Welding Consumable: Approval Certificate

Office: **Mumbai-Port**

Date: **18 June 2019**

This Certificate is issued to Superon Schweisstechnik India Limited, 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 15 May 2019 and subsequently tested on 07 June 2019. Welding consumable is manufactured by Superon Schweisstechnik India Limited, IMT Manesar, India

Description:

Consumable name : SUPER OPTIMAL 309L

Size : 2, 2.4, 2.5, 3.2, 4.0, 4.8, 5.0 mm

SFA Classification : SFA 5.4 AWS E309L-16

Results of test :

	2.00mm	2.40 mm	2.50 mm	3.20 mm	4.00 mm	4.80 mm	5.00 mm
0.2% Proof stress (N/mm^2)	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required	Not Required
UTS (N/mm^2)	Not Required	Not Required	Not Required	570.07	562.18	569.27	569.27
% Elongation	Not Required	Not Required	Not Required	45.4	41.34	41.48	41.18
Impact at -50deg 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: 2.00 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	**0.04 max**	**22 - 25**	**12 - 14**	**0.750 max**	**0.5 - 2.5**	**1 max**	**0.04 max**	**0.03max**	**0.75 max**
Result	**0.0192**	**22.92**	**12.28**	**0.0214**	**0.709**	**0.809**	**0.0209**	**0.0203**	**0.0514**

Chemical Analysis- Size: 2.40 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22 - 25	12 - 14	0.750 max	0.5 - 2.5	1 max	0.04 max	0.03max	0.75 max
Result	**0.0207**	**23.03**	**12.25**	**0.0203**	**0.675**	**0.805**	**0.0214**	**0.0205**	**0.0489**

Chemical Analysis- Size: 2.50 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22 - 25	12 - 14	0.750 max	0.5 - 2.5	1 max	0.04 max	0.03max	0.75 max
Result	0.0175	22.80	12.25	0.0238	0.728	0.832	0.0205	0.0210	0.0571

Chemical Analysis- Size: 3.20 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22 - 25	12 - 14	0.750 max	0.5 - 2.5	1 max	0.04 max	0.03max	0.75 max
Result	0.0194	22.81	12.37	0.0212	0.696	0.808	0.0205	0.0201	0.0492

Chemical Analysis- Size: 4.00 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22 - 25	12 - 14	0.750 max	0.5 - 2.5	1 max	0.04 max	0.03max	0.75 max
Result	0.0186	22.76	12.28	0.0231	0.684	0.830	0.0209	0.0197	0.0556

Chemical Analysis- Size: 4.80 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22 - 25	12 - 14	0.750 max	0.5 - 2.5	1 max	0.04 max	0.03max	0.75 max
Result	0.0198	22.63	12.31	0.0210	0.664	0.796	0.0213	0.0213	0.0515

Chemical Analysis- Size: 5.00 mm

	C	Cr	Ni	Mo	Mn	Si	P	S	Cu
	%	%	%	%	%	%	%	%	%
Range	0.04 max	22 - 25	12 - 14	0.750 max	0.5 - 2.5	1 max	0.04 max	0.03max	0.75 max
Result	0.0236	22.59	12.33	0.0171	0.693	0.786	0.0193	0.0206	0.0412

Refer Report No. N190521017-5/6/7/8 for radiography, results found satisfactory.
Refer Fillet test report No. 5/6/7/8 dated 07/06/2019 for fillet test and results found satisfactory.

Certificate is valid until 18 May 2020.

TD
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Lloyd's Register Asia
Lloyd's Register

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