

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: +607-2511888 Fax: +607-2519999 Website: www.pantechssalloy.com
http://www.pantech-group.com



MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/68/EU, ANNEX 1, PARA 4.3.1,
PED CERTIFICATE NO.:
0343/PED/MUM/1110006/1

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

Certificate No : PSA2-26688
Date : 30/08/2021

INSPECTION DOCUMENT: EN 10204:2004 Type 3.1

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition				
APO-2105-0051	L000011828	ASTM A312/A312M - 19 / ASME SA312/ISA312M - 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	
KS177-10	3/4 inch Sch 10S x 6M	TP 304/304L	11	Eddy Current	PASSED	Pressure / Hold	Result	
KG158-10	1 inch Sch 40S x 6M	TP 304/304L	91	PASSED	PASSED	2500 PSI, 5s	PASSED	
KG154-10	2 inch Sch 40S x 6M	TP 304/304L	80	PASSED	PASSED	2500 PSI, 5s	PASSED	
KG157-10	2 inch Sch 40S x 6M	TP 304/304L	29	PASSED	PASSED	2500 PSI, 5s	PASSED	
KG161-10	2 inch Sch 40S x 6M	TP 304/304L	17	PASSED	PASSED	2500 PSI, 5s	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.								
KS177-10	0.014	0.44	0.98	0.028	0.001	18.18	8.03	< 0.01
KG158-10	0.023	0.42	1.13	0.033	0.001	18.22	8.01	< 0.01
KG154-10	0.025	0.43	1.15	0.036	0.001	18.10	8.02	< 0.01
KG157-10	0.023	0.42	1.13	0.033	0.001	18.22	8.01	< 0.01
KG161-10	0.025	0.40	1.13	0.035	0.001	18.24	8.03	< 0.01
Tensile Test ¹								
YS	TS	E	Hardness, HRB					
			YS	TS				
205	515	35	90					
372	667	44	87					
360	673	60	81					
340	660	55	77					
348	670	54	78					
348	667	55	76					

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 L₂ (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 1059°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

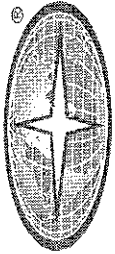
*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

EDDY CURRENT ACCORDING TO ASTM 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)

*2: NH: Not Hydrostatically Tested

DAG
MANAGER
HASSANUDDIN

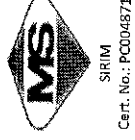
Head of Quality Assurance Department



MILL TEST CERTIFICATE

PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
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Tel: +607-2518888 Fax: +607-2519999 Website: www.pantechsteel.com
http://www.pantech-group.com



Cert. No.: ISO 9001-0047465

Certified to NSF/ANSI 61

MATERIAL MANUFACTURER APPROVAL ACCORDING TO PED 2014/68/EU, ANNEX 1, PARA 4.3.
PED CERTIFICATE NO.: 0343/PED/MUM/111.0006/1

SPAN

SPERANJAYA PAKSIKIMATIUM ATIF BERSEKUTU
NO. 50/UL PENDAFATARAN: SPAN/BP/300-10/553/A/W-1

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

Certificate No : PSA2-26684
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		Dimensional / PMI / Visual Inspection				
APO-2107-4075	L000011825	ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	TP 304/304L	6	Eddy Current	Flattening	PASSED	PASSED	PASSED	PASSED	Pressure / Hold	Result	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	PASSED	GOOD	
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	6	Eddy Current	Flattening	PASSED	PASSED	PASSED	PASSED	Pressure / Hold	Result	2500 PSI, 5s	PASSED	GOOD		
KG095-10	4 inch Sch 40S x 6M	TP 304/304L	5	Eddy Current	Flattening	PASSED	PASSED	PASSED	PASSED	Pressure / Hold	Result	2500 PSI, 5s	PASSED	GOOD		
KG138-10	4 inch Sch 40S x 6M	TP 304/304L	9	Eddy Current	Flattening	PASSED	PASSED	PASSED	PASSED	Pressure / Hold	Result	2500 PSI, 5s	PASSED	GOOD		
KG143-10	4 inch Sch 40S x 6M	TP 304/304L	1	Eddy Current	Flattening	PASSED	PASSED	PASSED	PASSED	Pressure / Hold	Result	2500 PSI, 5s	PASSED	GOOD		
GSA180-02112	5 inch Sch 40S x 6M	TP 304/304L	3	Eddy Current	Flattening	PASSED	PASSED	PASSED	PASSED	Pressure / Hold	Result	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	TS	E					
Mtn	-	-	-	-	-	18.00	8.00	-	-(ksi / MPa)		(%)					
Heat No.	-	-	-	-	-	18.00	8.00	-	205	515	35					
KS177-10	0.014	0.44	0.98	0.028	0.001	18.18	8.03	< 0.01	372	667	44					
KG095-10	0.021	0.38	1.12	0.029	0.001	18.22	8.03	< 0.01	343	655	67					
KG138-10	0.024	0.40	1.15	0.037	0.001	18.05	8.03	< 0.01	353	678	49					
KG143-10	0.028	0.43	1.12	0.031	0.002	18.04	8.03	< 0.01	344	654	49					
GSA180-02112	0.022	0.35	1.12	0.033	0.001	18.12	8.05	< 0.01	335	638	56					

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' (500mm)

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 E826-98 (Reapproved 2003) *2 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.9)

*2: NIT, Not Hydrostatically Tested

Head of Quality Assurance Department

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 204534, JALAN PLATINUM UTAMA,
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Tel: +607-2518888 Fax: +607-2519999 Website: www.pantechsteel.com
http://www.pantech-group.com



Cert. No.: PC004871



SPAN
Pantech Malaysia Air Techno
NO. SIKIL PENDAFTARAN: SPAN/01/300-10/555/A/W-1



Cert. No.: ISO9001-0047465

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 : PSA2-26560
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	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		
				Eddy Current	Flattening						
KS125-10	1 inch Sch 40S x 6M	TP 304/304L	91	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
KG146-10	2 inch Sch 40S x 6M	TP 304/304L	39	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
KG147-10	2 inch Sch 40S x 6M	TP 304/304L	35	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
KS126-10	8 inch Sch 10S x 6M	TP 304/304L	20	PASSED	PASSED	PASSED	1100 PSI, 5s	PASSED	GOOD		
Chemical Composition (%)											
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		
									YS (ksi / MPa)	TS (%)	E (%)
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	90
Min	-	-	-	-	-	18.00	8.00	-	-	-	-
Heat No.	-	-	-	-	-	-	-	-	-	-	-
KS125-10	0.024	0.52	1.00	0.028	0.001	18.14	8.02	< 0.01	205	515	35
KG146-10	0.025	0.40	1.13	0.030	0.002	18.15	8.04	< 0.01	345	657	51
KG147-10	0.028	0.40	1.14	0.032	0.002	18.19	8.02	< 0.01	340	651	51
KS126-10	0.024	0.52	1.00	0.028	0.001	18.14	8.02	< 0.01	347	666	50
									342	651	49

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: 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)

Head of Quality Assurance Department



MILL TEST CERTIFICATE

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 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



Certified to NSF/ANSI 61



SUKSES PAKSI PERINDUSTRIAN, AT1 NEGARA
 NO. SUKSES PANDAPATAN: SPAN/BP/300-30/553/AW-1

Cert. No.: PC004871

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

Certificate No : PSA2-26468
 Date : 24/05/2021

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																																																																																																																													
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				Eddy Current	Flattening		Pressure / Hold	Result																																																																																																																										
KG010-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	9	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																									
KG019-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	31	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																									
KG100-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	82	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD																																																																																																																									
KG112-10	1 1/4 inch Sch 40S x 6M	TP 304/304L	50	PASSED	PASSED	PASSED	2500 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 (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>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> </tr> <tr> <td>Heat No.</td> <td>0.026</td> <td>0.45</td> <td>1.16</td> <td>0.033</td> <td>0.002</td> <td>18.21</td> <td>8.01</td> <td>< 0.01</td> <td>205</td> <td>515</td> <td>35</td> <td>-</td> <td></td> </tr> <tr> <td>KG010-10</td> <td>0.021</td> <td>0.40</td> <td>1.16</td> <td>0.028</td> <td>0.001</td> <td>18.10</td> <td>8.01</td> <td>< 0.01</td> <td>464</td> <td>720</td> <td>49</td> <td>84</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>466</td> <td>722</td> <td>49</td> <td>85</td> <td></td> </tr> <tr> <td>KG112-10</td> <td>0.022</td> <td>0.40</td> <td>1.12</td> <td>0.031</td> <td>0.002</td> <td>18.13</td> <td>8.02</td> <td>< 0.01</td> <td>364</td> <td>672</td> <td>47</td> <td>79</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>368</td> <td>690</td> <td>47</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 (KSI / MPa)	TS	E (%)	Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90		Min	-	-	-	-	-	18.00	8.00	-	-	-	-	-		Heat No.	0.026	0.45	1.16	0.033	0.002	18.21	8.01	< 0.01	205	515	35	-		KG010-10	0.021	0.40	1.16	0.028	0.001	18.10	8.01	< 0.01	464	720	49	84		KG100-10	0.025	0.40	1.13	0.030	0.002	18.15	8.04	< 0.01	466	722	49	85		KG112-10	0.022	0.40	1.12	0.031	0.002	18.13	8.02	< 0.01	364	672	47	79											368	690	47	80	
Specification	Chemical Composition (%)								Tensile Test ¹		Hardness, HRB	Remarks																																																																																																																						
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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 19.3MM FOR T¹ ABOVE, 1" INCLUDE; AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION. GAUGE LENGTH 2" (50mm)

NOTE: MADE IN MALAYSIA STEEL-MAKING PROCESS: AOD/VOI

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-MR0175-2015 / ISO 15156-2015 & NACH-MR0100-2015

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

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

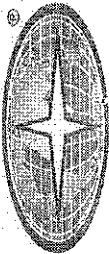
*1. YS, YIELD STRENGTH TS, TENSILE STRENGTH E, ELONGATION

*2. NH Non Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2003)⁶¹ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.9)

(Signature)
 QAQC MANAGER
 HASSAMUDDIN

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



Cert. No.: PC004871



Certified to NSF/ANSI 61



Cert. No.: ISO9001-0047665



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

MATERIAL MANUFACTURER APPROVAL ACCORDING TO
PED 2014/66/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 : PSA2-26533
Date : 17/06/2021

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- 2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	Hydrostatic Test	Inter-Granular Corrosion Test	Pressure / Hold	Result	Dimensional /PMI/ Visual Inspection	Remarks
Heat No.	Size	Grade	Quantity (Length)	Non Destructive Test			Tensile Test ¹		Hardness, HRB	Remarks	
				Eddy Current	Flattening	Inter-Granular Corrosion Test	YS (ksi / MPa)	TS (%)			E (%)
Chemical Composition (%)											
	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.	-	-	-	-	-	-	-	-	90		
KS038-10	0.022	0.47	1.09	0.028	0.001	18.02	8.03	< 0.01	35		
KS047-10	0.018	0.48	1.03	0.025	0.001	18.10	8.02	< 0.01	83		
KG136-10	0.024	0.40	1.15	0.037	0.001	18.05	8.03	< 0.01	80		
KS039-10	0.014	0.45	0.90	0.027	0.002	18.06	8.00	< 0.01	88		
KS047-10	0.018	0.48	1.03	0.025	0.001	18.10	8.02	< 0.01	66		
									67		

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 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 E266-98 (Reapproved 2003) *2: REQUIREMENTS (REFERENCE TO ASTM A998/A998M-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

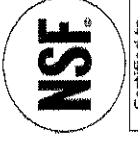


MILL TEST CERTIFICATE
PANTECH STAINLESS & ALLOY INDUSTRIES SDN. BHD. (733428W)
 (A MEMBER OF PANTECH GROUP HOLDINGS BERHAD, LISTED ON MAIN MARKET OF BORSA MALAYSIA)

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 http://www.pantech-group.com



Cert. No.: PC004871



Certified to
 NSF/ANSI 61



Cert. No.: ISO9001-
 0047465



SURUTAJAYE PERKHIDMATAN AIR NEGARA
 NO. SUIL PENDAFTARAN : SPAN/BPI/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

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

Certificate No : PSA2-26537
 Date : 17/06/2021

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- 2018 & B36.10M-2018	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	Pressure / Hold	Result	Remarks		
				Eddy Current	Flattening						
KG013-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
KG064-10	1 1/2 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
KG138-10	4 inch Sch 40S x 6M	TP 304/304L	10	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD		
KG026-10	5 inch Sch 10S x 6M	TP 304/304L	8	PASSED	PASSED	PASSED	1500 PSI, 5s	PASSED	GOOD		
KG096-10	8 inch Sch 40S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	2300 PSI, 5s	PASSED	GOOD		
Chemical Composition (%)											
Specification Max Min Heat No.	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 - (ksi) / MPa	TS (%)	Hardness, HRB
KG013-10	0.021	0.39	1.23	0.032	0.002	18.00	8.00	-	205	515	35
KG064-10	0.019	0.41	1.12	0.027	0.002	18.12	8.03	< 0.01	384	674	62
KG138-10	0.024	0.40	1.15	0.037	0.001	18.05	8.03	< 0.01	383	669	45
KG026-10	0.021	0.45	1.16	0.028	0.001	18.12	8.02	< 0.01	353	678	49
KG096-10	0.021	0.38	1.12	0.029	0.001	18.22	8.03	< 0.01	353	660	52
									339	655	56

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

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

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

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

WELDED BY ELECTRIC FUSION WELDING PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

HARDNESS ACCORDING TO NACE-MR0175-2015 / ISO 15156-2015 & NACE-MR0109-2015

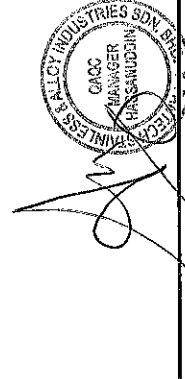
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

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

EDDY CURRENT ACCORDING TO ASTM E456-96 (Reapproved 2003)² REQUIREMENTS (REFERENCE TO ASTM A998/A998M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.9)

*2: NfE: Not Hydrogenatically 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



Cert. No.: ISO9001-0047465

Certified to NSF/ANSI 61

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



Suruhanjaya Perkhidmatan Ais Negara
 NO. SULL PENDAFTARAN : SPAN/BP/300-10/553/AW-1

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

Certificate No : PSA2-26635
 Date : 17/06/2021

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification				Delivery Condition			
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19	B 36.19M- 2018 & B36.10M-2018	Solution Treated, Pickled-Passivated, Plain Ends Square Cut	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			
				Eddy Current	Flattening	Yield Strength	TS	E			
				PASSED	PASSED	YS	TS	E			
KG046-10	1 inch Sch 40S x 6M	TP 304/304L	2	PASSED	PASSED	205	515	35			
KS125-10	1 inch Sch 40S x 6M	TP 304/304L	12	PASSED	PASSED	355	664	70			
JG141-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	8	PASSED	PASSED	345	657	51			
KG094-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	47	PASSED	PASSED	355	652	47			
KG098-10	1 1/4 inch Sch 10S x 6M	TP 304/304L	30	PASSED	PASSED	377	699	54			
				PASSED	PASSED	375	698	58			
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.											
KG046-10	0.022	0.42	1.15	0.026	0.002	18.07	8.02	< 0.01			
KS125-10	0.024	0.52	1.00	0.028	0.001	18.14	8.02	< 0.01			
JG141-10	0.025	0.40	1.17	0.027	0.001	18.12	8.05	< 0.01			
KG094-10	0.021	0.38	1.12	0.029	0.001	18.22	8.03	< 0.01			
KG098-10	0.029	0.40	1.17	0.032	0.001	18.24	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 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 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