

# CERTIFIED MATERIAL REPORT

CMR No. : NI2770001612

Date of Issue 2012/09/27

Customer	HYUNDAI WELDING EUROPE		
Trade Name	SW-309L Cored	Size	1.2 mm * 15 kg
Lot No.	SW2927I	Purchaser's Order No.	-
Applicable Specification	AWS A5.22 E309LT1-1/-4 * According to EN10204 3.1 : 2004 Equivalent to EN ISO 17633-A T 23 12 L P M/C 2		

Welding Current	DCEP	Shielding Gas	80%Ar+ 20%CO <sub>2</sub>	Post Weld Heat Treatment (°C × hr.)	AS WELDED
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Mechanical Properties	Tensile Test			Impact Test (CVN - Joule)				
	YS (MPa)	TS (MPa)	EL (%)	Temp.(°C)	X1	X2	X3	Avg.
	-	547	43.6					
Spec.	-	≥520	≥30					

Chemical Composition (%)

	C	Si	Mn	P	S	Cu	Ni	Cr	Mo		
( Weld Metal )	0.03	0.90	1.21	0.017	0.005	0.04	12.48	23.14	0.01		
Spec.	≤0.04	≤1.0	0.5 ~2.5	≤0.04	≤0.03	≤0.5	12.0 ~14.0	22.0 ~25.0	≤0.5		

Others

We hereby certifies that the material covered by this report has been inspected in accordance with and been found to meet the applicable requirements of specification and customer's requirements.

Approved by

*Sang Hee Lee*

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