

**Test Report No. 7191244754-MEC20/01-TYX**  
dated 15 OCT 2020



PSB Singapore

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**SUBJECT:**

Testing on uPVC pipe

**TESTED FOR:**

Snow Pte Ltd  
15A Tuas Ave 18  
#03-01 & #04-03  
Singapore 638905

Attn : Mr. Huang Sheng Jie

**TEST METHOD:**

SS 213 : 1998 Specification for Unplasticised PVC pipes and fittings for soil, waste and vent applications.

**SAMPLE DESCRIPTION:**

The following nominal size of white uPVC pipe were submitted for testing on 21 September 2020.

Nominal Size (mm)	Tests Conducted	Painted markings on uPVC pipes submitted
32, 40, 50, 80, 110 and 160 dia	1. Dimensional measurements 2. Heat reversion 3. Impact 4. Hydrostatic pressure 5. Opacity 6. Tensile	Snow

**DATE OF TEST :**

28 September 2020 to 07 October 2020



LA-2007-0380-A LA-2007-0386-C  
LA-2007-0381-F LA-2010-0464-D  
LA-2007-0382-B LA-2018-0702-B  
LA-2007-0383-G LA-2018-0703-G  
LA-2007-0384-G LA-2020-0747-L  
LA-2007-0385-E

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**TUV®**

**TEST RESULTS:**

**Table 1: Dimensional Measurements**

Nominal diameter Item Measured	32 mm	40 mm	SS 213 : 1998 Requirements	
			32 mm	40 mm
Mean outside diameter (mm)	36.4	43.0	36.2 min, 36.5 max	42.8 min, 43.1 max
Wall thickness (mm)	2.4	2.5	2.1 min, 2.4 max	2.3 min, 2.6 max

**Table 2: Dimensional Measurements**

Nominal diameter Item Measured	50 mm	80 mm	SS 213 : 1998 Requirements	
			50 mm	80 mm
Mean outside diameter (mm)	55.9	82.6	55.7 min, 56.0 max	82.3 min, 82.7 max
Wall thickness (mm)	2.7	3.2	2.4 min, 2.7 max	3.0 min, 3.5 max

**Table 3: Dimensional Measurements**

Nominal diameter Item Measured	110 mm	160 mm	SS 213 : 1998 Requirements	
			110 mm	160 mm
Mean outside diameter (mm)	110.2	160.2	110.0 min, 110.4 max	160.0 min, 160.5 max
Wall thickness (mm)	3.4	4.5	3.2 min, 3.6 max	4.0 min, 4.5 max

**Table 4: Heat Reversion Test**

Nominal Diameter	32 mm	40 mm	50 mm	SS 213 : 1998 Requirements
Percentage change in length (%)	3	3	2	Max. 5%

**Table 5: Heat Reversion Test**

Nominal Diameter	80 mm	110 mm	160 mm	SS 213 : 1998 Requirements
Percentage change in length (%)	2	2	2	Max. 5%





**TEST RESULTS (CONT'D):**

**Table 6: Hydrostatic Pressure Test**

Nominal Diameter	32 mm	40 mm	50 mm	SS 213 : 1998 Requirements
Hydrostatic test pressure (kPa)	70			Shall show no sign of leakage
Results	Comply			

**Table 7: Hydrostatic Pressure Test**

Nominal Diameter	80 mm	110 mm	160 mm	SS 213 : 1998 Requirements
Hydrostatic test pressure (kPa)	70			Shall show no sign of leakage
Results	Comply			

**Table 8: Impact Test**

Nominal Diameter	32 mm	40 mm	50 mm	SS 213 : 1998 Requirements
Result of first 14 strikes	Comply			If the first 14 strikes are made without failures, the pipes shall be deemed to have passed the test.

**Table 9: Impact Test**

Nominal Diameter	80 mm	110 mm	160 mm	SS 213 : 1998 Requirements
Result of first 14 strikes	Comply			If the first 14 strikes are made without failures, the pipes shall be deemed to have passed the test.

**TEST RESULTS (CONT'D):**

**Table 10: Opacity Test**

Nominal Diameter	32 mm	40 mm	50 mm	SS 213 : 1998 Requirements
Results	0.1	0.1	0.1	0.2% max
	Comply			

**Table 11: Opacity Test**

Nominal Diameter	80 mm	110 mm	160 mm	SS 213 : 1998 Requirements
Results	0.1	0.1	0.1	0.2% max
	Comply			

**Table 12: Tensile Strength**


Nominal Diameter	32 mm	40 mm	50 mm	SS 213 : 1998 Requirements
Tensile Strength, MPa	47	46	46	45 min
Elongation at break, %	128	127	127	80 min


**Table 13: Tensile Strength**

Nominal Diameter	80 mm	110 mm	160 mm	SS 213 : 1998 Requirements
Tensile Strength, MPa	46	45	47	45 min
Elongation at break, %	128	101	95	80 min

Note :

The results of the softening point and PVC & titanium dioxide content will be submitted separately.

  
Tan Yong Xiang  
Associate Engineer

  
Lee Ngiap Boon  
Senior Associate Engineer  
Industrial Group  
Mechanical Centre

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Effective 01 September 2020

