

INSPECTION CERTIFICATE

(EN 10204 -3.1)

Certificate No. : BK201407-0633
 Date : 2014.07.28
 Spec. for Inspection : ASME B16.9
 Starting Material : Steel Plate
 Visual and Dimension : Bellfactory

Customer : TCC Bend Korea Corp.
 220, Gondan 2-ro, Sangam-Myeon,
 Sacheon-Si, Gyeongsangnam-Do, 664-942, Korea

Project Name :
 Spec. for Material : ASTM A234 WPBW - 11

Item No.	Heat I.D. No.	Description	Tensile Test #1				Hardness (HB)	Impact Test			Flattening Test	Bend Test 180°	Raw Heat No.	Remark (POR/Code No.)	
			#2	Y.S	T.S	E.L		R.A	Temp.	Notch					Uhl
		Q'ty		%		Size		Avg.							
		Min	Max	35	60	30	1	2	3	Avg.					
10	SU38076	90° ELBOW LONG X-S B.W 26"	2	43.2	87.7	35.4	Max.197					SU38076			
11	SP78594	90° ELBOW LONG X-S B.W 28"	2	39.5	87.2	34.1	141 / 139					SP78594			
12	SP78545	90° ELBOW LONG X-S B.W 30"	2	41.8	87.7	33.8	139 / 137					SP78545			
12	SP78593	90° ELBOW LONG X-S B.W 30"	1	40.8	88.9	33.8	140 / 138					SP78593			
12	LK289925	90° ELBOW LONG X-S B.W 30"	1	42.3	87.5	32.9	139 / 136					SP78593			
13	SF38814	90° ELBOW SHORT STD B.W 30"	2	41.7	85.3	34.8	138 / 138					LK289925			
							137 / 135					SF38814			
Chemical Composition (%) #3															
Item No.	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Nb	Al	N	As	Phos	Coef.
10	0.30	0.10	0.29	-	-	-	-	-	0.40	0.05	0.40	0.02	0.08		
11	0.14	0.24	1.11	0.008	0.001	0.007	0.01	0.01	0.01	0.002	0.001	0.001	0.001		
12	0.15	0.21	1.18	0.012	0.005	0.02	0.02	0.01	0.02	0.001	0.001	0.001	0.001		
12	0.16	0.20	1.18	0.011	0.004	0.01	0.02	0.001	0.01	0.001	0.001	0.001	0.001		
12	0.17	0.28	1.15	0.013	0.005	0.01	0.02	0.008	0.001	0.001	0.001	0.001	0.001		
13	0.14	0.26	1.10	0.009	0.002	0.01	0.02	0	0.01	0.002	0.001	0.001	0.001		

Heat Treatment: #4
 Hot Formed (700-950°C) & Cooled in still air

NDE
 RT MT
 PT UT

Customer's Requirement:

We hereby certify that the product described herein has been manufactured in accordance with specifications concerned and also with the purchaser's requirements and that the test results shown here are correct.

Surveyor: _____
 Quality Management Division Manager: _____

Notes:
 #1... Tensile Test : Y.S=Yield Strength(0.2% off set), T.S=Tensile Strength, E.L=Elongation, R.A=Reduction of Area
 #2... Location : L=Longitudinal, T=Transverse, T= Tangential
 #3... Chemical Composition : H=Heat Analysis, P=Product Analysis, Caq1 = C + Mn/8 = (C+Mn)/8 + (Ni + Cu)/15, Caq2 = C + Mn/8
 #4... Heat Treatment : N=Normalized, A=Annealed, Q=Quenched, T=Tempered, S.T=Solution Treated, S.H=Stress Relieved, A.C=Air Cooled, W.C=Water Cooled, F.C=Furnace Cooled, O.C=Oil Cooled



Address : 220, Gongdan 2-Ro, Sanam-Myeon, Sacheon-Si, Gyeongsangnam-Do, 664-942, South Korea
Contact Person: Edwin Park Tel: 82-55-830-8523

Doc. No : TCC-SM-1602-001
ATTN. :
C.C. :
SUBJECT : **Letter of Authenticity**

“To whom it may concern,

Please be advised that the **30” XH LR 90 WPBW** with Heat Numbers **SP79594** and **SP79545** located on TCC BEND MTR#: **BK201407-0533** and MTR#: **BK201407-0533-1** have been manufactured in accordance with ASTM A234.

- Quantity: 4 pieces
- Total weight: 1,711.73 Kg
- Type of steel: “Hot Obtained”

Additionally, all listed material have been manufactured by TCC BEND CORP, a South Korean entity.

For an additional comments or concern, please feel free to contact us”

Approved By

TCC BEND KOREA CORP.

Jae Woo Ha

Jae Woo, Ha (CEO)
220, Gongdan 2-Ro, Sanam-Myeon, Sacheon-Si,
Gyeongsangnam-Do, Korea
