

Test report no.: 114670/15-I

Customer: Fenesta Building Systems
(A unit of DSCL)
Shriramnagar
Rajasthan
324004 KOTA
INDIA

Order: Testing of the material characteristics according to DIN EN 12608: 2003-09, annex A on window profiles made of PVC-U

Email of: 2015-09-24 by: Mr. S.K. Gupta

Sample receipt: 2015-09-21, 2015-09-30 and 2015-10-01

Test period: 2015-10-09 to 2015-10-25

This test report comprises 5 pages.

Würzburg, 2016-01-11
Rs/ste

i. V.



Dr. Anton Zahn



i. A.



Wolfgang Ries

Die ungekürzte oder auszugsweise Wiedergabe, Vervielfältigung und Übersetzung dieses Berichtes zu Werbezwecken bedarf der schriftlichen Genehmigung der SKZ - Testing GmbH. Die Ergebnisse beziehen sich auf die geprüften Produkte. Die Akkreditierungen gelten nur für die in den Urkunden aufgeführten Normen und Verfahren, die im Internet unter www.skz.de eingesehen werden können.

1. Order

By its email of 24 September 2015 the company Fenesta Building Systems (A unit of DSCL), Shriramnagar, Rajasthan, 324004 KOTA, INDIA instructed the SKZ - Testing GmbH to test the material characteristics according to DIN EN 12608: 2003-09, annex A on window profiles made of PVC-U.

2. Test material

SKZ - Testing GmbH had the following test material at their disposal on 21 September 2015, 30 September 2015 and 1 October 2015:

3 x 1 m window profile sections made of PVC-U (2015-10-01), colour white and approx. 3 kg compound (2015-09-21)

Designation	A65PF1/2
Designation of profile:	2 track fix/casement outer frame
Profile marking:	FENESTA A65PF1 020915 1016 L5 GRN

1 press plate produced by company Vinnolit GmbH & Co. KG, Munich, GERMANY, with receipt of 30 September 2015.

3. Test procedure

Testing of material characteristics was carried out according to DIN EN 12608: 2003-09, annex A, item A.4, Material characteristics, on window profiles made of PVC-U.

Unless indicated otherwise, pre-testing storage and the test itself were carried out at standard conditioning atmosphere 23/50, class 1 according to DIN EN ISO 291: 2008-08.

Usually we carry out tests according to standards for which we have an accreditation. The list of all standards for which we are accredited is shown on the homepage at www.skz.de.

3.1 Vicat-softening temperature (VST)

The Vicat-softening temperature (VST) was determined according to DIN EN ISO 306: 2004-10, method B/50. The required samples were taken from the outer surface of the window profile. The mean value is based on 3 individual values.

Requirement:

The Vicat-softening temperature (VST) shall not be less than 75 °C.

3.2 Charpy impact strength

The Charpy impact strength a_{cN} was tested on specimen (80 x 10 x 4) mm according to DIN EN ISO 179-2: 2000-06, type 1eA with single notch. The notch base radius was 0.25 mm. The samples were taken from the press plate made by company Wacker Chemie AG by milling. The mean value is based on 10 individual values. The tests were performed by an external (accredited) testing laboratory.

Requirement:

The Charpy impact strength shall either not be less than 10 kJ/m² or 20 kJ/m², respectively.

3.3 Flexural modulus of elasticity

The flexural modulus of elasticity (E_b) was determined according to DIN EN ISO 178: 2013-09. The samples were taken from the press plate made by company Wacker Chemie AG by milling. The test speed was 1 mm/min, the support distance L was 48 mm (16 x sample thickness).

Requirement:

The flexural modulus of elasticity shall not be < 2200 N/mm².

3.4 Tensile impact strength

The tensile impact strength test was carried out according to EN ISO 8256: 2005-05 on samples of type 5. The samples were taken from the outer sight surface of the window profiles, in the direction of extrusion, by machining. The impact energy capacity of the pendulum was 50 J.

The mean value is based on 5 individual values.

Requirement:

The mean tensile impact strength shall not be less than 600 kJ/m².

4. Test results

4.1 Vicat-softening temperature (VST)

Vicat-softening temperature (VST)			
Individual values in [°C]			Mean value in [°C]
81.5	81.7	81.6	81.6

4.2 Charpy impact strength

Charpy impact strength a_{cN} according to EN ISO 179-2/1eA			
Individual values in [kJ/m ²]	Fracture behaviour	Mean value in [kJ/m ²]	Standard deviation
20.8	brittle break (b)	20.1	2.5
23.4	brittle break (b)		
14.0	brittle break (b)		
19.3	brittle break (b)		
20.0	brittle break (b)		
21.1	brittle break (b)		
21.7	brittle break (b)		
20.5	brittle break (b)		
20.8	brittle break (b)		
19.0	brittle break (b)		

4.3 Flexural modulus of elasticity

Flexural modulus of elasticity	
Mean value from 5 individual measurements in [N/mm ²]	Standard deviation
2910	203

4.4 Tensile impact strength

Tensile impact strength according to EN ISO 8256/5A		
Mean value from 5 individual measurements in [kJ/m ²]	Standard deviation	Fracture behaviour
882	108	ductile

5. **Assessment of test results**

The requirements of DIN EN 12608: 2003-09, annex A concerning material characteristics on window profiles made of PVC-U were fulfilled.