



MILL TEST CERTIFICATE

PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
 (A MEMBER OF PANTECH GROUP HOLDINGS BERHAD, LISTED ON MAIN MARKET OF BURSA MALAYSIA)

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SPAN

SURSAJAJAYE REGISTRASI BERKUALITI MALAYSIA
 NO. SUJIL PENDAFTARAN : SPAN/K27A/006883-2011



SIRM
 Cert. No.: PP087201



Cert. No.: ISO9001-0047465
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/L

Customer : Umimech Engineering (M) SDN BHD.
 Product : Welded Austenitic Stainless Steel Pipe

Certificate No : PSA3-11663
 Date : 25/11/2019

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification				Delivery Condition					
			ASTM A312/A312M - 17 / ASME SA312/SA312M - 17	ASTM A999/A999M - 16/ ASME SA999/SA999M - 15 B 36.19M-85 & B36.10M-04	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Flattening	Inter-Granular Corrosion Test	Hydrostatic Test Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection		
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test				Yield Strength YS (MPa)	Tensile TS (MPa)	Elongation E (%)	Hardness, HRB	Remarks
				Eddy Current	Flattening	Inter-Granular Corrosion Test	Hydrostatic Test Pressure / Hold					
IYA089-01113	1 inch Sch 40S x 6M	TP 316/316L	50	PASSED	PASSED	PASSED	PASSED	205	515	35	84	
ISA361-03113	2 1/2 inch Sch 40S x 6M	TP 316/316L	10	PASSED	PASSED	PASSED	PASSED	366	598	54	83	
HSA324-01113	8 inch Sch 10S x 6M	TP 316/316L	5	PASSED	PASSED	PASSED	PASSED	291	520	58	78	
HSA334-01113	10 inch Sch 10S x 6M	TP 316/316L	10	PASSED	PASSED	PASSED	PASSED	342	628	51	82	
ISA375-01113	10 inch Sch 10S x 6M	TP 316/316L	2	PASSED	PASSED	PASSED	PASSED	298	554	58	76	
Chemical Composition (%)												
C	Si	Mn	P	S	Cr	Ni	Mo	Pb	YS	TS	E	Hardness, HRB
0.035	1.00	2.00	0.045	0.030	18.00	14.00	3.00	-	-	-	-	90
-	-	-	-	-	16.00	10.00	2.00	-	205	515	35	-
0.020	0.53	1.15	0.027	0.001	16.60	10.10	2.07	< 0.10	322	578	56	84
0.010	0.47	0.94	0.030	0.004	16.76	10.17	2.08	< 0.10	366	598	54	83
0.017	0.42	0.93	0.033	0.002	16.71	10.08	2.06	< 0.10	291	520	58	78
0.007	0.36	0.90	0.029	0.004	16.89	10.18	2.11	< 0.10	342	628	51	82
0.015	0.26	0.94	0.032	0.003	16.71	10.23	2.06	< 0.10	298	554	58	76

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED & INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION & PURCHASE ORDER.

AND WAS FOUND SATISFIED TO THE REQUIREMENTS. MATERIAL IS FREE FROM MERCURY & RADIOACTIVE CONTAMINATION.

TENSILE REQUIREMENT: CONFORMS TO ASTM A370 - 12a STANDARD. SPECIMEN GAUGE WIDTH 19.2MM. FOR 1" ABOVE, 1" INCLUDE AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION. GAUGE LENGTH 2" (50mm)

NOTE: MADE IN MALAYSIA STEEL MAKING PROCESS: AOD / VOD

WELDED BY ELECTRIC FUSION WELDING PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2:2015 & NACE-MR0103-2015

HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

*2: NH: Not Hydrostatically Tested

REQUIREMENTS (REFERENCE TO ASTM B436-98 (Reapproved 2003)¹ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4. PROCEDURE ACC. TO CLAUSE 22.3.9)



Head of Quality Assurance Department



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SIRM
Cert. No.: PP087201

SPAN

SURABDIJAYA BERKUALITI AIR NEGARA
NO. SUJIL PENDAFTARAN: SPAN/KP/A/00883-2011

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

Certificate No : PSA2-24270
Date : 25/11/2019

Customer : Unimech Engineering (M) Sdn Bhd
Product : Welded Austenitic Stainless Steel Pipe

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification				Delivery Condition					
			ASTM A312/A312M - 17 / ASME SA312/SA312M - 17	ASTM A999/A999M - 16/ ASME SA999/SA999M - 15 B 36.19M-85 & B36.10M-04	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test	Result	Dimensional / PMI/ Visual Inspection				
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test	Pressure / Hold	Result				
ISA398-01112	1/2 inch Sch 40S x 6M	TP 304/304L	169	Eddy Current	Flattening	PASSED	2500 PSI, 5s	PASSED	GOOD			
ISA380-01112	3/4 inch Sch 10S x 6M	TP 304/304L	24	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
ISA397-01112	3/4 inch Sch 10S x 6M	TP 304/304L	103	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
IDA264-01112	2 inch Sch 40S x 6M	TP 304/304L	38	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
IDA270-01112	2 inch Sch 40S x 6M	TP 304/304L	37	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
Chemical Composition (%)												
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks
									YS (KSI / MPa)	TS		
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	90	
Min	-	-	-	-	-	18.00	8.00	-	-	-	-	
Heat No.												
ISA398-01112	0.014	0.50	1.10	0.032	0.001	18.08	8.20	< 0.10	205	515	35	
ISA380-01112	0.015	0.40	1.02	0.032	0.002	18.17	8.13	< 0.10	375	683	52	
ISA397-01112	0.015	0.43	1.16	0.031	0.001	18.07	8.13	< 0.10	369	657	49	
IDA264-01112	0.016	0.40	1.37	0.029	0.003	18.16	8.01	< 0.10	346	645	51	
IDA270-01112	0.022	0.40	1.38	0.029	0.003	18.14	8.01	< 0.10	385	617	50	
									368	629	52	

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NOTE: MADE IN MALAYSIA STEEL MAKING PROCESS: AOD / VOD
WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL
INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E
HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2015 & NACE-MR0105-2015
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER
CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION
EDDY CURRENT: ACCORDING TO ASTM E426-98 (reapproved 2003)² REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.9)

*2: NH: Not Hydrostatically Tested



Head of Quality Assurance Department