



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 2/04334, JALAN PLATINUM UTAMA,
KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 128, 81700 PASIR GUDANG
JOHOR DARUL TAKZIM, MALAYSIA
Tel: +607-2511888 Fax: +607-2519999 Website: www.pantechsteel.com
http://www.pantech-group.com



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047465



SUKSES BERKUALITI, BERKUALITI BERKUALITI
NO. SUJIL PENDAFTARAN: SPAN/BP/300-10/559/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU ANNEX 1, PARAG 4.3.
PED CERTIFICATE NO.: 0343/PED/MUM/1110006/1

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

Certificate No : PSA2-26686
Date : 30/08/2021

INSPECTION DOCUMENT EN 10204: 2004 Type 3.1

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-2107-0111	L000011826	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19 B 36. 19M- 2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut									
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test	Inter-Granular Corrosion Test	Hydrostatic Test	Dimensional /PMI/ Visual Inspection						
KG102-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	39	Eddy Current PASSED	Flattening PASSED	Pressure / Hold 2500 PSI, 5s PASSED	GOOD						
KS048-10	12 inch Sch 10S x 6M	TP 304/304L	8	PASSED	PASSED	NH -	GOOD						
KS128-10	12 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	NH -	GOOD						
Specification		Chemical Composition (%)			Tensile Test ¹		Remarks						
Max	Min	C	Si	Mn	P	S		Cr	Ni	Pb	YS (ksi / MPa)	TS (%)	E (%)
0.028	0.019	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	90	-
0.028	0.019	0.035	0.40	1.14	0.032	0.002	18.19	8.02	< 0.01	-	205	515	35
0.019	0.019	0.035	0.44	1.07	0.027	0.001	18.05	8.04	< 0.01	-	363	685	61
0.016	0.016	0.035	0.42	1.04	0.030	0.001	18.07	8.03	< 0.01	-	351	674	46
											331	628	66

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

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 Hydrotestually Tested

Head of Quality Assurance Department



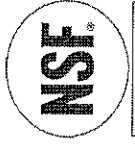
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PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
(A MEMBER OF PANTECH GROUP HOLDINGS BERHAD, LISTED ON MAIN MARKET OF BURSA MALAYSIA)

PTD 264334, JALAN PLATINUM UTAMA,
KAWASAN PERINDUSTRIAN PASIR GUDANG ZON 12B, 81700 PASIR GUDANG
JOHOR DARUL TAKZIM, MALAYSIA
Tel: +607-2518888 Fax: +607-2519999 Website: www.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



SATUH BERSEKUTU MENCAPAI AIR NEGARA
NO. SILL PENDAFTARAN : SPAN/BH/300-10/553/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/68/EU ANNEX 1, PARA 4.3.
PED CERTIFICATE NO. :
0843/PED/MUM/1110006/1

Cert. No.: ISO9001-
0047465

Certified to
NSF/ANSI 61

Certificate No : PSA2-26683
Date : 30/08/2021

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification				Delivery Condition																																																																																																					
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	Grade	Quantity (Length)	Eddy Current	Flattening	Inter-Granular Corrosion Test	Hydrostatic Test Pressure / Hold	Result	Solution Treated, Pickled-Passivated, Plain Ends Square Cut																																																																																																			
APO-2105-0051	L000011824		TP 304/304L	74	PASSED	PASSED	PASSED	2600 PSI, 5s	PASSED																																																																																																				
Heat No.	Size																																																																																																												
KG200-10	2 inch Sch 10S x 6M																																																																																																												
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NOTE: MADE IN MALAYSIA STEEL MAKING PROCESS: AOD / VOD

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2015 & NACE-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 (Reapproval 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: NI: Not Hydrostatically Tested

DACC
MANAGER
1833-683032

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

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



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047465



SARABANJAYA PAINTS (M) BERHAD
 NO. SUK PENDAITARAN : SPAN/8P1300-10/553/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO. : 0343/PED/MUM/1110006/1

Certificate No : PSA2-26681
 Date : 30/08/2021

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification				Delivery Condition				
			ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19	B 36.19M- 2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test	Dimensional / PMI / Visual Inspection			
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			
KG139-10	2 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
Chemical Composition (%)											
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test *1		
	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS	E
Max	-	-	-	-	-	-	-	-	(KSI / MPa)	(%)	
Min	-	-	-	-	-	-	-	-	205	515	35
Heat No.	0.023	0.44	1.17	0.037	0.002	18.21	8.02	< 0.01	373	677	46
KG139-10											81
Remarks											

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

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

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

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

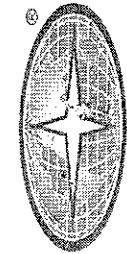
CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

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

*2: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E2456-98 (Reapproved 2003), §1 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE AFC. TO CLAUSE 22.3.9)

[Signature]
 Head of Quality Assurance Department



MILL TEST CERTIFICATE

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INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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Product : Welded Austenitic Stainless Steel Pipe



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047465



SERVIS BERSEKUTUAN AIR NEGARA
NO. SUKILL PENDAFTARAN: SPAN/BH/300-10/553/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.: 0343/PED/MUM/1110006/1

Certificate No : PSA2-26665
Date : 30/08/2021

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, Pickled-Passivated, Plain Ends Square Cut																																																																																														
Heat No.	Size																																																																																																					
KG205-10	4 inch Sch 10S x 6M	TP 304/304L	30	Eddy Current	Flattening	PASSED	1600 PSI, 5s	PASSED	GOOD																																																																																													
KG212-10	4 inch Sch 10S x 6M	TP 304/304L	70	PASSED	PASSED	PASSED	1600 PSI, 5s	PASSED	GOOD																																																																																													
<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="8">Chemical Composition (%)</th> <th rowspan="2">Tensile Test¹</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 MPa</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> <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>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> </tr> <tr> <td>Heat No.</td> <td>0.022</td> <td>0.42</td> <td>1.11</td> <td>0.032</td> <td>0.001</td> <td>18.10</td> <td>8.02</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> <td>-</td> <td></td> </tr> <tr> <td>KG205-10</td> <td>0.022</td> <td>0.51</td> <td>1.41</td> <td>0.026</td> <td>0.002</td> <td>18.06</td> <td>8.02</td> <td>< 0.01</td> <td>362</td> <td>668</td> <td>55</td> <td>79</td> <td></td> </tr> <tr> <td>KG212-10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>356</td> <td>648</td> <td>59</td> <td>80</td> <td></td> </tr> </tbody> </table>										Specification	Chemical Composition (%)								Tensile Test ¹	Hardness, HRB	Remarks	C	Si	Mn	P	S	Cr	Ni	Pb	YS MPa	TS MPa	E (%)	Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90		Min	-	-	-	-	-	18.00	8.00	-	-	-	-	-		Heat No.	0.022	0.42	1.11	0.032	0.001	18.10	8.02	< 0.01	205	515	35	-		KG205-10	0.022	0.51	1.41	0.026	0.002	18.06	8.02	< 0.01	362	668	55	79		KG212-10									356	648	59	80	
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NOTE: MADE IN MALAYSIA STEEL-MAKING PROCESS: AOD/VOD

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A362-10 PRACTICE E

HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15136 -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

EBBY 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 and Stamp of Quality Assurance Department

Head of Quality Assurance Department



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SATUHANDAJA PERKIDMALAR AIR MABANG
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Date : 23/06/2021

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	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19	B 36.19M-2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection	Remarks																																																																																																																							
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test	Hardness, HRB	Remarks																																																																																																																								
				Eddy Current	Flattening	Flattening																																																																																																																											
KG100-10	2 inch Sch 10S x 6M	TP 304/304L	8	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																							
KG136-10	2 inch Sch 10S x 6M	TP 304/304L	102	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																							
KG139-10	2 inch Sch 10S x 6M	TP 304/304L	48	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																							
KG141-10	2 inch Sch 10S x 6M	TP 304/304L	64	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																							
<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="10">Chemical Composition (%)</th> </tr> <tr> <th>C</th> <th>Si</th> <th>Mn</th> <th>P</th> <th>S</th> <th>Cr</th> <th>Ni</th> <th>Pb</th> <th>YS (ksi / MPa)</th> <th>TS</th> <th>E (%)</th> </tr> </thead> <tbody> <tr> <td>Max</td> <td>0.035</td> <td>1.00</td> <td>2.00</td> <td>0.045</td> <td>0.030</td> <td>20.00</td> <td>11.00</td> <td>-</td> <td>-</td> <td>-</td> <td>-</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>KG100-10</td> <td>0.025</td> <td>0.40</td> <td>1.13</td> <td>0.030</td> <td>0.002</td> <td>18.15</td> <td>8.04</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> </tr> <tr> <td>KG136-10</td> <td>0.024</td> <td>0.40</td> <td>1.15</td> <td>0.037</td> <td>0.001</td> <td>18.05</td> <td>8.03</td> <td>< 0.01</td> <td>370</td> <td>673</td> <td>63</td> </tr> <tr> <td>KG139-10</td> <td>0.023</td> <td>0.44</td> <td>1.17</td> <td>0.037</td> <td>0.002</td> <td>18.21</td> <td>8.02</td> <td>< 0.01</td> <td>361</td> <td>675</td> <td>49</td> </tr> <tr> <td>KG141-10</td> <td>0.028</td> <td>0.43</td> <td>1.12</td> <td>0.031</td> <td>0.002</td> <td>18.04</td> <td>8.03</td> <td>< 0.01</td> <td>373</td> <td>677</td> <td>46</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>348</td> <td>672</td> <td>47</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.	-	-	-	-	-	-	-	-	-	-	-	KG100-10	0.025	0.40	1.13	0.030	0.002	18.15	8.04	< 0.01	205	515	35	KG136-10	0.024	0.40	1.15	0.037	0.001	18.05	8.03	< 0.01	370	673	63	KG139-10	0.023	0.44	1.17	0.037	0.002	18.21	8.02	< 0.01	361	675	49	KG141-10	0.028	0.43	1.12	0.031	0.002	18.04	8.03	< 0.01	373	677	46										348	672	47
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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-MR0106-2015

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

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

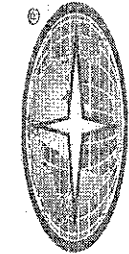
*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

EDDY CURRENT ACCORDING TO ASTM E266-98 (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)

*2: N/A Not Hydrostatically Tested

Signature of Head of Quality Assurance Department

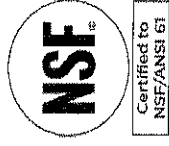
Head of Quality Assurance Department



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
 JHDOR DARUL TAKZIM, MALAYSIA
 Tel: +607-2518888 Fax: +607-2519999 Website: www.pantechgroup.com
 http://www.pantech-group.com



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0843/PED/MUM/1110006/1



INSPECTION DOCUMENT: EN 10204, 2004 Type 3.1

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

Certificate No : PSA2-26558
 Date : 23/06/2021

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition								
APO-2102-0024	L000011704	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M-2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut								
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test								
KG11-10	10 inch Sch 10S x 6M	TP 304/304L	10	Eddy Current PASSED Flattening PASSED								
				Inter-Granular Corrosion Test PASSED								
				Hydrostatic Test Pressure / Hold Result - / -								
				Dimensional (PMI)/ Visual Inspection GOOD								
Specification	Chemical Composition (%)			Remarks								
	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	-	-	-		-
Heat No.	0.021	0.42	1.15	0.031	0.001	18.03	8.04	< 0.01	205	515		35
KG11-10									338	650	64	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

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: NF: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E626-98 (Re-approved 2003)⁴ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY 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)

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



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047465



Suruhanjaya Perkhidmatan Air Bersih
NO. SUKIL PENDAFTARAN : SPAN/BP/300-10/553/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/68/FEL, 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 : PSA2-264500
Date : 09/06/2021

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition							
APO-2105-0062	L000011645	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19 B 36.19M- 2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut							
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test							
KG028-10	16 inch Sch 10S x 6M	TP 304/304L	1	Eddy Current PASSED Flattening PASSED							
Chemical Composition (%)											
Specification Max Min Heat No.	C	P	S	Cr	Ni	Pb	Tensile Test ¹			Hardness, HRB	Remarks
	0.035	0.045	0.030	20.00	11.00	-	YS ($\sigma_{0.2}$) / MPa	TS	E (%)		
KG028-10	0.021	0.028	0.001	18.00	8.00	< 0.01	205	515	35	90	
				18.12	8.02		339	653	60	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
HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2:015 & NACE-MR0103-2015
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER
CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

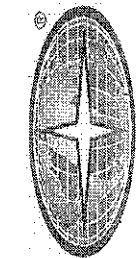
¹ YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

² NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM F426-98 (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)

DACC MANAGER
SPAN

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 204334, JALAN PLATINUM UTAMA,
 JOHOR DARUL TAKZIM, MALAYSIA
 Tel: +607-2518888 Fax: +607-2519999 Website: www.pantechgroup.com
 http://www.pantech-group.com



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047465



Syarikat Perindustrian Pasir Gudang Air Negara
 NO. SUIJ PENDAFTARAN: SPAN/BI/300-10/533/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/08/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.: 0343/PED/MUM/1110006/1

Certificate No : PSA2-26536
 Date : 17/06/2021

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

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification						Delivery Condition								
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19	B 36.19M-2018 & B36.10M-2018	Non Destructive Test		Inter-Granular Corrosion Test	Hydrostatic Test		Dimensional / PMI / Visual Inspection								
Heat No.	Size	Grade	Quantity (Length)	Eddy Current		Flattening	Pb	Ni	Cr	S	P	Mn	Si	C	Tensile Test ¹	Hardness, HRB	Remarks	
				PASSED	PASSED													PASSED
KG100-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	40	PASSED	PASSED	PASSED	-	11.00	20.00	0.030	0.045	2.00	1.00	0.035	205	515	35	GOOD
KG102-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	25	PASSED	PASSED	PASSED	-	8.00	18.00	-	-	-	-	-	364	672	47	GOOD
JG144-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	-	8.04	18.15	0.002	0.030	1.13	0.40	0.025	363	685	61	GOOD
JG148-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	12	PASSED	PASSED	PASSED	-	8.03	18.19	0.002	0.028	1.15	0.43	0.019	432	692	44	GOOD
JG207-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	-	8.04	18.23	0.001	0.026	1.14	0.39	0.024	400	689	46	GOOD
JG207-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	-	8.01	18.14	0.002	0.029	1.14	0.44	0.023	407	698	42	GOOD

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

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

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

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

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

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

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

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003) *2: 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
 OACC
 MANAGER
 QA ASSURANCE

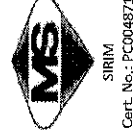
Head of Quality Assurance Department



MILL TEST CERTIFICATE

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Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047465



Suruhanjaya Pendaftaran Air Bersih
 NO. SIHL PENDAFTARAN: SPAN/SP/500-10/553/A/M-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.: 0343/PED/MUM/1110006/1

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

Certificate No : PSA2-26532
 Date : 17/06/2021

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition								
APO-2104-0190	L000011685	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19 B 36.19M-2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut								
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test	Hydrostatic Test		Dimensional / PMI / Visual Inspection		
				Eddy Current	Flattening	PASSED		Pressure / Hold	Result			
KG094-10	4 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	PASSED	1600 PSI, 5s	PASSED	GOOD		
KG098-10	4 inch Sch 10S x 6M	TP 304/304L	86	PASSED	PASSED	PASSED	PASSED	1600 PSI, 5s	PASSED	GOOD		
KG101-10	4 inch Sch 10S x 6M	TP 304/304L	19	PASSED	PASSED	PASSED	PASSED	1600 PSI, 5s	PASSED	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	TS		
Heat No.	-	-	-	-	-	18.00	8.00	-	-	-	-	90
KG094-10	0.021	0.38	1.12	0.029	0.001	18.22	8.03	< 0.01	205	515	35	-
KG098-10	0.029	0.40	1.17	0.032	0.001	18.24	8.02	< 0.01	370	676	56	77
KG101-10	0.025	0.40	1.13	0.030	0.002	18.15	8.04	< 0.01	384	668	61	77
									374	668	54	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 E

HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2015 & NACE-MR0105-2015

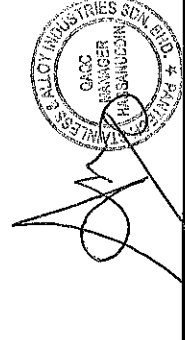
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

*2: NH: Not Hydrocyclically 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)



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 24834, JALAN PLATINUM UTAMA,
KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
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http://www.pantech-group.com



MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.: 0343/PED/MUM/11100066/1

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

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

Certificate No : PSA2-26717
Date : 10/09/2021

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition																																																																																																				
APO-2105-0051	L000011862	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M- 2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut																																																																																																				
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Inter-Granular Corrosion Test	Hydrostatic Test		Dimensional /PMI/ Visual Inspection																																																																																														
				Eddy Current	Flattening	PASSED		Pressure / Hold	Result																																																																																															
KG150-10	6 inch Sch 10S x 6M	TP 304/304L	15	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																														
KG155-10	6 inch Sch 10S x 6M	TP 304/304L	39	PASSED	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 (%SI / MPa)</th> <th>TS</th> <th>E (%)</th> <th rowspan="2">Hardness, HRB</th> <th rowspan="2">Remarks</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>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> </tr> <tr> <td>Heat No.</td> <td>0.021</td> <td>0.41</td> <td>1.15</td> <td>0.036</td> <td>0.001</td> <td>18.18</td> <td>8.03</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> <td>-</td> <td></td> </tr> <tr> <td>KG150-10</td> <td>0.025</td> <td>0.43</td> <td>1.15</td> <td>0.036</td> <td>0.001</td> <td>18.10</td> <td>8.02</td> <td>< 0.01</td> <td>338</td> <td>627</td> <td>56</td> <td>79</td> <td></td> </tr> <tr> <td>KG155-10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>342</td> <td>649</td> <td>49</td> <td>81</td> <td></td> </tr> </tbody> </table>											Specification	Chemical Composition (%)										C	Si	Mn	P	S	Cr	Ni	Pb	YS (%SI / 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	-	-	-	-	-		Heat No.	0.021	0.41	1.15	0.036	0.001	18.18	8.03	< 0.01	205	515	35	-		KG150-10	0.025	0.43	1.15	0.036	0.001	18.10	8.02	< 0.01	338	627	56	79		KG155-10									342	649	49	81	
Specification	Chemical Composition (%)																																																																																																							
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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-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 G426-98 (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)

GANCC
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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Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047485



Suruhanjaya Perkhidmatan Air Negara
NO. SUIJ PENDAFTARAN: SPAN/89/300-10/553/A/W-1

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PAR 4.3.
PED CERTIFICATE NO.: 0343/PED/MUM/1110006/1

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

Certificate No : PSA2-26716
Date : 10/09/2021

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-2105-0051	L000011862	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18/ ASME SA999/SA999M - 19 B 36.19M-2018 & B36.10M-2018	Solution Treated, Pickled+Passivated, Plain Ends Square Cut									
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test	Inter-Granular Corrosion Test	Hydrostatic Test	Dimensional / PMI/ Visual Inspection						
KG199-10	4 inch Sch 10S x 6M	TP 304/304L	5	Eddy Current	Flattening	Pressure / Hold	Result						
KG202-10	4 inch Sch 10S x 6M	TP 304/304L	3	PASSED	PASSED	1600 PSI, 5s	PASSED						
KG204-10	4 inch Sch 10S x 6M	TP 304/304L	30	PASSED	PASSED	1600 PSI, 5s	PASSED						
KG205-10	4 inch Sch 10S x 6M	TP 304/304L	8	PASSED	PASSED	1600 PSI, 5s	PASSED						
KG148-10	6 inch Sch 10S x 6M	TP 304/304L	11	PASSED	PASSED	1300 PSI, 5s	PASSED						
Specification		Chemical Composition (%)			Tensile Test ¹		Hardness, HRB	Remarks					
C	Si	Mn	P	S	Cr	Ni			Pb				
0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90		
					18.00	8.00	-	-	205	515	35		
Max	0.024	0.39	1.18	0.034	0.001	18.17	8.02	< 0.01	363	630	59	79	
Min	0.023	0.41	1.15	0.035	0.001	18.21	8.03	< 0.01	337	646	56	79	
Heat No.	0.024	0.39	1.14	0.031	0.001	18.06	8.02	< 0.01	318	587	59	77	
KG199-10	0.022	0.42	1.11	0.032	0.001	18.10	8.02	< 0.01	362	668	55	79	
KG202-10	0.022	0.47	1.13	0.035	0.002	18.09	8.03	< 0.01	356	655	58	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 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 15136-2015 & NACE-MR0105-2015

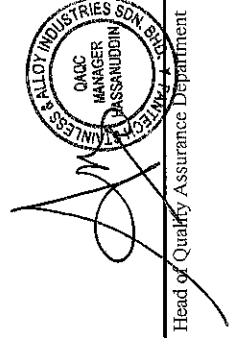
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

EDDY CURRENT ACCORDING TO ASTM E246-99 (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



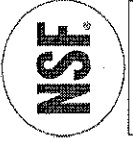
Head of Quality Assurance Department



MILL TEST CERTIFICATE

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

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http://www.pantech-group.com



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/58/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.:
0343/PED/MUM/1110006/1

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

Certificate No : PSA2-26715
Date : 10/09/2021

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	Grade	Quantity (Length)	Eddy Current	Flattening	Inter-Granular Corrosion Test	Hydrostatic Test	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	
KS177-10	3/4 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	2500 PSI, 5s	GOOD	
KG094-10	1 inch Sch 10S x 6M	TP 304/304L	7	PASSED	PASSED	PASSED	2500 PSI, 5s	GOOD	
KG141-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	42	PASSED	PASSED	PASSED	2500 PSI, 5s	GOOD	
KG197-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	2500 PSI, 5s	GOOD	
KG185-10	4 inch Sch 10S x 6M	TP 304/304L	54	PASSED	PASSED	PASSED	1600 PSI, 5s	GOOD	
Chemical Composition (%)									
C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹	
0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS
					18.00	8.00	-	f _{0.2} / MPa	
Heat No.								205	515
KS177-10	0.014	0.44	0.028	0.001	18.18	8.03	< 0.01	372	667
KG094-10	0.021	0.38	0.029	0.001	18.22	8.03	< 0.01	367	664
KG141-10	0.028	0.43	0.031	0.002	18.04	8.03	< 0.01	367	700
KG197-10	0.024	0.37	0.034	0.001	18.14	8.02	< 0.01	372	686
KG185-10	0.027	0.43	0.032	0.001	18.07	8.03	< 0.01	342	641
								E	Hardness, HRB
								(%)	
								35	90
								44	87
								54	87
								54	82
								50	81
								52	79

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

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

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

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

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

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

*2: NH: Not Hydrostatically Tested

REQUIREMENTS (REFERENCE TO ASTM E496-98 (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)

GACC
MANAGER
HASSAMUDDIN
PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD.

Head of Quality Assurance Department



MILL TEST CERTIFICATE

PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
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 Tel: +607-25118838 Fax: +607-2519999 Website: www.pantechsteel.com
 http://www.pantech-group.com



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
 PED 2014/68/EU, ANNEX 1, PARA 4.3.
 PED CERTIFICATE NO.:
 0343/PED/MUM/1110006/1

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

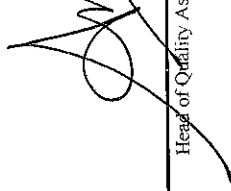
Certificate No : PSA2-26713
 Date : 10/09/2021

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- 2018 & B36.10M-2018	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		
KS177-10	1/2 inch Sch 10S x 6M	TP 304/304L	8	Eddy Current	Flattening	PASSED	2500 PSI, 5s	PASSED	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
Min	-	-	-	-	-	18.00	8.00	-	205	515	35
Heat No.	0.014	0.44	0.98	0.028	0.001	18.18	8.03	< 0.01	390	673	52
KS177-10											

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 19.2484 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 1039°C, RAPIDLY COOLED WITH WATER
 CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS
 *1: YS: YIELD STRENGTH IS 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 & 4. PROCEDURE ACC. TO CLAUSE 22.5.9)


 QAQC MANAGER
 HASSA RAUDIN
 PANTCH STAINLESS & ALLOY INDUSTRIES SDN. BHD.

Head of Quality Assurance Department