



Inspection Order No. : IN-TJ- 5804-13111

BOSS No: n/a

Page No. : 1 of 20

Date of issue: Sep.11, 2013

INSPECTION REPORT

(non-negotiable)

- **Description and Quantity of Commodity:** steel pipes, flanges and fittings
- **Name & Address Of Buyer:** GHESHM D.P CO.
- **Name & Address Of Seller:** WENZHOU SUCCESS GROUP CO., LTD.
- **Inspection Date & Place:** Sep 03 ~07, 2013 in Yanshan county , Hebei Province, China
- **P/I No.:** PFSAM130518P11 DD: JULY-2ND-2013

- Nature Of Inspection:	Item	Comment
	Quantity check	Subjected to client's evaluation
	Visual quality check	Subjected to client's evaluation
	Packing and Marking check	Subjected to client's evaluation
	Dimension check	Subjected to client's evaluation
	witness testing	Subjected to client's evaluation
	Documents review	Subjected to client's evaluation

- **Inspector:**

Jack Sun

Jack Sun

- **Reviewed by**

Vivian Ran

Vivian Ran

This is to report that we, SGS-CSTC (Tianjin) Co., Ltd. at the request of GHESHM D.P CO. conducted the following inspection:

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[V: 02 June. 1st, 2012]

Member of the SGS Group (Société Générale de Surveillance)



Instrument checklist

During the inspection, the following instrument calibration status has been checked for inspection:

No.	Description	Instrument No.	Type/Size	Calibration	
				Calibration Date	Expire date
1	Steel tape	/	0-10000mm	/	/
2	Steel tape	/	0-1000mm	/	/
3	Vernier caliper	/	0-150mm	2013/04/25	2014/04/24
4	Vernier caliper	/	0-600mm	2013/04/25	2014/04/24
5	Angle ruler	4-TF1884	0-320°	2013/04/25	2014/04/24
6	ultrasonic thickness indicator	OU1600	0.5-200mm	2013/04/25	2014/04/24
7	ultrasonic flaw detector	R20893	PXUT-350+	2013/04/22	2014/04/21
8	leeb hardness tester	H29617	HI-80	2013/04/25	2014/04/24
9	Spark Discharge atomic emission spectrometer	051152MLV09	Metal LAB 75-80J	2011/12/14	2013/12/11
10	Universal material testing machine	30709015	SHT4106	2013/04/09	2014/04/08

Remark: We checked the certificate of measured instrument before inspection, but the manufacturer couldn't provide the certificates of steel tape.

Sample Size:

- According to ANSI/ASQ Z1.4-2008, L-II, total 321pcs cargos were randomly selected to perform the visual quality check, packing and marking check.
- According to ANSI/ASQ Z1.4-2008, S-4, total 127pcs cargos were randomly selected to perform the dimension check
- Sampling on finished products and witness testing at mill's lab, sample size: 1 sample per item, 21 samples totally; details as following:

Item 1~5: A335 P11: Chemical analysis (C, Mn, P, S, Si, Cr, Mo), Mechanical properties (Tensile strength, yield strength, elongation), and UT for size 10" and 18";

Item 9~12: A234 WP11: Chemical analysis (C, Mn, P, S, Si, Cr, Mo), Mechanical properties (Tensile strength, yield strength, elongation, for size over 1");

Item 6~8 & 16~27): A182 F-11: Chemical analysis (C, Mn, P, S, Si, Cr, N, Mo), Hardness and Mechanical properties (Tensile strength, yield strength, elongation), kindly note the mechanical tests capacity is pending for these items.



Item 13~15: ASTM A193 B16: Chemical analysis (C, Mn, P, S, Si, Cr, V, Al, Mo), Hardness

Inspection Finding:

1. Quantity check:

The quantity check was performed by SGS inspector according to the packing list provided by client, and the details were shown as below:

Item	Description	Quantity on contract	Actual quantity
1	18" PIPE SMLS, A335P11 SCH60, BE	612M	52PCS=612.9M
2	10" PIPE SMLE, A335P11 SCH60, BE	12M	2PCS=12.77M
3	2" PIPE SMLE, A335P11 SCH60, BE	48M	9PCS=52.2M
4	1" PIPE SMLE, A335P11 SCH60, BE	150M	26PCS=150.8M
5	3/4" PIPE NIPPLE-SCHXXS, ASTM A335 P11-TOE	20PCS	21PCS
6	10" x 1" BOSS, SW, CL6000, ASTM A182-F11, CL.1	30PCS	31PCS
7	18" x 3/4" BOSS, SW, CL6000, ASTM A182-F11, CL.1	30PCS	31PCS
8	3/4", CAP, SCRD, CL6000,ASTM A182-F11, CL.1	30PCS	31PCS
9	18" ELBOW 45DEG, LR, SCH.60, BW A234W P11, CL.1	30PCS	31PCS
10	18" ELBOW 90DEG, LR, SCH.60, BW A234W P11, CL.1	105PCS	106PCS
11	1" ELBOW 90DEG, SHC.60, SW A234W P11, CL.1	120PCS	121PCS
12	18" x 10" TEE RED, SCH60, BW, A234 WP11, CL.1	15PCS	16PCS
13	5/8" x 95MM STUD BOLT W/2NUT, ASTM A193-B16	320PCS(Including:BOL T:320PCS; NUT:640PCS)	BOLT:317PCS; NUT:644PCS
14	1 1/4" x 230MM STUD BOLT W/2NUT, ASTM A193-B16	180PCS(Including:BOL T:1800PCS; NUT:360PCS)	BOLT:181PCS; NUT:362PCS
15	1 5/8" x 285MM STUD BOLT W/2NUT, ASTM A193-B16	120PCS(Including:BOL T:120PCS; NUT:240PCS)	BOLT:120PCS; NUT:242PCS
16	10" BLIND FLANGE, CL.600#,RF,A182-F11, CL.1	15PCS	16PCS
17	2" SW. FLANGE, CL.600#,RF,A182-F11, CL.1	6PCS	7PCS
18	1" SW. FLANGE, CL.600#,RF,A182-F11, CL.1	80PCS	81PCS
19	18" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	6PCS	7PCS
20	14" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	2PCS	3PCS
21	10" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	15PCS	16PCS
27	STEAM TRAP 600# RF A182 F11 CL.1	15SET	Informed by

	THERMODYNAMIC 1"		manufacturer, the cargos weren't in the factory.
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Remark: during inspection, SGS inspector found the quantity of 5/8" x 95MM STUD BOLT wasn't in accordance with client's requirement.

2. Visual quality check randomly:

According to ANSI/ASQ Z1.4-2008, L-II, total 321pcs cargos were randomly selected to perform the visual quality check.

The steel pipes and fittings were coated black antirust paint on outer surface. The stud bolts and nuts were basically in the normal condition with slight anti-rust oil applied. During inspection, the Flanges, Boss and Cap were found rust and stains on surface of cargos. For the 18" Elbow 90DEG and 18" Elbow 45DEG, most of the elbows were found the obvious circular bump on the surface, the manufacturer explained that it was caused during bending fabrication; the actual finding was subject to client's evaluation. And the details were shown as below:



Rust on cargos

Rust and stains on cargos

Rust on cargos	Obvious circular bump on the surface
	
Obvious circular bump on the surface	Obvious circular bump on the surface

3. Packing and Marking check:

According to ANSI/ASQ Z1.4-2008, L-II, total 321pcs cargos were randomly selected to perform the packing and marking check. SGS inspector checked packing and marking situation at random, and found the packing of cargos weren't finished yet. the details of marking as below:

Item	Description	Marking check
1	18" PIPE SMLS, A335P11 SCH60, BE	<i>Marking on pipe end:</i> PIPE SMLS ASTM A335 P11 18" sch60 1238631 H129651163 marun petrochemical economic zone(spez) BIK, MAHSHAR, ISLAMIC REPUBLIC OF IRAN ORDER NO.903656
2	10" PIPE SMLE, A335P11 SCH60, BE	<i>Marking on pipe end:</i> PIPE SMLS ASTM A335 P11 10" sch60 1262352 128632512 marun petrochemical co. site no.2 special petrochemical economic zone(spez) BIK, MAHSHAR, ISLAMIC REPUBLIC OF IRAN ORDER NO.903656
3	2" PIPE SMLE, A335P11 SCH60, BE	<i>Marking on pipe end:</i> PIPE SMLS ASTM A335 P11 2" sch60 1229521 127561522 ORDER NO. 903656
4	1" PIPE SMLE, A335P11 SCH60, BE	<i>Marking on pipe end:</i> PIPE SMLS ASTM A335 P11 1" sch60 1271254 128632141 ORDER NO. 903656
5	3/4" PIPE NIPPLE-SCHXXS, ASTM A335 P11-TOE	<i>Stamped on surface of cargo:</i> PIPE NIPPLE-3/4 SCHXXS, ASTM A335 P11-TOE
6	10" x 1" BOSS, SW, CL6000, ASTM A182-F11, CL.1	<i>Stamped on surface:</i> BOSS, SW, 10x1 CL6000,ASTM A182-F11, CL.1

7	18" x 3/4" BOSS, SW, CL6000, ASTM A182-F11, CL.1	Stamped on surface of cargo: BOSS, SW, 18x3/4 CL6000,ASTM A182-F11, CL.1
8	3/4", CAP, SCRCD, CL6000,ASTM A182-F11, CL.1	Stamped on surface of cargos: CAP SCRCD 3/4 CL6000,ASTM A182-F11, CL.1
9	18" ELBOW 45DEG, LR, SCH.60, BW A234W P11, CL.1	<i>The marking of cargos weren't finished yet, only 1 elbow was finished the marking at inspection site. the details as following:</i> A234 WP11 45° 18" SCH60 ORDER NO. 903656
10	18" ELBOW 90DEG, LR, SCH.60, BW A234W P11, CL.1	<i>The marking of cargos weren't finished yet, only 1 elbow was finished the marking at inspection site. the details as following:</i> A234 WP11 90° 18" SCH60 ORDER NO. 903656
11	1" ELBOW 90DEG, SHC.60, SW A234W P11, CL.1	<i>The marking of cargos weren't finished yet, only 2 elbows were finished the marking on surface. the details as following:</i> A234 WP11 90° 1" SCH60 ORDER NO. 903656
12	18" x 10" TEE RED, SCH60, BW, A234 WP11, CL.1	<i>The marking of cargos weren't finished yet, only 1 tee was finished the marking at inspection site. the details as following:</i> A234 WP11 18"x10" SCH60 ORDER NO. 903656
13	5/8" x 95MM STUD BOLT W/2NUT, ASTM A193-B16	N/A
14	1 1/4" x 230MM STUD BOLT W/2NUT, ASTM A193-B16	N/A
15	1 5/8" x 285MM STUD BOLT W/2NUT, ASTM A193-B16	N/A
16	10" BLIND FLANGE, CL.600#,RF,A182-F11, CL.1	Stamped on surface of cargo: 10" BLIND FLANGE CL600# RF A182-F11 CL.1
17	2" SW. FLANGE, CL.600#,RF,A182-F11, CL.1	Stamped on surface of cargo: 2" SW FLANGE CL600# RF A182-F11 CL.1
18	1" SW. FLANGE, CL.600#,RF,A182-F11, CL.1	Stamped on surface of cargo: 1" SW FLANGE CL600# RF A182-F11 CL.1
19	18" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	Stamped on surface of cargo: 18" WN FLANGE CL600# RF A182-F11 CL.1
20	14" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	<i>No marking wasn't found the on cargos.</i>
21	10" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	Stamped on surface of cargo: 10" WN FLANGE CL600# RF A182-F11 CL.1

4. Dimension check:

According to ANSI/ASQ Z1.4-2008, S-4, total 127pcs cargos were randomly selected for the dimension check, the dimension check was performed according the drawings provided by factory, and the process was witnessed by SGS inspector. and the details as following:

Unit:

mm

Item	Description	Length on drawing	Actual value	Outer diameter on drawing	Actual value	Thickness on drawing	Actual value
1	18" PIPE SMLS, A335P11 SCH60, BE	11500~11850	11800~11813	457±4.6	457.3~457.8	19.05+2.9/-2.3	18.0~19.3
2	10" PIPE SMLE, A335P11 SCH60, BE	11500~11850	11780	273±2.3	273.0-273.2	12.7+2.0/-1.6	13~14
3	2" PIPE SMLE, A335P11 SCH60, BE	5500~5850	5805~5809	60.3±1	60.1~60.3	4+0.8/-0.5	3.9~4.1
4	1" PIPE SMLE, A335P11 SCH60, BE	5500~5850	5795~5800	33.4±0.5	34.1~34.4	4+0.8/-0.5	4.4~4.5

Remark: the values with red words were out of tolerance. Other values were found in accordance with the drawing provided by manufacturer. The result was subject to buyer's evaluation.

Unit: mm

Item	Description	Dimension on drawing	Actual value
5	3/4" PIPE NIPPLE-SCHXXS, ASTM A335 P11-TOE	75mm min	75.5~76
		26.7+1.5/-0.7	27.0~27.3
		7.8+2.5/-0.9	7.9~8.0
		18mm min	18.0~18.3

Remark: the result was acceptable according to the drawing provided by manufacturer.

Unit: mm

Item	Description	Dimension on drawing	Actual value
6	10" x 1" BOSS, SW, CL6000, ASTM A182-F11, CL.1	34+1/0	33.6~33.8
		20+1.5/-0.7	20.1~20.2
		6.9+1/0	7.1~7.2
		45°±1	Can't measure
		12.5mm min	12.5~12.7
		28.5±2	29.0~29.6

Remark: the values with red words were out of tolerance. Other values were found in accordance with the drawing provided by manufacturer. The result was subject to buyer's evaluation.

Unit: mm

Item	Description	Dimension on drawing	Actual value
7	18" x 3/4" BOSS, SW,	27.3+1/0	27.0~27.2



	CL6000, ASTM A182-F11, CL.1	14.8+1.5/-0.7	15.0~15.2
		7+1/0	6.5~7.3 1pc:6.5; 1pc:6.8
		45°±1	Can't measure
		12.5mm min	12.0~12.3
		24±2	24.5~25.0

Remark: the values with red words were out of tolerance. Other values were found in accordance with the drawing provided by manufacturer. The result was subject to buyer's evaluation.

Unit: mm

Item	Description	Dimension on drawing	Actual value
8	3/4", CAP, SCRD, CL6000,ASTM A182-F11, CL.1	44±1.5	44.3~44.4
		25.5mm min	25.8~26.0
		12.7mm min	19.2~19.5
		8mm min	6.8~7.0

Remark: the values with red words were out of tolerance. Other values were found in accordance with the drawing provided by manufacturer. The result was subject to buyer's evaluation.

Unit: mm

Item	Description	Outer diameter on drawing	Actual value	Bevel angle on drawing	Actual value	thickness on drawing	Actual value	Blunt edge on drawing	Actual value
9	18" ELBOW 45DEG, LR, SCH.60, BW A234W P11, CL.1	457.2+4.0/-3.05	458.0~458.7	37°±2.5°	36~37°	19.05+3.0/-2.4	19.32~19.58	1.6±0.8	1.8~2.2
10	18" ELBOW 90DEG, LR, SCH.60, BW A234W P11, CL.1	457.2+4.0/-3.05	458.0~459.3	37°±2.5°	36~38°	19.05+3.0/-2.4	18.63~21.08	1.6±0.8	1.4~2.0
11	1" ELBOW 90DEG, SHC.60, SW A234W P11, CL.1	33.4+1.5/-0.8	34.0~34.2	37°±2.5°	36~37°	4+2.0/-0.5	4.6~4.7	1.6±0.8	0.9~1.3

Remark: the result was acceptable according to the drawing provided by manufacturer.

Unit: mm

Item	Description	Outer diameter on drawing	Actual value	Bevel angle on drawing	Actual value	thickness on drawing	Actual value	Blunt edge on drawing	Actual value
12	18" x 10" TEE RED, SCH60, BW, A234 WP11, CL.1	457.2+4.0/-3.05	457.4~457.7	37°±2.5°	36~37°	19.05+4.0/-2.3	20.29~22.11	1.6±0.8	1.5~2.0
		273+4.06/-3.05	274.5~274.8	37°±2.5°	36~37°	12.7+2.0/-1.6	16.28~17.39	1.6±0.8	1.2~1.8

Remark: the result was acceptable according to the drawing provided by manufacturer.

Unit: mm

Item	Description	Length on contract	Actual value
13	5/8" x 95MM STUD BOLT W/2NUT, ASTM A193-B16	95	95.0~95.2
14	1 1/4" x 230MM STUD BOLT W/2NUT, ASTM A193-B16	230	229.6~230.0
15	1 5/8" x 285MM STUD BOLT W/2NUT, ASTM A193-B16	285	284.0~284.5

Remark: the result was acceptable according to the drawing provided by manufacturer.

Unit: mm

Item		Description								
16		10" BLIND FLANGE, CL.600#,RF,A182-F11, CL.1								
	OD	diameter of the bolt circle	OD of raised face	ID	Dia of hole	No of hole	Thickness	Hub dia. Beginning of chamfer	Height of raised face	Total height
Required value on drawings	508±4	432±1.6	323.8±1.6	N/A	35.5±0.5	/	63.5+3.2/0	N/A	6.4±0.8	N/A
Actual value	508.0~508.5	433.0~433.2	323.5~324.0	N/A	36.0	16	65.0~65.5	N/A	7.0~7.2	N/A
17		2" SW. FLANGE, CL.600#,RF,A182-F11, CL.1								
	OD	diameter of the bolt circle	OD of raised face	ID	Dia of hole	No of hole	Thickness	Hub dia. Beginning of chamfer	Height of raised face	Total height
Required value on drawings	165±4	127±1.6	92±0.8	62+0.8/0	18±0.5	/	25.4+3.2/0	84±0.5	6.4±0.5	37±1.6
Actual value	165.0~165.3	128.0	92	62.0~62.3	18.0	8	26.0	84.0~84.2	6.5	38.0~38.2
18		1" SW. FLANGE, CL.600#,RF,A182-F11, CL.1								
	OD	diameter of the bolt circle	OD of raised face	ID	Dia of hole	No of hole	Thickness	Hub dia. Beginning of chamfer	Height of raised face	Total height
Required value on drawings	124±4	89±1.6	51±0.8	34.5+0.8/0	18±0.5	/	17.5+3.2/0	54±0.5	6.4±0.5	27±1.6
Actual value	124.5~125.0	89.0~89.4	51.0~51.4	35.0~35.3	18.0	4	18.0~18.4	53.5~54.2	6.5~6.7	28.0~28.3
19		18" WN. FLANGE, CL.600#,RF,A182-F11, CL.1								
	OD	diameter of the bolt circle	OD of raised face	ID	Dia of hole	No of hole	Thickness	Hub dia. Beginning of chamfer	Height of raised face	Total height

Required value on drawings	743±4	654±1.6	534±1.6	/	44.5±0.5	/	82.6+3.2/0	457.2+4.0/-3.2	6.4±0.8	184±3.2
Actual value	746.0~746.3	655.0~655.5	534.0~534.4	416.5~416.8	45.0	20	84.5~84.8	458.0~458.4	7.0~7.1	184.5~184.8
Item		Description								
20		14" WN. FLANGE, CL.600#,RF,A182-F11, CL.1								
	OD	diameter of the bolt circle	OD of raised face	ID	Dia of hole	No of hole	Thickness	Hub dia. Beginning of chamfer	Height of raised face	Total height
Required value on drawings	604±4	527±1.6	413±1.6	/	38±0.5	/	70+3.2/0	355.6+4.0/-3.3	6.4±0.8	165±1.6
Actual value	605	525	413	323.2	38.5	20	70.5	356	6.8	165.7
Item		Description								
21		10" WN. FLANGE, CL.600#,RF,A182-F11, CL.1								
	OD	diameter of the bolt circle	OD of raised face	ID	Dia of hole	No of hole	Thickness	Hub dia. Beginning of chamfer	Height of raised face	Total height
Required value on drawings	508±4	432±1.6	323.8±1.6	/	35.5±0.5	/	63.5+3.2/0	273+4/-3.2	6.4±0.8	152±1.6
Actual value	507.5~507.7	431.0~431.4	324.0~324.3	247.2~247.5	36.0	16	64.5~64.7	274.0~274.6	6.5~6.6	153.3~153.5

Remark: the result was acceptable according to the drawing provided by manufacturer.

5. Witness testing:

As per client's requirement, 1 sample per item on finished products, total 21pcs samples were randomly selected to perform the witness testing, and the details were shown as below:

Witness Chemical analysis test:

Item 13~15: ASTM A193 B16: Chemical analysis(C, Mn, P, S, Si, Cr, V, Al, Mo)

NO.	Product name	size	C	Si	Mn	S	P	Cr	Cu	Mo	Ni	V	Al
19	STUD BOLT	5/8"	0.37	0.20	0.52	0.005	0.010	0.88	0.05	0.56	0.02	0.27	0.005
18	STUD BOLT	1 1/4"	0.41	0.24	0.55	0.005	0.011	0.91	0.05	0.60	0.02	0.29	0.010
20	STUD BOLT	1 5/8"	0.41	0.22	0.56	0.005	0.013	0.94	0.06	0.62	0.01	0.31	0.010
17	NUT	5/8"	0.35	0.13	0.72	0.005	0.009	0.01	0.06	0	0.02	0	0.026
16	NUT	1 1/4"	0.37	0.29	0.86	0.006	0.009	0.98	0.10	0.21	0.05	0	0.009



15	NUT	1 5/8"	0.40	0.25	0.86	0.005	0.011	0.97	0.06	0.19	0.02	0	0.009
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Remark: the value with red word was out of tolerance. Other elements were found in accordance with the standard ASTM A193 B16. The result was subject to buyer's evaluation.

Item 1~5: A335 P11: Chemical analysis(C, Mn, P, S, Si, Cr, Mo)

No.	Product name	size	Heat No.	C	Si	Mn	S	P	Cr	Mo
4	PIPE	18"-SCH60	1238631	0.12	0.69	0.51	0.005	0.009	1.33	0.48
5	PIPE	2"-SCH60	1229521	0.09	0.64	0.41	0.005	0.009	1.16	0.45
6	PIPE	1"-SCH60	1271254	0.10	0.66	0.43	0.005	0.011	1.18	0.47
9	PIPE NIPPLE	3/4"SCHXXS	/	0.15	0.55	0.46	0.005	0.009	1.37	0.54
14	PIPE	10"-SCH60	1262352	0.10	0.74	0.50	0.005	0.011	1.26	0.59

Remark: the testing results were acceptable according to the Standard A335 P11.

Item 9~12: A234 WP11: Chemical analysis(C, Mn, P, S, Si, Cr, Mo)

No.	Product name	Size	C	Si	Mn	S	P	Cr	Mo
1	ELLBOW 90 DEG	18"-SCH60	0.10	0.83	0.40	0.005	0.011	1.39	0.48
2	ELLBOW 45 DEG	18"-SCH60	0.09	0.82	0.39	0.005	0.012	1.38	0.49
3	TEE RED	18"×10"-SCH60	0.13	0.73	0.48	0.005	0.009	1.29	0.47
10	ELLBOW 90 DEG	1"-SCH60	0.10	0.64	0.42	0.005	0.010	1.17	0.48

Remark: the testing results were acceptable according to the Standard A234 WP11.

Item 6~8 & 16~21): A182 F-11: Chemical analysis (C, Mn, P, S, Si, Cr, N, Mo)

No.	Product	size	C	Si	Mn	S	P	Cr	Mo	N
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7	FLANGE	2"SW CL.600# RF	0.13	0.87	0.38	0.007	0.012	1.33	0.51	Not analyze
8	FLANGE	1"SW CL.600# RF	0.13	0.88	0.53	0.010	0.011	1.25	0.52	
11	CAP	3/4"SCRD CL6000	0.15	0.55	0.46	0.005	0.009	1.37	0.55	
12	BOSS	18"x3/4" SW CL6000	0.14	0.55	0.46	0.005	0.009	1.37	0.55	
13	BOSS	10"x1" SW CL6000	0.14	0.54	0.46	0.005	0.009	1.38	0.53	
21	BLIND FLANGE	10" CL600# RF	0.12	0.74	0.39	0.007	0.013	1.28	0.61	

Remark: the element "N" couldn't be analyzed due to no proper testing equipment. Other elements were found in accordance with the standard A182 F-11. The result was subject to buyer's evaluation.

Witness Mechanical properties test:

Item 1~4: A335 P11: Mechanical properties

No.	size	temperature	Tensile strength Rm (MPa)	yield strength Rel (MPa)	elongation L0=50 A (%)
4	18" SCH60	22°C	634	516	30.0
14	10" SCH60	22°C	514	364	40.0
5	2" SCH60	22°C	432	335	30.0
6	1" SCH60	22°C	447	334	50.0

Remark: the testing results were acceptable according to the Standard A335 P11.

Item 9, 10&12: A234 WP11: Mechanical properties

No.	size	Product name	Tensile strength Rm (MPa)	yield strength Rel (MPa)	elongation L0=50 A (%)
1	18" SCH60	90° elbow	527	339	34.5
2	18" SCH60	45° elbow	515	333	34.0
3	18" x10" SCH60	TEE	509	318	37.0

Remark: the testing results were acceptable according to the Standard A234 WP11.

Item 16: A182 F-11: Mechanical properties

No.	size	Product name	Tensile strength Rm (MPa)	yield strength Rel (MPa)	elongation L0=50 A (%)
21	10" CL600#	Blind flange	562	424	25.0

Remark: The testing result was acceptable according to the Standard A182 F-11. For the item 17~21, the manufacturer declared they couldn't sample on cargos. The result was subject to buyer's evaluation.

Witness Hardness test:



Item (6~8 & 16~21): A182 F-11: Hardness

Item No.	Description	Required value(HB)	Actual value(HB)
6	10" x 1" BOSS, SW, CL6000, ASTM A182-F11, CL.1	121~174	158~174
7	18" x 3/4" BOSS, SW, CL6000, ASTM A182-F11, CL.1	121~174	159~178
8	3/4", CAP, SCRD, CL6000,ASTM A182-F11, CL.1	121~174	102~125
16	10" BLIND FLANGE, CL.600#,RF,A182-F11, CL.1	121~174	121~130
17	2" SW. FLANGE, CL.600#,RF,A182-F11, CL.1	121~174	139~150
18	1" SW. FLANGE, CL.600#,RF,A182-F11, CL.1	121~174	107~126
19	18" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	121~174	158~174
20	14" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	121~174	158~175
21	10" WN. FLANGE, CL.600#,RF,A182-F11, CL.1	121~174	139~151

Remark: the value with red words was out of tolerance. Other values were found in accordance with the standard A182 F-11. The result was subject to buyer's evaluation.

Item 13~15: ASTM A193 B16: Hardness

Item No.	Description	Required value(HB)	Actual value(HB)
13	5/8" x 95MM STUD BOLT W/2NUT, ASTM A193-B16	≤321	107~242
14	1 1/4" x 230MM STUD BOLT W/2NUT, ASTM A193-B16	≤321	232~275
15	1 5/8" x 285MM STUD BOLT W/2NUT, ASTM A193-B16	≤321	255~282

Remark: the testing results were acceptable according to the Standard ASTM A193 B16.

Witness UT:

For size 18" and 10" pipes, 1 sample per item was performed the ultrasonic test, the test was conducted by level II personnel qualified. The process was witnessed by SGS inspector, and the test result was acceptable. The details as following:

Instrument model	Pxut-350+	Couplant	Machine oil	Probe spec.	2.5P13x13k1.5
Flaw detection sensitivity	Reference wave ≥80% full wave	compensation	4dB	Test sample	Artificial contrast test block
Grack detection method	Direct contact	Crack detection standard	JB/T4730.3-2005	Qualified rank	Level 1
Description				Quantity	Test result
18" PIPE SMLS, A335P11 SCH60				1piece	qualified
10" PIPE SMLE, A335P11 SCH60				1piece	qualified

5. Document review:

The reports for Chemical analysis and Mechanical properties of raw materials, mill test certificates of raw material and Product quality certificates were submitted by manufacturer and reviewed by SGS inspector, and the result was acceptable.

Attachment: Photos during inspection



Quantity check



Quantity check



Quantity check



Quantity check



Visual quality check



Visual quality check



Visual quality check



Visual quality check



Dimension check



Dimension check



Dimension check



Dimension check



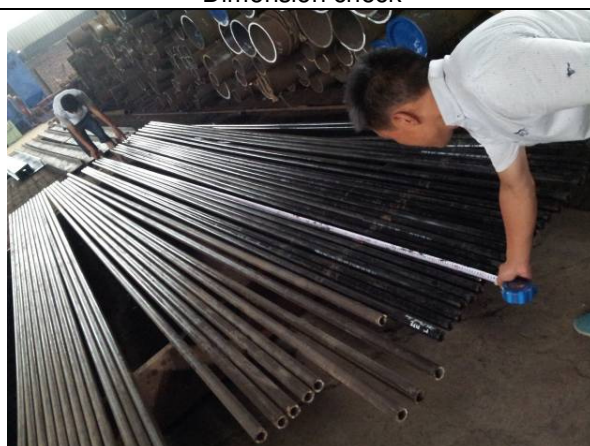
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Hardness test



Hardness test



Witness ultrasonic test



Witness ultrasonic test



During sampling



During sampling



During sampling



During sampling



During sampling



During sampling



During machining for specimen



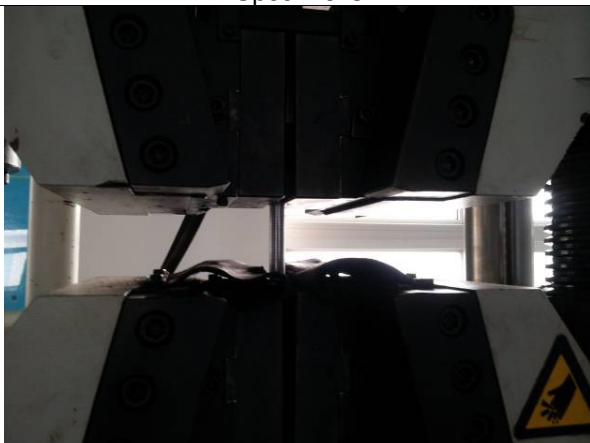
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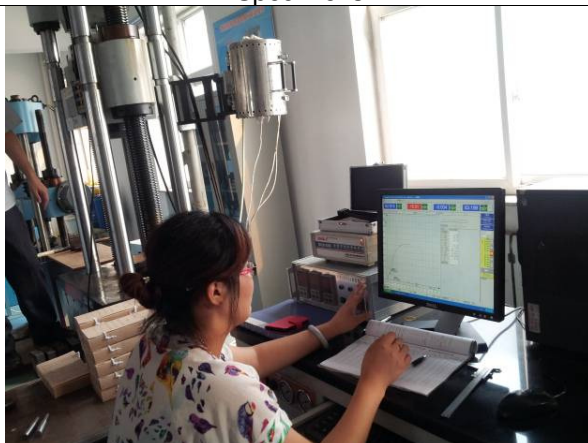
Specimens



Specimens



Mechanical properties test



Mechanical properties test



Chemical analysis test



Chemical analysis test



End of report

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SGS-CSTC STANDARDS
TECHNICAL SERVICES CO., LTD.

AUTHORIZED SIGNATURE