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CERTIFICATE OF MATERIAL

(EN10204 ; 2004 3.1)

Certificate No. : DH-202107-120
 Date : 2021/07/07
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Customer ALLIED GROUP	Project:	P.O No.: PO21915	Heat Treatment ※1																
Spec. For Material : A/SA182 F316/316L+NACE (2017ED)	※2 Chemical Composition (%)																DHH210223-21 S.T:1050°C X 11.33 HRS-W.C		
	Spec.	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Nb	Al	W	Ti	N		Ceq	PREN
	Min.						10.0	16.0	2.00									0.10	
Heat No. & Lot No. : WALSIN 6F355-1223E	H	0.011	0.35	1.37	0.030	0.0062	10.05	16.76	2.05							0.0301		24.0	
	P																		

Raw Certificate No. : A2010190129

Direction ※3	Specimen		Spec.	Tension Test				Hardness (HBW)	Charpy Impact Test (10*10*55mm)				Bending Test	Dimensional Inspection
	Dia. in.	Gage Length in.		Yield Strength ksi	Tensile Strength ksi	Elongation %	Red. of Area %		Individual MIN.	Average MIN.	Notch Type			
	0.5	2		30	75	30	50		Test Result			Temp.		
T	0.5	2	Min. Max.	35	78	64	80	152,156	1	2	3	Ave.		GOOD

Description				Remark			
No.	Dimension	Q'ty	Item No./POR No.				
38	B16.5 150# BL FF 2"	25 EA		- NACE MR0175/ISO15156,NACE MR0103 - No repair welding - PREN = Cr+3.3Mo+16N - SI unit(specimen-12.5mmX 50.0mm) : Y.S-246MPa / T.S-538MPa - Intergranular Corrosion Test Test Method : ASTM A262-15 Practice E Test Report No. : 212565-G03735 Result : Accepted - All material supplied is certified to be free of Mercury contamination and no mercury bearing equipment was used during manufacturing			
39	B16.5 150# BL RF 1 1/2"	150 EA					
40	B16.5 150# BL RF 1"	150 EA					
41	B16.5 150# SW RF 3" S/40S	25 EA					
42	B16.5 150# THREAD RF 2"	75 EA					
43	B16.5 150# LJ 6"	50 EA					
60	B16.5 300# LJ 1 1/4"	50 EA					
				Liquid Penetrant Examination N/A P.M.I DH-PMI-210622-04 GOOD			

Inspector: _____ We here by certify that the material herein has been made and tested in accordance with the above specification and also with the requirements called for by the above order.


 Manager of Quality Assurance Dept.

Notes : ※1 Heat Treatment : N = Normalizing A = Annealing Q = Quenching T = Tempering R = Stress Relieving S.T : Solution Treatment SA = Solution Annealing
 STA = Stabilized Annealed O = Other QT = Quenching Tempering Z = Stabilization NT = Normalizing Tempering
 A.C = Air Cooled W.C = Water Cooled F.C = Furnace Cooled O.C = Oil Cooled R.C = Rapid Air Cooling S.A = Solution Annealing W.Q = Water Quenched
 ※2 TR : Trace
 ※3 Direction : C=Crosswide L=Longitudinal Tr=Transverse T=Tangential R=Radial U=UW-13(Direction Parallel to the Axis of the Vessel)