



Inspection Order No. : IN07142QD
Page No. : 1 of 10
Date of Issue: SEP 26, 2007

INSPECTION REPORT
(non-negotiable)

- Description and Quantity of Commodity: DI pipes 9pcs
DI fittings 164pcs

- Name & Address Of Seller: SHANXI SOLID INDUSTRIAL CO., LTD
Room 1501, Building B, Dingyuan Times Center, Yingzenanjie,
Taiyuan, Shanxi, China

- Inspection Date & Place: Sep 24-25, 2007 Zhucheng city, China

- L/C No.: 333-11-1331067-1 Dated: 070705

- Invoice No.: N/A

- Nature Of Inspection: FRI

- Inspector: Mr. Lester Deng

This is to report that we, SGS-CSTC Qingdao Branch on Sep 24-25, 2007 at the request of SHANXI SOLID INDUSTRIAL CO., LTD conducted the following inspection:

Inspection Finding:

1. Quantity Check:

No.	Description	Order Qty (pcs)	Inspection Qty (pcs)
1-4	Double spigots pipes with puddle DN1400	1	1
2-1	Flange adapter ductile DN900 PN10	4	4
2-2	Flange adapter ductile DN600 PN10	30	30
2-3	Flange adapter ductile DN500 PN10	24	24
2-4	Flange adapter ductile DN250 PN10	16	16
2-5	Flange adapter ductile DN500 PN10	12	12
2-6	Flange adapter ductile DN1000 PN10	16	16
2-7	Flange adapter ductile DN350 PN10	8	8
2-8	Flange adapter ductile DN1200 PN10	2	2
3-1	Elbow flange ductile DN200 90° PN10	4	4
3-2	Elbow flange ductile DN350 90° PN10	4	4
3-3	Elbow flange ductile DN900 90° PN10	2	2

Important Note
All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).

SGS-CSTC Standards Technical Services Co., Ltd. 4th Floor, Chengji center, 206 Yan An San Road, Qingdao 266071
Industrial Services Tel : (86 532) 83884408 Fax: (86 532) 83884250

Member of the SGS Group (Société Générale de Surveillance)

3-4	Elbow flange ductile DN500 90° PN10	14	14
3-5	Elbow flange ductile DN1000 90° PN10	2	2
3-6	Elbow flange ductile DN1200 90° PN10	1	1
4-1	Radius flange ductile DN200*250 PN10	4	4
6-1	Tee flange ductile DN500*250 PN10	4	4
8-1	DIP pipe DN900 L=6m	3	3
8-2	DIP pipe DN500 L=6m	2	2
8-3	DIP pipe DN1000 L=6m	4	4
9-1	Flexible coupling DN250	4	4
10-1	Flange Reducer DN350*500 PN10	4	4
10-2	Tee flange reducer DN1000*500 PN10	4	4
10-3	Flange Reducer DN600*350 PN10	4	4
Total		Pipes: 9pcs Fittings: 164pcs	Pipes: 9pcs Fittings: 164pcs

2. Packing Check:

- For Pipes:

Found these pipes with nude packing, and specially for DN900/1000: found the spigot was supported by one crossed wooden battens.

- For fittings:

Found these fittings were packed in wooden cases or pallets, then wrapped by stretch film.

3. Marking Check:

- For pipes:

(Take DN500 pipe for example:)

(Painted on body)

(Mould inside of socket)

DI DN500 SDIP 2007

ISO2531 : 98 K9

09-10-016

- For fittings:

- For flange adaptor:

(Take DN350 flange adaptor for example:)

(Mould on body)

ISO 2531 PN10 DN350

- For bends:

(Take DN350 bend for example:)

(Mould on body)

SOLID ISO 2531 PN10 350X90° DI 2007

MADE IN CHINA

- For Flange reducer:

(Take DN600x350 flange reducer for example:)

(Mould on body)

SOLID ISO 2531 PN10 600x 350 DI 2007

MADE IN CHINA

- For tee reducer:

(Take DN500x250 tee reducer for example:)

(Mould on body)

SOLID ISO 2531 PN10 500x250 DI 2007

MADE IN CHINA

Important Note

All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).

4. Visual Quality Inspection:

- For pipes: found inside of pipe were cement mortar lined and out side Bitumen coated and visual quality is acceptable.
- For flange adaptor and flexible coupling : found inside and outside were painted with blue epoxy, and with bolts and gaskets, and visual quality is acceptable.
- For fittings (except for flange adaptor and flexible coupling): found inside of pipe were cement mortar lined and out side Bitumen coated and visual quality is acceptable.

5. Dimension Check:

- For Pipes:

Total 24pcs pipes and fittings (S-3, at least 1pcs/item) were randomly selected for dimension check according to ISO2531-1998, and the actual finding as following (unit: mm):

Check point	DE	D3	L	P	e	t (um)
Standard	532	534.5	6000	120	9.0	≥70um
Tolerance	+1/-3.8	+2.4/-1	+/-30	+/-5	-1.8	/
Ductile iron pipe DN500 K9	531	536.5	6028	120	9.5	114

Check point	DE	D3	L	P	e	t (um)
Standard	945	947.5	6000	175	12.6	≥70um
Tolerance	+1/-4.8	+4.7/-1	+/-30	+/-5	-2.2	/
Ductile iron pipe DN900 K9	940	948	5998	178	13.5	123

Check point	DE	D3	L	P	e	t (um)
Standard	1048	1050.5	6000	185	13.5	≥70um
Tolerance	+1/-5.0	+4.4/-1	+/-30	+/-5	-2.3	/
Ductile iron pipe DN1000 K9	1044	1050	6012	180	14.3	119

Check point	DE	e	t (um)
Standard	1462	22.8	≥70um
Tolerance	+1/-6.0	-3.7	/
Double spigots pipes with puddle DN1400	1458	24.5	124

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	947.5	1115	1050	28-34	37.5	1001	5	≥350um
Tolerance	+4.1/-1	/	+/-2	d:+1/-0	+/-4.5	+8.5/-5.5	+2.5/-4	/
Flange adapter ductile DN900 PN10	950	1128	1051	28-34	39	1005	5	379

Important Note

All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	637.5	780	725	20-31	30	682	5	≥350um
Tolerance	+2.7/-1	/	+/-2	d:+1/-0	+/-4.0	+6.5/-5	+2.5/-4	/
Flange adapter ductile DN600 PN10	639	785	726	20-31	32	684	5.5	420

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	534.5	670	620	20-28	26.5	582	4	≥350um
Tolerance	+2.4/-1	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+2/-3	/
Flange adapter ductile DN500 PN10	536	672	621	20-28	28	583	4.5	395

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	276.5	400	350	12-23	22	319	3	≥350um
Tolerance	+1.5/-1	/	+/-1.5	d:+1/-0	+/-4.0	+5.5/-4.5	+1.5/-2	/
Flange adapter ductile DN250 PN10	278	400	351	12-23	25	318	3	412

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	1050.5	1230	1160	28-37	40	1112	5	≥350um
Tolerance	+4.4/-1	/	+/-2	d:+1/-0	+/-4.5	+8.5/-5.5	+2.5/-4	/
Flange adapter ductile DN1000 PN10	1054	1230	1160	28-37	37	1110	3	420

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	380.5	505	460	16-23	24.5	429	4	≥350um
Tolerance	+1.8/-1	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+1.5/-2	/
Flange adapter ductile DN350 PN10	382	505	460	16-23	26	429	3	450

Check point	D3	D	K	n-d	C7	d1	f1	t (um)
Standard	1258	1455	1380	32-40	45	1328	5	≥350um
Tolerance	+4.4/-1	/	+/-2	d:+1/-0	+/-4.5	+8.5/-5.5	+2.5/-4	/

Important Note
 All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
 (copy available upon request).

Flange adapter ductile DN1200 PN10	1260	1456	1381	32-40	47	1330	5	420
------------------------------------	------	------	------	-------	----	------	---	-----

Check point	D	K	n-d	C7	d1	f1	e	t (um)
Standard	340	295	8-23	20	266	3	8.4	≥70um
Tolerance	/	+/- 1.5	d:+1/-0	+/- 4.0	+5.5/-4.5	+1.5/-2	-2.5	/
Elbow flange ductile DN200 90° PN10	341	295	8-23	21	267	3	8.1	89

Check point	D	K	n-d	C7	d1	f1	e	t (um)
Standard	505	460	16-23	24.5	429	4	10.2	≥70um
Tolerance	/	+/- 1.5	d:+1/-0	+/- 4.0	+6.5/-5	+1.5/-2	-2.7	/
Elbow flange ductile DN350 90° PN10	508	460	16-23	25	430	3.5	11.8	115

Check point	D	K	n-d	C7	d1	f1	e	t (um)
Standard	1115	1050	28-34	37.5	1001	5	16.8	≥70um
Tolerance	/	+/-2	d:+1/-0	+/- 4.5	+8.5/-5.5	+2.5/-4	3.2	/
Elbow flange ductile DN900 90° PN10	1117	1051	28-34	40	1003	5	17.5	98

Check point	D	K	n-d	C7	d1	f1	e	t (um)
Standard	670	620	20-28	26.5	582	4	12	≥350um
Tolerance	/	+/- 1.5	d:+1/-0	+/- 4.0	+6.5/-5	+2/-3	-2.8	/
Elbow flange ductile DN500 90° PN10	671	621	20-28	27	580	3	13.2	129

Check point	D	K	n-d	C7	d1	f1	e	t (um)
Standard	1230	1160	28-37	40	1112	5	18	≥70um
Tolerance	/	+/-2	d:+1/-0	+/- 4.5	+8.5/-5.5	+2.5/-4	3.3	/
Elbow flange ductile DN1000 90° PN10	1231	1161	28-37	42	1115	5	19.5	138

Check point	D	K	n-d	C7	d1	f1	e	t (um)
-------------	---	---	-----	----	----	----	---	--------

Important Note
All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).

Standard	1455	1380	32-40	45	1328	5	20.4	≥70um
Tolerance	/	+/-2	d:+1/-0	+/-4.5	+8.5/-5.5	+2.5/-4	-3.5	/
Elbow flange ductile DN1200 90° PN10	1458	1381	32-40	47	1330	5.5	22.5	127

Check point	D	K	n-d	C7	d1	f1	e	D'	K'	n-d'	C7'	d1'	f1'	t (um)
Standard	340	295	8-23	20	266	3	8.4	400	350	12-23	22	319	3	≥70um
Tolerance	/	+/-1.5	d:+1/-0	+/-4.0	+5.5/-4.5	+1.5/-2	-2.5	/	+/-1.5	d:+1/-0	+/-4.0	+5.5/-4.5	+1.5/-2	/
Radius flange ductile DN200*250 PN10	341	295	8-23	22	267	3	8.9	401	350	12-23	23	318	3	136

Check point	D	K	n-d	C7	d1	f1	e	D'	K'	n-d'	C7'	d1'	f1'	t (um)
Standard	670	620	20-28	26.5	582	4	14	400	350	12-23	22	319	3	≥70um
Tolerance	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+2/-3	-2.8	/	+/-1.5	d:+1/-0	+/-4.0	+5.5/-4.5	+1.5/-2	/
Tee flange ductile DN500*250 PN10	672	621	20-28	28	581	3.5	15.3	401	350	12-23	23.5	320	3	152

Check point	D3	t (um)
Standard	276.5	≥350um
Tolerance	+1.5/-1	/
Flexible coupling DN250	277	420

Check point	D	K	n-d	C7	d1	f1	e	D'	K'	n-d'	C7'	d1'	f1'	t (um)
Standard	670	620	20-28	26.5	582	4	12	505	460	16-23	24.5	429	4	≥70um
Tolerance	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+2/-3	-2.8	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+1.5/-2	/

Important Note
 All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
 (copy available upon request).

Flange Reducer DN350*500 PN10	671	621	20-28	27	580	3.5	13.3	506	461	16-23	26	430	4.5	132
-------------------------------	-----	-----	-------	----	-----	-----	------	-----	-----	-------	----	-----	-----	-----

Check point	D	K	n-d	C7	d1	f1	e	D'	K'	n-d'	C7'	d1'	f1'	t (um)
Standard	1230	1160	28-37	40	1112	5	21	670	620	20-28	26.5	582	4	≥70um
Tolerance	/	+/-2	d:+1/-0	+/-4.5	+8.5/-5.5	+2.5/-4	-3.3	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+2/-3	/
Tee flange reducer DN1000*500 PN10	1231	1160	28-37	41	1113	5.5	23	671	621	20-28	28	583	3.5	143

Check point	D	K	n-d	C7	d1	f1	e	D'	K'	n-d'	C7'	d1'	f1'	t (um)
Standard	780	725	20-31	30	682	5	13.2	505	460	16-23	24.5	429	4	≥70um
Tolerance	/	+/-2	d:+1/-0	+/-4.0	+6.5/-5	+2.5/-4	-2.9	/	+/-1.5	d:+1/-0	+/-4.0	+6.5/-5	+1.5/-2	/
Flange Reducer DN600*350 PN10	783	725	20-31	33	683	5.5	13.5	506	461	16-23	26	430	4.5	132

- | | |
|--|-------------------------------|
| D3: Smallest diameter of socket end | DE: External diameter |
| P: Socket depth | d1: Facing diameter |
| D: Outside diameter of flange | f1: Facing height |
| K: Diameter of bolt circle | L: Total length |
| n-d: Number of bolt holes-Diameter of bolt holes | e: Wall thickness |
| C7: Flange thickness | t: External coating thickness |
| d: Inner diameter of collar | |

Result: Passed

6. Witnessed test:

6.1 Hydrostatic test:

Total 8pcs fittings were randomly selected for hydrostatic test according to ISO2531-1998, and the actual finding as following:

Important Note
All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).

Description	Tested sample (pcs)	Pressure and duration (Mpa x S)		Result
		Requirement of ISO2531	Actual performed	
Elbow flange ductile DN200 90° PN10	1	2.5Mpa X 10S	>2.5Mpa X 10S	Passed
Elbow flange ductile DN350 90° PN10	1	1.6Mpa X 10S	>1.6Mpa X 10S	Passed
Elbow flange ductile DN500 90° PN10	2	1.6Mpa X 10S	>1.6Mpa X 10S	Passed
Radius flange ductile DN200*250 PN10	1	2.5Mpa X 10S	>2.5Mpa X 10S	Passed
Flange Reducer DN350*500 PN10	2	1.6Mpa X 10S	>1.6Mpa X 10S	Passed
Flange Reducer DN600*350 PN10	1	1.6Mpa X 10S	>1.6Mpa X 10S	Passed

Result: Passed

7. Documentation Review:

The factory inspection reports were submitted to SGS inspector for reviewing, and it shows it is confirmed to the requirement of ISO2531-1998, we quote the date as following:

---Quoted---

- For Pipes:
 - Performed standard: ISO2531:1998
 - Hydrostatic test: 4.0/3.2Mpa x 10 Sec. Passed (ISO2531 Standard: 4.0/3.2Mpa x 10 Sec)
 - Mechanical properties testing:
 - Tensile Str.: 520-525Mpa (ISO2531 standard: >=420 Mpa)
 - Elongation: 12-15% (ISO2531 standard: >=10%)
 - Hardness: 169-177HB (ISO2531 standard: <=230 HB)
 - Thickness of Zinc: ≥130 g/m² (ISO2531 standard: ≥130 g/m²)
 - Thickness of Bitumen: ≥70um (ISO2531 standard: ≥70um)
- For fittings :
 - Performed standard: ISO2531:1998
 - Hydrostatic test: 2.5/1.6/1.0Mpa x 30 Sec. Passed (ISO2531 Standard: 2.5/1.6/1.0Mpa x 10 Sec)
 - Mechanical properties testing:
 - Tensile Str.: 509-542Mpa (ISO2531 standard: >=420 Mpa)
 - Elongation: 10.6-13.0% (ISO2531 standard: >=5%)
 - Hardness: 172-191HB (ISO2531 standard: <=250 HB)
 - Thickness of Zinc rich coating: ≥150 g/m² (ISO2531 standard: ≥150 g/m²)
 - Thickness of Bitumen: ≥70um (ISO2531 standard: ≥70um)

---Unquoted---

8. Informative remark:

Important Note
All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).

The witness test of mechanical properties and hydro test for pipe had not been performed because there were not testing instrument for pipe at fitting factory.

9. Conclusion:

According to requirement, the goods were inspected for quantity, packing, marking, visual quality, dimension check, witnessed test, document review , and found the cargo we inspected were met requirement of ISO2531-1998 except for packing and marking subject to client's evaluation.

THIS REPORT ONLY REFLECTED OUR ACTUAL FINDINGS. THE INSPECTION WAS DONE TO THE BEST OF OUR KNOWLEDGE AND ABILITY AND WITH DUE CARE. THE FINDINGS ARE VALID AS FOR TIME AND PLACE OF INSPECTION.

Hydro testing

Marking on pipes



Marking on fittings



Packing

Important Note

All orders are accepted and all reports and certificates issued subject to the General Conditions of Service .
(copy available upon request).