



ECLIPSE “VISTA” Series

PRODUCT INFORMATION AND COMPLIANCE

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PRODUCT BRANDING

The manufacturer (PLYGEM) markets this profile type in Canada as “VISTA”

In New Zealand the “Vista” platform is marketed as “ECLIPSE” by Vinyl Cladding New Zealand Ltd.

ECLIPSE™
Thermally Proficient uPVC Windows & Doors

PRODUCT VISUAL

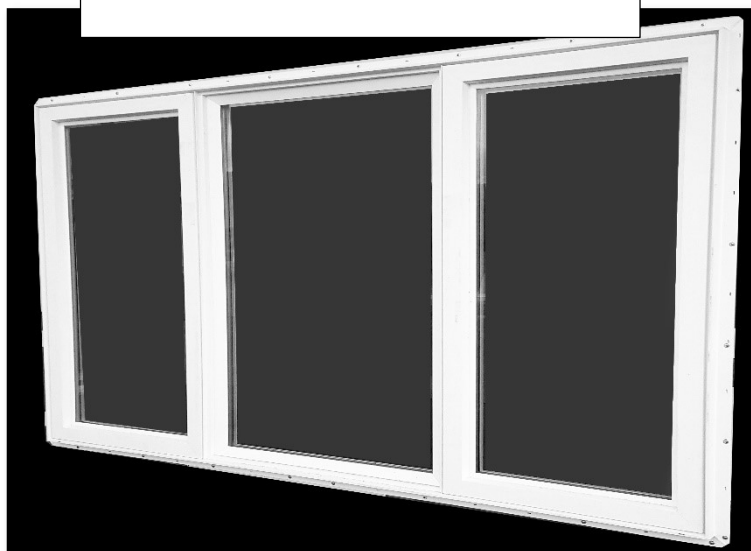
ECLIPSE VISTA BLACK AWNING WINDOW



ECLIPSE VISTA BLACK SLIDING WINDOW



ECLIPSE VISTA WHITE AWNING WINDOW



COMPLIANCE TESTING

We reference the following INTERTEK report numbers, supplied in support of Compliance with the Building code:

1. INTERTEK :103210909COQ -001D
2. INTERTEK :103210964COQ -001E
3. INTERTEK :103246429CoQ -001D
4. INTERTEK :103246429COQ -001C
5. INTERTEK :103210964COQ -001F
6. INTERTEK: C1290.01-106-31 – Weatherability Impact Resistance
7. VEKA PVC EXTRUSION TECHNICAL REFERENCE SHEET

These reports were completed by reputable testing company (INTERTEK) experienced in testing of Building Products globally. They hold the following laboratory accreditations: ISO 17025 (as required by NZS4211:2008

These reports assess the standards of PLYGEM PVC window and door joinery. The reports are tested under several globally and New Zealand recognised methods such as: AS2047:2014 | ASTM 4726-02; 1042-06; 4803-97.

ASTM is an internationally recognised published technical laboratory standard recognised by ISO to which the New Zealand Government is a member legislated under the Standards and Accreditations Act 2015.

All reports comply with NZS4211:2008 Testing & Reporting with the proposed windows and doors complying with “Marking” section 4.4 NZS4211:2008. These markings are located as on each window and door frame.

The INTERTEK reports 1- 5 above confirm testing was done in accordance to AS2047:2014 - For clarity, this is the window and door manufacturing Australian standard, as NZS4211:2008 is the stand-alone window and door manufacturing standard to New Zealand.

This Australian standard was compiled by committee BD-021 which is represented by Australian and New Zealand industry professionals and references NZS4211:2008 within the build model. The Australian standard has a mirrored layout and categories to that of the New Zealand Standard 4211.2008.

When both New Zealand and Australian standards are compared to each other for performance criteria, the newer Australian Standard has a higher numerical level of compliance requirement. Therefore, this reasonably concludes that testing carried out to this Australian standard AS2047:2014 will likely comply to the New Zealand Building Code, ergo; NZS4211:2008.

COMPARISON MATRIX - AS2047:2014 < > NZS4211:2008

For ease of reference we have compiled a matrix comparison table for the authority to compare testing results. This table transposes resultant test data from all INTERTEK reports on PLYGEM windows & doors and corresponds these to the NZS4211:2008 requirements. For the purposes of this, coded reference items to irrelevant outcome specifications were not included as the New Zealand Standard does not require these comparisons to be made.

Only finalised and universal numerical and reported results have been used to compare against the required New Zealand standard.

BUILD CODE RESULTANT

COMPLIANCE of PLYGEM WINDOWS AND DOORS TO B1

Refer to INTERTEK Reports 1-5:

The structure of the window and door systems can contain galvanised high tensile steel styles sleeved and sealed within the window system extrusions for increased rigidity and strength. This system enables PLYGEM windows to surpass the New Zealand Standards required for wind load deflection, operation of components, and torsional strength.

1. The test data indicates the test windows satisfy the requirements of the NZ standard, against all categories listed relating to the window or door structure.
2. The testing indicated an exceeding result in all relevant categories.
3. These results also deduce a root mean calculation assumption of compliance where testing of windows sizes differs from any tested sizes (as allowed for within NZS4211:2008)
4. It is concluded PLYGEM windows pass the New Zealand standards requirements

COMPLIANCE of PLYGEM WINDOWS & DOORS TO B2

Refer to INTERTEK C1290.01-106-31 Weatherability (figure 5)

Note: The credential and compliance accreditation of INTERTEK being accredited under ISO 17025 as a laboratory testing facility and therefore recognised under New Zealand Standards.

The report demonstrates imperial measurements, but these once converted to metric units, conclude the PVC extrusion passes all weatherability tests under these standards.

I also refer to the Comparison Matrix where all tests exceed the parameters required, including ultimate strength testing.

Refer to detail's cross sections Figure 3 and 4 that show manufactured weep holes to expel any water ingress.

Refer to details of fixing - Figure and manufacturer recommendations

The included Build Consent approval and details of fixing of the fixing fin system on the windows. This system is a simple system. Fixing externally to frame structure together with using a suitable sealing tape provides an extremely weathertight fit against the framework. It must be noted NZS4211:2008 performance parameters are based around Aluminium and Timber window and door joinery generally fixed to the frame via reveals, therefore calling for perf rod and polyurethane foam to fill the edge void and seal. In the case of PLYGEM nail fin windows, the fin itself is fully attached over the entire circumference of the frame extrusion and mechanically fixed and sealed to the structure of the building creating a fully sealed circumference.

Installation

The fixing fin is screwed to the external face of the frame using a Class 3 galvanised 8# (or Stainless) wafer head screw long enough to penetrate at least 1/3 of its length (Timber or less if steel frame) into the main constructed frame of the building. The manufacturer recommends screw spacings of every second pre-punched nail fin hole. A weatherproof sealing tape can then be used to tape over the fixing fin and screws as to seal back to the build wrap membrane ensuring all laps are consistent with good taping practice. Once tape sealed, the system remains with a fully encased weathertight seal to the frame.

Refer to generally accepted materials and use.

The design of the PLYGEM® window and doors can (on some styles) have an aluminium external capping façade covering the entire exterior uPVC extrusion. Whilst this capping is purely for colour cosmetic choices, and is not

needed for durability, the aluminium capping is not unlike the quality of aluminium currently and commonly used on window and doors system in New Zealand.

Refer to Figure 3 where the Aluminium capping system is denoted in purple.

The aluminium exterior capping system on certain styles of PLYGEM® windows and doors, will indeed be compliant with the B2 Durability requirement of the building Code similar too or at least as good as generally accepted aluminium material extrusions.

Refer to Certificate of Composition.

VEKA extrusions are used for all PLYGEM® window and door systems. VEKA is a European manufacturer globally known and tested. Veka extrusions contain the correct “Tropical Mix” of Titanium dioxide pigmenting for weatherability and these have been tested and appraised by BRANZ for many other window systems using Veka extrusion technology within New Zealand.

TiO₂ Titanium Dioxide Levels – The Titanium Dioxide levels within the Veka extrusions used for all PLYGEM windows and Doors is 8phr as verified by the appended certificate of composition

COMPLIANCE with E2

Refer to the Comparison Matrix, INTERTEK reports 1-5, fixing details, and cross section details.

The testing conducted under AS2047:2014 by INTERTEK demonstrates an **exceeding** compliance with the New Zealand Standard for Air infiltration and water penetration resistance. The general construction of the uPVC extrusion-based window and door system always consists of fully welded joints and mitres which support a high resistance to water penetration. Window and door protrusions are constructed with up to three different types of seals/gaskets which also support a high resistance to water penetration.

The PLYGEM system cross sections as detailed under Figure 2 and 3 show the weep pathways for moisture built in to each window system. This includes sliders, awning and picture fixed pane. The cross sections also show 3 levels of gasket sealing that have been tested in accordance with AS2047:2014 and compared to NZS4112:2008 under the Comparison Matrix, reasonably proving compliance with the NZ Standard and E2 requirements of the Building Code.

COMPLIANCE with F2

Refer in practice to NZS4223 part 3.

PLYGEM® windows and doors contain glass etchings on all glass that is compliant to NZS4223 part 3 for markings and any and all toughened glass requirements are denoted under the etching on each window pane installed within the frames.

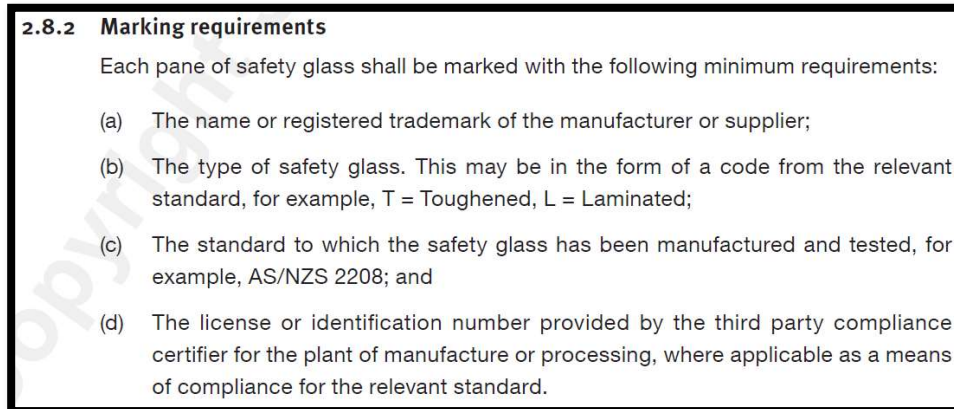


Figure 1 - NZ4223 section 2.8.2

Therefore, during site inspections, it can be verified, PLYGEM windows and doors comply with NZ4223.3:2016 and therefore the Building Code F2.

COMPLIANCE with H1 (ZONE 6)

ZONE 6 COMPLIANT

The highest New Zealand building code thermal performance requirement for Zone 6 areas (windows and doors) is R0.50.

PLYGEM Vista windows achieve a minimum of R0.63

COMPLIANCE WITH NZS4211

All PLYGEM® windows and doors contain a manufacturing label stating that all double glazing is Argon filled with LoE coatings. Argon and LoE improve the thermal properties of glazing units and this exceeds the minimum requirements under legislation in New Zealand.

PRODUCT MANUFACTURER / IMPORTER DETAILS

Importer	VINYL CLADDING NEW ZEALAND LIMITED
Address	1 FACTORY ROAD, ROLLESTON, SELWYN DISTRICT, CANTERBURY
NZBN	9429031999250
Email	martin@vinylcladding.co.nz
Phone	0800 648 836
Website	www.vinylcladding.co.nz
Contact Technical	Martin Hartley – Managing Director
Supplier/Manufacturer Relationship	Long Term Exclusive New Zealand
Product Manufacturing Contractor	PLYGEM CANADA
Website	www.plygem.ca
Email:	Via submission form through above website
Country Of Manufacture	CANADA
Address	7140 40 Street SE Calgary, AB T2C 2B6
Phone	+1 800 297 6102

LIMITATIONS OF USE

PLYGEM VISTA SERIES SHOULD NOT BE USED:

- Where window and door systems need to be fire rated beyond normal residential requirements.
- Without special engineering approval for use in extreme environments
- At levels higher than 10 meters from ground level, without fire engineering sign off and/or building authority approval.
- Without special engineering approval and design where wind pressures are expected to be extremely high.

DECLARATION OF COMPLIANCE

We hereby declare the Eclipse VISTA Windows and Doors products are not subject to a ban of goods as per section 26 of the Building Act 2004.

The Director/s of Vinyl Cladding New Zealand hereby verify and declare the information contained herein has been qualified via research, which has included manufacturer assessment for quality practices and certifications for product testing. Therefore, the product has been reasonably assessed by us as achieving the relevant product standards and minimum requirements of the New Zealand 2023 Building Code. It is with confidence, derived from the information available to us, the product achieves the requirements for use within New Zealand.

On behalf of Vinyl Cladding New Zealand Limited

MS HARTLEY - v11123-3564-05

Martin S Hartley Grad dip Bus Stud, MBA, Cert P2PM
MANAGING DIRECTOR

APPENDED REPORTS:

VEKA EXTRUSION TECHNICAL REFERENCE SHEET (TiO₂)
INTERTEK REPORT COMPARISON MATRIX

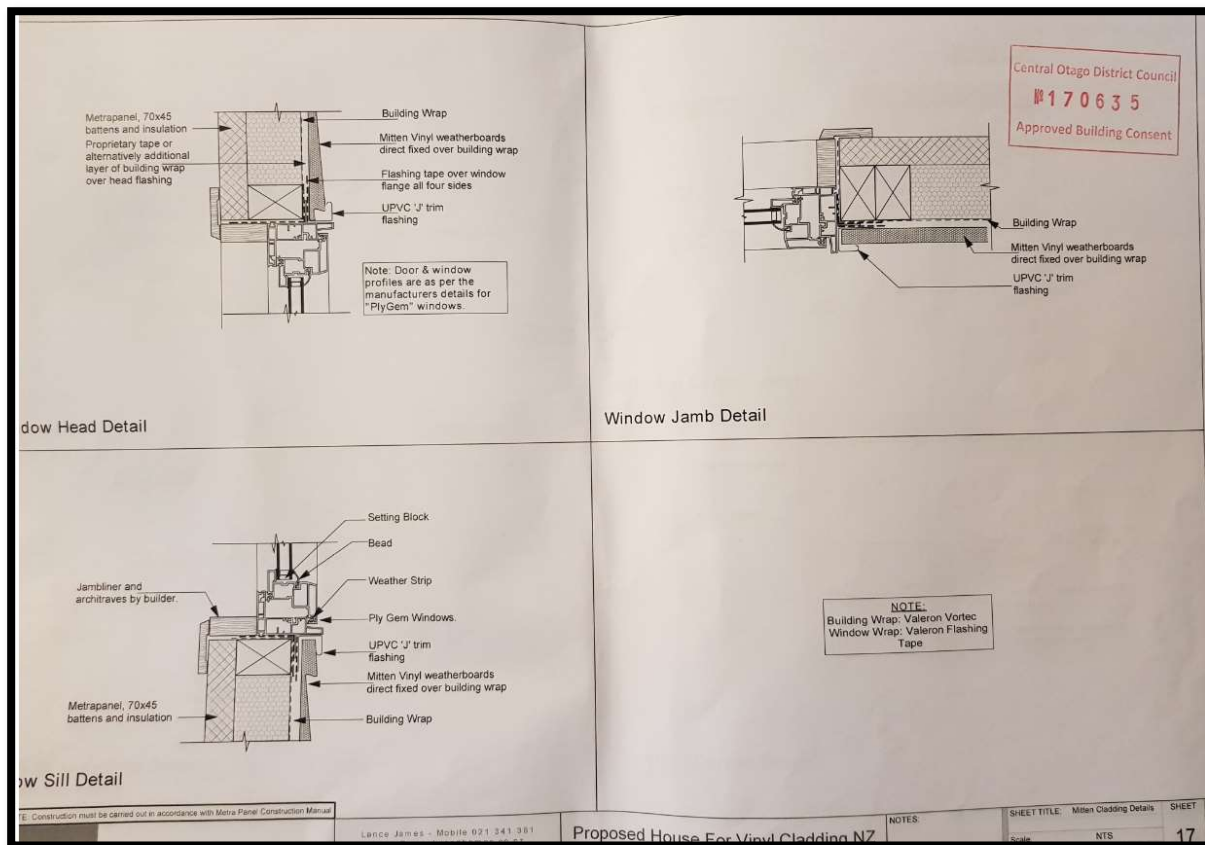


Figure 2 - EXAMPLE CONSENTED WINDOW DETAIL OF FIN FIXED SYSTEM – OTAGO DISTRICT COUNCIL

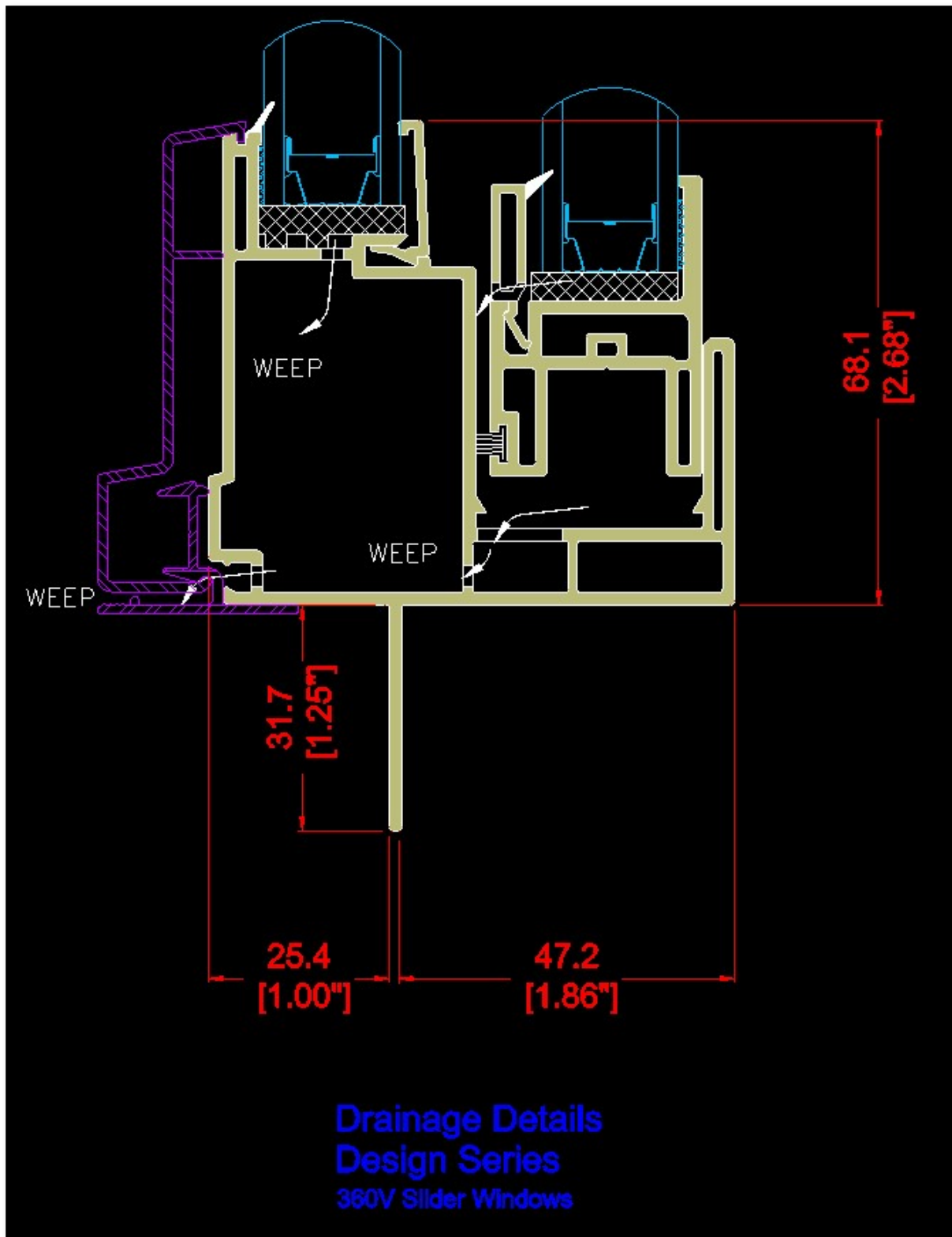


Figure 3 -PLYGEM WINDOW WEEP DETAIL CROSS SECTION 1

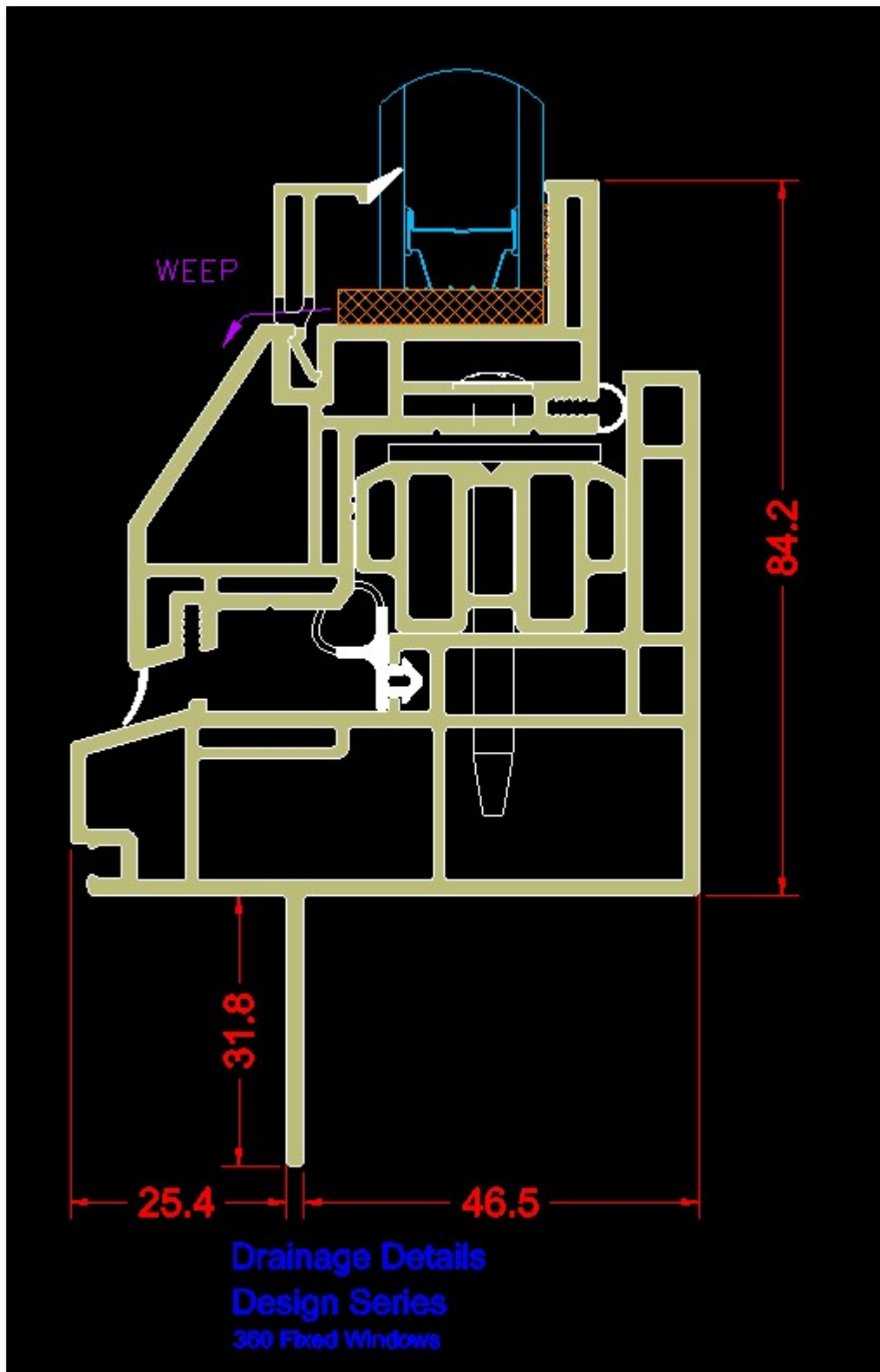


Figure 4 -PLYGEM WINDOW WEEP DETAIL CROSS SECTION 2

NAMI CERTIFIED PRODUCT

To verify that the "Notice of Product Certification" is valid, please visit www.NAMICertification.com to assure that the product is active and currently listed. This certification represents product conformity to the applicable specification and that certification criteria has been satisfied. An MMPA/NAMI approved certification mark or label must be applied to the product to claim certification status. Please review and advise NAMI if any corrections are required to this document.

Certification No: P012173	Date Certified: 10/24/2014
Program Type: Profile	Manufacturer's Code: 1908-1

Company Name & Address	Product Description
Ply Gem Windows 433 North Main Street Rocky Mount, VA 24151	White/Beige/Clay PVC Profile Extrusions

Standard	Product Rating
AAMA 303-08 ASTM D4726-02 ASTM D1042-06 ASTM D4803-97	Passed All Requirements

Weatherability:	Completed 12 month Exposure
Testing Laboratory:	Architectural Testing, Inc. (York, PA)
Report No:	Draft-C1290.01-106-31
Draft Date:	September 15, 2014
Status:	Weatherability-Still in Process/All other tests completed

Expiration Date: September 30, 2018

Administrator's Signature: _____



**NATIONAL ACCREDITATION AND
MANAGEMENT INSTITUTE, INC.**

4794 George Washington Memorial Highway
Hayes, VA 23072
Tel: (804) 684-5124
Fax: (804) 684-5122


Figure 5 -Weatherability Exposure Certificate

Figure 6-COMPARISON MATRIX -AS to NZS

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COMPARISON MATRIX NZS4211:2008 <> AS2047:2014		INTERTEK REPORT TESTED TO AS2047:2014			PLYGEM WINDOWS		COPYRIGHT 2018 VCNZ
		WIND LOAD DEFLECTION (Section 6 of the Standard)					
TYPE	Width	Height	Pa	TESTED RESULT Positive/Negative deflection (mm)	NZS4211 MAX ALLOWABLE DEFLECTION (Negative and Positive)(SPAN/200TH) mm +/-	OVERALL RESULT	
PLYGEM Vinyl Window (two pane, single Casement opening central mullion)	915	2125	800	0.49 / 1.57	4.58	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Horizontal slider)	1200	2120	800	4.79 / 4.75	6.00	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Direct set Picture)	2045	2110	800	0.55 / 2.19	10.23	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Awning)	1200	1212	800	0.4 / 0.10	6.00	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window Single Hung	1200	2100	800	4.47 / 4.26	6.00	MEETS AND EXCEEDS STANDARDS	
PLYGEM ENTRY DOOR TEST							
PLYGEM Entry Door Swing Hinged model 685 / 695	950	2494	1920	1.3 / 0.08	4.75	MEETS AND EXCEEDS STANDARDS	
COMPARISON MATRIX NZS4211:2008 <> AS2047:2014		INTERTEK REPORT TESTED TO AS2047 :2014			PLYGEM WINDOWS		
		OPERATION OF SASHES (section 7 of the Standard)					
TYPE	Width	Height	TESTED RESULT		NZS4211 MAX ALLOWABLE FORCE To: (Highest Criteria)	OVERALL RESULT	
TYPE	Width	Height	OPEN: Initiate / Maintain	CLOSE: Initiate / Maintain	OPEN/CLOSE: Initiate / Maintain		
PLYGEM Vinyl Window (two pane, single Casement opening central mullion)	915	2125	11.2N / 7.4N	5.2N / 11.5N	90N / 90N	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Horizontal slider)	1200	2120	77N / 42.2	53N / 43.6	110N / 90N	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Direct set Picture)	2045	2110	N/A	N/A	N/A	Standard not applicable to fixed pane	
PLYGEM Vinyl Window (Awning)	1200	1212	19.1N / 9.9N	2.2N / 17.5N	90N / 90N	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window Single Hung	1200	2100	126.2N / 98.2N	90N / 94.6N	200N / 160N	MEETS AND EXCEEDS STANDARDS	
PLYGEM Sliding Patio Door	2425	2072	42.6N / 26.4N	42.6N / 45N	180N / 110N	MEETS AND EXCEEDS STANDARDS	
PLYGEM ENTRY DOOR TEST							
PLYGEM Entry Door Swing Hinged model 685 / 695	950	2494	22N	44N	90N / 90N	MEETS AND EXCEEDS STANDARDS	
COMPARISON MATRIX NZS4211:2008 <> AS2047:2014		INTERTEK REPORT TESTED TO AS2047 :2014			PLYGEM WINDOWS		
		AIR INFILTRATION (section 8 of the Standard)					
TYPE	Width	Height	AREA m2	TESTED RESULT Infiltration / exfiltration rates (Litres Per Second)	NZS4211 MAX RATE OF INFILTRATION L/s (Geometric Mean) (Highest Criteria Air Conditioned)	OVERALL RESULT	
PLYGEM Vinyl Window (two pane, single Casement opening central mullion)	915	2125	1.94	0.05 / 0.4	0.84	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Horizontal slider)	1200	2120	2.59	0.27 / 0.24	1.48	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Direct set Picture)	2045	2110	4.45	0.03 / 0.04	2.92	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Awning)	1200	1212	1.52	0.02 / 0.01	1.32	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window Single Hung	1200	2100	2.59	0.26 / 0.24	1.72	MEETS AND EXCEEDS STANDARDS	
PLYGEM Sliding Patio Door	2425	2072	5.02	0.74 / 0.76	2.34	MEETS AND EXCEEDS STANDARDS	
PLYGEM ENTRY DOOR TEST							
PLYGEM Entry Door Swing Hinged model 685 / 695	950	2494	5.02	0.5 / 0.1	2.44	MEETS AND EXCEEDS STANDARDS	
COMPARISON MATRIX NZS4211:2008 <> AS2047:2014		INTERTEK REPORT TESTED TO AS2047 :2014			PLYGEM WINDOWS		
		WATER PENETRATION RESISTANCE (section 9 of the standard)					
TYPE	Width	Height	TEST PRESSURE Pa	TESTED RESULT ASSESSMENT	VISUAL NZS4211 (No Uncontrolled visual leakage)	OVERALL RESULT	
PLYGEM Vinyl Window (two pane, single Casement opening central mullion)	915	2125	600	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Horizontal slider)	1200	2120	330	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS	
PLYGEM Vinyl Window (Direct set Picture)	2045	2110	600	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS	

Figure 7 -COMPARISON MATRIX part 2 AS to NZS

PLYGEM Vinyl Window (Awning)	1200	1212	600	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS
PLYGEM Vinyl Window Single Hung	1200	2100	330	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS
PLYGEM Sliding Patio Door	2425	2072	300	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS
PLYGEM ENTRY DOOR TEST						
PLYGEM Entry Door Swing Hinged model 685 / 695	950	2494	290	ZERO LEAKAGE	No uncontrolled leakage	MEETS AND EXCEEDS STANDARDS
COMPARISON MATRIX						
NZS4211:2008 < > AS2047:2014			INTERTEK REPORT TESTED TO AS2047 :2014		PLYGEM WINDOWS	
ULTIMATE STRENGTH (Section 10 of the Standard)						
TYPE	Width	Height	TEST PRESSURE Pa	TESTED RESULT	NZS4211 COMPLIANCE STANDARD (No Collapse/Failure of any part at pressure 1760pa) (Highest criteria)	OVERALL RESULT
PLYGEM Vinyl Window (two pane, single Casement opening central mullion)	915	2125	2700	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
PLYGEM Vinyl Window (Horizontal slider)	1200	2120	2700	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
PLYGEM Vinyl Window (Direct set Picture)	2045	2110	2700	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
PLYGEM Vinyl Window (Awning)	1200	1212	2700	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
PLYGEM Vinyl Window Single Hung	1200	2100	2700	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
PLYGEM Sliding Patio Door	2425	2072	1400	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
PLYGEM ENTRY DOOR TEST						
PLYGEM Entry Door Swing Hinged model 685 / 695	950	2494	2880	No structure or operational failures	No Collapse	MEETS AND EXCEEDS STANDARDS
DECLARATION OF ACTUALS:						
I Martin Stuart Hartley certify to the best of my knowledge the above Comparison Matrix is a true and correct compilation of all test Data as tested by Intertek in accordance with AS2047:2014 and transposed together with a true and correct requirements of NZS4211:2008						
Signed:		2 January 2019	Martin Stuart Hartley MBA, Grad Dip Bus Stud, cert P2PM			

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NOTE: Due to the large data file associated : Intertek reports compared in this matrix are available by document link on request to martin@vinylcladding.co.nz.