



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 TA'IZIM, MALAYSIA
 Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechsteel.com
 http://www.pantech-group.com



Cert. No.: ISO9001-0047465
 PED CERTIFICATE NO.:
 0056/PED/MUM/1110006/1



SIRIM
 Cert. No.: PP087201



SARAWAK STEEL INDUSTRIES SDN. BHD.
 NO. SUIL PENDAFARAN - SPAN/KP/A/00893-2011

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

Certificate No : PSA2-24943
 Date : 05/08/2020

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-2006-0132	L000010128	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						
JGA053-01112	1 inch Sch 40S x 6M	TP 304/304L	10	Eddy Current	Flattening	2500 PSI, 5s	GOOD						
JGA066-01112	1 inch Sch 40S x 6M	TP 304/304L	9	PASSED	PASSED	2500 PSI, 5s	GOOD						
JGA077-01112	4 inch Sch 10S x 6M	TP 304/304L	8	PASSED	PASSED	1600 PSI, 5s	GOOD						
JGA113-01112	4 inch Sch 10S x 6M	TP 304/304L	69	PASSED	PASSED	1600 PSI, 5s	GOOD						
JGA116-01112	4 inch Sch 10S x 6M	TP 304/304L	63	PASSED	PASSED	1600 PSI, 5s	GOOD						
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS	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.	JGA053-01112	0.020	0.42	1.07	0.034	0.002	18.35	8.02	333	610	43	86	
	JGA066-01112	0.021	0.39	1.18	0.031	0.003	18.21	8.04	347	649	63	86	
	JGA077-01112	0.020	0.46	1.16	0.028	0.001	18.20	8.02	350	644	54	83	
	JGA113-01112	0.024	0.40	1.14	0.026	0.002	18.14	8.03	345	652	59	82	
	JGA116-01112	0.024	0.40	1.14	0.026	0.002	18.14	8.03	334	618	51	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 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 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
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Cert. No.: ISO9001-0047465
PED CERTIFICATE NO.:
6038/PED/MUM/1110006/1



SIRM
Cert. No.: PP087201



Suruhanjaya Pendaftaran Air Bersih
NO. SUII 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 : PSA2-25057
Date : 26/08/2020

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification										Delivery Condition		Remarks
		ASTM A312/A312M - 19 / ASME SA312/SA312M - 19	ASTM A999/A999M - 18 / ASME SA999/SA999M - 19 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	
		C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB				
		0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	YS	TS	E				
		-	-	-	-	-	18.00	8.00	-	-	-	-	90			
		0.022	0.40	1.16	0.029	0.002	18.13	8.04	< 0.10	205	515	35				
		0.020	0.46	1.12	0.029	0.001	18.10	8.02	< 0.10	369	658	51				
		0.023	0.38	1.60	0.026	0.003	18.50	8.10	< 0.10	472	828	49				
		0.020	0.46	1.16	0.028	0.001	18.20	8.02	< 0.10	422	652	53				
		0.022	0.40	1.16	0.029	0.002	18.13	8.04	< 0.10	379	656	51				
										354	665	54				

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

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

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

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

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH NO FILLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE E

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

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

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

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

*2: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E646-98 (Reapproved 2003)¹ REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 2.3.3.4, PROCEDURE ACC. TO CLAUSE 2.2.3.9)

Signature of Head of Quality Assurance Department
PAWELCZAKI, S. & ALLOY INDUSTRIES & SON, BHD.
QA/QC MANAGER
MANSHUDDIN

Head of Quality Assurance Department

MILL TEST CERTIFICATE

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

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INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



Cert. No.: ISO9001-0047465
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1



SIRM
 Cert. No.: PP087201



SPAN
 Airconding, Peralaksanaan, Air Negeri
 NO. 3111 PENDAFARAN: SPAN/KP/A/00883-2011

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

Certificate No : PSA2-25054
 Date : 26/08/2020

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				
JGA128-0112	1 inch Sch 40S x 6M	TP 304/304L	164	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
JGA129-0112	1 inch Sch 40S x 6M	TP 304/304L	139	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
JSA426-0112	1 inch Sch 40S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
JGA112-0112	2 inch Sch 10S x 6M	TP 304/304L	49	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD			
JGA123-0112	2 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
									YS (ksi / MPa)	E (%)		
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	205	515	35	90
Min	-	-	-	-	-	18.00	8.00	-	362	630	51	-
Heat No.	0.019	0.39	1.17	0.027	0.002	18.15	8.02	< 0.10	370	688	54	88
JGA128-01112	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.10	391	702	53	87
JGA129-01112	0.012	0.39	1.03	0.031	0.002	18.04	8.00	< 0.10	363	681	52	85
JSA426-01112	0.023	0.40	1.15	0.029	0.001	18.25	8.01	< 0.10	374	672	56	85
JGA112-01112	0.022	0.39	1.16	0.027	0.002	18.30	8.02	< 0.10				

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 19.5MM FOR 1" ABOVE, 1" INCLUDE AND BELOW DIRECT TEST FROM PPE. 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 1030°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

*1: YS: YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION
 *2: NI: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E312-08 (Reapproved 2003) *1 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-18 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 2.3.8.4. PROCEDURE ACC. TO CLAUSE 2.3.9)

[Signature]
 QAQC MANAGER
 HASSANUDDIYAH
 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: +607-2519888 Fax: +607-2519999 E-mail: info@pantechalloy.com
 http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204 2004 Type 3.1



Cert. No.: ISO9001-0047465
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1



SIRM
 Cert. No.: PP087201



SPAN
 NO. SUK. PENDAFTARAN: SPAN/APA/00883-2011

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

Certificate No : PSA2-25053
 Date : 26/08/2020

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		Tensile Test		Hardness. HRB	Remarks						
				Eddy Current	Flattening	Flattening	YS (ksi / MPa)	TS	Pressure / Hoid	Result	YS	TS	Pressure / Hoid	Result	E			(%)					
JGA083-01112	1 inch Sch 10S x 6M	TP 304/304L	21	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD											
JGA084-01112	1 inch Sch 10S x 6M	TP 304/304L	70	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD											
JGA091-01112	1 inch Sch 40S x 6M	TP 304/304L	44	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD											
JGA126-01112	1 inch Sch 40S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD											
JGA127-01112	1 inch Sch 40S x 6M	TP 304/304L	79	PASSED	PASSED	PASSED	PASSED	PASSED	PASSED	2500 PSI, 5s	PASSED	GOOD											
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.																							
JGA083-01112	0.027	0.41	1.37	0.033	0.002	18.10	8.03	< 0.10															
JGA084-01112	0.024	0.46	1.38	0.031	0.002	18.33	8.04	< 0.10															
JGA091-01112	0.022	0.37	1.17	0.027	0.001	18.12	8.03	< 0.10															
JGA126-01112	0.019	0.39	1.17	0.027	0.002	18.15	8.02	< 0.10															
JGA127-01112	0.019	0.39	1.17	0.027	0.002	18.15	8.02	< 0.10															

WE HEREBY CERTIFY THAT THE PRODUCT DESCRIBED HEREIN WAS 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: COMPRESS TO ASTM A370 - 12a STANDARD, SPECIMEN GAUGE WIDTH (19.2MM) FOR T, ABOVE T, IN UPPER AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION, GAGE LENGTH (112.15mm)

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

WELDED BY ELECTRIC FUSION WELDING WITH PROCESS WITH INO BELLER METAL

INTERGRANULAR CORROSION TEST ACCORDING TO ASTM A262-10 PRACTICE F

HARDNESS ACCORDING TO NACE-MRO175-2015 / ISO 15156-2015 & NACE-MRO107-2015

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

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

*1 YS: YIELD STRENGTH *2 TENSILE STRENGTH *3 ELONGATION

EDDY CURRENT ACCORDING TO ASTM F426-08 (Reapproved 2003) *4 REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC TO CLAUSE 22.3.8.4, PROCEDURE ACC TO CLAUSE 22.1.9)

[Signature]
 QA/QC
 MANAGER
 HASSAMUDDIN
 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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 http://www.pantech-group.com



SPAN

Suruhanjaya Perkhidmatan Air Negara
 NO. SUIL PENDAFTARAN: SPAN/N7/A/00883-2011



Cert. No.: ISO9001-0047465
 PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1

SIRIM
 Cert. No.: PP087201

Certificate No : PSA2-25106
 Date : 03/09/2020

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																																																																																																															
		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																																																																																																												
IGA123-01112	2 inch Sch 10S x 6M	TP 304/304L	10	Eddy Current PASSED	Flattening PASSED	Pressure / Hold 2500 PSI, 5s PASSED	GOOD																																																																																																												
IYA133-01112	2 inch Sch 40S x 6M	TP 304/304L	10	PASSED	PASSED	2500 PSI, 5s PASSED	GOOD																																																																																																												
<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="8">Chemical Composition (%)</th> <th colspan="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></td> <td></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>IGA123-01112</td> <td>0.022</td> <td>0.39</td> <td>1.16</td> <td>0.027</td> <td>0.002</td> <td>18.30</td> <td>8.02</td> <td>< 0.10</td> <td>205</td> <td>515</td> <td>35</td> <td>-</td> <td></td> </tr> <tr> <td>IYA133-01112</td> <td>0.015</td> <td>0.43</td> <td>1.57</td> <td>0.027</td> <td>0.001</td> <td>18.10</td> <td>8.00</td> <td>< 0.10</td> <td>374</td> <td>672</td> <td>56</td> <td>85</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>326</td> <td>641</td> <td>55</td> <td>76</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.														IGA123-01112	0.022	0.39	1.16	0.027	0.002	18.30	8.02	< 0.10	205	515	35	-		IYA133-01112	0.015	0.43	1.57	0.027	0.001	18.10	8.00	< 0.10	374	672	56	85											326	641	55	76	
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.																																																																																																																			
IGA123-01112	0.022	0.39	1.16	0.027	0.002	18.30	8.02	< 0.10	205	515	35	-																																																																																																							
IYA133-01112	0.015	0.43	1.57	0.027	0.001	18.10	8.00	< 0.10	374	672	56	85																																																																																																							
									326	641	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 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 A363-10 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) *2: REQUIREMENTS (REFERENCE TO ASTM A999/A999M-12 REQUIREMENTS, DISCONTINUITY ACC. TO CLAUSE 22.3.8.4, PROCEDURE ACC. TO CLAUSE 22.3.5)

Signature of Dato' M. M. Yusoff
 Dato' M. M. Yusoff
 DAKA
 MANAGER
 PANTECH INDUSTRIES SDN. BHD.

Head of Quality Assurance Department