

Auditing Test Report

Date: 10-Jan-24

Report No.: SA13-4043/41

Client

Saudi Vitrified Clay Pipe Co.

P.O. Box 6415

Rivadh 11442

Kingdom of Saudi Arabia

Sampling Date:

07 January 2024

Testing Date:

09 January 2024

Auditing Purpose:

Testing of Chemical and physical resistance to effluent of joint assemblies according to EN 295-1:2013/WN ZP 295:2022

Testing of Thermal cycling stability of joint assemblies according to EN 295-1:2013, Clause 6.6

Testing of Long-term thermal stability of joint assemblies according to EN 295-1:2013, Clause 6.7

Description of Sampling

Samples were taken from the stock at the client's manufacturing works in Riyadh (Kingdom of Saudi Arabia) by the agent of the Suhaimi - Fugro

Underlying specification of the tests

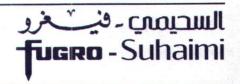
EN 295-1:2013 "Vitrified clay pipe systems for drains and sewers - Part 1: Requirements for pipes, fittings & joints"

WN 295:2022 'Glazed vitrified clay pipes, fittings and their accessories for drains and sewers"

EN 295-2:2013 "Vitrified clay pipe systems for drains and sewers - Part 2: Evaluation of conformity and sampling"

EN 295-3:2012 "Vitrified clay pipe systems for drains and sewers - Part 3: Test Methods





Test Results of Chemical & Thermal Testing of joint assemblies

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| Test | Requirements | Pipe Size | Chemical Solution | РН | Concent. (mol/L) | Water tightness Result |
|---|---|------------------------------|--------------------------------|------|---------------------|---------------------------|
| Chemical Resistance to effluent for joint assemblies | Four joint assmblies shall be immersed in different four chemical solutions for 168 hrs, then water tightness shall be carried out and there shall be no visible leakage within 5 min. | 300 ES (Hard Poyurethane) | H₂SO₄ | 2.0 | 0.005 | No visible leakage |
| | | | HNO ₃ | 2.0 | 0.01 | No visible leakage |
| | | | NaOH | 12.0 | 0.01 | No visible leakage |
| | | | NaOCI | 12.0 | 0.01 | No visible leakage |
| | | 150 mm (L- ring) | H ₂ SO ₄ | 0.0 | 0.5 | No visible leakage |
| | | | HNO ₃ | 0.0 | 1.0 | No visible leakage |
| | | | NaOH | 14.0 | 1.0 | No visible leakage |
| | | | NaOCI | 14.0 | 1.0 | No visible leakage |
| | | 200 SS (Foam) | H ₂ SO ₄ | 2.0 | 0.005 | No visible leakage |
| | | | HNO ₃ | 2.0 | 0.01 | No visible leakage |
| | | | NaOH | 12.0 | 0.01 | No visible leakage |
| | | | NaOCI | 12.0 | 0.01 | No visible leakage |
| | Joint Assmebly shall withstand cyclic temperature changes between (-10) °C and (+70) °C without visible defect. Then, water tightness shall be carried out for the same joint assembly for 15 minutes and there shall be no visible leakage | 150 mm | 4 | | 2 28 4 | No visible leakage |
| Thermal Cycling | | - | • | | | |
| | | 250 SS | | 10.5 | | No visible leakage |
| 9 | Water shall be fed through a joint assembly to maintain a temperature of (45) °C for seven days. A water tightness shall be then carried out for the same assmebly for 15 minutes and there shall be no visible leakage. | 150 SS | | | | No visible leakage |
| Long Term Thermal Cycling | | 9 250 SS | <u>-</u> | - | 5. | No visible leakage |

FUGRO - SUHAIMI LTD Mohammad Afaq

السحيم - ويث نزه - يرميال السحيم - Suhaimi Material Division (Riyadh Lab. 01) C.R. 1010083413 من ما يح وقط التقارير المعتبر (Stamp Valid For Lab Lab Test Reports)