



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,
 KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG,
 JOHOR DARUL TAKZIM, MALAYSIA
 Tel: +607-251 8888 Fax: +607-251 9999 E-mail: info@pantechssalloy.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



Suruhanjaya Perindustrian Air Negeri
 NO. SUIJ PENDAFITARAN : SPAN/AP/A/00883-2011

SIRIM
 Cert. No.: PP087201

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

Certificate No : PSA2-24281
 Date : 04/12/2019

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-1909-0073	L000009480	ASTM A312/A312M - 17 / ASME SA312/SA312M - 17	ASTM A999/A999M - 16/ ASME SA999/SA999M - 15 B 36.19M-85 & 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						
IGA011-01112	6 inch Sch 10S x 6M	TP 304/304L	4	Eddy Current	Flattening	Pressure / Hold	Result						
ISA349-01112	6 inch Sch 10S x 6M	TP 304/304L	14	PASSED	PASSED	1300 PSI, 5s	PASSED						
ISA376-01112	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	1300 PSI, 5s	PASSED						
IYA071-01112	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	1300 PSI, 5s	PASSED						
Chemical Composition (%)													
Specification	C	Si	Mn	P	S	Cr	Ni	Pb	YS (ksi / MPa)	TS (%)	E (%)	Hardness, HRB	Remarks
Max	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	-	-	-	-	-
Min	-	-	-	-	-	18.00	8.00	-	-	-	-	-	-
Heat No.													
IGA011-01112	0.021	0.37	1.39	0.027	0.002	18.25	8.05	< 0.10	205	515	35	90	
ISA349-01112	0.022	0.40	1.56	0.036	0.002	18.19	8.05	< 0.10	357	657	57	83	
ISA376-01112	0.018	0.65	0.99	0.029	0.001	18.25	8.15	< 0.10	346	644	62	83	
IYA071-01112	0.014	0.43	1.55	0.030	0.002	18.2	8.00	< 0.10	363	655	59	82	
									339	632	59	82	

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

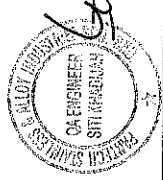
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C, RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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

EDDY CURRENT ACCORDING TO ASTM E646-98 (Reapproved 2005) *2: NR: Not Hydrostatically Tested

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)
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PTD 204934, JALAN PLATINUM UTAMA,
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Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechstnloy.com
http://www.pantech-group.com



Cert. No.: IS09001-0097465

PED CERTIFICATE NO.:
0038/PED/MUM/1110006/L



SIRIM
Cert. No.: PP087201



Suruhanjaya Perindustrian Air Negeri
NO. SIUL PENDAFTARAN : SPAN/RP/A/00888-2011

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1

Customer : Unimech Engineering (M) Sdn Bhd

Product : Welded Austenitic Stainless Steel Pipe

Certificate No : PSA2-24137

Date : 21/10/2019

PO No.	Invoice No.	Product Specification		Dimensional & Inspection Specification				Delivery Condition																																																																																				
		ASTM A312/A312M - 17 / ASME SA312/SA312M - 17	Grade	Quantity (Length)	Eddy Current	Flattening	Inter-Granular Corrosion Test	Hydrostatic Test Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection																																																																																		
APO-1910-0072	L000009425	8 inch Sch 10S x 6M	TP 304/304L	5	PASSED	PASSED	PASSED	1100 PSI, 5s	PASSED	GOOD																																																																																		
		8 inch Sch 10S x 6M	TP 304/304L	70	PASSED	PASSED	PASSED	1100 PSI, 5s	PASSED	GOOD																																																																																		
		8 inch Sch 10S x 6M	TP 304/304L	25	PASSED	PASSED	PASSED	1100 PSI, 5s	PASSED	GOOD																																																																																		
<table border="1"> <thead> <tr> <th rowspan="2">Specification</th> <th colspan="10">Chemical Composition (%)</th> <th rowspan="2">Tensile Test^{*1}</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>IGA012-01112</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>205</td> <td>515</td> <td>35</td> <td>90</td> <td></td> </tr> <tr> <td>IGA013-01112</td> <td>0.022</td> <td>0.38</td> <td>1.39</td> <td>0.028</td> <td>0.002</td> <td>18.24</td> <td>8.06</td> <td>< 0.10</td> <td>333</td> <td>626</td> <td>58</td> <td>82</td> <td></td> </tr> <tr> <td>ISA376-02112</td> <td>0.018</td> <td>0.37</td> <td>1.43</td> <td>0.032</td> <td>0.002</td> <td>18.31</td> <td>8.05</td> <td>< 0.10</td> <td>322</td> <td>611</td> <td>58</td> <td>77</td> <td></td> </tr> <tr> <td></td> <td>0.018</td> <td>0.65</td> <td>0.99</td> <td>0.029</td> <td>0.001</td> <td>18.25</td> <td>8.15</td> <td>< 0.10</td> <td>347</td> <td>635</td> <td>56</td> <td>82</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 (%)	IGA012-01112	0.035	1.00	2.00	0.045	0.030	20.00	11.00	-	205	515	35	90		IGA013-01112	0.022	0.38	1.39	0.028	0.002	18.24	8.06	< 0.10	333	626	58	82		ISA376-02112	0.018	0.37	1.43	0.032	0.002	18.31	8.05	< 0.10	322	611	58	77			0.018	0.65	0.99	0.029	0.001	18.25	8.15	< 0.10	347	635	56	82	
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 19.2MM 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 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



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PTD 204334, JALAN PLATINUM UTAMA,
 KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
 JOHOR DARUL TAKZIM, MALAYSIA
 Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechalloy.com
 http://www.pantech-group.com

INSPECTION DOCUMENT: EN 10204: 2004 Type 3.1



Cert. No.: IS09001-0047465

PED CERTIFICATE NO.:
 0038/PED/MUM/1110006/1



SIRIM
 Cert. No.: PP087201



Suruhanjaya Pendaftaran & Pengawasan
 NO. SJIL PENDAFTARAN : SPAN/AP/A/00883-2011

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

Certificate No : PSA2-24140
 Date : 21/10/2019

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification	Delivery Condition									
APO-1910-0077	L000009428	ASTM A312/A312M - 17 / ASME SA312/SA312M - 17	ASTM A999/A999M - 16/ ASME SA999/SA999M - 15 B 36.19M-85 & 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 Pressure / Hold	Dimensional / PMI/ Visual Inspection						
ISA383-01112	12 inch Sch 10S x 6M	TP 304/304L	4	Eddy Current PASSED Flattening PASSED	PASSED	NH	Result - GOOD						
IYA125-01112	12 inch Sch 10S x 6M	TP 304/304L	10	PASSED	PASSED	NH	Result - 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 (%)
Min	-	-	-	-	-	18.00	8.00	-	-	-			-
Heat No.	0.017	0.53	0.99	0.033	0.002	18.12	8.09	< 0.10	205	515			35
ISA383-01112	0.017	0.45	1.59	0.028	0.003	18.00	8.10	< 0.10	351	655	59	83	
IYA125-01112									319	606	61	77	

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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 19.2MM FOR 1" ABOVE, 1" INCLUDE AND BELOW DIRECT TEST FROM PIPE. LONGITUDINAL DIRECTION. GAUGE LENGTH 2" (50mm)

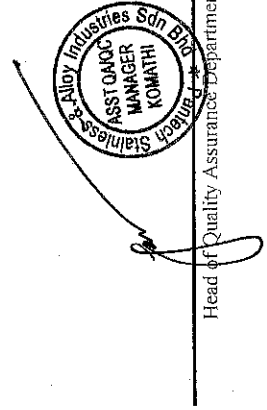
NOTE: MADE IN MALAYSIA STEEL MAKING PROCESS: AOD / VOD

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 A312/A312M-17) 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)

PTD 204334, JALAN PLATINUM UTAMA,
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Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechstainless.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



Cert. No.: IS09001-0074655

PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1



SIRIM
Cert. No.: PP087201



SURUJAJAYA PAPERINDUSTRI, AIR NEGARA
NO. 5111 PENDAFTARAN : SPAN/KP/A/00883-2011

Certificate No : PSA2-24136
Date : 21/10/2019

PO No.	Invoice No.	Product Specification	Dimensional & Inspection Specification										Delivery Condition																																																																																																							
			ASTM A312/A312M - 17 / ASME SA312/SA312M - 17					ASTM A999/A999M - 16 / ASME SA999/SA999M - 15 B 36.19M-85 & B36.10M-04					Solution Treated, Pickled-Passivated, Plain Ends Square Cut																																																																																																							
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IGA011-01112	6 inch Sch 10S x 6M	TP 304/304L	28	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																										
ISA348-01112	6 inch Sch 10S x 6M	TP 304/304L	15	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																										
ISA349-01112	6 inch Sch 10S x 6M	TP 304/304L	2	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																										
IYA071-01112	6 inch Sch 10S x 6M	TP 304/304L	10	PASSED	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD																																																																																																										
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Specification	Chemical Composition (%)										Tensile Test ^{*1}			Remarks																																																																																																						
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TENSILE REQUIREMENT: CONFORMS TO ASTM A570 - 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 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

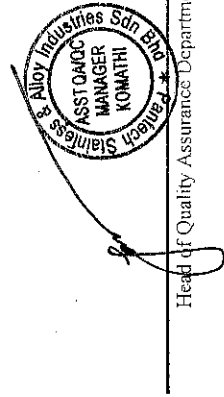
HEAT TREATMENT: SOLUTION TREATED AT MINIMUM 1050°C. RAPIDLY COOLED WITH WATER

CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIALS HEAT ANALYSIS

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

*2: NH: Not Hydrostatically Tested

REQUIREMENTS (REFERENCE TO ASTM E424-98 (Reapproved 2005)⁶⁷ 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)

PTD 204334, JALAN PLATINUM UTAMA,
KAWASAN PERINDUSTRIAN PASIR GUDANG, ZON 12B, 81700 PASIR GUDANG
JOHOR DARUL TAKZIM, MALAYSIA
Tel: +607-2518888 Fax: +607-2519999 E-mail: info@pantechgroup.com
http://www.pantech-group.com

SPAN

SUTAHANJAYS PERKHIDMATAN AIR NEGARA
NO. SUJIL PENDAFTARAN: SPAN/KP/A/00883-2011



Lloyd's Register

Cert. No.: ISO9001-0047465
PED CERTIFICATE NO.:
0038/PED/MUM/1110006/1
SIRIM
Cert. No.: PPO87201

Certificate No : PSA2-24190
Date : 08/11/2019

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 - 17 / ASME SA312/SA312M - 17	ASTM A999/A999M - 16 / ASME SA999/SA999M - 15 B 36.19M-85 & B36.10M-04	Grade	Quantity (Length)	Non Destructive Test	Inter-Granular Corrosion Test	Hydrostatic Test	Solution Treated, Pickled-Passivated, Plain Ends Square Cut			
Heat No.	Size	Grade	Quantity (Length)	Eddy Current	Flattening	Corrosion Test	Pressure / Hold	Result	Dimensional / PMI/ Visual Inspection			
IGA011-01112	6 inch Sch 10S x 6M	TP 304/304L	4	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD			
ISA349-01112	6 inch Sch 10S x 6M	TP 304/304L	14	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD			
ISA376-01112	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD			
IYA071-01112	6 inch Sch 10S x 6M	TP 304/304L	1	PASSED	PASSED	PASSED	1300 PSI, 5s	PASSED	GOOD			
Specification	Chemical Composition (%)											
	C	Si	Mn	P	S	Cr	Ni	Pb	Tensile Test ¹		Hardness, HRB	Remarks
Max	1.00	0.37	0.027	0.002	20.00	11.00	-	YS - (ksi / MPa)	TS	E (%)		
Min	0.035	-	1.56	0.036	-	18.00	8.00	-	-	-	90	
Heat No.									205	515	35	
IGA011-01112	0.021	0.37	1.39	0.027	0.002	18.25	8.05	< 0.10	348	645	54	84
ISA349-01112	0.022	0.40	1.56	0.036	0.002	18.19	8.05	< 0.10	344	648	61	83
ISA376-01112	0.018	0.65	0.99	0.029	0.001	18.25	8.15	< 0.10	363	655	59	82
IYA071-01112	0.014	0.43	1.55	0.030	0.002	18.20	8.00	< 0.10	339	632	59	82

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 3" (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

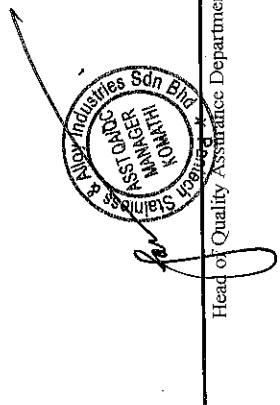
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CHEMICAL COMPOSITION CAPTURED FROM RAW MATERIAL'S HEAT ANALYSIS

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*2: NH: Not Hydrostatically Tested

EDDY CURRENT ACCORDING TO ASTM E426-98 (Reapproved 2005) REQUIRMENTS (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

