



Welding Consumable: Approval Certificate

Office: **Mumbai**

Date: **26 June 2018**

This Certificate is issued to **Superon Schweisstechnik India Ltd., India**, to certify that the undernoted welding consumable is recommended for entry in the supplementary list of certified welding consumable in accordance with ASME Section II, Part C, SFA 5.4, specification of the year 2017. This certificate is issued on the basis of satisfactory test results on the test coupons prepared on 21 May 2018 and subsequently tested on 12 June 2018. Welding consumable is manufactured by Superon Schweisstechnik India Ltd, IMT Manesar, India

Description:

Consumable name : Super Optimal 309L
Size : 2.00, 2.40, 2.50, 3.20, 4.00, 4.80, 5.00 mm
SFA Classification : SFA 5.4 AWS E309L-16
Results of test :

	2.00mm	2.40mm	2.50mm	3.20mm	4.00mm	4.80mm	5.00 mm
0.2% Proof stress	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
UTS	Not Required	Not Required	Not Required	601 N/mm2	566 N/mm2	558 N/mm2	557 N/mm2
% Elongation	Not Required	Not Required	Not Required	43.48	41.88	43.00	41.40
Impact at °C	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
Chemical	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
Radiography	Not Required	Not Required	Not Required	Acceptable	Acceptable	Acceptable	Acceptable
Fillet(H,V, OH)	Not Required	Not Required	Not Required	Acceptable	Acceptable	Acceptable	Acceptable

Chemical Analysis- Size: 2.00mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22.0-25.0	12.0-14.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.024	23.6	12.35	0.045	0.66	0.91	0.017	0.016	0.057

Chemical Analysis- Size: 2.40mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22.0-25.0	12.0-14.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.024	23.55	12.51	0.032	0.70	0.93	0.019	0.012	0.059

Chemical Analysis- Size: 2.50mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22.0-25.0	12.0-14.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.025	23.56	12.29	0.06	0.74	0.94	0.021	0.018	0.067

Chemical Analysis- Size: 3.20mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22.0-25.0	12.0-14.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.018	23.12	12.42	0.085	0.68	0.89	0.024	0.014	0.061

Chemical Analysis- Size: 4.00mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22.0-25.0	12.0-14.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.021	23.35	12.14	0.053	0.68	0.85	0.014	0.016	0.079

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Chemical Analysis- Size: 4.80mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	18.0-21.0	9.0-11.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.025	18.82	9.60	0.14	0.64	0.91	0.02	0.011	0.082

Chemical Analysis- Size: 5.00mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	18.0-21.0	9.0-11.0	0.75 max	0.5-2.5	1.00 max	0.04 max	0.03 max	0.75max
Result	0.024	19.02	9.64	0.12	0.60	0.89	0.026	0.01	0.121

- Refer Report No.: D180528009-1/2/3/4 for radiography result found satisfactory.
- Refer Fillet Test Report No. 01/02/03/04 dtd:12.06.2018 for fillet test result found satisfactory.

Certificate is valid until 18 May 2019.



for Abhishek Yadav
Surveyor to Lloyd's Register Asia

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