BOTH-WELL STEEL FITTINGS CO., LTD.

NO.303, RENXIN ROAD, RENWU DISTRICT, KAOHSIUNG CITY, TAIWAN, R.O.C. (814020)
TEL : (886)7-3711536, 3710497, 3720260 FAX : (886)7-371-3864, 3713882
WEB SITE : http://www.bothwell.com.tw E-Mail : box@bothwell.com.tw
An ISO 9001 : 2015 Registered Manufacturer

MILL TEST & INSPECTION CERTIFICATE

ACCORDING TO EN 10204 3.1

CUSTOMER : TEXAS PIPE & SUPPLY CO.
CERT NO. : 210807 INVOICE NO. : 5200017950 DATE : 04/20/2021
ORDER NO. : 279582-(1) L/C NO. : ORIGIN : TAIWAN

ITEM	RAW HEAT NO. HEAT NO.	QTY	DESC/GRADE OR SPECIFICATION NO. CHEMICAL COMPOSITION(%) MECHANICAL PROPERTIES.
176	9SK0188 HT0746	510 PCS	45D ELBOW F316L 2" 3000# S/W 2------TF5U4SAC C:0.016 Si:0.40 Mn:1.45 P:0.034 S:0.026 Cu:0.42 Cr:16.65 Ni:10.10 Mo:2.02 N:0.070 TS(KSI):82.5 YS 0.2%(KSI):35.5 EL(%):62.0 R.A.(%):77.9 HARDNESS 1(HBW):151 HARDNESS 2(HBW):154

REMARK :
THE MATERIAL SUPPLIED IDENTIFIED AS ASTM A182 -20, ASME SA182-2019ED, F316/F316L
THE FITTING SUPPLIED IDENTIFIED AS ASME B16.11 - 2016
THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH SPECIFICATION(SURFACE & DIM). : GOOD
STANDARD : CHEMICAL COMPOSITION(%) & MECHANICAL PROPERTIES.

	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)
MIN	-	-	-	-	-	-	16.0	10.0	2.00	-	-
MAX	0.030	1.00	2.00	0.045	0.030	-	18.0	14.0	3.00	-	-
	N	Al	Ti	Zr	CE	TS(KSI)	YS(KSI)	YS 0.2%(KSI)	EL(%)	R of A(%)	HARDNESS(HBW)
MIN	-					75		30	30	50	-
MAX	0.10					-		-	-	-	235

HEAT TREATMENT : SOLUTION: 1060°C(1940°F) W.Q.
CONFORMS TO NACE MR0175-15/ISO 15156-15/MR0103-15
FREE FROM RADIATION CONTAMINATION AND MERCURY FREE
CONFORMS TO ASTM A262 PRACTICE E SPECIFICATION

WE CERTIFY THE ABOVE MENTIONED FITTINGS HAVE BEEN MANUFACTURED, SAMPLED, TESTED, AND INSPECTED IN ACCORDANCE WITH THE SPECIFICATIONS SHOWN

Y.Y. Chang C.L. Ko

Q.C. MANAGER INSPECTOR

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CUSTOMER : TEXAS PIPE & SUPPLY CO. PAGE : 10
CERT NO. : 212262 INVOICE NO. : 5200019054 DATE : 11/05/2021
ORDER NO. : 294966-(1 OF 2) L/C NO. : ORIGIN : TAIWAN

ITEM	RAW HEAT NO. HEAT NO.	QTY	DESC/GRADE OR SPECIFICATION NO. CHEMICAL COMPOSITION(%) MECHANICAL PROPERTIES.
173	6E113 HT0788	830 PCS	FULL CPLG F316L 2" 3000# S/W 2------TF5UFSAC C:0.021 Si:0.40 Mn:1.69 P:0.025 S:0.023 Cu:0.47 Cr:16.81 Ni:10.07 Mo:2.02 N:0.056 TS(KSI):89.2 YS 0.2%(KSI):46.3 EL(%):55.4 R.A.(%):74.7 HARDNESS 1(HBW):169 HARDNESS 2(HBW):172

REMARK :
THE MATERIAL SUPPLIED IDENTIFIED AS ASTM A182 -20, ASME SA182-2021ED, F316/F316L
THE FITTING SUPPLIED IDENTIFIED AS ASME B16.11 - 2016
THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH SPECIFICATION(SURFACE & DIM). : GOOD
STANDARD : CHEMICAL COMPOSITION(%) & MECHANICAL PROPERTIES.

	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)
MIN	-	-	-	-	-	-	16.0	10.0	2.00	-	-
MAX	0.030	1.00	2.00	0.045	0.030	-	18.0	14.0	3.00	-	-
	N	Al	Ti	Zr	CE	TS(KSI)	YS(KSI)	YS 0.2%(KSI)	EL(%)	R of A(%)	HARDNESS(HBW)
MIN	-					75		30	30	50	-
MAX	0.10					-		-	-	-	235

HEAT TREATMENT : SOLUTION, 1060°C(1940°F) WQ
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CONFORMS TO ASTM A262 PRACTICE E SPECIFICATION

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CUSTOMER : TEXAS PIPE & SUPPLY CO. PAGE : 6
CERT NO. : 212262 INVOICE NO. : 5200019054 DATE : 11/05/2021
ORDER NO. : 294966-(1 OF 2) L/C NO. : ORIGIN : TAIWAN

ITEM	RAW HEAT NO. HEAT NO.	QTY	DESC/GRADE OR SPECIFICATION NO. CHEMICAL COMPOSITION(%) MECHANICAL PROPERTIES.
159	9SL0056 HT0781	213 PCS	90D ELBOW F316L 2" 3000# S/W 2------TF5ULSAC C:0.022 Si:0.45 Mn:1.59 P:0.034 S:0.028 Cu:0.34 Cr:17.31 Ni:10.60 Mo:2.07 N:0.065 TS(KSI):82.3 YS 0.2%(KSI):36.0 EL(%):63.4 R.A.(%):75.7 HARDNESS 1(HBW):163 HARDNESS 2(HBW):166

REMARK :
THE MATERIAL SUPPLIED IDENTIFIED AS ASTM A182 -20, ASME SA182-2021ED, F316/F316L
THE FITTING SUPPLIED IDENTIFIED AS ASME B16.11 - 2016
THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH SPECIFICATION(SURFACE & DIM). : GOOD
STANDARD : CHEMICAL COMPOSITION(%) & MECHANICAL PROPERTIES.

	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)
MIN	-	-	-	-	-	-	16.0	10.0	2.00	-	-
MAX	0.030	1.00	2.00	0.045	0.030	-	18.0	14.0	3.00	-	-
	N	Al	Ti	Zr	CE	TS(KSI)	YS(KSI)	YS 0.2%(KSI)	EL(%)	R of A(%)	HARDNESS(HBW)
MIN	-					75		30	30	50	-
MAX	0.10					-		-	-	-	235

HEAT TREATMENT : SOLUTION, 1060°C(1940°F) WQ
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CUSTOMER : TEXAS PIPE & SUPPLY CO. PAGE : 7
CERT NO. : 212262 INVOICE NO. : 5200019054 DATE : 11/05/2021
ORDER NO. : 294966-(1 OF 2) L/C NO. : ORIGIN : TAIWAN

ITEM	RAW HEAT NO. HEAT NO.	QTY	DESC/GRADE OR SPECIFICATION NO. CHEMICAL COMPOSITION(%) MECHANICAL PROPERTIES.
159	9SL0197 HT0816	587 PCS	90D ELBOW F316L 2" 3000# S/W 2------TF5ULSAC C:0.024 Si:0.44 Mn:1.60 P:0.035 S:0.028 Cu:0.31 Cr:17.15 Ni:10.42 Mo:2.02 N:0.066 TS(KSI):87.0 YS 0.2%(KSI):41.3 EL(%):60.3 R.A.(%):76.8 HARDNESS 1(HBW):178 HARDNESS 2(HBW):180

REMARK :
THE MATERIAL SUPPLIED IDENTIFIED AS ASTM A182 -20, ASME SA182-2021ED, F316/F316L
THE FITTING SUPPLIED IDENTIFIED AS ASME B16.11 - 2016
THE PRODUCT SUPPLIED WAS INSPECTED IN ACCORDANCE WITH SPECIFICATION(SURFACE & DIM). : GOOD
STANDARD : CHEMICAL COMPOSITION(%) & MECHANICAL PROPERTIES.

	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V	Cb(Nb)
MIN	-	-	-	-	-	-	16.0	10.0	2.00	-	-
MAX	0.030	1.00	2.00	0.045	0.030	-	18.0	14.0	3.00	-	-
	N	Al	Ti	Zr	CE	TS(KSI)	YS(KSI)	YS 0.2%(KSI)	EL(%)	R of A(%)	HARDNESS(HBW)
MIN	-					75		30	30	50	-
MAX	0.10					-		-	-	-	235

HEAT TREATMENT : SOLUTION, 1060°C(1940°F) WQ
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