Vinyl Council Australia

uPVC Window Profiles Industry Code of Practice

Version 1.1 2019

Document Information and Revision History

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Current Revision Author(s)	VCA Sophi MacMillan

Revision History

Revision	Date	Approved	Reason for change
2.3.1 The compliance certificate	28 March 2019	ICP Admin Committee	Certificate to include product range or formulation identification mark or batch number
3.2.1 Test Samples	28 March 2019	ICP Admin Committee	Sample sets shall have a product range or formulation identification mark or batch number
4.1 and 6.1 The Charpy Impact Strength Test Conditions	28 March 2019	ICP Admin Committee	Correct reference to EN ISO 179-1; Clarify sample conditioning and test conditions to be similar and minimal time lapse
4.3.1	2 April	Sophi MacMillan	Typographical error corrected in table reference
5.1 Test Options	28 March 2019	ICP Admin Committee	Correct description of Allunga Exposure Laboratory location
5.2.1, 5.3.1 and Appendix A Colour Change	28 March 2019	ICP Admin Committee	Technical clarification that the limit to the change in colour applies in both directions of the colour spectrum.
5.2.2 Evidence of compliance	28 March 2019	ICP Admin Committee	Clarity on compliance certificate content
5.3.2 Evidence of compliance for Interim Accreditation	28 March 2019	ICP Admin Committee	Clarity on compliance certificate content and include evidence that natural weathering exposure test has commenced
Appendix A	28 March 2019	ICP Admin Committee	Include evidence that natural weathering exposure test has commenced

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PREFACE

This Industry Code of Practice (ICP) was prepared by the uPVC Window Working Group in Australia, comprising representatives of suppliers of unplasticised polyvinyl chloride (uPVC) exterior profile extrusions used for assembled windows and doors in Australian buildings, as well as representatives of the Australian Windows Association and the Vinyl Council of Australia.

The goal of this document is for extruded uPVC profiles to be used in windows and doors in Australian buildings to meet a single generic code to provide customers and consumers confidence in the durability of uPVC profiles in Australian climatic conditions.

This document covers primarily the weathering resistance, colour and strength requirements of uPVC window profiles for use in Australian buildings. These performance requirements were selected as they affect the longevity of the profile. The ICP is implemented in addition to uPVC profiles meeting the requirements of the Australian Window Standard AS2047-2014 and does not replace or confirm compliance with AS2047.

This code does not currently cover testing for the performance of foils and coatings applied to extruded uPVC profiles.

INTERPRETATION

If there are any concerns regarding interpretation of this Code of Practice they should be referred to the relevant association, either the Australian Window Association (AWA) or the Vinyl Council of Australia (VCA).

The final determination of whether the window system complies with AS 2047 or other requirements is the responsibility of the window manufacturer or system supplier.

MAINTENANCE

Routine preventative maintenance in accordance with the manufacturer's instructions is essential to ensure that products achieve their intended useful life.

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PURPOSE

The purpose of this Industry Code of Practice (ICP) is to provide greater confidence to Australian consumers and customers in the durability of uPVC profiles in Australia's high UV climatic conditions.

SECTION 1

SCOPE AND GENERAL

1.1 GENERAL

This document establishes requirements for the material properties, including dimensional stability, weatherability and extrusion quality of white and light coloured unplasticised polyvinyl chloride (uPVC) exterior profile extrusions used for assembled windows and doors. Methods for testing and for identifying exterior profile extrusions that comply with this specification are also provided.

1.2 SCOPE

1.2.1 Window Types

This ICP is applicable to uPVC profile extrusions for fabrication of all types of windows and doors.

Throughout this ICP 'windows' denotes both windows and doors.

This ICP does not cover fabrication of the window or door from the extruded uPVC profiles, nor installation of windows and doors into a building. (Refer to the AWA's Installation Manual for more information on installing uPVC windows.)

1.2.2 Profile Types

The ICP is relevant for both white and light coloured extruded uPVC profiles as well as co-extruded profiles. The performance requirements related to maximum colour change shall be applicable to both white and light coloured profiles.

Extruded profiles tested in compliance with this ICP may contain recycled PVC.

1.2.3 Foils and Coatings

The performance of foils, laminations and coatings including external paint applied to uPVC profiles is not covered by the tests referred to in this ICP. Foils, laminations, paint and coatings applied to uPVC profiles will be subject to the manufacturer's warranties and will comply with relevant standards for such foils and coatings.

1.2.4 New products and formulations

The profile extrusion producer shall immediately respond in terms of compound change or extrusion technology change which could affect weatherability behaviour of the profiles under test in any weathering test site at any stage of the weatherability testing.

New products or formulations of extruded profiles shall qualify for Accreditation after the completion of the 24 month ***natural weathering*** test described in 5.2 or for Interim Accreditation following completion of the accelerated weathering test described in 5.3.

1.3 REFERENCED DOCUMENTS

This document references the following documents

(a) AS 2047 Windows in buildings – Selection and installation
(b) ASTM D4726-09 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Exterior-Profile Extrusions Used for Assembled Windows and Doors
(c) EN 513: 1999 Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors – Determination of the resistance to artificial weathering
(d) EN514 EN 514:2000 Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors. Determination of the strength of welded corners and T-joints
(e) EN 12608: 2003 Unplasticized polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors
(f) ASTM D4216 - 06 Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly (Vinyl Chloride) (CPVC) Building Products Compounds
(g) ASTM G151 - 10 Standard Practice for Exposing Nonmetallic Materials in Accelerated Test Devices that Use Laboratory Light Sources
(h) ASTM G154 - 12a Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials
(i) ABCB National Construction Code's Building Code of Australia

1.4 ACCREDITATION PROCEDURE

Companies seeking accreditation of uPVC profiles to this document must follow the procedure described below:

(a) Meet the Raw Material Requirements outlined in Section 2.
(b) Test sample uPVC extruded profiles according to the tests described in Section 3 in the order described in Figure 3 Test Flow Chart.
(c) Perform those tests according to the test conditions described in Sections 4, 5 and 6.
(d) Meet the performance requirements described in Sections 4, 5 and 6.
(e) Apply labelling and supply accreditation as described in Section 7.

1.5 DEFINITIONS

For the purpose of this document, the definitions given in AS 2047, AS 4145.1 and those below apply:

1.5.1 ***Accredited test facility/accredited laboratory*** - a test facility accredited to perform a given test by a third party accreditation body complying with ISO/IEC 17025.
1.5.2 ***Association*** - either the VCA or AWA, whichever is relevant.
1.5.3 ***Company*** – the manufacturer, supplier, distributor or individual who is seeking accreditation of uPVC profiles to this document.
1.5.4 ***Dry blend compound*** – PVC polymer added together with other ingredients and blended at high speed, for subsequent use directly by extruders or for pelletizing
1.5.5 ***Natural (outdoor) weathering*** – weathering obtained by exposure on a site operated by Allunga Exposure Laboratory, Queensland Australia providing annual global solar radiation per year of approximately 7.5 +/- 0.5 GJ/m2 and an insolation of 3,100 hours +/-100 hours.
1.5.6 ***Product range*** - defined as a set of products with the same composition and produced at the same production facility as the compliant tested profiles

1.5.7 ***Profile*** – an extruded section of unplasticised PVC used for fabrication and installation of window and door frames.
1.5.8 ***PVC*** – Polyvinyl Chloride, or vinyl
1.5.9 ***Resin*** –the polyvinyl chloride powder prior to compounding with additives for extrusion of the profiles
1.5.10 ***Sample*** – the extruded profile and all the components and multiples of the product that are required for testing.
1.5.11 ***uPVC*** – unplasticised PVC

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SECTION 2

RAW MATERIAL REQUIREMENTS

2.1 COMPOSITION REQUIREMENTS

2.1.1 Residual Monomer

The profile extrusions used for assembled windows and doors shall be made principally of uPVC ***dry blend*** compounds meeting or exceeding the requirements of Class 1-20131-13 as defined in Specification ASTM D4216.

The vinyl chloride monomer concentration in the extruded profile shall not exceed 1 mg/kg.

If the profile is manufactured from ***resin*** or ***dry blend*** compounds with a residual vinyl chloride monomer content of less than 1 mg/kg, this requirement shall be deemed to have been met. This requirement is not applicable to recyclate.

2.1.1.1 Evidence of compliance

Certificates of Analysis for ***resin*** or ***dry blend*** compound supplied to the ***Company*** producing the profiles indicating the residual Vinyl Chloride Monomer content of the ***resin*** supplied or a certificate of conformance to this requirement from the resin supplier.

2.1.2 Restricted Additives

The material from which the uPVC profile is produced shall, in addition to uPVC, consist of suitable additives such as lubricants, pigments and stabilisers.

Additives containing compounds based on lead (Pb)or cadmium (Cd) shall not be used except that recycled uPVC material containing these elements may be used provided it is contained within the inner layer of a co-extruded profile, with an external skin of virgin uPVC that does not contain these substances on all visible, exposed surfaces.

2.1.2.1 Evidence of Compliance

Purchasing records for additives or analytical testing of profiles. The compliance threshold for restricted additives is <0.1%.

2.1.3 Rework Material

Clean, homogeneous PVC rework material or rework material containing PVC capstock generated from the manufacturer's own production of the same class compound may be used by the same manufacturer providing that the extruded profiles meet all the requirements of this specification. Material that consists principally of clean PVC rework material containing non-PVC capstock may be used only in the substrate of a capstocked product by the same manufacturer, providing that the extruded profiles meet all of the requirements of this specification.

2.2 USE OF RECYCLATE

Where a sample contains recycled PVC and seeks exemption from requirements in 2.1.2, the ***Company*** shall provide evidence of the percentage composition of recycled PVC and its source.

2.3 AUDITING OF COMPOSITION REQUIREMENTS

Compliance with the composition requirements of Section 2 of this ICP is to be assessed on the basis of objective evidence which may include:

- Technical specifications of the profile including Material Safety Data Sheets and product formulations
- Scientific test results and reports

Evidence must definitively validate claims that the compliance requirements outlined in Section 2 have been achieved. The compliance requirements cannot be customised and are not to be optional, flexible or allowed to be achieved post-accreditation.

Where the auditor identifies non-compliance, the manufacturer will need to adequately address the non-compliance before the auditor can issue a certificate of compliance in relation to the profiles.

2.3.1 The compliance certificate

The certificate of compliance to Section 2 issued by the auditor must include:

- The product range or formulation identification mark or batch number
- the Statement that the certificate is in evidence of compliance of specific uPVC profiles (including names, trademark, etc) to the composition requirements of section 2 of the Industry Code of Practice for uPVC Window Profiles Version 1 2015;
- the date of issue and validity of the certificate; and
- the relevant auditor qualifications.

2.3.2 Auditor qualifications

To be compliant with this ICP, audits are to be conducted by an accredited auditor registered by RABQSA or another equivalent national or international auditor accreditation system, or a JAS-ANZ (or equivalent) accredited certification body.

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SECTION 3
GENERAL CONDITION FOR TESTS

3.1 GENERAL

Samples of the uPVC profiles within the scope of Section 1 for which accreditation is being sought shall be subject to various tests. The tests are to be performed according to Figure 3.1 Test Flow Chart.

The Test Flow Chart contains a series of requirements and tests including:

- Composition requirements of uPVC profiles
- Test A for Charpy Impact Strength and Weld Strength of unexposed profiles;
- Test B for Weathering Resistance and
- Test C for Charpy Impact Strength of exposed profiles. Test C shall be conducted on a sample which has been subjected to Test B.

The tests described in Section 4, 5 and 6 shall be performed under the following conditions.

NOTE: During these tests and within the test conditions specified, reasonable effort shall be made to replicate the conditions of actual field use regarding the installation and operation of the samples*.*

3.2 CONDITIONS

3.2.1 Test Samples

A 'sample' of uPVC extruded profile is defined in the applicable methodology standards identified for each Test. Samples with the same formulation/composition shall be selected from normal production with regards to design, materials and composition. The samples shall not be prototypes.

Weatherability conformance testing requirements are to reflect performance of a "typical" extrusion system profile representing a specific PVC ***Dry blend*** compound and a specific extrusion technology. There is no implied requirement for testing of all the various shaped profiles.

Samples shall be tested in the 'as received' condition and undergo no adjustment or modification unless specified by the test conditions described within this document. Once testing has begun, the samples may not be further adjusted or maintained in any way beyond that allowed for by the test conditions described within this document.

Two sets of extruded uPVC profile samples shall be supplied for each profile to be tested:

- Sample set A for Test A – minimum length of one metre;
- Sample set B for Tests B and C conducted consecutively – minimum length of one metre.
  NOTE: Where both laboratory and accelerated weathering tests are being completed, Sample set B shall consist of two subsets of samples: sample group B-1 tested under ***Natural outdoor weathering*** *conditions in accordance with section 5.2 and sample group B-2 tested under laboratory weathering conditions in accordance with section 5.3.*

The Reference Sample shall be kept in a manner to preserve its 'as new' condition. All sample sets shall have a product range or formulation identification mark or batch number, be labelled and retained until the end of the accreditation process.

Only once the uPVC profile sample has complied with the Composition Requirements (section 2) and passed Tests A, B and C can an application for accreditation be made for that product. If any sample fails a composition requirement or test, then the product is deemed non-compliant with this ICP.

3.2.2 Type-testing of similar products

Groups of similar products which are compositionally equivalent and/or equivalent colour may be type-tested to determine performance of the whole group.

3.3 TEST FACILITIES

It is a requirement that the tests be performed in an ***Accredited test facility*** to the Standards defined. This requirement is specified in the relevant tests described in Sections 4, 5 and 6. That test facility is responsible for the handling, storage, safety and confidentiality of the uPVC profile samples and intellectual property.

3.3.1 Testing safety

The testing described in this document involves procedures and equipment that are potentially dangerous to those performing the tests, bystanders and facilities. Careful planning should be undertaken before testing commences to ensure that all avoidable dangers to people and facilities are minimised. Testing should only then be performed by persons trained in the safe operation of the required equipment. This document does not describe the safety equipment and practices necessary; this information should be obtained independently.

3.4 ONGOING COMPLIANCE AUDITS

Profile samples may be randomly selected by the Australian Window Association from companies or fabricators for auditing purposes and assessment of ongoing Impact Strength compliance.

3.5 DISCLAIMER

Audits to test compliance to the technical standards referenced in this ICP do not guarantee or ensure the overall quality of the window profile. Quality assurance rests with the profile suppliers, window fabricators and installers.

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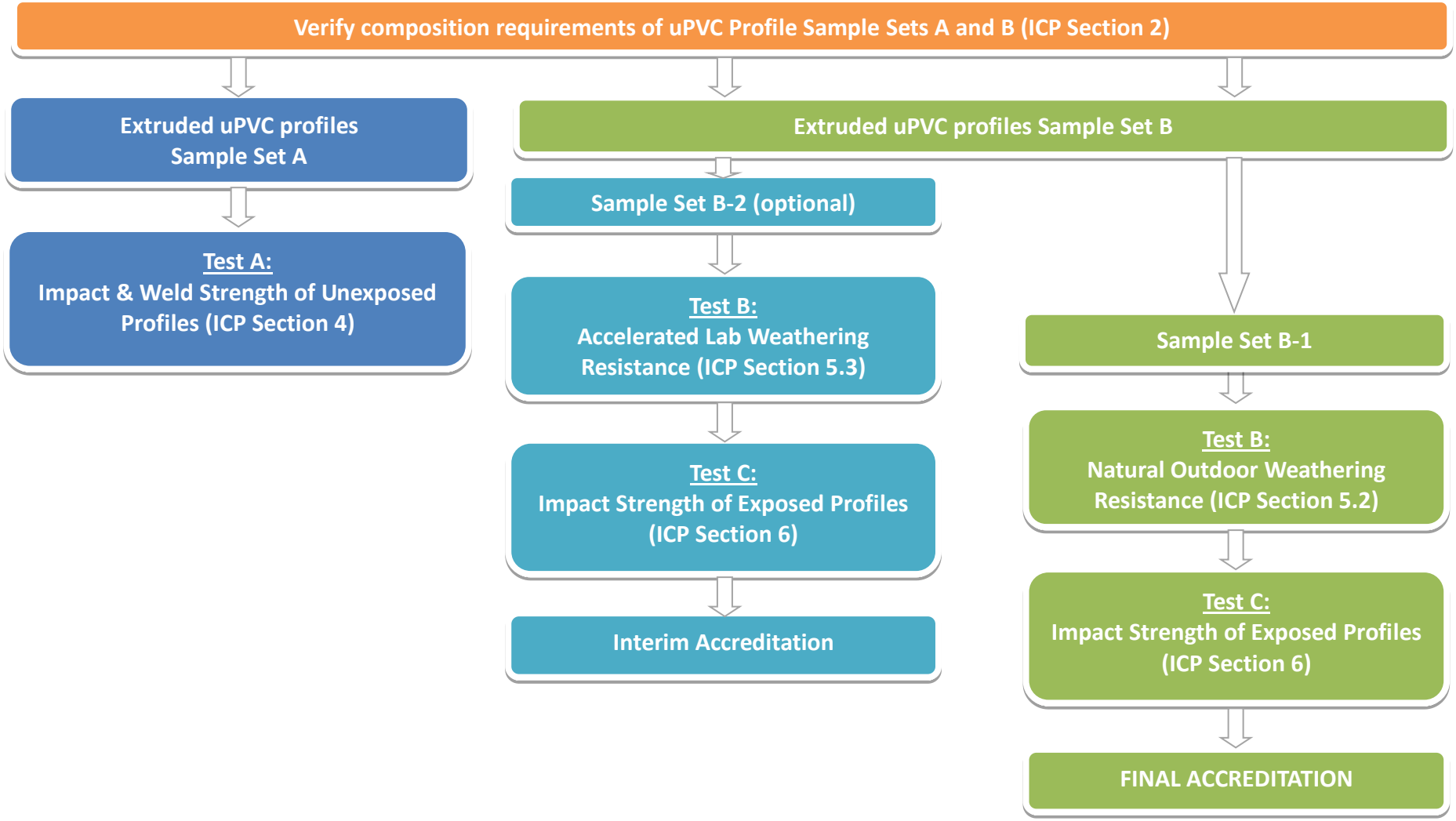
FIGURE 3 Test Flow Chart



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SECTION 4
TEST A: STRENGTH OF UNEXPOSED PROFILES

Sample set A shall be subject to the Charpy impact strength test and weld strength testing. These tests shall be performed on a set of unexposed profile sections.

4.1 THE CHARPY IMPACT STRENGTH TEST CONDITIONS

Manufacturers producing profiles in both class A and B according to EN12608 (refer to Table 4.3) may select either one of these classes for impact testing. Any manufacturer producing a profile in class C according to EN12608 shall test class C separately.

Equivalent sections of Sample set A profile(s) shall be tested for impact strength in accordance with EN ISO 179-1 at 23 ± 2 °C, by using method designation ISO 179-1/1fA.

The test specimen shall be taken from the exposed face of a main profile such that the longitudinal direction of the test specimen and profile are the same. The test specimen shall have a length of 50 ± 1 mm, a width of 6 ± 0.2 mm and a thickness equal to the wall thickness of the profile. The residual width between the notches shall be 3 ± 0.1 mm.

The test specimen shall be conditioned at 23 ± 2 °C for at least 16 hours. The Charpy test conditions such as humidity shall be very similar to those at the time of conditioning of the samples and the time shall be minimised between conditioning and testing to ensure samples are not affected by changes in conditions as per the ISO standard.

The recommended pendulum energy should be 2 J, as given in EN 513.

4.2 WELD STRENGTH TEST CONDITIONS

Testing shall be conducted on welded, unexposed profiles from Sample set A in accordance with EN514.

4.3 PERFORMANCE REQUIREMENTS FOR TEST A

4.3.1 Impact Strength

Upon completion of the tests identified in Section 4.1, uPVC profiles tested shall have met the performance requirements given in Table 4.3 to be deemed compliant with this Industry Code of Practice.

The Charpy impact strength shall not be below the thresholds given in Table 4.3 below for each profile class according to the wall thickness.

Table: 4.3 Charpy Impact Strength of Unexposed Profiles

Profile Class according to EN12608	Profile thickness mm	Impact strength before weathering kJ/m^2	Impact strength after weathering kJ/m^2	Maximum impact reduction after weathering %
A	≥2.8	≥55	≥33	40
B	≥2.5 and <2.8	≥60	≥42	30
C	<2.5	≥65	≥52	20

NOTE: Recycled uPVC plastic, as defined in ASTM Guide D5033, may be used in this product if all the requirements of the ICP are met by the extrusions containing PVC recycled plastic.

After each test, the tested samples shall maintain a uniform colour and be free of any visual surface or structural changes such as peeling, chipping, cracking, flaking, and pitting.

4.3.2 Weld Strength

Breaking force and weldability shall comply with EN514.

4.4 EVIDENCE OF COMPLIANCE FOR BOTH IMPACT & WELD STRENGTH

A signed and dated compliance certificate(s) issued by the ***Accredited laboratory*** performing or commissioning each or both tests which confirms:

- The name of the testing laboratory
- The date of testing and the duration of the compliance certificate
- Identification of testing report number traceable to ISO 17025
- The name of the ***Company*** manufacturing or supplying the profile sample(s)
- A description of the uPVC profile sample(s) tested including dimensions, end product use
- The test methodology applied
- The compliance status/performance of the profile sample

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SECTION 5
TEST B: RESISTANCE TO WEATHERING

5.1 TEST OPTIONS

Sample set B uPVC extruded profiles will be subject to a two year ***natural outdoor weathering*** test at Allunga Exposure Laboratory's Townsville site in Queensland. The ***natural weathering*** test follows ASTM D4726 methodology adapted for Australian climatic conditions.

NOTE: Profiles tested at an accredited natural weathering laboratory in the US Arizona climate for 2 years and meeting the colour change requirements stipulated below will qualify for compliance under this Industry Code of Practice.

Following completion of Test B, the change in colour of the sample shall be measured in accordance with EN 513 (see 5.2.1 and 5.3.1 below).

5.2 NATURAL WEATHERING TEST CONDITIONS & PERFORMANCE REQUIREMENTS

The test methodology used at the outdoor weathering facility shall be based on ASTM D4726 and establishes requirements for the material properties, including weatherability and extrusion quality, of uPVC exterior profile extrusions used for assembled windows and doors. Methods for testing and for identifying exterior profile extrusions that comply with this specification are provided in ASTM D4726.

The exposure shall be conducted at an angle of 45° N, plywood backed, in accordance with Practice ASTM D1435 and Practice ASTM G147.

Colour-hold guidelines are presently limited to white, and light coloured profiles which are not coated, laminated or painted externally. Additional colours will be added as colour guidelines are developed.

Extruded uPVC profiles which demonstrate weathering behaviour within reasonable conformance to the test's target guidelines during a 2-year test period can be anticipated to weather without exhibiting unacceptable colour changes.

5.2.1 Performance Requirements for Test B Natural Weathering

Upon completion of the ***natural weathering*** test identified in Section 5.1, uPVC profiles that have met the performance requirements given here shall be deemed compliant with this Industry Code of Practice.

NOTE: Recycled uPVC plastic, as defined in ASTM Guide D5033, may be used in this product if all the requirements of the ICP are met by the extrusions containing PVC recycled plastic.

The PVC compound in extruded section shall maintain uniform colour and be free of any surface or structural changes, such as peeling, chipping, cracking, flaking, or pitting following testing.

Colour Change Evaluation

After an exposure in accordance with the test conditions mentioned above, the change in colour between the unexposed Sample set A and exposed Sample set B, expressed as ΔE^* shall be ≤ 5 and Δb^* shall be ≤ 3[1], in accordance with EN 513.

[1] The limit to the change in colour applies in both directions of the colour spectrum.

5.2.2 Evidence of compliance

A signed and dated compliance certificate issued by the ***Accredited laboratory*** performing the test which confirms:

- The name of the testing laboratory
- The date of testing and the duration of the compliance certificate
- Identification of testing report number traceable to ISO 17025
- The name of the ***Company*** manufacturing or supplying the profile sample(s)
- A description of the uPVC profile sample(s) tested including dimensions, end product use
- The test methodology applied
- The compliance status/performance of the profile sample with respect to general appearance and colour change

5.3 INTERIM ACCREDITATION

'Interim Accreditation' will be granted to profiles that have met the performance requirements of an Accelerated Laboratory Weathering Resistance test provided the following conditions are met:

(i) A sample set ("B-2") of profiles taken from the ***product range*** shall have been exposed under EN 12608 severe climatic (Climate S) conditions or ASTM G151 and G154 methodology[2] adapted for Australian climatic conditions to the equivalent of 15 GJ/m2 radiation in accordance with EN 513 or ASTM G154.

And

(ii) a two year ***natural outdoor weathering*** test at Allunga has commenced.

5.3.1 Performance Requirements for Test B Accelerated Laboratory Weathering

Colour Change Evaluation: After an exposure in accordance with the test conditions mentioned above, the change in colour between the unexposed and exposed test specimens, expressed as ΔE* shall be ≤ 5 and Δ b* shall be ≤ 3[3], in accordance with EN 513.

The PVC compound in the extruded section shall maintain uniform colour and be free of any visual surface or structural changes, such as peeling, chipping, cracking, flaking, or pitting following testing.

Upon completion of the Accelerated Laboratory Weathering Resistance test, uPVC profiles tested that have met the performance requirements given here shall be deemed compliant for an interim period with this Industry Code of Practice while compliance to ***natural outdoor weathering*** Test Conditions specified in section 5.2 is being conducted.

5.3.2 Evidence of compliance for Interim Accreditation

A signed and dated compliance certificate issued by the accredited laboratory performing the test which confirms:

- The name of the testing laboratory
- The date of testing and the duration of the compliance certificate
- Identification of testing report number traceable to ISO 17025

[2] These tests define the mechanical and visual property requirements of a profile exposed to ultra violet (UV) radiaton and aged.
[3] The limit to the change in colour applies in both directions of the colour spectrum.

- The name of the ***Company*** manufacturing or supplying the profile sample(s)
- A description of the uPVC profile sample(s) tested including dimensions, end product use
- The test methodology applied
- The compliance status/performance of the profile sample with respect to general appearance and colour change
- Exposure Confirmation dated and issued by ***natural weathering*** laboratory to confirm the start of the natural weathering test process

5.3.3 Validity of Interim Accreditation Certificates

The maximum period of validity of Interim Accreditation certificates shall be thirty (30) months.

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SECTION 6
TEST C: IMPACT STRENGTH OF EXPOSED PROFILES

Following Test B, sample set B shall be subject to Test C: the Charpy impact strength test.

6.1 TEST CONDITIONS

Manufacturers producing profiles in both class A and B according to EN12608 (refer Table 6.2) may select either one of these classes for impact testing. Any manufacturer producing a profile in class C according to EN12608 shall test class C separately.

Equivalent sections of Sample set B profile(s) shall be tested in accordance with EN ISO 179-1 at 23 ± 2 °C, by using method designation ISO 179-1/1fA.

The test specimen shall be taken from the exposed face of a main profile such that the longitudinal direction of the test specimen and profile are the same. The test specimen shall have a length of 50 ± 1 mm, a width of 6 ± 0.2 mm and a thickness equal to the wall thickness of the profile. The residual width between the notches shall be 3 ± 0.1 mm.

The test specimen shall be conditioned at 23 ± 2 °C for at least 16 hours. The recommended pendulum energy should be 2 J, as given in EN 513. The weathered surface of the test specimen shall be in the tensile area.

6.2 PERFORMANCE REQUIREMENTS FOR TEST C

Upon completion of the tests identified in Section 6.1, uPVC profiles tested shall have met the performance requirements given in Table 6.2 below to be deemed compliant with this Industry Code of Practice.

After an exposure in accordance with Test B, the Charpy impact strength of exposed profiles from Sample set B shall not be below the thresholds given in the table below for each profile class according to the wall thickness.

Table 6.2 Charpy Impact Strength of Exposed Profiles

Profile Class according to EN12608	Profile thickness mm	Charpy Impact strength before weathering kJ/m^2	Charpy Impact strength after weathering kJ/m^2	Maximum impact reduction after weathering %
A	≥2.8	≥55	≥33	40
B	≥2.5 and <2.8	≥60	≥42	30
C	<2.5	≥65	≥52	20

NOTE: Recycled uPVC plastic, as defined in ASTM Guide D5033, may be used in this product if all the requirements of the ICP are met by the extrusions containing PVC recycled plastic.

After each test, the tested samples shall maintain a uniform colour and be free of any visual surface or structural changes such as peeling, chipping, cracking, flaking, and pitting.

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6.3 EVIDENCE OF COMPLIANCE

A signed and dated compliance certificate issued by the ***Accredited laboratory*** performing or commissioning the test which confirms:

- The name of the testing laboratory
- The date of testing and the duration of the compliance certificate
- Identification of testing report number traceable to ISO 17025
- The name of the ***Company*** manufacturing or supplying the profile sample(s)
- A description of the uPVC profile sample(s) tested including dimensions, end product use and confirmation of weathering exposure
- The test methodology applied
- The compliance status/performance of the profile sample

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SECTION 7

ACCREDITATION PROCESS

7.1 GENERAL

Evidence of compliance to this Industry Code of Practice must be provided for each unique ***Product range***, where the "Product range" is defined as a set of products with the same composition of the compliant tested profiles.

The ***Company*** shall issue a Statement of Compliance with this ICP which shall:

- Identify the ***Product range*** represented by the sample(s) tested
- Identify the tests conducted in accordance with Sections 4, 5 and 6.
- Attach a certificate of compliance issued by an accredited auditing body or auditor to verify compliance with the composition requirements of section 2.
- Attach relevant certificate/s of compliance to the Weathering Resistance, Impact Strength and Weld Strength Tests issued by the ***Accredited laboratory/ies***.

Table 7.1: Summary of documents required for accreditation

Verification compliance evidence		**Issuer**
1.	Statement of Compliance	Company
2.	Certificate of compliance with composition requirements (Section 2)	Accredited auditing body
3.	Certificate of compliance of Charpy Impact Strength tests of unexposed profiles (Section 4.3.1)	Accredited laboratory
4.	Certificate of compliance of Weld Strength test of unexposed profiles (Section 4.3.2)	Accredited laboratory
5.	Certificate of assessment of compliance with Weathering Resistance requirements of exposed profiles (Section 5)	Accredited laboratory
6.	Certificate of compliance of Charpy Impact Strength tests of exposed profiles (Section 6.2)	Accredited laboratory

This Statement of Compliance shall be submitted to the ICP Administration Committee with an application for the use of the uPVC Profile Accreditation licensed trade mark (Figure 7.1) signifying compliance with this ICP. The VCA is enabling relevant participants who demonstrate compliance with

the ICP to use the uPVC Profile Accreditation Trade Mark for Windows and Doors on licensed products to indicate their compliance with the ICP.

Figure 7.1 uPVC Profile Accreditation licensed trade mark

The VCA is the owner of this trade mark; as such the VCA requires users of the trade mark to comply with the system of VCA's Licensee Registration before they can use the trade mark. Refer to Appendix B for information on the licensing arrangement of the trade mark.

It is important to note that it is the profile ***Product range*** that is authorised for accreditation and not the compound, colour, or extruder of the profile.

7.2 ACCREDITATION PROCESS

In order to be certified as compliant with this ICP, the product shall provide evidence of compliance with the Composition requirements AND the Weathering Resistance requirements AND the Impact Strength AND Weld Strength Test requirements and provide the Statement of Compliance as per 7.1.

Companies with compliant profile may be issued with a licenced trade mark signifying compliance with this ICP and a certificate coded for identification of the licensee and plant location.

The uPVC profiles, or their packaging, invoicing and/or literature may be labelled with the ICP licenced trademark.

Licensees of the trademark shall comply with the trade mark rules.

There is no process of review of the licensee declarations by the VCA or the ICP Administration Committee other than confirmation of the assessment of the compliance evidence and validations provided by the auditors. The VCA claims no expertise in relation to the compliance of products to meet the ICP criteria, the liability for which is taken up by those who issue the test compliance certificates.

No endorsement of registered products by the VCA or related parties is implied through the use of the ICP trade mark.

7.3 LICENCE PERIOD

The maximum term of the licence agreement is two years from the date of issue. At the termination of the two year period, the licensee may apply to renew the licence for the same ***Product Range*** upon written confirmation from an authorised signatory of the ***Company*** that the ***Product Range*** is unchanged.

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SECTION 8

ADMINISTRATION

8.1 ADMINISTRATION COMMITTEE

The ICP Administration Committee is comprised of staff of the VCA, the AWA and members of the VCA, including suppliers of extruded uPVC profiles for windows and doors. Representation of other stakeholders including uPVC window fabricators, installers and consumers is invited.

8.2 MONITORING

The ICP Administrative Committee shall monitor the issuing, use and expiry of the licenced trademark in accordance with its Trade Mark Rules and Licence Agreement.

The profile producer shall include documented procedures and processes in its business management systems to assure ongoing conformance of the product with the ICP specifications, including quality control records and logs.

8.3 NON-COMPLIANCE

Program licensees that fail to maintain compliance of the Licensed Products with the technical standards on which the ICP Licence was granted shall cease the use of the licence mark and the licence agreement is terminated.

Deliberate use of the licence mark in relation to non-compliant product may incur sanctions including corrective advertising.

8.4 COMPLAINTS HANDLING

8.4.1 Consumer complaints against product suppliers

The VCA requires its ICP trade mark licensees to respond to customer complaints in a timely manner. Licensee contact information is available through the uPVC Certified Products Directory on the uPVC Window Alliance website (www.upvcwindows.org.au).

8.4.2 Complaints of fraudulent claims of accreditation

If a manufacturer claims ICP accreditation of their products but this claim cannot be substantiated, contact the Chair of the ICP Administration Committee via email: info@vinyl.org.au.

8.4.3 Complaints against the ICP program

Complaints against the ICP accreditation program itself including regarding decisions on and uses of the ICP Trade Mark should be brought to the attention of the Chair of the ICP Administration Committee c/o the Vinyl Council of Australia via email: info@vinyl.org.au.

These complaints will be dealt with in an open forum in which all correspondence is available to all stakeholders.

Complaint resolution procedure shall involve:

- appeal to the Board of the VCA in writing by the Registrant
- review of the complaint by the VCA Board within 4 weeks of the date of receipt of the complaint,
- the appointment of an independent arbitrator if necessary,

- engagement of parties in dispute,
- decision of the parties on the complaint posted on the VCA web site.

An aggrieved party may further appeal to the Registrar of Trade Marks.

8.5 ICP REVIEW

The implementation and effectiveness of the ICP will be reviewed by the ICP Administration Committee five years after commencement of the program.

The review and its recommendations will be published on the uPVC Window Alliance website and/or the Vinyl Council of Australia website.

Vinyl Council Australia

APPENDIX A

SUMMARY OF EVIDENCE OF ICP COMPLIANCE

CRITERIA	REQUIREMENT	EVIDENCE OF COMPLIANCE
Residual Vinyl Chloride Monomer	The vinyl chloride monomer concentration in the extruded profile shall not exceed 1 mg/kg.	Refer 2.1.1.1 Audit certificate from an accredited auditor or certification body (refer 2.3.2)
Restricted Additives	Additives containing compounds based on lead (Pb) or cadmium (Cd) shall not be used except that recycled uPVC material containing these elements may be used provided it is contained within the inner layer of a co-extruded profile, with an external skin of virgin uPVC that does not contain these substances.	Refer 2.1.2.1 Audit certificate from an accredited auditor or certification body (refer 2.3.2)
Recycled PVC use	Percentage composition of recycled PVC and its source	Refer 2.2 Audit certificate from an accredited auditor or certification body (refer 2.3.2)
Impact strength of unexposed profiles	Refer Table 4.3 Uniform colour; free of any visual surface or structural changes such as peeling, chipping, cracking, flaking, and pitting.	Refer 4.4 Certificate of compliance from Accredited laboratory
Weld Strength	Breaking force and weldability shall comply with EN514	Refer 4.4 Certificate of compliance from Accredited laboratory
Weathering	Uniform colour; free of any surface or structural changes, such as peeling, chipping, cracking, flaking, or pitting Change in colour between the unexposed Sample set A and exposed Sample set B, expressed as ΔE* shall be ≤ 5 and Δ b* shall be ≤ 3, in accordance with EN 513. Refer to 5.2.1 (***Natural Weathering***) or 5.3.1 (Accelerated Laboratory Weathering)	Refer 5.2.2 (***Natural Weathering***) or 5.3.2 (Accelerated Laboratory Weathering) Certificate of compliance from Accredited laboratory *Plus, for Interim Accreditation*: Exposure Confirmation dated and issued by natural weathering laboratory to confirm the start of the natural weathering test process
Impact strength of exposed profiles	Refer Table 6.2	Refer 6.3 Certificate of compliance from Accredited laboratory

Vinyl Council Australia

APPENDIX B

TRADE MARK LICENCE RULES

1. The Registrant must become a Licensee registered with the VCA for the purposes of the Licence and the use of the Trade Mark.
2. A Licensee must apply for registration of its legal entity with the VCA using the Licence Registration Form supplied. Applications made to the ICP Administration Committee must use the forms provided and must be signed by an officer of the organisation making the registration application.
3. An annual Licensee Registration Fee shall apply to cover administration costs.
4. Evidence of compliance to the Industry Code of Practice for uPVC Profiles version 1 2015 must be provided for each unique ***Product range***, where the "Product range" is defined as a set of products with the same composition of the compliant tested profiles. Evidence consists of a true copy of the third party verification certificate of compliance issued in accordance with the ICP.
5. When a product registration is accepted by the ICP Administration Committee a Product Registration Number will be issued along with the Trade Mark.
6. Product Registration Fees may apply as dictated by the Board of Directors of the VCA, to cover the costs incurred in administration, marketing and other elements of maintenance of the Trade Mark.
7. A Licensee must be a registered legal organisation and comply with relevant Australian regulations.
8. Licensee registrations are not transferable to another organisation. Product registrations are not transferable.
9. The period of validity of registration corresponds to the term of the Licence, itself determined by the Audit certificate issued.
10. The Licensee must reapply for a Trade Mark Licence after registration expires. The Licensee can withdraw a Product registration at any time with written notice of such withdrawal to the VCA.
11. There is no process of review of the Licensee declarations by the VCA other than confirmation of the completeness of the compliance evidence and validations provided. The VCA claims no expertise in relation to the compliance of products to meet the ICP criteria, the liability for which is taken up by those who verify the product declarations.