

TEST REPORT

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Report Number: 1374-10003 **IAPMO R&T File No.:** 4775

Report Issued: June 7, 2010 **Project No.:** 16956

Client: TIANJIN DACHANG BUILDING MATERIAL CO., LTD.
DOUZHANG ZHUANG VILLAGE
WUQING, TIANJIN, 301700,
CHINA

Source of Samples: On April 30, 2010, during a routine audit by an IAPMO inspector, Bowen Tian, at the manufacturer's facility at Tianjin, China, samples of 2" no-hub coupling were selected for Continuous Compliance Testing. The samples were sent by the manufacturer and received in good condition by IAPMO R&T Lab on May 5, 2010. The IAPMO R&T inspection stickers were on the package and there was no sign of tampering.

Date of Testing: May 15, 2010 through May 20, 2010

Sample Description: No-hub coupling for cast iron pipes

Model: 2" No-hub coupling

Scope of Testing: The purpose of the testing was to determine if the samples tested of the no-hub couplings met the applicable requirements of ASTM C1277-09a, entitled "Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings".

Conclusion: The samples tested of the 2" No-hub coupling from Tianjin Dachang Building Material Co., Ltd. COMPLIED with all the applicable requirements of ASTM C1277-09a standard.

By our signatures below we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO R&T Lab, unless otherwise stated.

Tested / Reviewed by,

A handwritten signature in black ink, appearing to read 'Jeff Huang', is written over a horizontal line.

Jeff Huang, MSME, General Manager

Primary Standards: ASTM C1277-09a Sections tested / evaluated:

Section 4	Materials and Manufacture
Section 5	Elastomeric Gasket
Section 6	Clamp Assembly
Section 7	Coupling Requirements and Test Methods
Section 8	Markings and Identification

Sections of ASTM C1277-09a not listed above were considered not applicable to subject products.

Test Results: All tests and evaluations were conducted per the written procedures in the specified standard.

ASTM C1277-09a

4 Materials and Manufacture

- 4.1 The gasket met the dimensional requirements as shown in Fig 1 and Table 1 of this standard.
- 4.2 The clamp assembly screws did not have screwdriver slots.

5 Elastomeric Gasket – COMPLIED

- 5.1 The elastomeric gaskets consisted of one piece. And the products were Continue Compliance samples and no specific material test samples were received for the testing to ASTM C564.
 - 5.1.1 The elastomeric gasket had a inside stop which did not create an enlargement chamber or recess with a ledge, shoulder, or reduction of pipe area or offer an obstruction to flow.
 - 5.1.2 The elastomeric gaskets were free of defects that affect the use and serviceability.

6 Clamp Assembly – COMPLIED

- 6.1.1 The clamp assembly was made of 300 series stainless steel. The shield was corrugated to accommodate maximum and minimum OD's of pipe and fittings and included 2 bands. Each tightening device housing was interlocked with a band at the unslotted end. The bands were to be fastened to the shield by riveting to ensure that the bands will not become separated from the shield. The shield and clamp assembly were complied with the dimensions and material specification as given in Table 3, Fig. 3 and Fig. 4.
- 6.1.2 The clamp assembly withstood a torque of 125% of the manufacturer's stated installation torque (80 in-lbf) without any sign of failure when tested per the standard.
- 6.1.3 The clamped shield met the requirements of Table 3 of this standard.
 - The bands were made of stainless steel 301
 - The eyelets were made of stainless steel 301
 - The screw housings were made of stainless steel 301
 - The screws were made of stainless steel 305
 - The shields were made of stainless steel 304.
- 6.1.4 The couplings met the dimensional requirements of Figure 3.

7 Coupling Requirements and Test Methods

7.1.1 Deflection Test – COMPLIED

The hubless couplings were set up per FIG. 5 of the standard. The clamp screws were tightened to 80 inch pounds torque. A hydrostatic pressure was applied to 4.3 psi. One pipe was rigidly supported and while under pressure, the opposite end was raised to 1/2 inch per linear foot of the pipe. Maintained for 5 minutes.

Finding: The sample did not leak during the test.

7.1.2 Shear Test – COMPLIED

The hubless couplings were set up per FIG. 6 of the standard. The clamp screws were tightened to 80 inch pounds torque. The samples were subjected to 50 lbs/in load with the system pressured to 4.3 psi and maintained for 15 minutes. The samples should not leak during the test and the displacement should not more than 3/8” from the true alignment.

Finding: The sample did not leak during the test with the displacement of 0.008”.

7.1.3 Unrestrained Hydrostatic Test – COMPLIED

The hubless couplings were set up per FIG. 7 of the standard. The clamp screws were tightened to 80 inch pounds torque. A hydrostatic pressure was applied in increment 1 psi at 30 seconds intervals until a pressure of that specified in Section 7.1.4.2 was reached and maintained for 10 minutes. The samples should not show any leakage during the test. And maximum deflection should not more than 0.150”.

Finding: The sample did not leak during the test with the maximum displacement of 0.017”.

8 Markings and Identification – COMPLIED

8.1 The gaskets were permanently marked with the pipe size, trade name, standard specification C564 with raised letters.

8.2 The bands were permanently marked with the pipe size, the manufacturer’s trade name, country of origin, and the words “ALL STAINLESS” on the bend assembly.