

FUGRO TECHNICAL SERVICES LIMITED

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Materialab

Client Ref. : --

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Report No. : 130489ST130165(2)A

TEST REPORT

CLIENT : Unique Engineering (HK) Ltd.
TITLE : Testing of uPVC Pipe
DESCRIPTION : uPVC pressure pipes
BRAND : DFP
COUNTRY OF ORIGIN : TAIWAN / CHINA
MANUFACTURER : KUNSHAN SHIEYU VALVE CO., LTD.
BODY MARKINGS : As shown below :

Pipe Size (inch)	Body Markings
10"	SCH80 10" UPVC ASTM D1785 TYPE 1 GRADE1 230 PSI W.P. @73.4°F (WATER) 11/03/13 10:19 011188
12"	SCH80 12" UPVC ASTM D1785 TYPE 1 GRADE1 230 PSI W.P. @73.4°F (WATER) 13.03.01 21:46:37 21166
14"	SCH80 14" UPVC ASTM D1785 TYPE 1 GRADE1 230 PSI W.P. @73.4°F (WATER) 13.01.28 21:37:31 011188

METHOD OF TEST : BS EN ISO 1452-2 : 2009

PERIOD OF TESTS : 24 May 2013 to 9 June 2013

TEST RESULTS :**1. DIMENSION**

Size (inch)	Outside Diameter (mm)			Wall Thickness (mm)		
	Minimum	Maximum	Mean	Minimum	Maximum	Mean
10"	272.6	273.3	273.0	16.4	17.4	16.9
12"	323.6	324.4	324.0	18.4	19.2	18.8
14"	354.0	356.5	355.3	20.6	21.7	21.2

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2. IMPACT RESISTANCE

Size (inch)	Mass of striker (kg)	Falling height of striker (m)	No. of strikes			Remark
			Total	Pass	Fail	
10"	6.25	2	40	40	0	Pass
12"	7.50	2	40	40	0	Pass
14"	7.50	2	40	40	0	Pass

3. SHORT-TERM HYDROSTATIC PRESSURE TEST

Nominal size (inch)	Test pressure (bar)	Duration (hour)	Remark
10"	54	1	Pass
12"	54	1	Pass
14"	54	1	Pass
BS Requirement for class E pipe	54	1	/

4. LONGITUDINAL REVERSION (Oil bath method)

Size (inch)	Test temperature (°C)	Duration (min)	change in length (%)		Remark
			Sample	BS EN ISO Requirement	
10"	150	240	-4.4	±5	Pass
12"	150	240	-2.7	±5	Pass
14"	150	240	-3.1	±5	Pass

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TEST REPORT**5. VICAT SOFTENING TEMPERATURE**

Lab. Sample I.D.	Size (inch)	Sample Thickness (mm)	VST Temperature (°C)	BS EN ISO Requirement
ST130165/130	10	3.8	81	≥80
ST130165/131		3.8	83	
ST130165/132		4.0	83	
		Average	82	

Lab. Sample I.D.	Size (inch)	Sample Thickness (mm)	VST Temperature (°C)	BS EN ISO Requirement
ST130165/133	12	3.7	83	≥80
ST130165/134		3.8	84	
ST130165/135		4.0	83	
		Average	83	

Lab. Sample I.D.	Size (inch)	Sample Thickness (mm)	VST Temperature (°C)	BS EN ISO Requirement
ST130165/136	14	3.9	84	≥80
ST130165/137		3.8	84	
ST130165/138		3.8	83	
		Average	84	

6. SUMMARY OF RESULTS (apply only to the sample tested)

Dimensions	- As shown in section I
Impact resistance	- Satisfactory
Short-term hydrostatic pressure test	- Satisfactory
Longitudinal reversion	- Satisfactory
Vicat softening temperature	- Satisfactory

Remark : 1.) The test results relate only to the samples tested.

2.) This report is to supersede our previous test report no. 130489ST130165(2).

Checked by : Igor Date : 04 MAY 2015 Certified by : Chan Chun Wai Ivan Date : 04 MAY 2015

Chan Chun Wai Ivan

Manager (Product Testing Laboratory)

**** End of Report ****