



FUGRO TECHNICAL SERVICES LIMITED

Fugro Development Centre

5 Lok Yi Street, Tai Lam

Tuen Mun, NT

Hong Kong

REPORT ON PERFORMANCE TESTS OF uPVC FITTING

Client : East Wind Products Limited

Project : Testing of Fittings

Client Ref. : --

Report No. : 190544ST190071C



Date : 30 November 2021



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1.0 Introduction

Fugro Technical Services Limited, FTS was commissioned by the client, East Wind Products Limited address: 10A Fraser Road, Tuen Mun, N.T., Hong Kong to conduct a series of tests on uPVC Fitting briefly in accordance with: BS 4514 : 2001.

The test samples given a code number as per below ST190071, ST190209, ST210562 were received by FTS on 25 January 2019, 01 April 2019 and 08 September 2021.

2.0 Sample Description

Sample Description : FITTINGS
Model : SK-9000
Brand : POSEIDON
Body Markings : POSE DON
Nominal Size : DN100

3.0 Summary of Test Results

Test Sample	Test Item	Test Method	Test Results	Remark
ST190071/1	Dimensions	BS 4514 : 2001, Clause 5	Thickness : 3.22 mm (min.)	Pass
ST190071/4	Proof Pressure of Pipework Assemblies	BS 4514 : 2001, Clause 6.5	No leakage	Pass
ST190209/1-2	Vicat Softening Temperature	BS 4514 : 2001, Clause 6.1	Average 79°C	Pass
ST190209/3	Stress Relief Behaviour of Mould Fittings	BS 4514 : 2001, Clause 6.4	No weld line splitting and no crack	Pass
ST210562/7	Elevated Temperature Cycling Test	BS 4514 : 2001, Clause 6.6	No leakage	Pass

Remarks : 1.) The test results relate only to the samples tested.
2.) The results apply to the sample as received.
3.) This report is to supersede our previous test report no. 190544ST190071B.

Checked by

30 NOV 2021

Date

Chan Chun Wai Ivan

Manager (Product Testing Laboratory)

30 NOV 2021

Date

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GEN01/0819

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4.0 Individual Results

4.1 Dimensions

(BS 4514 : 2001, Clause 5)

Lab Sample I.D. : ST190071/1
Date Received : 25 January 2019
Date Tested : 15 February 2019

Dimension Item	Test Results (mm)	BS Requirement (mm)
Thickness	3.22 mm	min. 3.0

Remark : The test results **comply** with the requirement of BS 4514 : 2001, Clause 5
for wall thickness

4.2 Proof Pressure of Pipework Assemblies

(BS 4514 : 2001, Clause 6.5)

Lab Sample I.D. : ST190071/4
Date Received : 25 January 2019
Date Tested : 15 February 2019

Lab. Sample I.D.	Applied Hydraulic Pressure (bar)	Duration (sec)	Observation	BS Requirement
ST190071/4	0.5	15	No leakage	No leakage

Remark : The test results **comply** with the requirement of BS 4514 : 2001, Clause 6.5

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4.3 Vicat Softening Temperature (BS 4514 : 2001, Clause 6.1)

Lab Sample I.D. : ST190209/1-2
Date Received : 01 April 2019
Date Tested : 25 April 2019

Lab. Sample I.D.	Vicat Softening Temperature (°C)	BS Requirement (°C)
ST190209/1	79.0	≥79
ST190209/2	79.0	
Average	79.0	

Remark : The test results **comply** with the requirement of BS 4514 : 2001, Clause 6.1

4.4 Stress Relief Behaviour of Mould Fittings (BS 4514 : 2001, Clause 6.4)

Lab Sample I.D. : ST190209/3
Date Received : 01 April 2019
Date Tested : 25 April 2019

Lab. Sample I.D.	Observation	BS Requirement
ST190209/3	No weld line splitting and no crack	i. Within a radius of 15 times the wall thickness around the injection point, the depth of cracks, delamination or blisters shall not exceed 50% of the wall thickness at that point. ii. Within a distance of 10 times the wall thickness from the diaphragm zone, the depth of cracks, delamination or blisters shall not exceed 50% of the wall thickness at that point. iii. Within a distance of 10 times the wall thickness from the ring gate, the length of cracks shall not exceed 50% of the wall thickness at that point. iv. The weld line shall not have opened more than 50% of the wall thickness at the line. v. In all other parts of the surface the depth of cracks and delaminations shall not exceed 30% of the wall thickness at that point. Blisters shall not exceed a length 10 times of the wall thickness. vi. After cutting through the fitting, the cut surfaces shall show no foreign particles, when viewed without magnification.

Remark : The test results **comply** with the requirement of BS 4514 : 2001, Clause 6.4

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4.5 Elevated Temperature Cycling Test

(BS 4514 : 2001, Clause 6.6)

Lab Sample I.D. : ST210562/7
 Date Received : 08 September 2021
 Date Test Started : 04 October 2021
 Date Test Completed : 13 October 2021

Lab. Sample I.D.	Observation After Test	Requirement of BS 4514 : 2001, Clause 6.6
ST210562/7	No leakage and no sagging	i) No leakage ii) Sagging : $\leq 3 \text{ mm}$ ($\text{DN} \leq 50$) / 0.05 dn mm ($\text{DN} > 50$)

Note: dn - Nominal outside diameter

Remark : The test results **comply** with the requirement of BS 4514 : 2001, Clause 6.6

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5.0 Record Photographs



Test Sample
Sample I.D.: ST190071/1



Body Marking
Sample I.D.: ST190071/1



Test Configuration
Sample I.D.: ST190071/4



Test Configuration
Sample I.D.: ST190071/4



Sample After Test
Sample I.D.: ST190209/3



Sample After Test
Sample I.D.: ST210562/7

****End of Report****