

