IAN BENNIE AND ASSOCIATES

TEST REPORT NO. 6044S3

ZENDOW UPVC INWARD TILT-TURN WINDOW PROTOTYPE TEST to AS2047-1999

for

DECEUNINCK EGE PROFIL TIC. VE SAN A.S.

December 2006

NATA

Registered Laboratory No. 2371

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Building Performance Testing
ACN : 007 133 253

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Test Client: **DECEUNINCK EGE PROFIL TIC. VE SAN A.S.**

Sample Identification: A Zendow UPVC Inward Tilt-Turn Window, measuring, 1500 mm in height x 1200 mm in width. The sample is detailed in the DECEUNINCK EGE PROFIL TIC. VE SAN A.S. drawings given in Appendix C.

Test Method: Structural Deflection, Air Infiltration, Water Penetration Resistance and Ultimate Strength test performance requirements to Clause 2.3 of Australian Standard AS2047-1999, and test procedures to Australian Standard AS4420-1996 as detailed in Appendix A.

Test Location: IBA Test Centre
Dandenong, Melbourne.

Test Date(s): 7 June 2006.

Pre-loading: The sample was operated five (5) times prior to the commencement of testing.

TEST RESULTS

Deflection Test

Deflections recorded:

	Housing (span/150)		**Residential** (span/180)		**Commercial** (span/250)	
Pressure (Pa)	**+3010**	**-3000**	**+3010**	**-3000**	**+2510**	**-2560**
Mullion						
Deflection	span/210	span/213	span/210	span/213	span/253	span/252
Sash Stile (measurement not required for housing)						
Deflection	span/537	span/456	span/537	span/456	span/658	span/529

All test readings and calculated deflections are given in Table 1 and measurement locations are indicated on Figure 1.

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Air Infiltration Test

Air Leakage Recorded ($L/s.m^2$)	Pressure Applied (Pa)			
Condition	**+75**	**+150**	**-76**	**-150**
Chamber & Sample (A):	0.27	0.40	0.27	0.40
Chamber (sample taped) (B):	NR	NR	NR	NR
Sample (A-B):	**0.27**	**0.40**	**0.27**	**0.40**

NR: measurement not required

Water Leakage Test , 450 Pa

No water was observed during the test.

Water Leakage Test , 600 Pa

Water penetrated from behind the hinge at the bottom RH corner of the sash during the test, which constitutes a failure.

Ultimate Strength Test: +4500 Pa & -4500 Pa

No sign of collapse was observed at either test pressure

CONCLUSION

The Zendow UPVC Inward Tilt-Turn Window sample achieved the following ratings per AS2047-1999 and Building Importance Level 2 when tested for Structural Deflection, Air Infiltration, Water Penetration Resistance and Ultimate Strength. Referenced Standards, building classifications, housing limitations and Region data are summarised in Appendix B.

NOTES:

1. Ratings have been calculated using the 2002 issue of AS/NZS 1170.2. The client can re-calculate the ratings using the 1989 issues of AS 1170.2 from the test results if required.
2. Ratings have only been calculated for BCA Building Importance Level 2. The client can re-calculate the ratings for other levels of importance from the test results if required.

Housing ratings:

Regions A & B.....N6
Region C.....+1500 ‡ ..... and ....-3000 # Pa
Region D .....+1500 ‡ ..... and ....-1510 # Pa

Residential building ratings:

Region A .....+1500 ‡ ..... and ....-3000 Pa
Region B .....+1500 ‡ ..... and ....-2000 # Pa
Region C .....+1500 ‡ ..... and ....-1910 # Pa
Region D .....+1500 ‡ ..... and ....-1510 # Pa

Commercial building ratings:

Region A .....+1500 ‡ ..... and ....-2560 Pa
Region B .....+1500 ‡ ..... and ....-2000 # Pa
Region C .....+1500 ‡ ..... and ....-1910 # Pa
Region D .....+1500 ‡ ..... and ....-1510 # Pa

‡ - rating is limited by the maximum water test pressure applied without failure.
# - rating is limited by the maximum ultimate test pressures applied without failure.

Air Infiltration: Airconditioned and Non-airconditioned Buildings

Maximum Water Penetration Resistance Pressure: 450 Pa

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Ian Bennie 14 December 2006
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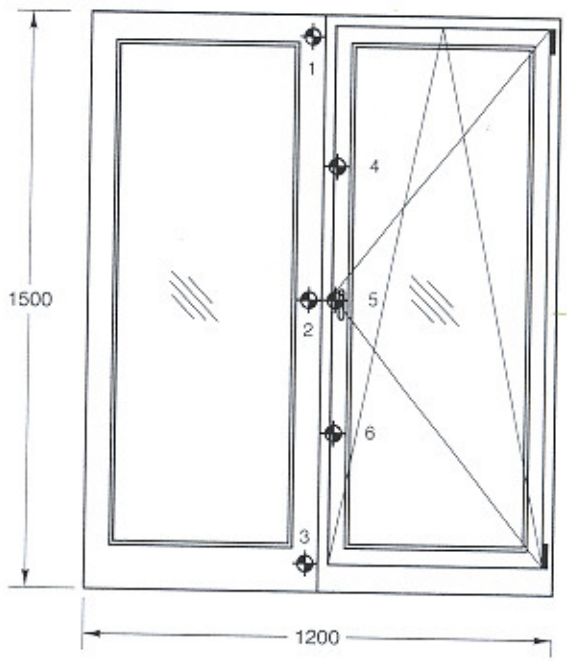

INDOOR VIEW

⊕ Displacement measurement locations:

1. Mullion - top
2. Mullion - centre
3. Mullion - bottom
4. Door Stile - top at lock
5. Door Stile - centre
6. Door Stile - bottom at lock

Figure 1. Indoor view of the test sample showing the displacement measurement locations.