



Inspection Order No. : IN-QD-PSI-09039
Boss No. : 11725090
Page No. : 1 of 6
Date of Issue: Apr. 07, 2009

INSPECTION REPORT
(non-negotiable)

- **Description and Quantity of Commodity:** Ductile Iron Pipe DN500 (with rubber gasket): 667 pcs

- **Name & Address Of Buyer:** T*****

- **Name & Address Of Seller:** Shanxi Solid Industrial CO., LTD.
1501, Building B, Dingyuan Times Center, Yingzenanjie,
Taiyuan, Shanxi, China

- **Inspection Date & Place:** Apr. 01-03, 2009 Shanxi , China

- **L/C No.:** N/A

- **P.I No.:** STS-0901 Mar.16, 2009

- **Nature Of Inspection:**

1. Quantity check
2. Packing check
3. Marking check
4. Visual quality check (Level II)
5. Dimension check (S-3)
6. Witness testing
7. Document review

- **Inspector:** Mr. Lester Deng & Youkun Bu

This is to report that we, SGS-CSTC Qingdao Branch on Apr. 01-03, 2009 at the request of Shanxi Solid Industrial CO., LTD. conducted the following inspection:

Inspection Finding:

1. Quantity Check:

Description	Order Qty.	Inspected Qty.
Ductile Iron Pipe DN500 L=6m	667 pcs	667 pcs

Disclaimer

This document is issued by the Company under its General Conditions of Service accessible at http://www.sgs.com/terms_and_conditions.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

2. Packing Check:

- Found all Ductile Iron pipes were in bulk.

Reference photos:



3. Marking Check:

(Painted on body surface)	(Mould inside of socket)
<p>SOLID DI PIPE DN500MM 2009 ISO2531 K9 MADE IN CHINA XX-XX-XXX</p>	<p>DI DN500 SDIP 2009</p>

4. Visual Quality Check:

According to the ANSI/ASQ Z1.4-2003 single planning for normal inspection Level II, total 80pcs pipes were randomly selected for visual quality check, found the outside of pipes and inside of socket were coated with black epoxy and inside of the pipes were cement mortar lined, and the pipes we inspected were in normal condition.

Reference photos:



5. Dimension Check:

Total 13pcs(S-3) Ductile Iron pipes were randomly selected for dimension check according to ISO2531-1998, and the actual finding as follows:

- DI pipe DN500 K9:

Check point	DE (mm)	D3 (mm)	P (mm)	L (mm)	e (mm)	T (mm)	t (um)
Standard	532	534.5	120	6000	9.0	≥3	≥70
Tolerance	+1/-3.8	+2.4/-1	±5	±30	-1.8	4.5	/
Actual finding	530	536	120	6005	10.6	5.5	99
	531	536	120	6023	10.3	6.0	102
	531.5	536	120	6010	11	5.5	106
	531	534	119	6018	10.5	5.0	111
	530.5	535	120	6013	9.7	5.5	98
	530	535	120	6018	10.5	6.0	93
	531	536	119	5995	10.3	5.5	101
	530	534	120	5998	10.8	5.0	107
	531.5	535	120	6002	10.2	5.0	146
	531.5	536	120	6000	9.8	5.0	124
	531.5	534	120	6007	10.2	4.5	134
	530	535	120	6005	10.7	5.5	120
	530.5	535	120	6012	10.2	5.5	108

DE: External diameter
 L: Total length
 e: Wall thickness
 T: Thickness of cement lining

D3: Smallest diameter of socket end
 P: Socket depth
 t: External coating thickness

Result: passed

6. Witness Testing:

6.1 Mechanical properties test:

Total 7pcs (1pc per lot) pipes were randomly selected for mechanical properties test according to ISO2531-1998, and this test was performed by the manufacturer and witnessed by SGS inspector, and the actual finding as follows:

Description	Pipe No.	Actual tested data		
		Tensile strength (Mpa)	Elongation (%)	Hardness (HB)
Requirement of ISO2531-1998		≥420	≥10	≤230
DN500 pipe	03-14-16	505	16	178-179
	03-15-50	500	15	166-167
	03-19-50	500	16	167-168
	03-20-66	485	14	169-170
	03-22-83	535	15	177-179
	03-23-45	470	19	163-164
	03-24-55	520	16	174-175

Result: Passed.

6.2 Hydrostatic test:

Total 13pcs (S-3) were randomly selected for hydrostatic test according to ISO2531-1998, and the actual finding as follows:

Description	Checked quantity (pcs)	Pressure and duration (MPa x S)		Result
		Requirement of ISO2531 -1998	Actual performed	
DN500 pipe K9	13	4.0Mpa X 10S	4.0Mpa X 10S	Passed

Result: No visual leakage was found. Passed.

7. Document Review:

The quality certificates were submitted to SGS inspector for reviewing by the mill, and we quote some data as follows:

---Quoted---

- For DI pipes:

- Performed standard: ISO2531-1998	Requirement of ISO2531-1998
- Hydrostatic test: 4.0Mpa x 10 Sec. Passed	4.0Mpa x 10 Sec.
- Mechanical properties testing:	
Tensile strength: 470~520 Mpa	≥420 Mpa
Elongation: 14~19 %	≥10%
Hardness: 163~179 HB	≤230 HB
- Thickness of Zinc: ≥130 g/m ²	≥130 g/m ²

- Thickness of black epoxy: $\geq 70\mu\text{m}$	$\geq 70\mu\text{m}$
- Internal cement thickness: $\geq 5.0\text{mm}$	Min.3.0 for DN500

---Unquoted---

Result: Passed.

8. Conclusion:

According to requirement, the cargo were inspected for quantity, packing, marking, visual quality, dimension check, witness testing & document review , and found the cargo we inspected were met requirement of ISO2531-1998 and relative standard (ISO8179 & ISO4179).

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.

Attachment:

Photos:



Hydro test



Rubber gaskets



Mechanical properties testing

*****THE END*****