



# 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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Certified to NSF/ANSI 61

Cert. No.: ISO9001-0047465



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-4397  
Date: 8 Feb 2022

PO No.	Invoice No.	Product Specification	Dimension & Inspection Specification				Delivery Condition																																																																																												
APO-2107-0067	L000012599	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																																																																																													
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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>11</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>18.00</td> <td>8.00</td> <td>-</td> <td>205</td> <td>515</td> <td>28</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>KG098-1</td> <td>0.029</td> <td>0.40</td> <td>1.17</td> <td>0.032</td> <td>0.001</td> <td>18.24</td> <td>8.02</td> <td>&lt; 0.01</td> <td>332</td> <td>640</td> <td>65</td> <td>81</td> <td>PASSED</td> </tr> </tbody> </table>							Specification	Chemical Composition (%)								Tensile Test <sup>11</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.	-	-	-	-	-	18.00	8.00	-	205	515	28	-	KG065-1	0.028	0.41	1.17	0.024	0.002	18.07	8.03	< 0.01	339	640	67	84	PASSED	KG098-1	0.029	0.40	1.17	0.032	0.001	18.24	8.02	< 0.01	332	640	65	81	PASSED
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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

Handwritten signature: *Hassanuddin*  
 Head of Quality Assurance Department  
 QACC MANAGER HASSANUDDIN  
 PANTech STAINLESS & ALLOY INDUSTRIES SDN BHD