



# 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

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http://www.pantech-group.com



Certified to NSF/ANSI 61

Approval No.: IS09001-0047455



INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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 Fitting

Certificate No: PSA2-FT-4436  
Date: 26 May 2022

PO No.	Invoice No.	Product Specification	Dimension & Inspection Specification				Delivery Condition																																																																																													
APO-2203-0185	L000013021	ASTM A403/A403M - 20 / ASME SA 403/SA403M - 21	ASME B16.9 - 18 / ASTM A960/A960M - 20 / ASME SA 960/SA960M - 21/ ASME SECTION II PART A - 2021				Solution Treated, Pickled-Passivated																																																																																													
Heat No.	Product & Size			Quantity (pcs)	Material Grade	Visual / Dimension / PMI Examination	Remarks																																																																																													
KG065-1	1" X 1/2"	SCH 10s	CON-REDUCER	200	WP304/304L-W	PASSED	-																																																																																													
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<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="8">Chemical Composition (%)</th> <th colspan="3">Tensile Test<sup>*1</sup></th> <th rowspan="2">Hardness (HRB)</th> <th rowspan="2">Inter-granular corrosion test</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 (KSI / MPa)</th> <th>E (%)</th> </tr> </thead> <tbody> <tr> <td>Max</td> <td>0.030</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 rowspan="3"></td> </tr> <tr> <td>Min</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>18.00</td> <td>8.00</td> <td>-</td> <td>205</td> <td>515</td> <td>28</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> </tr> <tr> <td>KG065-1</td> <td>0.028</td> <td>0.41</td> <td>1.17</td> <td>0.024</td> <td>0.002</td> <td>18.07</td> <td>8.03</td> <td>&lt; 0.01</td> <td>339</td> <td>640</td> <td>67</td> <td>84</td> <td>PASSED</td> </tr> <tr> <td>KG065-1</td> <td>0.028</td> <td>0.41</td> <td>1.17</td> <td>0.024</td> <td>0.002</td> <td>18.07</td> <td>8.03</td> <td>&lt; 0.01</td> <td>339</td> <td>640</td> <td>67</td> <td>84</td> <td>PASSED</td> </tr> </tbody> </table>								Specification	Chemical Composition (%)								Tensile Test <sup>*1</sup>			Hardness (HRB)	Inter-granular corrosion test	C	Si	Mn	P	S	Cr	Ni	Pb	YS (KSI / MPa)	TS (KSI / MPa)	E (%)	Max	0.030	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90		Min	-	-	-	-	-	18.00	8.00	-	205	515	28	-	Heat No.	-	-	-	-	-	-	-	-	-	-	-	-	KG065-1	0.028	0.41	1.17	0.024	0.002	18.07	8.03	< 0.01	339	640	67	84	PASSED	KG065-1	0.028	0.41	1.17	0.024	0.002	18.07	8.03	< 0.01	339	640	67	84	PASSED
Specification	Chemical Composition (%)								Tensile Test <sup>*1</sup>			Hardness (HRB)	Inter-granular corrosion test																																																																																							
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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 3" ABOVE & 3" BELOW DONE SIMULATION TEST FROM PIPE. LONGITUDINAL. DIRECTION, GAUGE LENGTH 2" (50mm)

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

PIPE RAW MATERIAL - 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

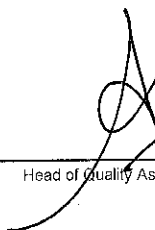

HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

MATERIAL CONFORMS TO THE SPECIFICATION / STANDARD SHOWN

Head of Quality Assurance







# MILL TEST CERTIFICATE

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SIRIM  
Cert. No.: PC005078



Certified to  
NSF/ANSI 51



Approval No.:  
ISO9001-0047465

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 Fitting

Certificate No: PSA2-FT-4450

Date: 14 Jun 2021

PO No.	Invoice No.	Product Specification				Dimension & Inspection Specification	
APO-2201-0186	L000013089	ASTM A403/A403M - 20 / ASME SA 403/SA403M - 21 / MSS SP-43-19				ASME B16.9 - 18 / ASTM A960/A960M - 20 / ASME SA 960/SA960M - 21 / ASME SECTION II PART A 2021	
Heat No.	Product & Size			Quantity (pcs)	Material Grade	Visual / Dimension / PMI Examination	Remarks
JG114-1	4"	SCH 10s	STUB END (B)	5	WP304/304L-W	PASSED	-
KG086-1	4"	SCH 10s	STUB END (B)	8	WP304/304L-W	PASSED	-
KG106-1	4"	SCH 10s	STUB END (B)	8	WP304/304L-W	PASSED	-
KG297-1	4"	SCH 10s	STUB END (B)	59	WP304/304L-W	PASSED	-

Specification	Chemical Composition (%)									Tensile Test <sup>1</sup>			Hardness	Inter-granular corrosion test
	C	Si	Mn	P	S	Cr	Ni	Pb	YS	TS	E			
	(KSI / MPa)	(%)	(HRB)											
Max	0.030	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90		
Min	-	-	-	-	-	18.00	8.00	-	205	515	28	-		
Heat No.	-	-	-	-	-	18.00	8.00	-	205	515	28	-		
JG114-1	0.024	0.41	1.17	0.032	0.001	18.06	8.02	< 0.01	347	658	58	81	PASSED	
KG086-1	0.022	0.42	1.15	0.026	0.002	18.07	8.02	< 0.01	319	608	52	77	PASSED	
KG106-1	0.028	0.41	1.15	0.034	0.001	18.12	8.03	< 0.01	358	678	66	78	PASSED	
KG297-1	0.026	0.41	1.14	0.031	0.001	18.10	8.03	< 0.01	362	665	51	83	PASSED	

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;

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

PIPE RAW MATERIAL - 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

\*Y: YS YIELD STRENGTH TS: TENSILE STRENGTH E: ELONGATION

MATERIAL CONFORMS TO THE SPECIFICATION / STANDARD SHOWN

*[Signature]*

QAQC  
MANAGER  
HASSANUDDIN

Head of Quality Assurance Department



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Approval 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

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

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

Certificate No: PSA2-FT-4449  
Date: 14 Jun 2021

PO No.	Invoice No.	Product Specification				Dimension & Inspection Specification	
APO-2201-0186	L000013089	ASTM A403/A403M - 20 / ASME SA 403/SA403M - 21 / MSS SP-43-19				ASME B16.9 - 18 / ASTM A960/A960M - 20 / ASME SA 960/SA960M - 21 / ASME SECTION II PART A 201	
Heat No.	Product & Size			Quantity (pcs)	Material Grade	Visual / Dimension / PMI Examination	Remarks
HTA079-05-102SB	1"	SCH 10s	STUB END (B)	115	WP304/304L-W	PASSED	-
JOA001-01-102SB	1"	SCH 10s	STUB END (B)	209	WP304/304L-W	PASSED	-
HSA304-01-112SB	2"	SCH 10s	STUB END (B)	17	WP304/304L-W	PASSED	-
ISA401-04-112SB	2"	SCH 10s	STUB END (B)	3	WP304/304L-W	PASSED	-
JGA064-01-112SB	2"	SCH 10s	STUB END (B)	12	WP304/304L-W	PASSED	-
KG018-1	2"	SCH 10s	STUB END (B)	68	WP304/304L-W	PASSED	-
KG106-1	2 1/2"	SCH 10s	STUB END (B)	100	WP304/304L-W	PASSED	-
FEA139-04-112SB	3"	SCH 10s	STUB END (B)	75	WP304/304L-W	PASSED	-
HEA249-01-112SB	3"	SCH 10s	STUB END (B)	24	WP304/304L-W	PASSED	-
JG114-1	3"	SCH 10s	STUB END (B)	1	WP304/304L-W	PASSED	-

Specification	Chemical Composition (%)								Tensile Test <sup>*1</sup>			Hardness (HRB)	Inter-granular corrosion test	
	C	Si	Mn	P	S	Cr	Ni	Pb	YS (KSI / MPa)	TS (KSI / MPa)	E (%)			
	Max	0.030	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	90		
Heat No.	-	-	-	-	-	18.00	8.00	-	-	205	515	28	-	-
HTA079-05-102SB	0.021	0.39	1.35	0.037	0.003	18.25	8.05	< 0.01	-	235	565	57	73	PASSED
JOA001-01-102SB	0.025	0.29	1.08	0.033	0.002	18.11	8.09	< 0.01	-	253	598	52	78	PASSED
HSA304-01-112SB	0.012	0.66	0.97	0.033	0.001	18.18	8.09	< 0.01	-	314	612	60	82	PASSED
ISA401-04-112SB	0.015	0.35	0.97	0.032	0.002	18.28	8.13	< 0.01	-	333	648	47	79	PASSED
JGA064-01-112SB	0.020	0.41	1.07	0.031	0.003	18.37	8.05	< 0.01	-	342	640	55	82	PASSED
KG018-1	0.023	0.39	1.18	0.033	0.001	18.25	8.04	< 0.01	-	335	651	54	76	PASSED
KG106-1	0.028	0.41	1.15	0.034	0.001	18.12	8.03	< 0.01	-	341	660	49	77	PASSED
FEA139-04-112SB	0.022	0.44	0.93	0.038	0.008	18.08	8.08	< 0.01	-	326	557	57	82	PASSED
HEA249-01-112SB	0.017	0.37	1.14	0.039	0.003	18.01	8.26	< 0.01	-	314	603	54	83	PASSED
JG114-1	0.024	0.41	1.17	0.032	0.001	18.06	8.02	< 0.01	-	372	665	58	82	PASSED

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

PIPE RAW MATERIAL: 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

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MATERIAL CONFORMS TO THE SPECIFICATION / STANDARD SHOWN

Signature and stamp of QACC Manager Hassanuddin

Head of Quality Assurance Department





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**INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1**

Customer: Unimech Engineering (M) Sdn Bhd  
Product: Seamless Austenitic Stainless Steel Fitting

Certificate No: PSA2-FT-4446

Date: 14 Jun 2022

PO No.	Invoice No.	Product Specification	Dimension & Inspection Specification			Delivery Condition	
APO-2201-0186	L000013089	ASTM A403/A403M - 20 / ASME SA 403/SA403M - 21	ASME B16.9 - 18 / ASTM A960/A960M - 20 / ASME SA 960/SA960M - 21/ ASME SECTION II PART A - 2021			Solution Treated, Pickled-Passivated	
Heat No.	Product & Size			Quantity (pcs)	Material Grade	Visual / Dimension / PMI Examination	Remarks
KI004-1	3/4"	SCH 10s	90° LR ELBOW	700	WP304/304L-S	PASSED	-

Specification	Chemical Composition (%)									Tensile Test *1			Hardness (HRB)	Inter-granular corrosion test
	C	Si	Mn	P	S	Cr	Ni	Pb	YS (KSI / MPa)	TS (KSI / MPa)	E (%)			
	Max	Min												
Heat No.	0.030	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	90		
KI004-1	0.023	0.37	1.35	0.030	0.003	18.15	8.02	< 0.01	263	559	52	81	PASSED	

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*[Signature]*  
 QA MANAGER  
 HASSRUDDIN  
 Head of Quality Assurance Department