

Test type: Air leakage test

Sliding doors:

Pressure (Pa)	Air flow for specimen with film Q_e (l/s)	Air flow for specimen without film Q_t (l/s)	Air leakage through the test specimen $Q_s = Q_t - Q_e$ (l/s)	Rate of air leakage per length unit $q_l = Q_s/A$ (L/m ² .s)
P = 75	0.78* (3.14*0.23 ² /4)*10 ³ = 32.39	0.98* (3.14*0.23 ² /4)*10 ³ = 40.70	8.31	0.83
P = -75	3.51* (3.14*0.23 ² /4)*10 ³ = 145.76	3.65* (3.14*0.23 ² /4)*10 ³ = 151.57	5.81	0.58
Conclusion: OK (Rate of air leakage per length unit < 1.0 (L/m ² .s))				

Note: Pipe diameter for getting air flow speed is 0.23 m

Awning windows:

Pressure (Pa)	Air flow for specimen with film Q_e (l/s)	Air flow for specimen without film Q_t (l/s)	Air leakage through the test specimen $Q_s = Q_t - Q_e$ (l/s)	Rate of air leakage per length unit $q_l = Q_s/A$ (L/m ² .s)
P = 75	0.37* (3.14*0.23 ² /4)*10 ³ = 15.36	0.5* (3.14*0.23 ² /4)*10 ³ = 20.76	5.40	0.65
P = -75	4.39* (3.14*0.23 ² /4)*10 ³ = 182.30	4.48* (3.14*0.23 ² /4)*10 ³ = 186.04	3.74	0.45
Conclusion: OK (Rate of air leakage per length unit < 1.0 (L/m ² .s))				

Note: Pipe diameter for getting air flow speed is 0.23 m

Test type: Water penetration test

Sliding doors:

Type	Pressure (Pa)	Duration (min)
Settle-in	Zero	5
Static	312	15
<u>Equivalent</u>	<u>81.1 Km/h (Storm level 9)</u>	
<u>Conclusion: Ok (No water leakage appears under static pressure)</u>		

Awning windows:

Type	Pressure (Pa)	Duration (min)
Settle-in	Zero	5
Static	312	15
<u>Equivalent</u>	<u>81.1 Km/h (Storm level 9)</u>	
<u>Conclusion: Ok (No water leakage appears under static pressure)</u>		

Test type: Operational Force

Sliding doors:

Type	Operational Force (N)
Initiate	70
Maintain	50
Conclusion: OK (< 180N initiate and 110N maintain)	

Awning windows:

Type	Operational Force (N)
Initiate	40
Maintain	30
Conclusion: OK (< 180N initiate and 110N maintain)	

Test type: Ultimate Wind Load

Sliding doors:

<u>Pressure</u>	<u>Description</u>
P = +1600 Pa	No any damage, no deforamtion of metal frame, no glass breakage
P = -2200 Pa	No any damage, no deforamtion of metal frame, no glass breakage
<u>Equivalent</u>	<u>183 - 215.6 km/h (Storm level 17)</u>
<u>Conclusion: OK</u>	

Awning windows:

<u>Pressure</u>	<u>Description</u>
P = +1600 Pa	No any damage, no deforamtion of metal frame, no glass breakage
P = -2200 Pa	No any damage, no deforamtion of metal frame, no glass breakage
<u>Equivalent</u>	<u>183 - 215.6 km/h (Storm level 17)</u>
<u>Conclusion: OK</u>	