

AIM OF CREDIT

To reduce the environmental and health impacts of Polyvinyl Chloride (PVC) by encouraging the use of PVC material which adheres to best practice guidelines.

CREDIT CRITERIA

Up to two points are awarded when a percentage of a project's flooring, cable, pipe and conduit - which together account for the majority of PVC use in buildings and which are referred to as 'common uses of PVC' in this credit – meet the Best Practice Guidelines for PVC in the built environment. For further information on the Best Practice Guidelines see the Additional Guidance section of this credit.

Points are awarded as follows:

- One point where at least 60% of the common uses of PVC products in buildings (by cost) complies; and
- Two points where at least 90% of the common uses of PVC products in buildings (by cost) complies.

If the cost of PVC products in common uses of PVC represents less than 0.05% of the project's total contract value, or there are no PVC products present in the project for any of the common uses of PVC, this credit is 'Not Applicable' and is excluded from the points available used to calculate the Materials Category score.

COMPLIANCE REQUIREMENTS

Common uses of PVC

This credit addresses the common uses of PVC in buildings. This refers only to:

- Pipes, conduit and associated fittings;
- Wire and cable insulation; and
- Flooring* and resilient wall covering products that contain PVC.

*Flooring refers to vinyl flooring or a carpet containing PVC backing.

Common uses of PVC products that are re-used are excluded from this credit. Any PVC product not included in common uses of PVC is not addressed by this credit (for example PVC windows) and is neither positively nor negatively treated by the credit.

Calculating PVC Product Cost:

The 'total cost of PVC products' for the purpose of providing cost calculations shall be determined by the cost of the entire product (excluding installation costs); the percentage of PVC in the product is irrelevant for purposes of this credit.

Evidence of Independent Verification

Documenting compliance of a PVC product to the Guidelines shall be demonstrated using any of the following pathways:

- ISO 14001 certified EMS that includes the requirements of the Best Practice Guidelines;
- Independently audited manufacturer’s declaration of compliance to the Best Practice Guidelines; or
- Product third party certification of compliance to the guidelines (ISO type 5 certificate or eco label).

For further information refer to the Additional Guidance section.

DOCUMENTATION: DESIGN RATING
Submit all the evidence and ensure it readily confirms compliance.
<input type="checkbox"/> Short report
<input type="checkbox"/> Extract(s) from the specification(s)
<input type="checkbox"/> Confirmation from the quantity surveyor
<input type="checkbox"/> Extract(s) from the contract
Where the cost of PVC is less than 0.05% of the project’s total value:
<input type="checkbox"/> Confirmation from the quantity surveyor
<input type="checkbox"/> Extract(s) from the contract
Where no PVC is used in the project:
<input type="checkbox"/> Confirmation from the architect, quantity surveyor or head contractor
Short report prepared by a quantity surveyor, cost manager, cost planner, cost estimator, or architect that describes how the Credit Criteria have been met by:
<ul style="list-style-type: none"> • Identifying all pipe, conduit and associated fittings, wire and cable insulation and flooring products, and stating whether they contain PVC; • Stating which PVC products in common uses of PVC are compliant with the Credit Criteria (including total combined cost); • Stating which PVC products in common uses of PVC are not compliant with the Credit Criteria (including total combined cost); • Stating the percentage (by cost) of the total PVC products in common uses of PVC that is compliant; and • Referencing the extracts from the specifications to support the claims in the short report.
(The PVC schedule template found in Additional Guidance may be used as a basis for the some aspects of the short report)
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Extract(s) from the specification(s):

- Requiring that the specified common uses of PVC are independently verified as compliant with the Best Practice Guidelines for PVC in the Built Environment. The specification must specifically state the three methods of demonstrating compliance (see Additional Guidance); and
- Requiring any substitute PVC product of a specified PVC product to be compliant with the Credit Criteria.

Where the credit is not applicable:

Confirmation from the quantity surveyor comparing the total cost of PVC products in common uses of PVC specified in the project against the project’s total contract value.

Extract(s) from the contract that includes the project’s total value.

Confirmation from the architect, quantity surveyor or head contractor confirming that no new PVC products in common uses of PVC are specified in the project.

DOCUMENTATION: AS BUILT RATING

Submit all the evidence and ensure it readily confirms compliance.

- Short report
- Evidence of Independent Verification
- Confirmation from the head contractor or supplier(s)
- Confirmation from the quantity surveyor
- Extract(s) from the contract

Where the cost of PVC is less than 0.05% of the project’s total value:

- Confirmation from the quantity surveyor
- Extract(s) from the contract

Where no PVC is present in the project:

- Confirmation from the architect or head contractor

Short report describing how the Credit Criteria have been met by providing:

- An as-installed PVC schedule prepared by a quantity surveyor, cost manager, cost planner, cost estimator, or architect showing cost calculations to demonstrate how the Credit Criteria is met. The PVC schedule must provide:
 - Type of common uses of PVC products ;
 - Product and supplier names;
 - Indication of compliance;
 - Reference to evidence of independent verification;

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- Quantities of installed products;
- Total costs of compliant and non-compliant products; and
- The percentage (by cost) of the total common uses of PVC products that are compliant with the Credit Criteria.

See Additional Guidance for PVC schedule template example that must be included with the short report.

Evidence of independent verification from the supplier demonstrating how PVC products comply with the Best Practice Guidelines for PVC in the Built Environment.

Confirmation from the Head Contractor or Supplier(s) confirming that the PVC products listed in the PVC schedule have been supplied and installed.

Where the credit is not applicable:

Confirmation from the Quantity Surveyor comparing the total cost of common uses of PVC products installed in the project against the project's total contract value.

Extract(s) from the contract that includes the project's total value.

Confirmation from the architect or head contractor that no new PVC products in common uses of PVC are installed in the project.

ADDITIONAL GUIDANCE

Best Practice Guidelines for PVC in the Built Environment

The Best Practice Guidelines for PVC in the Built Environment (Guidelines) have been developed by the PVC Expert Reference Panel (appointed February – September 2009) and the GBCA as part of the 'PVC Minimisation' credit review. The Guidelines cover environmental impacts and health risks associated with the manufacture and end of life management of the common uses of PVC products used in buildings. Full details of the Guidelines are provided in the *Literature Review and Best Practice Guidelines for the Life Cycle of PVC Building Products* available on the GBCA website.

Manufacturers and suppliers of common uses of PVC products should obtain independent third-party verification to demonstrate that their products fully comply with the Best Practice Guidelines.

Independent third party verification of compliance with the Best Practice Guidelines is intended to provide the market with simple methods to demand, and be assured of receiving, PVC products that have been manufactured, sold, tracked and will potentially be reclaimed according to best practice environmental and health impact minimisation criteria.

Evidence of Independent Verifications

Documenting compliance of a PVC product to the Best Practice Guidelines shall be demonstrated using any of the following pathways:

1. Environmental Management System (EMS): Inclusion of the Best Practice Guidelines for PVC in the manufacturer or supplier's independently audited ISO 14001, Environmental Management Systems (EMS). Audits must be conducted by a JAS-ANZ (or equivalent) accredited certification body on a biannual basis. The compliance certificate issued by the auditor must provide written assurance of compliance to the guidelines and serves as the documentation needed to establish compliance with the credit via the EMS option; or
2. Product Declaration: Manufacturer or supplier product declaration that the producer-specific and product performance-specific criteria of the Best Practice Guidelines for PVC have been met for a specific product. The product declaration must be independently audited on a biannual basis by either an accredited auditor registered by RABQSA or another equivalent national or international auditor, or a JAS-ANZ (or equivalent) accredited certification body. A copy of the compliance certificate issued to the manufacturer/supplier by the auditor must be included in the Green Star submission along with a copy of the product declaration. These two items serve as the documentation required to establish compliance with the credit via the Product Declaration option; or
3. Product Certification: Independent accreditation program(s) or product certification schemes that integrate the producer-specific and product performance-specific criteria of the Guidelines into standard(s) or certification criteria (e.g. Type 5 ISO product certification, and eco labels). Independent accreditation programs and product certification schemes must either be JAS-ANZ accredited or pre-qualify for GBCA recognition by demonstrating full compliance with Part I, Section A – Governance and Transparency of the GBCA Assessment Framework for Product Certification Schemes. Evidence of independent accreditation of the product(s) (e.g. to an ISO Type 5 certification such as an Australian Standard or to a GBCA-recognised eco label) must be provided to Green Star project teams for inclusion in Green Star submissions and serves as the documentation needed to establish compliance with the credit via the Product Certification option.

Note: A guidance document detailing how the criteria of the Best Practice Guidelines for PVC in the Built Environment will be verified will be available from the GBCA website. The guidance document is to be incorporated in technical standards (e.g. Australian Standards applicable to PVC pipe) or eco labels and applied by all auditors undertaking assessment of products against the Best Practice Guidelines. The GBCA will list relevant standards or eco labels as these become available on the GBCA website.

Re-used PVC

Re-used PVC is defined as PVC products pre-existing in a building or fitout, or PVC products procured from a second hand source. Re-used PVC product sources may include, but are not limited to second hand retailers, removalists, auction houses, and demolition works from previous sites.

Re-used PVC products may be excluded from documentation in this credit.

Recycled content in PVC products

Products containing recycled PVC content shall be documented in the credit and comply with the Best Practice Guidelines as even PVC products with high recycled content require some virgin PVC in their production. Claims of recycled content in such products by suppliers or manufacturers must be independently verified. This requirement is incorporated in the Best Practice Guidelines for PVC in the Built Environment.

PVC Schedule

For Green Star - As Built submissions, the percentage (by cost) of PVC products addressed by this credit and installed in the building, shall be demonstrated using the following PVC schedule template. Project teams should enter the type of product (e.g. Pipe), supplier name, indication of compliance, type of compliance documentation provided, reference to compliance documentation attachments and quantities of each product into the PVC schedule. At the bottom of the PVC schedule, project teams must add up all of the line item costs of the compliant and non-compliant products as well as the combined total costs of all PVC products listed in the schedule. The percentage of PVC products that comply with the Best Practice Guidelines for PVC must be at least 60% to achieve one point and at least 90% to achieve two points.

Table 1: PVC schedule template example

Type of Common PVC Use	Product Name	Supplier Name	Compliant with Best Practice Guidelines for PVC (Y/N)	Type of Compliance Documents Provided and Reference to Attachments to Schedule*	Quantity by area (m ²), lineal metres (lm), or number of items (no) **	Total Cost Compliant Products	Total Cost Non - Compliant Products
Pipe	Storm-water	Pipex	Y	Australian Standard certificate (Type 5 ISO) (Attachment A)	480 (lm)	\$14,000	
Pipe	Gas	Pipex	Y	Australian Standard certificate (Type 5 ISO) (Attachment B)	300 (lm)	\$6,000	
Pipe	Water	Pipex	Y		500 (lm)	\$10,000	
Pipe	Sewer	Pipex	Y	Australian Standard certificate (Type 5 ISO) (Attachment C)	350 (lm)	\$8,000	
Pipe Fittings	Pipe Fittings	Fitthal	N	-	400 (no)		
Conduit Fittings	Conduit fittings	Fitthal	N	-	600 (no)		\$2,000
Conduit	Electric	Candu	Y	EMS certificate (Attachment D)	300 (lm)	\$5,000	\$1,500
Conduit	Comms	Candu	Y	EMS certificate (Attachment E)	500 (lm)	\$7,500	
Wire/Cable Insulation	Mains	Electrix	N	-	200 (lm)		
Wire/Cable Insulation	Submains	Electrix	N	-	400 (lm)		\$8,000
Wire/Cable Insulation	Subcircuit	Electrix	N	-	800 (lm)		\$8,000

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PVC Credit



Type of Common PVC Use	Product Name	Supplier Name	Compliant with Best Practice Guidelines for PVC (Y/N)	Type of Compliance Documents Provided and Reference to Attachments to Schedule*	Quantity by area (m ²), lineal metres (lm), or number of items (no) **	Total Cost Compliant Products	Total Cost Non - Compliant Products
Wire/Cable Insulation	Phone	Wired	Y	Product Declaration (Attachment F)	400 (lm)	\$6,000	\$10,000
Wire/Cable Insulation	Data	Wired	Y	Product Declaration (Attachment G)	400 (lm)	\$10,000	
Wire/Cable Insulation	Security	New-Wire	Y	EMS certificate (Attachment H)	200 (lm)	\$3,000	
Wire/Cable Insulation	Fire alarms	New-Wire	Y	EMS certificate (Attachment H)	200 (lm)	\$3,000	
Flooring	Carpet tiles	Carpet-Source	Y	Eco label certificate (Attachment I)	950 (m ²)	\$40,000	
Flooring	Resilient tiles	Walkeasy	Y	Product Declaration (Attachment J)	250 (m ²)	\$5,000	
Flooring	Resilient sheet floor	Walkeasy	Y	Product Declaration (Attachment K)	600 (m ²)	\$10,000	
Total Cost of All Compliant Products						\$127,500	
Total Cost of All Non-Compliant Products							\$29,500
Combined total Cost of all PVC Products in Schedule						\$157,000	
Percentage of PVC Products Compliant with the Best Practice Guidelines for PVC (\$127,500 / \$157,000) x 100 = 81% compliant products (achieves ONE point)						81%	

- * Provide certificates for compliance documentation as attachments to the PVC schedule (e.g. As suggested in this example with attachments A-K).
- ** Measurements and cost estimates of PVC products must be conducted in accordance with The Australian Standard Method of Measurement for Building Works – Fifth Addition, published by the Australian Institute of Quantity Surveyors (AIQS 2008).

BACKGROUND, REFERENCES AND FURTHER INFORMATION

Please refer to the *Background and Outcomes of the PVC Minimisation Credit Review and the Literature Review and Best Practice Guidelines for the Life Cycle of PVC Building Products* available on the GBCA website for detailed background and references supporting the Green Star PVC credit.