



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, 31700 PASIR GUDANG
JOHOR DARUL TAKZIM, MALAYSIA
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.: ISO9001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/58/EU ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1



SIRM
Cert. No.: PP087201



Suruhanjaya Perkhidmatan Air Negeri
NO. SUII PENDAFTARAN : SPAN/KP/A/00883-2011

Certificate No : PSA2-25597
Date : 27/11/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification				Delivery Condition					
APO-2010-0060	L000010755	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M-04 & B36.10M-04				Solution Treated, Pickled-Passivated, Plain Ends Square Cut					
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test		Dimensional /PMI/ Visual Inspection				
JG087-10	2 inch Sch 40S x 6M	TP 304/304L	14	Eddy Current	Flattening	PASSED	PASSED	Pressure / Hold	Result			
JG094-10	2 inch Sch 40S x 6M	TP 304/304L	74	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED			
								2500 PSI, 5s	PASSED			
									GOOD			
									GOOD			
Chemical Composition: (%)												
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks
	Max	1.00	2.00	0.045	0.030	20.00	11.00	-	YS (ksi / MPa)	TS		
Min	-	-	-	-	-	18.00	8.00	-	-	-	-	90
Heat No.									205	515	35	
JG087-10	0.023	0.40	1.15	0.025	0.002	18.12	8.03	< 0.01	348	591	52	81
JG094-10	0.024	0.40	1.17	0.028	0.002	18.10	8.02	< 0.01	348	649	45	82

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-MR01-75-2015 / 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: NIT: Nit Nitrogenically Treated

REQUIREMENTS (REFERENCE TO ASTM E426-98 (Reapproved 2003)¹)

DISCONTINUITY ACC. TO CLAUSE 22.3.8.4. PROCEDURE ACC. TO CLAUSE 22.3.9)



Head of Quality Assurance Department



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 (A MEMBER OF PANTECH GROUP HOLDINGS BERHAD, LISTED ON MAIN MARKET OF BURSA MALAYSIA)

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
 FTD 204334, JALAN PLATINUM UTAMA,
 JOHOR DARUL TAKZIM, MALAYSIA
 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.: ISO9001-0047465



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



SIRIM
 Cert. No.: PP087201

Certificate No : PSA2-25570
 Date : 27/11/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition								
APO-2009-0086	L000010723	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M-04 & B36.10M-04	Solution Treated, Pickled-Passivated, Plain Ends Square Cut								
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test								
JG094-10	2 inch Sch 40S x 6M	TP 304/304L	27	Eddy Current PASSED Flattening PASSED								
Inter-Granular Corrosion Test PASSED												
Hydrostatic Test Pressure / Hold Result PASSED 2500 PSI, 5s												
Dimensional / PMI / Visual Inspection GOOD												
Tensile Test ¹												
Specification	C	Mn	P	S	Cr	Ni	Pb	YS (KSI / MPa)	TS	E (%)	Hardness, HRB	Remarks
Max	0.035	1.00	0.045	0.030	20.00	11.00	-	-	-	-	-	90
Min	-	-	-	-	18.00	8.00	-	205	515	35	-	-
Heat No.	0.024	0.40	0.028	0.002	18.10	8.02	<0.01	348	591	52	81	-
JG094 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 A370 - 12a STANDARD, SPECIMEN GAUGE WIDTH 19.2MM FOR "A" ABOVE, "1" INCLUDE AND BELOW DIRECT TEST FROM PIPE, LONGITUDINAL DIRECTION, GAUGE LENGTH 12" (30mm)

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 A562-10 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 TEST ANALYSIS

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

*2: NH: Not Hydrofluorically Tested

EDDY CURRENT ACCORDING TO ASTM 1426-98 (Reapproved 2003)¹ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.19)



Head of Quality Assurance Department



MILL TEST CERTIFICATE

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 (A MEMBER OF PANTECH GROUP HOLDINGS BERHAD, LISTED ON MAIN MARKET OF BURSA MALAYSIA)

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81760 PASIR GUDANG
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 Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechsteel.com
 http://www.pantech-group.com



SURUCIAYA PERKHIDMATAN AIR NEGARA
 NO. SUIL Pendaftaran : SPAN/KP/A/00883-2011

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

Cert. No.: ISO9001-0607465



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/58/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/11.1006/1

SIRIM
 Cert. No.: PP087201

Certificate No : PSA2-25599
 Date : 30/11/2020

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

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-2009-0020	L000010756	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19 B 36.19M-04 & B36.10M-04	Solution Treated, Pickled-Passivated, Plain Ends Square Cut									
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test									
JG094-10	2 inch Sch 40S x 6M	TP 304/304L	111	Eddy Current PASSED Flattening PASSED									
Chemical Composition (%)													
Tensile Test ¹													
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS (MPa)	TS	E (%)	Hardness, HRB	Remarks
	Min	-	-	-	-	18.00	8.00	-	205	515	35	-	
	Heat No.	0.024	1.17	0.028	0.002	18.10	8.02	< 0.01	348	649	45	82	
JG094-10													

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 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 1650°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

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

*2: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E456-08 (Reapproved 2005)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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Tel: +607-2511888 Fax: +607-2519999 E-mail: info@pantechalloy.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



SPAN

SURUHANJAYA PENCERAMATAN AIR NEGARA
NO. SJIL PENDAFTARAN : SPAN/KP/A/00883-2011

SIRIM
Cert. No.: PPO87201

Cert. No.: ISO9001-0047465



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

Certificate No : PSA2-25673
Date : 07/12/2020

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification				Delivery Condition		Remarks																																																																																														
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test	Dimensional / PMI/ Visual Inspection																																																																																																
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test	Hardness, HRB																																																																																																
				Eddy Current	Flattening	Corrosion Test		Pressure / Hold	Result																																																																																															
JG091-10	4 inch Sch 40S x 6M	TP 304/304L	20	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																														
JG099-10	4 inch Sch 40S x 6M	TP 304/304L	6	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																														
<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="10">Chemical Composition (%)</th> </tr> <tr> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Ni</th> <th>Pb</th> <th>YS (ksi / MPa)</th> <th>TS (%)</th> <th>E (%)</th> </tr> </thead> <tbody> <tr> <td>Max</td> <td>0.035</td> <td>1.00</td> <td>2.00</td> <td>0.045</td> <td>0.030</td> <td>20.00</td> <td>11.00</td> <td>-</td> <td>-</td> <td>-</td> <td>90</td> </tr> <tr> <td>Min</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>18.00</td> <td>8.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Heat No.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>JG091-10</td> <td>0.023</td> <td>0.45</td> <td>1.16</td> <td>0.030</td> <td>0.001</td> <td>18.01</td> <td>8.04</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> </tr> <tr> <td>JG099-10</td> <td>0.022</td> <td>0.41</td> <td>1.13</td> <td>0.030</td> <td>0.002</td> <td>18.08</td> <td>8.03</td> <td>< 0.01</td> <td>351</td> <td>662</td> <td>49</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>364</td> <td>673</td> <td>48</td> </tr> </tbody> </table>											Specification	Chemical Composition (%)										C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS (%)	E (%)	Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	90	Min	-	-	-	-	-	18.00	8.00	-	-	-	-	Heat No.												JG091-10	0.023	0.45	1.16	0.030	0.001	18.01	8.04	< 0.01	205	515	35	JG099-10	0.022	0.41	1.13	0.030	0.002	18.08	8.03	< 0.01	351	662	49										364	673	48
Specification	Chemical Composition (%)																																																																																																							
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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 12" (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 MATERIALS HEAT ANALYSIS

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

*2: NI: Not Industrially Tested

REQUIREMENTS (REFERENCE TO ASTM E426-98 (Reapproved 2003), REQUIREMENTS) ACC. TO CLAUSE 22.3.8.4. PROCEDURE ACC. TO CLAUSE 22.3.9.1

Signature of Head of Quality Assurance Department
DACC MANAGER
HASSANUDDIN
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)
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INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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



Cert. No.: ISO9001-0047465

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



SIRM

Cert. No.: PP087201

Certificate No : PSA2-24942R1
Date : 15/10/2020



SUMBERAJAY POKKIDORAZAN A/S NEGARA
NO. 5111 PENDAFTARAN : SPAN/KP/A/008883-2011

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-04 & B36.10M-04									
APO-2007-0064	L000010127				Solution Treated, Pickled-Passivated, Plain Ends Square Cut								
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test	Dimensional / PMI/ Visual Inspection						
				Eddy Current	Flattening		Pressure / Hold	Result					
IYA080-01112	1 1/2 inch Sch 40S x 6M	TP 304/304L	50	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
IYA094-02112	1 1/2 inch Sch 40S x 6M	TP 304/304L	11	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JGA075-01112	4 inch Sch 40S x 6M	TP 304/304L	13	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JGA076-01112	4 inch Sch 40S x 6M	TP 304/304L	4	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JSA419-02112	4 inch Sch 40S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
Specification	Chemical Composition (%)												
	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks	
0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS (KSI / MPa)	TS (%)	E (%)			
Heat No.	-	-	-	-	-	18.00	8.00	-	205	515	35	90	
IYA080-01112	0.017	0.45	1.55	0.030	0.001	18.10	8.00	< 0.10	372	657	50	84	
IYA094-02112	0.019	0.52	1.57	0.029	0.002	18.10	8.00	< 0.10	409	694	44	88	
JGA075-01112	0.020	0.46	1.16	0.028	0.001	18.20	8.02	< 0.10	360	670	53	81	
JGA076-01112	0.020	0.46	1.16	0.028	0.001	18.20	8.02	< 0.10	347	665	58	80	
JSA419-02112	0.014	0.46	1.12	0.028	0.001	18.04	8.04	< 0.10	337	651	51	79	

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

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003) *2: Nf: Not Hydrostatically Tested

*3: REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.1.8.4, PROCEDURE ACC. TO CLAUSE 22.1.9)

Signature of QAQC Manager
QAQC MANAGER
HASSANUDDIN
TECH STAINLESS & ALLOY INDUSTRIES SDN BHD
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)

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<http://www.pantech-group.com>



Cert. No.: ISO9001-0047465
 MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1

Certificate No : PSA2-25377
 Date : 28/10/2020

INSPECTION DOCUMENT EN 10204:2004 Type 3.1

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

PO No.	Product Specification		Dimensional & Inspection Specification										Delivery Condition							
	Invoice No.	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M-04 & B36.10M-04	Non Destructive Test		Inter-Granular Corrosion Test		Hydrostatic Test		Dimensional / PMI/ Visual Inspection		Solution Treated, Plain Ends Square Cut								
Heat No.	Size	Grade	Quantity (Length)	Eddy Current	Flattening	PASSED	PASSED	Pressure / Hold	Result	Pressure / Hold	Result	2500 PSI, 5s	2500 PSI, 5s	2500 PSI, 5s	2500 PSI, 5s	PASSED	PASSED	GOOD	GOOD	
JG006-10	2 inch Sch 40S x 6M	TP 304/304L	62	PASSED	PASSED															
JG009-10	2 inch Sch 40S x 6M	TP 304/304L	12	PASSED	PASSED															
Specification	Chemical Composition (%)																			
	C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi)	TS (MPa)	E (%)	Tensile Test ¹		Hardness, HRB		Remarks				
Max	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	-	YS	TS	E						
Min	0.035	-	-	-	-	18.00	8.00	-	-	-	-	205	515	35						
JG006-10	0.019	0.39	1.19	0.031	0.001	18.25	8.01	< 0.01	335	631	48	346	661	52						
JG009-10	0.024	0.39	1.19	0.033	0.001	18.23	8.01	< 0.01	346	661	52									

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 11.92MM FOR 1" ABOVE, 1" INCLUDE AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION, GAUGE LENGTH 2.7 (50mm)

NO. 37
 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-MR0175-2013 / ISO 15156-2015 & NACE-MR0103-2015
 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 2013)¹ REQUIREMENTS (REFERENCE: 10 ASTM A999/A999M-12 REQUIREMENTS DISCONTINUITY ACC. TO CLAUSE 22.3.8.4 PROCEDURE ACC. TO CLAUSE 22.3.9)

*2. NIT: Not Hydrostatically Tested



