

Welder Qualification Classifications related to Gas Backing

Object of Amendment

Rules for the Survey and Construction of Steel Ships Part M

Reason for Amendment

Qualifications for welded joints for plates specified in Chapter 5 of Part M of the Rules for the Survey and Construction of Steel Ships are classified into two categories, with and without backing, in reference to IACS Unified Requirement (UR) W32 and related ISO standards.

Gas backing, on the other hand, is commonly used when welding stainless steel to prevent the oxidation of penetration beads.

Accordingly, relevant requirements are amended to specify the qualification classification for gas backing welding of plates.

In addition, the range of approval for welding work by gas backing specified in requirements related to welding procedures and related specifications in Chapter 4 of Part M is revised to harmonise it with similar requirements in Chapter 5 of Part M.

Outline of Amendment

Amends the treatment of welding work with gas backing for plates in requirements for welders, welder qualification tests, welding procedures and related specifications.

Effective Date and Application

This draft amendment applies to tests for which the application is submitted to the Society on or after the date of establishment.

ID: DH24-06

Amended-Original Requirements Comparison Table (Welder Qualification Classifications related to Gas Backing)

Amended	Original	Remarks
<p>RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p>Part M WELDING</p> <p>Chapter 4 WELDING PROCEDURE AND RELATED SPECIFICATIONS</p> <p>4.1 General</p> <p>4.1.4 Range of Approval*</p>	<p>RULES FOR THE SURVEY AND CONSTRUCTION OF STEEL SHIPS</p> <p>Part M WELDING</p> <p>Chapter 4 WELDING PROCEDURE AND RELATED SPECIFICATIONS</p> <p>4.1 General</p> <p>4.1.4 Range of Approval*</p>	

Amended-Original Requirements Comparison Table (Welder Qualification Classifications related to Gas Backing)

Amended				Original										Remarks			
Table M4.1 Range of Approval for Type of Weld Joint																	
Type of weld joint for test assembly				Range of approval													
				A	B	C	D	E	F	G	H	I	J	K	L		
Butt Welded joints	One side	With backing	A	○			○		○			○		○	○		
		Without backing	B	○	○	○	○	○	○	○	○	○	○	○	○	○	
		Gas backing ^(†)	C	○		○	○		○			○	○		○	○	
	Both side	With gouging	D				○						○		○	○	
		Without gouging	E				○	○					○	○	○	○	
T-joints with full penetration	One side	With backing	F						○			○		○	○		
		Without backing	G						○	○	○	○	○	○	○	○	
		Gas backing ^(†)	H						○		○	○			○	○	
	Both side	With gouging	I										○			○	○
		Without gouging	J										○	○	○	○	
T-joints with partial penetration			K												○	○	
Fillet weld joints			L													○	
<p>Note: (†) C and H apply to welding procedures and related specifications for pipes.</p>																	

Delete the note to revise the classification of C to apply not only to pipes but also to plates.

Amended-Original Requirements Comparison Table (Welder Qualification Classifications related to Gas Backing)

Amended	Original	Remarks																								
<p>Chapter 5 WELDERS AND WELDERS QUALIFICATION TESTS</p> <p>5.2 Qualifications</p> <p>5.2.1 Kind of Qualification*</p>	<p>Chapter 5 WELDERS AND WELDERS QUALIFICATION TESTS</p> <p>5.2 Qualifications</p> <p>5.2.1 Kind of Qualification*</p>																									
<p>Table M5.12 Variables of Detail of Welded Joint</p> <table border="1"> <thead> <tr> <th colspan="2">Detail of welded joint applied for test assemblies</th> <th>Symbol</th> <th>Detail of welded joint applicable to actual welding work</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Butt welding</td> <td rowspan="2">Single side</td> <td>With backing</td> <td><i>ss mb, bs mb, sl, ml</i></td> </tr> <tr> <td>Without backing</td> <td><i>ss mb, ss nb, ss gb, bs mb, bs nb, sl, ml</i></td> </tr> <tr> <td>Gas backing</td> <td><i>ss gb, bs mb, sl, ml</i></td> </tr> <tr> <td rowspan="2">Both side</td> <td>With gouging</td> <td><i>bs mb, bs mb, sl, ml</i></td> </tr> <tr> <td>Without gouging</td> <td><i>bs mb, bs mb, bs nb, sl, ml</i></td> </tr> <tr> <td rowspan="2">Fillet welding</td> <td>Single layer</td> <td><i>sl</i></td> <td><i>sl</i></td> </tr> <tr> <td>Multi-layer</td> <td><i>ml</i></td> <td><i>sl, ml</i></td> </tr> </tbody> </table> <p>Notes: (1) Backing materials other than backing strips may be used. (2) The symbol "ss gb" is to be used for qualifications including welding positions for tubes.</p>			Detail of welded joint applied for test assemblies		Symbol	Detail of welded joint applicable to actual welding work	Butt welding	Single side	With backing	<i>ss mb, bs mb, sl, ml</i>	Without backing	<i>ss mb, ss nb, ss gb, bs mb, bs nb, sl, ml</i>	Gas backing	<i>ss gb, bs mb, sl, ml</i>	Both side	With gouging	<i>bs mb, bs mb, sl, ml</i>	Without gouging	<i>bs mb, bs mb, bs nb, sl, ml</i>	Fillet welding	Single layer	<i>sl</i>	<i>sl</i>	Multi-layer	<i>ml</i>	<i>sl, ml</i>
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<p>EFFECTIVE DATE AND APPLICATION</p> <ol style="list-style-type: none"> The effective date of the amendments is [the date of establishment]. Notwithstanding the amendments to the Rules, the current requirements apply to test for which the application for survey is submitted to the Society before the effective date. 		<p>Delete the note to revise the classification of <i>ssgb</i> to apply not only to tubes but also to plates.</p>																								