



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,
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JOHOR DARUL TAKZIM, MALAYSIA
Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechgroup.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

Certificate No : PSA2-25586
Date : 27/11/2020

SIRIM
Cert. No.: PP087201

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition																																																														
APO-2008-0164	L000010740	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)	Dimensional / PMI/ Visual Inspection																																																														
JG083-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	3	GOOD																																																														
<table border="1"> <thead> <tr> <th colspan="2">Non Destructive Test</th> <th colspan="2">Inter-Granular Corrosion Test</th> <th colspan="2">Hydrostatic Test</th> </tr> <tr> <th>Eddy Current</th> <th>Flattening</th> <th>Corrosion Test</th> <th>Pressure / Hold</th> <th>Result</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>PASSED</td> <td>PASSED</td> <td>PASSED</td> <td>2500 PSI, 5s</td> <td>PASSED</td> <td>PASSED</td> </tr> </tbody> </table>					Non Destructive Test		Inter-Granular Corrosion Test		Hydrostatic Test		Eddy Current	Flattening	Corrosion Test	Pressure / Hold	Result	Result	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	PASSED																																												
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<table border="1"> <thead> <tr> <th colspan="5">Chemical Composition (%)</th> <th colspan="2">Tensile Test^{#1}</th> <th rowspan="2">Hardness, HRB</th> <th rowspan="2">Remarks</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>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>-</td> <td>90</td> <td></td> <td></td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>18.00</td> <td>8.00</td> <td>-</td> <td>205</td> <td>515</td> <td>35</td> <td>-</td> <td></td> <td></td> </tr> <tr> <td>0.024</td> <td>0.42</td> <td>1.14</td> <td>0.025</td> <td>0.001</td> <td>18.20</td> <td>8.03</td> <td>< 0.01</td> <td>348</td> <td>591</td> <td>52</td> <td>81</td> <td></td> <td></td> </tr> </tbody> </table>					Chemical Composition (%)					Tensile Test ^{#1}		Hardness, HRB	Remarks	C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS (%)	E (%)	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90			-	-	-	-	-	18.00	8.00	-	205	515	35	-			0.024	0.42	1.14	0.025	0.001	18.20	8.03	< 0.01	348	591	52	81		
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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 19.3MM FOR 1" ABOVE, 1" INCLUDE AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION. GAUGE LENGTH 2" (50mm)

NOTE: 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

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

HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAS/PH. Y 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

#3: 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



MILL TEST CERTIFICATE

PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
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INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

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

SRIM
 Cert. No.: PP087201

Certificate No : PSA2-25585
 Date : 27/11/2020

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					Solution Treated, Plain Ends Square Cut	Hydrostatic Test
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test		Pressure / Hold		Result		GOOD		
JG016-10	10 inch Sch 10S x 6Ml	TP 304/304L	2	Eddy Current	Flattening	PASSED	PASSED	PASSED	NH	-	-	-	GOOD	
Chemical Composition (%)														
Specification		C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB		Remarks
Max		0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS	E	90	
Min		-	-	-	-	-	18.00	8.00	-	205	515	35		
Heat No. JG016-10		0.028	0.41	1.18	0.032	0.002	18.12	8.03	< 0.01	348	591	52	81	

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: MANUFACTURING PROCESS: AOD / AOD
 WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL
 INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE 1E
 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 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)*1 REQUIREMENTS (REFERENCE TO ASTM A989/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.9)



Head of Quality Assurance Dept.



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INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



SIRIM
 Cert. No.: PP087201

Cert. No.: ISO9001-0047465
 MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0039/PED/MUM/1110006/1

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

Certificate No : PSA2-25584
 Date : 27/11/2020

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	Quantity (Length)	Eddy Current	Flattening	Inter-Granular Corrosion Test	Pressure / Hold	Result	Solution Treated, Pickled-Passivated, Plain Ends Square Cut																																																																																						
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test		Tensile Test ¹		Dimensional / PMI/ Visual Inspection																																																																																								
JG092-10	1 inch Sch 10S x 6M	TP 304/304L	50	PASSED	PASSED	YS	TS	Hardness, HRB	GOOD																																																																																							
JG081-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	17	PASSED	PASSED	205	515	90	GOOD																																																																																							
JG083-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	44	PASSED	PASSED	348	591	81	GOOD																																																																																							
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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 2" (50mm)

NOTE: STEEL MAKING PROCESS: AOD / VOD

WELDED BY ELECTRIC TIG 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 E226-98 (Reapproved 2003)² 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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Cert. No.: PP087201

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

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

Certificate No : PSA2-25583
 Date : 27/11/2020

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification										Delivery Condition	
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	Grade	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test		Hydrostatic Test		Dimensional / PMI/ Visual Inspection		Solution Treated, Pickled-Passivated, Plain Ends Square Cut		
Heat No.	Size	Grade	Quantity (Length)	Eddy Current	Flattening	Corrosion Test	Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection						
JG027-10	1 inch Sch 10S x 6M	TP 304/304L	12	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD						
JG082-10	1 inch Sch 10S x 6M	TP 304/304L	65	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD						
JG083-10	1 inch Sch 10S x 6M	TP 304/304L	50	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD						
JG085-10	1 inch Sch 10S x 6M	TP 304/304L	71	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD						
JG089-10	1 inch Sch 10S x 6M	TP 304/304L	25	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		
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS (ksi / MPa)	TS	E (%)				
Mfn	-	-	-	-	-	18.00	8.00	-	-	-	-	90			
Heat No.	-	-	-	-	-	-	-	-	205	515	35	-			
JG027-10	0.023	0.40	1.15	0.029	0.001	18.25	8.01	<0.01	348	591	52	81			
JG082-10	0.022	0.41	1.13	0.028	0.002	18.18	8.01	<0.01	332	623	50	84			
JG083-10	0.024	0.42	1.14	0.025	0.001	18.20	8.03	<0.01	333	634	54	83			
JG085-10	0.023	0.40	1.15	0.025	0.002	18.12	8.03	<0.01	363	678	55	83			
JG089-10	0.023	0.45	1.16	0.030	0.001	18.01	8.04	<0.01	344	665	53	87			

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 GAGE WIDTH 1/8" (3.175mm) FOR "A" ABOVE, 1" INCLUDE AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION. GAUGE LENGTH 1.2" (30mm)

NOTE: MADE IN MALAYSIA
 STEEL MAKING PROCESS: AOD / VOD
 WELDED BY ELECTRIC TIG WELDING WITH PROCESS WITH NO FILLER METAL
 INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE

HARDNESS ACCORDING TO RACE-MERUTS-2015 / ISO 15156-2015 & NACE-MRO103-2015
 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)*1. REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.1.9)



Head of Quality Assurance Department



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PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
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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.: 15C9001-0047665

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 : PSA2-25582
Date : 27/11/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-2009-0086	L000010735	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	Hydrostatic Test	Dimensional / PMI/ Visual Inspection						
JC095-10	6 inch Sch 10S x 6M	TP 304/304L	5	Eddy Current PASSED	Flattening PASSED	Pressure / Hold 1300 PSI, 5s PASSED	GOOD						
JG100-10	6 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	1300 PSI, 5s PASSED	GOOD						
JG103-10	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	1300 PSI, 5s PASSED	GOOD						
Chemical Composition (%)													
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS	E (%)	Hardness, HRB	Remarks
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	-	-
Min	-	-	-	-	-	18.00	8.00	-	-	-	-	-	-
Heat No.	-	-	-	-	-	-	-	-	205	515	35	90	-
JG085-10	0.024	0.43	1.19	0.025	0.001	18.17	8.04	< 0.01	348	591	52	81	-
JG100-10	0.027	0.42	1.20	0.028	0.001	18.24	8.03	< 0.01	364	637	50	78	-
JG103-10	0.023	0.48	1.17	0.028	0.002	18.09	8.02	< 0.01	357	669	51	81	-

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" INCLUSIVE AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION, GAUGE LENGTH 11.2" (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: Non Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM 1425-98 (Reapproved 2003) *1 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 21.3.3.8.4, PROCEDURE ACC. TO CLAUSE 21.3.3.9)



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, 81706 PASIR GUDANG
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Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechgroup.com
http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



SIRM
Cert. No.: PP087201



SUPERSENYA POKKIBERAZAN AIR NEGARA
NO. SUJIL PENDAFTARAN : SPAN/KP/A/00883-2011

Cert. No.: ISO9001-0087465



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

Certificate No : PSA2-25548
Date : 27/11/2020

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

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 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	Hydrostatic Test		Dimensional/PMI/ Visual Inspection					
				Eddy Current	Flattening	Corrosion Test		Pressure / Hold	Result						
JG089-10	1 inch Sch 10S x 6M	TP 304/304L	50	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD					
JG092-10	1 inch Sch 10S x 6M	TP 304/304L	132	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD					
JG082-10	2 1/2 inch Sch 10S x 6M	TP 304/304L	18	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD					
JG084-10	2 1/2 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD					
JG093-10	2 1/2 inch Sch 10S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD					
Chemical Composition (%)													Tensile Test ¹		Hardness, HRB
C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS	E (%)					
0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	205	515	35	90	
0.023	0.45	1.16	0.030	0.001	18.00	8.00	-	348	591	52	348	591	52	81	
0.024	0.40	1.17	0.028	0.002	18.10	8.02	< 0.01	350	660	49	348	663	50	85	
0.022	0.41	1.13	0.028	0.002	18.18	8.01	< 0.01	348	663	50	366	674	51	80	
0.024	0.42	1.14	0.025	0.001	18.20	8.03	< 0.01	358	675	48					
0.024	0.40	1.17	0.028	0.002	18.10	8.02	< 0.01								

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 A362-10 PRACTICE E

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

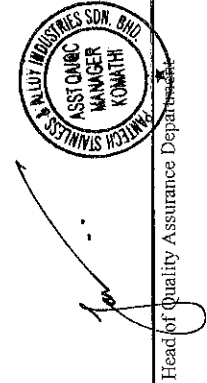
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

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 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)

*2: NH: Not Hydrostatically Tested



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)

FTD 204334, JALAN PLATINUM UTAMA,
KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
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Tel: +607-2511888 Fax: +607-2519999 E-mail: info@pantechsdn.com
http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204:2004 Type 3.1



SUKHENDRA PERKUMPERAN AIR NEGARA
NO. 5/II, PENDAFARAN: SPAN/KP/A/00883-2011

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 : PSA2-25606
Date : 30/11/2020

SIRIM
Cert. No.: PP087201

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 - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 19 / ASME SA999/SA999M - 19	B 36.19M-04 & B36.10M-04	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	Pressure / Hold	Result	Remarks																																																																																																																						
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JG109-10	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																																						
JGA091-01112	6 inch Sch 10S x 6M	TP 304/304L	6	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																																						
JGA133-01112	6 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																																						
JSA426-01112	6 inch Sch 10S x 6M	TP 304/304L	7	PASSED	PASSED	PASSED	1300 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>-</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>JG109-10</td> <td>0.026</td> <td>0.50</td> <td>1.14</td> <td>0.029</td> <td>0.001</td> <td>18.25</td> <td>8.01</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> </tr> <tr> <td>JGA091-01112</td> <td>0.022</td> <td>0.37</td> <td>1.17</td> <td>0.027</td> <td>0.001</td> <td>18.12</td> <td>8.03</td> <td>< 0.01</td> <td>346</td> <td>649</td> <td>54</td> </tr> <tr> <td>JGA133-01112</td> <td>0.020</td> <td>0.42</td> <td>1.16</td> <td>0.029</td> <td>0.002</td> <td>18.17</td> <td>8.02</td> <td>< 0.01</td> <td>353</td> <td>682</td> <td>51</td> </tr> <tr> <td>JSA426-01112</td> <td>0.012</td> <td>0.39</td> <td>1.03</td> <td>0.031</td> <td>0.002</td> <td>18.04</td> <td>8.00</td> <td>< 0.01</td> <td>338</td> <td>644</td> <td>55</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>347</td> <td>671</td> <td>49</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	-	-	-	-	Min	-	-	-	-	-	18.00	8.00	-	-	-	-	Heat No.												JG109-10	0.026	0.50	1.14	0.029	0.001	18.25	8.01	< 0.01	205	515	35	JGA091-01112	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.01	346	649	54	JGA133-01112	0.020	0.42	1.16	0.029	0.002	18.17	8.02	< 0.01	353	682	51	JSA426-01112	0.012	0.39	1.03	0.031	0.002	18.04	8.00	< 0.01	338	644	55										347	671	49
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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-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

*2: NI: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003)*1 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 and Stamp of 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
 JOHORE 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



Cert. No.: ISO9001-0047455
 MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2019/66/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1

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

Certificate No : PSA2-25606
 Date : 30/11/2020

SIRIM
 Cert. No.: PP087201

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification				Delivery Condition				
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A998/A998M - 18 / ASME SA998/SA998M - 19	B 36.19M-04 & 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			
				Eddy Current	Flattening	Corrosion Test						
ISA411-01112	6 inch Sch 10S x 6M	TP 304/304L	10	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD		
JG011-10	6 inch Sch 10S x 6M	TP 304/304L	64	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD		
JG034-10	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD		
JG095-10	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD		
JG100-10	6 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	PASSED	1300 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	TS		
	Max	-	-	-	-	18.00	8.00	-	(ksi / MPa)	(%)	(%)	
	Min	-	-	-	-	18.18	8.19	< 0.01	205	515	35	90
	Heat No.	-	-	-	-	18.23	8.02	< 0.01	354	647	51	-
ISA411-01112	0.014	0.39	0.98	0.029	0.002	18.13	8.02	< 0.01	341	655	57	80
JG011-10	0.025	0.44	1.14	0.029	0.002	18.23	8.03	< 0.01	344	636	60	83
JG034-10	0.020	0.46	1.40	0.026	0.003	18.17	8.04	< 0.01	350	657	48	79
JG095-10	0.024	0.43	1.19	0.025	0.001	18.24	8.03	< 0.01	364	637	50	78
JG100-10	0.027	0.42	1.20	0.028	0.001							

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 1/2" ABOVE, 1" ABOVE, 1" BELOW 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

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

TREAT TREATMENT: SOLUTION TREATED AT MINIMUM 1059°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)*1 REQUIREMENTS (REFERENCE TO ASTM A998/A998M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4. PROCEDURE ACC. TO CLAUSE 22.3.9)

*2: NDE Not Hydrostatically Tested

[Signature]
 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 204534, JALAN PLATINUM UTAMA,
 JOHOR DARUL TAKZIM, MALAYSIA
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 Tel: +607-2519999 Fax: +607-2519999 E-mail: info@pantechgroup.com
 http://www.pantechgroup.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



SIRIM
 Cert. No.: PP087201

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

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

Certificate No : PSA2-25605
 Date : 30/11/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition								
APO-2010-0060	L000010766	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	Hydrostatic Test	Dimensional / PMI/ Visual Inspection					
JG011-10	6 inch Sch 10S x 6M	TP 304/304L	15	Eddy Current	Flattening	1300 PSI, 5s	GOOD					
JGA091-01112	6 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	1300 PSI, 5s	GOOD					
JSA426-01112	6 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	1300 PSI, 5s	GOOD					
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS	TS	E	Remarks
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90
Min	-	-	-	-	-	18.00	8.00	-	-	-	-	
Heat No.	-	-	-	-	-	-	-	-	205	515	35	
JG011-10	0.025	0.44	1.14	0.029	0.002	18.13	8.02	< 0.01	341	655	57	80
JGA091-01112	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.01	353	682	51	82
JSA426-01112	0.012	0.39	1.03	0.031	0.002	18.04	8.00	< 0.01	347	671	49	83

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 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 A362-10 PRACTICE E

HAZARDOUSNESS 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

EDDY CURRENT ACCORDING TO ASTM F426-98 (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)

*2- NH: Not Hydrostatically Tested

Signature of Head of Quality Assurance Department
 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)

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
PTD 204334, JALAN PLATNUM UTAMA,
JOHOR DARUL TAKZIM, MALAYSIA
Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechgroup.com
http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



SIRIM
Cert. No.: PP087201

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

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

Certificate No : PSA2-25620
Date : 30/11/2020

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	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		
JS074-10	1/2 inch Sch 10S x 6M	TP 304/304L	169	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD	
Chemical Composition (%)										
Specification Max Min Heat No. JS074-10	C	P	S	Cr	Ni	Pb	Tensile Test ^{*1}		Hardness, HRB	Remarks
	0.035	0.045	0.030	20.00	11.00	-	YS (KSI / MPa)	TS		
	-	-	-	18.00	8.00	-	-	-	-	90
	0.018	0.032	0.001	18.10	8.02	< 0.01	205	515	35	-
							374	690	53	85

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 FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE B

HARDNESS ACCORDING TO ENAC16-AR0175-2015 / ISO 15156-2015 & NACE-MR01-03-2015

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. NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E436-98 (Reapproved 2003)[†] REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)

Signature of Head of Quality Assurance Department
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 204234, 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

INSPECTION DOCUMENT: EN 10204:2004 Type 3.1



Suruhanjaya Perkhidmatan Air Negeri
 NO. SIHL PENDAFTARAN : SPAN/KP/A/00889-2011



SIRIM
 Cert. No.: P087201



Cert. No.: ISO9001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110009/1

Certificate No : PSA2-25600
 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-2011-0058	L000010758	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	Hydrostatic Test	Dimensional / PMI/ Visual Inspection						
JG102-10	14 Inch Sch 10S x 6M	TP 304/304L	2	Eddy Current PASSED	Flattening PASSED	Pressure / Hold NH	Result GOOD						
Chemical Composition (%)													
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS (KSI / MPa)	TS (%)	E (%)	Hardness, HRB	Remarks
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90	
Min	-	-	-	-	-	18.00	8.00	-	205	515	35	-	
Heat No.	0.027	0.42	1.20	0.028	0.001	18.24	8.03	< 0.01	331	619	49	81	
JG102-10													

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 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 TREAT ANALYSIS

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

*2: NH: Not Hydrostatically Tested

REQUIREMENT ACCORDING TO ASTM E436-98 (Reapproved 2003) *1 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 2.3.8.4, PROCEDURE ACC. TO CLAUSE 2.3.3.9)

Signature of Head of Quality Assurance Department
 CQC MANAGER
 PANTECH GROUP HOLDINGS BERHAD

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@pantechalloy.com
http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



SIRIM
Cert. No.: PP087201
NO. SUJIL PENDAFTARAN: SPAN/KP/A/00883-2011



SIRIM
Cert. No.: PP087201



Cert. No.: IS09001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/66/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1

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

Certificate No : PSA2-25676
Date : 07/12/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-2011-0146	L000010828	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	Hydrostatic Test	Dimensional /PMI/ Visual Inspection						
JG097-10	10 inch Sch 10S x 6M	TP 304/304L	14	Eddy Current PASSED	Flattening PASSED	Pressure / Hold NH	GOOD						
Chemical Composition (%)													
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS (ksi / MPa)	E (%)	Hardness, HRB	Remarks
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90	
Min	-	-	-	-	-	18.00	8.00	-	205	515	35	-	
Heat No. JG097-10	0.024	0.43	1.19	0.025	0.001	18.17	8.04	< 0.01	336	646	55	78	

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
TARTENESS ACCORDING TO NACE-MRO175-2015 / ISO 15156-2015 & NACE-MRO 01-2015
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: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E426-98 (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)

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)

PTD 204334, JALAN PLATINUM UTAMA,
KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON I2B, 81700 PASIR GUDANG
JOHOR DARUL TAQZIM, MALAYSIA
Tel: +607-2519888 Fax: +607-2519999 E-mail: info@pantechsteel.com
http://www.pantech-group.com



INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



SIRIM
Cert. No.: PP087201
Suruhanjaya Perkhidmatan Air Negeri
NO. SUIL PENDAFTARAN: SPAN/KP/A/006893-2011

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 : PSA2-25675
Date : 07/12/2020

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

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification										Delivery Condition	
			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	Hydrostatic Test		Dimensional / PMI/ Visual Inspection			Remarks	
				Eddy Current	Flattening			Pressure / Hold	Result		Hardness, HRB			
JG081-10	2 inch Sch 10S x 6M	TP 304/304L	32	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JG083-10	2 inch Sch 10S x 6M	TP 304/304L	4	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JG092-10	2 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JG147-10	2 inch Sch 10S x 6M	TP 304/304L	13	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD				
JG041-10	10 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED	NH	-	GOOD				
Chemical Composition (%)														
Specification		C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB		
Max		0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS	E		
Min		-	-	-	-	-	18.00	8.00	-	(ksi / MPa)	(%)			
Heat No.		-	-	-	-	-	-	-	-	205	515	35	90	
JG081-10	0.022	0.41	1.13	0.028	0.002	0.002	18.16	8.01	< 0.01	362	674	54	82	
JG083-10	0.024	0.42	1.14	0.025	0.001	0.001	18.20	8.03	< 0.01	373	658	51	83	
JG092-10	0.024	0.40	1.17	0.028	0.002	0.002	18.10	8.02	< 0.01	352	642	49	81	
JG147-10	0.024	0.39	1.14	0.025	0.001	0.001	18.23	8.04	< 0.01	367	664	52	84	
JG041-10	0.022	0.44	1.41	0.029	0.002	0.002	18.30	8.02	< 0.01	329	622	61	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 NACH-MRD15-2015 / ISO 15156-2015 & NACE-MRO101-2015

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: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003)*3. REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4 PROCEDURE ACC. TO CLAUSE 22.3.9)

Signature of Head of Quality Assurance Department
DACC
MANAGER
PASIR GUDANG
JALAN PLATINUM UTAMA
81700 PASIR GUDANG
JOHOR DARUL TAQZIM

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)

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
 PTD 204334, JALAN PLATINUM UTAMA,
 JOHOR DARUL TAKZIM, MALAYSIA
 Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechgroup.com
 http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204:2004 Type 3.1

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



Cert. No.: ISO9001-0047465



SIRIM
 Cert. No.: P087201



Syarikannya Berhad
 NO. SUK PONDATTARAN: SPAN/KP/A/00883-2011

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

Certificate No : PSA2-25674
 Date : 07/12/2020

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	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	B 36.19M-04 & B36.10M-04	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test	Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection																																																																																		
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test	Hardness, HRB	Remarks																																																																																			
				Eddy Current	Flattening	Corrosion Test																																																																																						
JG016-10	10 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED	NH	-	GOOD																																																																																		
JG097-10	10 inch Sch 10S x 6M	TP 304/304L	14	PASSED	PASSED	PASSED	PASSED	NH	-	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)</th> <th>TS (MPa)</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>-</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>JG016-10</td> <td>0.028</td> <td>0.41</td> <td>1.18</td> <td>0.032</td> <td>18.12</td> <td>8.03</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> </tr> <tr> <td></td> <td>JG097-10</td> <td>0.024</td> <td>0.43</td> <td>1.19</td> <td>0.025</td> <td>18.17</td> <td>8.04</td> <td>< 0.01</td> <td>335</td> <td>646</td> <td>54</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>336</td> <td>646</td> <td>55</td> </tr> </tbody> </table>											Specification	Chemical Composition (%)										C	Si	Mn	P	S	Cr	Ni	Pb	YS (KSI)	TS (MPa)	E (%)	Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	Min	-	-	-	-	-	18.00	8.00	-	-	-	-	Heat No.	JG016-10	0.028	0.41	1.18	0.032	18.12	8.03	< 0.01	205	515	35		JG097-10	0.024	0.43	1.19	0.025	18.17	8.04	< 0.01	335	646	54										336	646	55
Specification	Chemical Composition (%)																																																																																											
	C	Si	Mn	P	S	Cr	Ni	Pb	YS (KSI)	TS (MPa)	E (%)																																																																																	
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Heat No.	JG016-10	0.028	0.41	1.18	0.032	18.12	8.03	< 0.01	205	515	35																																																																																	
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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 19.3MM 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 MATERIALS 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)*1 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4. PROCEDURE: ACC. TO CLAUSE 22.3.9)

[Signature]
 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.: ISO9001-0047465



SIRM
 Cert. No.: P0087201



Suruhanjaya Perkhidmatan Air Bersih
 NO. SUHL PENDAFTARAN: SPAN/KP/A/00883-2011

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

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

Certificate No : PSA2-25672
 Date : 07/12/2020

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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	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			
JG084-10	3 inch Sch 10S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	2100 PSI, 5s	PASSED	GOOD				
JG098-10	3 inch Sch 10S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	2100 PSI, 5s	PASSED	GOOD				
Chemical Composition (%)													
Specification		C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks
Max		0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS		
Min		-	-	-	-	-	18.00	8.00	-	-	-	-	-
Heat No.		0.024	0.42	1.14	0.025	0.001	18.20	8.03	< 0.01	205	515	35	90
JG084-10		0.022	0.41	1.13	0.030	0.002	18.08	8.03	< 0.01	356	635	47	84
JG098-10										330	622	48	81

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.
 INTERCRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E.
 HARDNESS ACCORDING TO MACE-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: N/A: Not Hydrostatically Tested

REQUIREMENTS (REFERENCE TO ASTM E246-98 (Reapproved 2003)¹ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.5.8.4 PROCEDURE: ACC. TO CLAUSE 22.5.9)

Signature of Head of Quality Assurance Department
 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.: ISO9001-0027465
PED CERTIFICATE NO.:
0039/PED/MUM/1110006/1



SIRIM
Cert. No.: PP087201



NO. SUIJ PENDATARAN: SPAN/PT/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 : PSA2-24913
Date : 27/07/2020

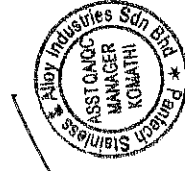
PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition								
APO-2007-0064	L000010105	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19 B 36.10M-04 & B36.10M-04	Solution Treated, Pickled-Passivated, Plain Ends Square Cut								
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test								
IGA032-01112	1 1/2 inch Sch 10S x 6M	TP 304/304L	61	Eddy Current PASSED Flattening PASSED								
JGA082-01112	1 1/2 inch Sch 10S x 6M	TP 304/304L	61	PASSED PASSED								
Chemical Composition (%)												
C	Si	Mn	P	S	Cr	Ni	Pb	YS	TS	E	Hardness, HRB	Remarks
0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-		
Max												
Min												
Heat No.												
IGA032-01112								205	515	35	90	
JGA082-01112								343	684	42	84	
								372	650	53	81	

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 - 12; 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 B
HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2:2015 & NACE-MR0103-2015
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1080°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 E436-08 (Reapproved 2003)*2: NDT, Not Hydrostatically Tested

*3: REF: Not Hydrostatically Tested
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



MILL TEST CERTIFICATE

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

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
 JOHOR DARUL TAKZIM, MALAYSIA
 PTD 204334, JALAN PLATINUM UTAMA,
 SRI MANGROVE, MERTAJAYA, JOHOR DARUL TAKZIM, MALAYSIA
 Tel: +607-2518888 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

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

NO. SILL PENDAFTARAN : SPAN/RP/A/00883-2011

Certificate No : PSA2-25354
 Date : 21/10/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition										
APO-2006-0132	L000010514	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										
JS001-10	3/4 inch Sch 10S x 6M	TP 304/304L	127	Eddy Current PASSED Flattening PASSED										
				Inter-Granular Corrosion Test PASSED										
				Hydrostatic Test Pressure / Hold 2500 PSI, 5s PASSED										
				Dimensional / PMI / Visual Inspection GOOD										
Chemical Composition (%)														
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks		
	Max	1.00	1.00	2.00	0.045	0.030	20.00	11.00	-	YS (ksi / MPa)			TS	E (%)
	Min	-	-	-	-	-	18.00	8.00	-	205			515	35
Heat No.	0.018	0.48	1.04	0.032	0.001	18.10	8.02	<0.01	363	689	53	89		
JS001-10														

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 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

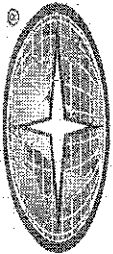
*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003)^{#1} REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3 & 4. PROCEDURE ACC. TO CLAUSE 22.3.9)

*2: NH: Net Hydrogen Ionically Treated

QAQC MANAGER
HASSANUDDIN
 RABALLOY 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)

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
 JOHOR DARUL TAKZIM, MALAYSIA
 Tel: +607-2511888 Fax: +607-2519999 E-mail: info@pantechgroup.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.: IS09001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU, ANNEX 1, PARAG 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/11.0006/1

Certificate No : PSA2-25352
 Date : 21/10/2020



SIRIM
 Cert. No.: PP087201

Suruhanjaya Perkhidmatan Awam & Sports
 NO. SUIK PENDAFTARAN: SPAN/KP/A/00885-2011

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	Eddy Current	Flattening	Inter-Granular Corrosion Test	Hydrostatic Test Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection	Solution Treated, Pickled-Passivated, Plan Ends Square Cut		Pressure / Hold		Result	Dimensional / PMI/ Visual Inspection	
APO-2007-0064	L000010512	6 inch Sch 10S x 6M	TP 304/304L	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	Solution Treated, Pickled-Passivated, Plan Ends Square Cut		1300 PSI, 5s	PASSED	GOOD			
		6 inch Sch 10S x 6M	TP 304/304L	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	Solution Treated, Pickled-Passivated, Plan Ends Square Cut		1300 PSI, 5s	PASSED	GOOD			
		6 inch Sch 10S x 6M	TP 304/304L	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	Solution Treated, Pickled-Passivated, Plan Ends Square Cut		1300 PSI, 5s	PASSED	GOOD			
Specification		Chemical Composition (%)												Tensile Test ¹		Remarks
Max	C	Si	Mn	P	S	Cr	Ni	Pb	YS - - -		TS - -	E -	Hardness, HRB			
Min	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	205		515	35		90		
Heat No.	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.01	353		682	51			82	
JGA091-01112	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.01	363		682	51				
JGA091-01182	0.020	0.42	1.16	0.029	0.002	18.17	8.02	< 0.01	338		644	55				81
JGA133-01112																

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 112 (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-MR0105-2015

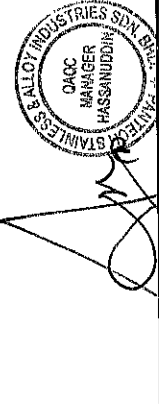
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

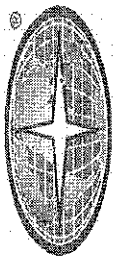
*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

EDDY CURRENT ACCORDING TO ASTM E4-98 (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)

*2: NH: NH Hydrostatically Tested



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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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



SPAN

Suruhanjaya Perkhidmatan Pelanggan
NO. SJUL PENDAFTARAN: SPAN/KP/A/00885-2011

SIRIM
Cert. No.: PP087201

Cert. No.: ISO9001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/68/EU ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.:
0058/PED/MUM/1110006/1

Certificate No : PSA2-25353
Date : 21/10/2020

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	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	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																																																																		
JS001-10	3/4 inch Sch 10S x 6M	TP 304/304L	22	Eddy Current	Flattening	PASSED	PASSED	Pressure / Hold	Result	2500 PSI, 5s	PASSED	GOOD																																																																
<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="7">Chemical Composition (%)</th> <th colspan="2">Tensile Test^{*1}</th> <th rowspan="2">Hardness, HRB</th> <th rowspan="2">Remarks</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>-</td> <td>90</td> <td></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>205</td> <td>515</td> <td>35</td> <td>-</td> <td></td> </tr> <tr> <td>Heat No. JS001-10</td> <td>0.018</td> <td>0.48</td> <td>1.04</td> <td>0.032</td> <td>0.001</td> <td>18.10</td> <td>8.02</td> <td>< 0.01</td> <td>363</td> <td>689</td> <td>53</td> <td>89</td> <td></td> </tr> </tbody> </table>												Specification	Chemical Composition (%)							Tensile Test ^{*1}		Hardness, HRB	Remarks	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	-	205	515	35	-		Heat No. JS001-10	0.018	0.48	1.04	0.032	0.001	18.10	8.02	< 0.01	363	689	53	89	
Specification	Chemical Composition (%)							Tensile Test ^{*1}		Hardness, HRB	Remarks																																																																	
	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																																																																
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Heat No. JS001-10	0.018	0.48	1.04	0.032	0.001	18.10	8.02	< 0.01	363	689	53	89																																																																

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: NIT: Not Hydrocratically Treated
EDDY CURRENT ACCORDING TO ASTM E266-98 (Reapproved 2005)[†] REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4. PROCEDURE ACC. TO CLAUSE 22.3.9)

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)
 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@pantechgroup.com
 http://www.pantech-group.com



SIRIM
 Cert. No.: PP087201

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

Cert. No.: ISO9001-0047465

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

Certificate No : PSA2-25350
 Date : 21/10/2020

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test		Hydrostatic Test		Dimensional / PMI/ Visual Inspection		Solution Treated, Pickled-Passivated, Plain Ends Square Cut		
Heat No.	Size	Grade	Quantity (Length)	Eddy Current	Flattening	Inter-Granular Corrosion Test	Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection						
JG011-10	6 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD						
JGA068-01112	6 inch Sch 10S x 6M	TP 304/304L	10	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD						
JGA091-01112	6 inch Sch 10S x 6M	TP 304/304L	13	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD						
JGA133-01112	6 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD						
JSA426-01112	6 inch Sch 10S x 6M	TP 304/304L	6	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD						
Chemical Composition (%)															
Specification	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			
JG011-10	0.025	0.44	1.14	0.029	0.002	18.13	8.02	< 0.01	341	655	57	80			
JGA068-01112	0.021	0.39	1.18	0.031	0.003	18.21	8.04	< 0.01	343	639	60	79			
JGA091-01112	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.01	353	682	51	82			
JGA133-01112	0.020	0.42	1.16	0.029	0.002	18.17	8.02	< 0.01	338	644	55	81			
JSA426-01112	0.012	0.39	1.03	0.031	0.002	18.04	8.00	< 0.01	347	671	49	83			

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 T ABOVE, T 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

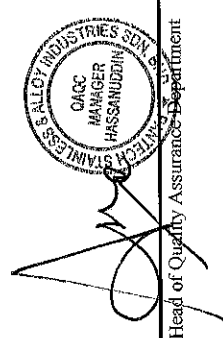
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

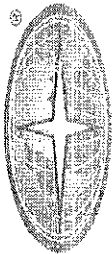
*1: YS: YIELD STRENGTH T: TENSILE STRENGTH E: ELONGATION

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003)⁴ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)

*2: NH: Not Hydrostatically Tested



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

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Tel: +607-2511888 Fax: +607-2519599 E-mail: info@pantechalloy.com

http://www.pantech-group.com



Cert. No.: ISO9001-0047465

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



SIRIM Cert. No.: PP087201



Sistem Pengurusan Kualiti ISO 9001
NO. SIKIL 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 : PSA2-25294
Date : 13/10/2020

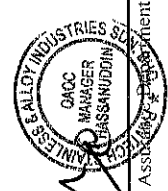
PO No.	invoice No.	Product Specification		Dimensional & Inspection Specification				Delivery Condition																																																															
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	B 36. 19M-04 & B36. 10M-04	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	Solution Treated, Plain Ends Square Cut	Hydrostatic Test		Dimensional /PMI/ Visual Inspection																																																														
Heat No.	Size	Grade	Quantity (Length)	Eddy Current	Flattening	Inter-Granular Corrosion Test	Pressure / Hold	Result		GOOD																																																													
JS002-10	12 inch Sch 10S x 6M	TP 304/304L	15	PASSED	PASSED	PASSED	NH	-																																																															
<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 colspan="2">Tensile Test ¹</th> <th rowspan="2">Hardness, HRB</th> <th rowspan="2">Remarks</th> </tr> <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>YS MPa</td> <td>TS MPa</td> <td>E (%)</td> <td></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>205</td> <td>515</td> <td>35</td> <td>90</td> </tr> <tr> <td>Heat No.</td> <td>0.012</td> <td>0.42</td> <td>1.06</td> <td>0.032</td> <td>0.002</td> <td>18.18</td> <td>8.01</td> <td>< 0.01</td> <td>329</td> <td>630</td> <td>57</td> <td>79</td> </tr> </thead></table>										Specification	Chemical Composition (%)										C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks	Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS MPa	TS MPa	E (%)		Min	-	-	-	-	-	18.00	8.00	-	205	515	35	90	Heat No.	0.012	0.42	1.06	0.032	0.002	18.18	8.01	< 0.01	329	630	57	79
Specification	Chemical Composition (%)																																																																						
	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks																																																											
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Min	-	-	-	-	-	18.00	8.00	-	205	515	35	90																																																											
Heat No.	0.012	0.42	1.06	0.032	0.002	18.18	8.01	< 0.01	329	630	57	79																																																											

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN HAS BEEN MANUFACTURED, SAMPLED, TESTED & INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ABOVE SPECIFICATION IN PURSUANCE OF THE
ASME SA999/SA999M-18/ASME SA999/SA999M-19 STANDARD. SPECIMEN GAGE WEIGHTS IN MM FOR F-ABOVE. F INCLUDES AND BELOW DIRECT TEST FROM PIPE LONGITUDINAL DIRECTION. GAGE LENGTH 2" (50mm)

NOTE: MADE IN MALAYSIA STEEL MAKING PROCESS: AOD / VOD
WELDED BY ELECTRIC FUSION WELDING WITH PROTECTIVE GAS AND FILLER METAL.
INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE F.
HARDNESS ACCORDING TO ASTM E18-05 (ISO 1576-2015) & NACE-MR0102-2015
UPPER TRIANGLE SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER
CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

* YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION
EDDY CURRENT ACCORDING TO ASTM E309-08 (Reapproved 2003) REQUIREMENTS (REFERENCE TO ASTM A999/A999M-18 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3 & 4.1 PRACTURE ACC. TO CLAUSE 22.3.9)

(Signature)
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 206334, 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@pantechalloy.com
 http://www.pantech-group.com



Suruhanjaya Perindustrian Air Kejuruan
 NO. SULLI 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

Cert. No.: ISO9001-0047465



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/FEU ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO. :
 0038/PED/MUM/J110006/1



SIRIM
 Cert. No.: PP087201

Certificate No : PSA2-25380
 Date : 28/10/2020

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	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection	
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test		Inter-Granular Corrosion Test			
ISA411-02112	16 inch Sch 10S x 6M	TP 304/304L	1	Eddy Current	Flattening	PASSED	PASSED		
JGA052-01112	16 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	PASSED		
Chemical Composition (%)									
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	
Min	-	-	-	-	-	18.00	8.00	-	
Heat No.	ISA411-02112	0.39	0.98	0.029	0.002	18.18	8.19	< 0.01	
JGA052-01112	0.021	0.43	1.13	0.030	0.002	18.13	8.05	< 0.01	
Tensile Test ¹									
	YS	TS	Elongation (%)		Hardness, HRB		Remarks		
	205	515	35		90				
	332	639	55		79				
	330	635	59		81				

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 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 1020°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 E-26-98 (Reapproved 2009)² REQUIREMENT'S (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)

*2: NH: Not Hydrogenatically Treated

Signature of Head of Quality Assurance Department
 QACC MANAGER
 HASSANUDDIN
 PANTech 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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 PTD 204534, JALAN PLATINIUM UTAMA,
 http://www.pantech-group.com

Tel: +607-2519888 Fax: +607-2519999 E-mail: info@pantechsteel.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification													Delivery Condition		Remarks	
APO-2008-0164	L000010536	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				Hydrostatic Test			Dimensional /PMI/ Visual Inspection
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test			Tensile Test *1			Hardness, HRB		Result	Result	GOOD	GOOD	
				Eddy Current	Flattening		YS	TS	E										
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	Chemical Composition (%)			Tensile Test *1		Hardness, HRB		Remarks			
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-				205	515	35					
Mfn						18.00	8.00												
Heat No.																			
ISA411-02112	0.014	0.39	0.98	0.029	0.002	18.18	8.19	< 0.01				332	639	55					
JGA051-01112	0.021	0.43	1.13	0.030	0.002	18.13	8.05	< 0.01				328	627	60					

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 F.

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

HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1035°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

*2: NFI Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E26-98 (Reapproved 2003) *1 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.4.4 PROCEDURE ACC. TO CLAUSE 22.3.9)



SPAN
 Syarikat Perindustrian Pasir Gudang Sdn Bhd

SIRIM
 Cert. No.: PP087201

NO. SOIL PENDAFTARAN: SPAN/KPA/00683-2011

Cert. No.: ISO9001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/J110006/1

Certificate No : PSA2-25379
 Date : 28/10/2020

CHOC
 QUALITY MANAGER
 (PASSANUDIN)
 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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Tel: +607-2513888 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



NO. SUK Pendaftaran : SPAN/JP/A/00883-2011

ISO 9001 CERTIFIED
MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/68/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1

Cert. No.: ISO9001-0047465
Certificate No : PSA2-25378
Date : 28/10/2020

Cert. No.: PP087201

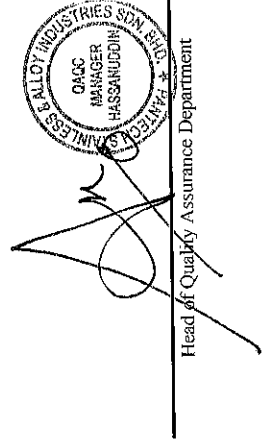


PO No.	Invoice No.	Product Specification				Dimensional & Inspection Specification										Delivery Condition	
		ASTM A312/A312M - 19/ ASME SA312/SA312M - 19		Grade		Quantity (Length)		Non Destructive Test		Inter-Granular Corrosion Test		Hydrostatic Test		Solution Treated, Plain Ends Square Cut		Dimensional /PMI/ Visual Inspection	
APO-2008-0164	L000010535	14 inch Sch 10S x 6M		TP 304/304L		9		PASSED		PASSED		PASSED		NH		GOOD	
Heat No.	JG013-10	14 inch Sch 10S x 6M		TP 304/304L		9		PASSED		PASSED		PASSED		NH		GOOD	
Specification		Chemical Composition (%)														Remarks	
Max		C	Si	Mn	P	S	Cr	Ni	Pb	YS	TS	E	Hardness, HRB				
Min		0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90				
Heat No.	JG013-10	-	-	-	-	-	18.00	8.00	-	205	515	35	82				
		0.024	0.39	1.16	0.029	0.001	18.17	8.04	< 0.01	343	641	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 F
HARDNESS ACCORDING TO NACT-M80175-2015 / ISO 15156-2015 & NACE-MRO103-2015
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 2005) *2: REQUIREMENTS (REFERENCE TO ASTM A999/A999M) *3: REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.9



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,
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 Tel: +607-251 8888 Fax: +607-2519999 E-mail: info@pantechssaiib.com
 http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204 Type 3.1



SURTIKALAYA, BOKKIDIRIMAN, AIR NEGARA
 NO. 3111 PENDAFTARAN: SPAN/KP/A/00883-2011

SIRM

Cert. No.: PP067201

Cert. No.: ISO9001-0047463



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/66/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1

Certificate No : PSA2-25506

Date : 24/11/2020

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

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification				Delivery Condition		Remarks			
			ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A998/A998M - 18/ ASME SA998/SA998M - 19	B 36.19M-04 & B36.10M-04	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	Hydrostatic Test		Result			
				Eddy Current	Flattening		Pressure / Hold	Pressure / Hold				
JG081-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	61	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD		
JG083-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	22	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD		
JG089-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	39	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD		
JG082-10	2 1/2 inch Sch 10S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD		
Specification		Chemical Composition (%)										
Max	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ^{*1}		Hardness, HRB	
Min	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS		E
Heat No.	-	-	-	-	-	18.00	8.00	-	-	-	-	(%)
JG081-10	0.022	0.41	1.13	0.028	0.002	18.18	8.01	< 0.01	205	515	35	90
JG083-10	0.024	0.42	1.14	0.025	0.001	18.20	8.03	< 0.01	376	672	46	84
JG089-10	0.023	0.45	1.16	0.030	0.001	18.01	8.04	< 0.01	343	618	47	80
JG082-10	0.022	0.41	1.13	0.028	0.002	18.18	8.01	< 0.01	370	678	49	81
									348	663	50	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-MR01-05-2015

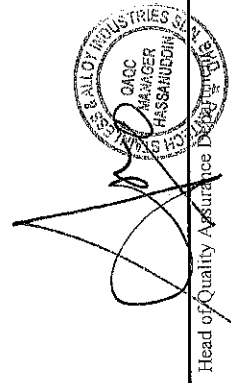
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1029°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

*1. YS, YIELD STRENGTH | TS, TENSILE STRENGTH | E, ELONGATION

EDDY CURRENT ACCORDING TO ASTM E266-98 (Reapproved 2003) *2. REQUIREMENTS (REFERENCE TO ASTM A998/A998M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.9)

*2. NIE: Not Fractionally Tested



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)

KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
PTD 204334, JALAN PLATINUM UTAMA,
JOHOR DARUL TA'IZIM, MALAYSIA

Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechstainless.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 2034/68/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1



SIRM
Cert. No.: PPO87201



Suruhanjaya Perkhidmatan Air Negeri
NO. SUHL PENDAFATAN : SPAN/KP/A/00883-2011

Certificate No : PSA2-25505
Date : 24/11/2020

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	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test		Hydrostatic Test		Dimensional / PMI/ Visual Inspection					
Heat No.	Size	Grade	Quantity (Length)	Eddy Current			Flattening		Corrosion Test		Pressure / Hold		Result		Remarks			
				PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED					
JG081-10	2 inch Sch 10S x 6M	TP 304/304L	22	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD					
JG089-10	2 inch Sch 10S x 6M	TP 304/304L	3	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD					
JG084-10	2 1/2 inch Sch 10S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD					
JG085-10	2 1/2 inch Sch 10S x 6M	TP 304/304L	6	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	2500 PSI, 5s	PASSED	GOOD					
Specification		Chemical Composition (%)																
Max	C	0.035	Si	1.00	P	0.045	S	0.030	Cr	20.00	Ni	11.00	Pb	-	YS (ksi / MPa)	TS	E (%)	Hardness, HRB
Min	C	-	Si	-	P	-	S	-	Cr	18.00	Ni	8.00	Pb	-	-	-	-	90
Heat No.	C	-	Si	-	P	-	S	-	Cr	18.00	Ni	8.00	Pb	-	205	515	35	-
JG081-10	C	0.022	Si	0.41	P	0.028	S	0.002	Cr	18.18	Ni	8.01	Pb	< 0.01	362	674	54	82
JG089-10	C	0.023	Si	0.45	P	0.030	S	0.001	Cr	18.01	Ni	8.04	Pb	< 0.01	359	681	47	79
JG084-10	C	0.024	Si	0.42	P	0.025	S	0.001	Cr	18.20	Ni	8.03	Pb	< 0.01	366	674	51	80
JG085-10	C	0.023	Si	0.40	P	0.025	S	0.002	Cr	18.12	Ni	8.03	Pb	< 0.01	352	676	49	81

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 H

HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15136-2:2015 & NACE-MR0103-2015

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

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL STATE 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

Signature of Head of Quality Assurance
Head of Quality Assurance
PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD.
QAQC MANAGER
ABDUL KASSARUDIN S



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 PASIR GUIDANG, ZON 12B, 81700 PASIR GUIDANG
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Tel: +607-2318888 Fax: +607-2519999 E-mail: info@pantechsales@com
http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204:2004 Type 3.1



SURUJAYA PERKAKULAN AL NUSRAH
NO. SUJIL PENDAFTARAN : SPAN/KP/A/00883-2011



SIRM
Cert. No.: PP087201



Cert. No.: ISO9001-0047465

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 20/4/68/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO. :
0038/PED/MUM/11.10006/1

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

Certificate No : PSA2-25671
Date : 07/12/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition								
APO-2011-0058	L000010823	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	Hydrostatic Test		Dimensional / PMI / Visual Inspection		
				Eddy Current	Flattening	PASSED		Pressure / Hold	Result			
JG102-10	14 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	PASSED	NH	-	GOOD		
JG108-10	14 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	PASSED	NH	-	GOOD		
Specification		Chemical Composition (%)										
Max	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks
Min	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS (KSI) / MPa	TS		
Heat No.	-	-	-	-	-	18.00	8.00	-	205	515	35	90
JG102-10	0.027	0.42	1.20	0.028	0.001	18.24	8.03	< 0.01	331	619	49	81
JG108-10	0.024	0.50	1.15	0.028	0.001	18.10	8.04	< 0.01	334	638	58	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 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 NAGE-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: NH: Not Heat-treatability Tested

EDDY CURRENT AC CURVED: TP, ASTM E269-98 (re-approved 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)

P. ALI DINDIS TRI
QAQC
MANAGER
PANTECH GROUP
81700 PASIR GUIDANG
JOHOR DARUL TAKZIM

Head of Quality Assurance Department