AWAJI MATERIA (THAILAND) CO.,LTD.

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INSPECTION CERTIFICATE

EN 10204 3.1 : 2004

ISO 9001 :2015 Manufacturing Company
Certified by BV. Certificate No. TH013595

Material manufacturer QMS acc.
PED 2014/68/EU, Annex1. Par4,3/AD2000-Merkblatt W0
Certified by Lloyd's Register
Certificate No. 50207/1

Date : JANUARY 26, 2022

Certificate No. : T22-12071

Purchaser : Dodson Global

Order No.	Job No.	Product	
290995-00/3	-	CARBON STEEL BUTT WELDING FITTINGS	MADE FROM SEAMLESS STEEL PIPE

Inspection Standard	Material Standard	Visual	Dimension	*4 UT Inspection	Magnetic Particle Test
ASME B16.9-18, ASME B16.25-17 ASTM A960-20 NACE MR-0175/ISO 15156-15 MR-0103-15	ASTM A234-19, WPB ASME SA234-19. Sec. II, Part A, except nuclear usage	GOOD	GOOD	W.T. INSPECTED	-

Manufacturing No. (Heat code.)	Product Code	Material	Article & Size	Quantity	Note.
191M71		WPB	STD 45 LONG RADIUS ELBOW 1-1/4"	200 Pcs.	

Specification		*1 Chemical Composition (%)																	*2 Mechanical Test			L Hardness
		C	Si	*3 Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	Ca	N	Al	C.E.		Y.S.	T.S.	E	
Min.		X100	X100	X100	X1000	X1000	X100	X100	X100	X100	X100	X100	X100	X10000	X10000	x1000	X1000	X100		MPa		%	HBW
Max.		-	10	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-		240	415	30	-
Heat No.		30	-	135	50	58	40	40	40	15	8	2	-	5	-	-	-	50		-	-	-	197
11312197	L	19	26	55	9	4	2	2	7	1	0	0	0	3	22	4	7	30		331	491	39	121
	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					124

$$C.E. = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15}$$

*4 UT = Ultrasonic thickness inspection

*1 Equivalent for A234 WPB

*2 Y.S.= Yield Strength (0.2% offset), T.S. = Tensile Strength, E = Elongation (in 50mm), L = Longitudinal, T = Transverse

*3 As per foot note D of ASME SA234 Table 1.

L = Ladle Analysis, P = Product Analysis

Material is free mercury contamination and no weld repair was performed

Killed steel & fine grain.

ELBOW / Forming temperature 850°C—945°C and cooled in still air

TEE, REDUCER & CAP / Normalizing (cold Forming) : 910°C (Holding Time : (Nominal Wall Thickness/1mm) x 1.5 min.))

"We certify that the fitting was manufactured, sampled, tested and inspected in accordance with the specification and was found to meet the requirements.

Surveyor to

AT-24(2)29

QA. GM. /Work Inspector S. PORNTIP

Porntip@awaji.co.th