

Head of Quality Assurance Department



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 204334, JALAN PLATINUM UTAMA,

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG

JOHOR DARUL TAKZIM, MALAYSIA

Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechsteel.com

http://www.pantech-group.com



Cert. No.: KLR 6012814

PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1



SIRIM

Cert. No.: PP087201

SPAN

Suruhanjaya Pendaftaran Air Negeri
NO. SUKIL PENDAFTARAN : SPAN/KP/A/00883-2011

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

Customer : Unimech Engineering (M) Sdn Bhd

Product : Welded Austenitic Stainless Steel Pipe

Certificate No : PSA2-23132

Date : 07/12/2018

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification				Delivery Condition						
APO-1810-0032	L000008463	ASTM A312/A312M - 16a / ASME SA312/SA312M - 15	ASTM A999/A999M - 16/ ASME SA999/SA999M - 15 B 36.19M-85 & B36.10M-04				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				
HSA280-06112	2 inch Sch 40S x 6M	TP 304/304L	5	Eddy Current	Flattening	PASSED	Pressure / Hold	Result	GOOD				
HSA306-02112	2 inch Sch 40S x 6M	TP 304/304L	115	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
HSA308-02112	2 inch Sch 40S x 6M	TP 304/304L	40	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
HSA317-04112	2 inch Sch 40S x 6M	TP 304/304L	40	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
Chemical Composition (%)													
Specification Max Min Heat No.	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB		Remarks
	0.035 - 0.020 0.024 0.027 0.020	1.00 - 0.20 0.44 0.45 0.41	2.00 - 1.17 1.40 1.39 1.15	0.045 - 0.031 0.030 0.031 0.037	0.030 - 0.001 0.001 0.000 0.001	20.00 18.00 18.22 18.08 18.07 18.12	11.00 8.00 8.16 8.02 8.24 8.19	- - < 0.10 < 0.10 < 0.10 < 0.10	YS	TS	E	90 - 83 86 85 85	
									- (ksi / MPa)		(%)		
									-	-	-		
									205	515	35		
HSA280-06112									353	652	60		
HSA306-02112									270	651	53		
HSA308-02112									270	631	56		
HSA317-04112									262	637	54		

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 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-MR0103-2015

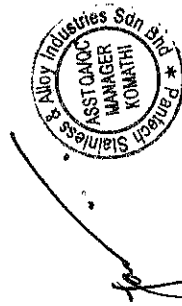
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

*2: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003)⁴¹ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)



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INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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Product : Welded Austenitic Stainless Steel Pipe

Certificate No : PSA2-23131
Date : 07/12/2018

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification						Delivery Condition				
APO-1810-0152	L000008450	ASTM A312/A312M - 16a / ASME SA312/SA312M - 15	ASTM A999/A999M - 16/ ASME SA999/SA999M - 15 B 36.19M-85 & B36.10M-04						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				
				Eddy Current	Flattening		Pressure / Hold	Result					
HSA286-03112	2 1/2 inch Sch 40S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
HYA012-01112	2 1/2 inch Sch 40S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
Specification Max Min Heat No.	Chemical Composition (%)										Tensile Test ¹		Remarks
	C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS	E (%)	Hardness, HRB	
	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	90		
	-	-	-	-	-	18.00	8.00	-	205	515	35	-	
	HSA296-03112	0.015	0.51	1.05	0.030	0.001	18.16	8.05	< 0.10	363	650	55	
HYA012-01112	0.021	0.45	1.62	0.031	0.001	18.20	8.00	< 0.10	363	698	63	82	

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

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

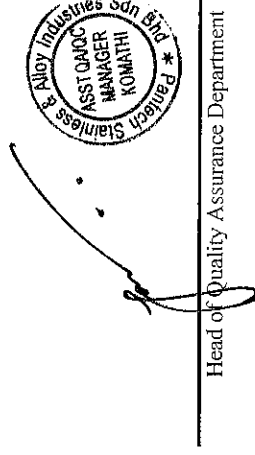
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