

# MATERIAL TEST CERTIFICATE

## ( EN 10204 - 3.1 )



Certificate No. : FT202204-056-001  
 Date : 2022/04/01  
 P.O No. : 301454  
 MPS. No. :

Felix MR No. : O202110-001 Rev. 1  
 Mat'l Specification : ASTM A182 F304/304L-21/ASME SA182 F304/304L-2021ED  
 Customer : TEXAS PIPE & SUPPLY COMPANY, LTD.  
 Project Name :

85, Mieumsandan 3-ro, Gangseo-gu, Busan, Korea  
 Tel : +82-51-796-7870 (REP.)

Description	Total Q'ty : 540 EA Q'ty (EA)	Lot No	Tensile Test * 1							Hardness (HB)	Impact Test				Bend Test	Material Code
			Specimen		Y.S	T.S	E.L	R.A	Temp. -196°C		Notch 2V	Unit J				
			D	G.L	MPa		%						Size : 10x10x55(mm)			
									237		Min. 27	Avg.				
42 B16.5 #150 BL RF 2 1/2"	15	CC32A4(T5)	T	12.5	50	293.6	599.4	63.3	74.5	151 / 154	156.3	147.8	132.9	145.7		
43 B16.5 #150 BL RF 3"	225															
44 B16.5 #150 BL RF 3 1/2"	10															
45 B16.5 #150 BL RF 4"	115															
46 B16.5 #150 BL RF 6"	75															
47 B16.5 #150 BL RF 8"	70															
48 B16.5 #300 BL RF 4"	20															
157 B16.5 #150 BL FF 6"	10															
***** BLANK *****																

Heat No	Spec	Chemical Composition(%) * 3													REMARK
		C	Si	Mn	P	S	Ni	Cr	Mo	Cu	V	Nb	N	Al	
		Min	-	-	-	-	-	8.0	18.0					-	
SD51837	Max	0.030	1.00	2.00	0.045	0.030	11.0	20.0				0.10			
	H	0.0254	0.372	1.651	0.0319	0.0035	8.064	18.068				0.0751			
	P														

Heat Treatment *4 S : 1050°C X 4Hrs W.C	Dimension & Visual	NDE		
		UT	MT	PT
		ACCEPT	N/A (N/A)	N/A (N/A)

We hereby certify that the material herein has been manufactured, tested and inspected in accordance with the above specification.

Surveyor

  
 Manager / Q.C Team

Notes : ※1 -- Tensile Test : Y.S=Yield Strength, T.S=Tensile Strength, E.L=Elongation, R.A=Reduction of Area, G.L=Gauge Length(mm), D=Diameter(φ)  
 ※2 -- Location : L=Longitudinal, Tr=Transverse, T=Tangential, R=Radial, U=Hubbed Tension Test 6.25x25.0mm (ASME SEC VIII Div.1 PARA UW-13.3)  
 ※3 -- Chemical Composition : H=Heat Analysis, P=Product Analysis  
 ※4 -- Heat Treatment : N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S=Solution Treated, S.R=Stress Relieved, S.T=Stabilization Heat Treatment, A.C=Air Cooled, W.C=Water Cooled, F.C=Furnace Cooled, O.C=Oil Cooled, A.C=Accelerated Cooled By Water  
 CE : C + (Mn/6) + (Cr+Mo+V)/5 + (Ni+Cu)/15

