

# MILL TEST CERTIFICATE

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

PTD 204534, JALAN PLATINUM UTAMA,  
 KAWASAN PERINDUSTRIAN PASTR-GUDANG, ZON 12B, 81700 PASIR GUDANG  
 JOHOR DARUL-TAKZIM, MALAYSIA  
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MATERIAL MANUFACTURER APPROVAL ACCORDING TO  
 PED 2014/68/EU ANNEX 1, PAR 4.3.  
 PED CERTIFICATE NO.:  
 0943/PED/MUM/1110006/1

Certificate No : PSA3-12025  
 Date : 17/06/2021

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

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition										
APO-2105-0051	L000011686	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M-2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut										
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test	Inter-Granular Corrosion Test	Hydrostatic Test	Dimensional / PMI/ Visual Inspection							
KS131-10	1 inch Sch 10S x 6M	TP 316/316L	29	Eddy Current	PASSED	Flattening	PASSED							
KS131-10	2 inch Sch 10S x 6M	TP 316/316L	50	PASSED	PASSED	PASSED	PASSED							
KG120-10	2 inch Sch 40S x 6M	TP 316/316L	13	PASSED	PASSED	PASSED	PASSED							
Specification		Chemical Composition (%)			Tensile Test <sup>*1</sup>			Hardness, HRB	Remarks					
Max	Min	C	Si	Mn	P	S	Cr			Ni	Mo	Pb	YS	TS
0.035	1.00	0.035	2.00	0.030	18.00	16.00	10.00	14.00	3.00	-	205	515	35	90
0.014	0.44	0.014	0.93	0.003	16.67	10.13	2.04	10.13	2.04	< 0.01	305	576	61	79
0.014	0.44	0.014	0.93	0.003	16.67	10.13	2.04	10.13	2.04	< 0.01	342	587	50	78
0.024	0.48	0.024	1.23	0.002	16.57	10.03	2.03	10.03	2.03	< 0.01	340	576	45	80

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

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

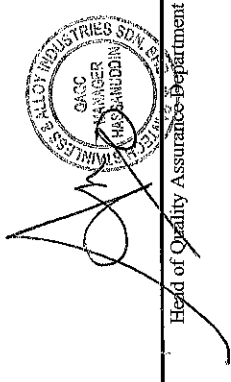
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1059°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

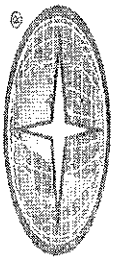
\*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

EDDY CURRENT ACCORDING TO ASTM E466-98 (Reapproved 2003)<sup>\*1</sup> REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)

\*2: Nf: Not Hydrostatically Tested



Head of Quality Assurance Department



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KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG  
JHD 264334, JALAN PLATINUM UTAMA.  
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Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechsteel.com  
http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: IS09001-0027465



SERVISYAK PERKHIDMATAN AIR BERSI  
NO. SUJIL PENDAFTARAN: SPAN/BP/300-10/553/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PARA 4.3.  
PED CERTIFICATE NO.: 0038/PED/MUJ/1110006/1

Certificate No : PSA3-12011  
Date : 09/06/2021

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification										Delivery Condition	
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	B 36.19M-2018 & B36.10M-2018										Solution Treated, Pickled-Passivated, Plain Ends Square Cut	
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test	Hydrostatic Test		Dimensional / PMI/ Visual Inspection		Remarks			
				Eddy Current	Flattening	Pb		Pressure / Hold	Result	Pressure / Hold	Result				
ISA406-01113	3/4 inch Sch 40S x 6M	TP 316/316L	19	PASSED	PASSED	-	PASSED	2500 PSI, 5s	PASSED	2500 PSI, 5s	PASSED	GOOD			
JE055-10	3/4 inch Sch 40S x 6M	TP 316/316L	128	PASSED	PASSED	-	PASSED	2500 PSI, 5s	PASSED	2500 PSI, 5s	PASSED	GOOD			
JG126-10	3/4 inch Sch 40S x 6M	TP 316/316L	3	PASSED	PASSED	-	PASSED	2500 PSI, 5s	PASSED	2500 PSI, 5s	PASSED	GOOD			
KG091-10	1 1/4 inch Sch 40S x 6M	TP 316/316L	15	PASSED	PASSED	-	PASSED	2500 PSI, 5s	PASSED	2500 PSI, 5s	PASSED	GOOD			
KS044-10	1 1/2 inch Sch 10S x 6M	TP 316/316L	20	PASSED	PASSED	-	PASSED	2500 PSI, 5s	PASSED	2500 PSI, 5s	PASSED	GOOD			
Chemical Composition (%)															
Specification	C	Si	Mn	P	S	Cr	Ni	Mo	Pb	Tensile Test <sup>1</sup>		Hardness, HRB			
										YS (ksi / MPa)	TS		E (%)		
Max	0.035	1.00	2.00	0.045	0.030	18.00	14.00	3.00	-	205	515	35			
Min	-	-	-	-	-	16.00	10.00	2.00	-	355	580	57			
Heat No.	0.015	0.51	0.95	0.035	0.002	16.61	10.08	2.02	< 0.01	315	553	60			
ISA406-01113	0.016	0.50	0.99	0.033	0.001	16.70	10.18	2.08	< 0.01	325	554	51			
JE055-10	0.022	0.45	1.18	0.027	0.001	16.73	10.02	2.02	< 0.01	433	604	48			
JG126-10	0.024	0.48	1.23	0.024	0.002	16.57	10.03	2.03	< 0.01	385	612	50			
KG091-10	0.018	0.44	0.93	0.027	0.001	16.80	10.06	2.01	< 0.01						
KS044-10															

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 A570 - 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 SITE/ 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 15156-2015 & NACE-MR0103-2015

HEAT TREATMENT SOLUTION TREATED AT MINIMUM 180°C, RAPIDLY COOLED WITH WATER.

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2007)\*2. REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 2.2.3.4 PROCEDURE ACC. TO CLAUSE 2.2.3.9)

Signature of Head of Quality Assurance Department  
GACC MANAGER  
HAS SANJUNJUN

Head of Quality Assurance Department

