

# CERTIFICATE OF MATERIAL

( EN10204 ; 2004 3.1 )

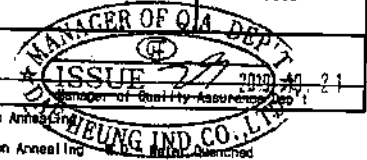
Customer	Project	P.O No.: 6000163-00	Heat Treatment #1																
Spec. For Material : A/SA182 F304/304L/HAACE (2017ED)	#2 Chemical Composition (%)																DH190628-46 S.T:1065°C X 9.33 HRS-W.C		
	Spec.	C	Si	Mn	P	S	Ni	Cr	Mo	V	Cu	Nb	Al	W	Ti	N		Ceq	Co
	Min.	0.030	1.00	2.00	0.045	0.030	11.0	18.0										0.10	
Heat No. & Lot No. OUTOKUMPU (E180906-9528A)	H	0.018	0.30	0.037	0.009	0.009	0.009	16.21										0.278	

Raw Certificate No. : 201801424

Direction	Specimen		Tension Test					Hardness (HBM)	Charpy Impact Test (10*10*56mm)			Bending Test	Dimensional Inspection
	Dia. mm	Gage Length mm	Yield Strength MPa	Tensile Strength MPa	Elongation %	Red. of Area %	Individual MIN.		Average MIN.	Notch Type	Temp.		
M	12.5	50.0	205	515	30	50	237	2	3	Ave.		GOOD	
L	12.5	50.0	272	549	45	72	162, 160					GOOD	

No.	Dimension	Description	Q. (EA)	Test No./POR/VOL	Remark	Examination
8	B16.5 150# BL RF 3"		50 EA			N/A
28	B16.5 150# LJ 3/4"		25 EA			Ultrasonic Examination
35	B16.5 150# LJ 3"		50 EA		No repair welding	N/A
48	B16.5 150# SO RF 3/4"		50 EA			Liquid Penetrant Examination
56	B16.5 150# SO RF 3"		50 EA			N/A
77	B16.5 150# SW RF 3/4" S/40S		50 EA			
83	B16.5 150# SW RF 3" S/40S		25 EA			
91	B16.5 150# THREAD RF 3/4"		25 EA			N/A
97	B16.5 150# THREAD RF 3"		50 EA			
115	B16.5 150# WN RF 3" S/10S		100 EA			P.M.I
116	B16.5 150# WN RF 3" S/40S		50 EA			GOOD

We hereby 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.



Notes : #1 Heat Treatment : N = Normalizing A = Annealing Q = Quenching T = Tempering R = Stress Relieving S = Solution Treatment SA = Solution Annealing  
 STA = Stabilized Annealed O = Other OT = 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  
 #2 TR : Trace  
 #3 Direction : C-Crosswise L-Longitudinal Tr-Transverse T-Tangential R-Radius D-DR-18(Direction Parallel to the Axis of the Vessel)

Stock 4725044 04/21/2021  
 SSFLANGE 3IN 150# 304 SS BLIND  
 FLANGE IMPORT