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1 Solid wood

The product shall meet the requirements below for solid wood if solid wood contributes more than 10% of the weight of the product.

1.1 Sources of solid wood

Criteria

The wood included in the product must meet either requirement a), b), or c) below.

a The product must be made from recycled wood.

OR

b If the wood is from native forests, the forest sources used must have current Sustainable Forest Management (SFM) certification.

Please see the notes section below for details of accepted SFM certifications.

c If the wood is from plantation forests:

i. the plantations used must be legally harvested, AND

- a total of at least 50% of the wood in the product must be from sources that have current SFM certification. This 50% may include wood from native forests that complies with requirement b) above.

Please see the notes section below for details of accepted evidence of legal harvesting and SFM certifications.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation (as relevant):

- demonstrating the proportion of wood types included in each product;
- recording the supplier, nature (native forest or plantation) and geographical source of all virgin wood inputs;
- including certificates or other evidence, for example invoices or packing slips showing FSC or PEFC claims, on forest management certification and chain of custody (to confirm the virgin wood from native forests is from a certified sustainably managed source, and virgin wood from plantations is from legally harvested sources);
- a calculation, spreadsheet or other evidence to demonstrate that a minimum of 50% of the virgin wood in the product is from SFM; and
- describing management systems in place to ensure that these requirements are consistently met.

Notes

This Clause requires details of forest management certifications, chain-of-custody certifications, and physical controls for SFM certified wood through the supply chain from the forest to the manufacturer. It does not require that the finished product carry a FSC or PEFC (or equivalent) label, nor does it require any information about FSC or PEFC credits generated in the supply chain or assigned to the finished products.

Legal harvesting:

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The following will be accepted as sources of information to demonstrate legal harvesting, where chain of custody evidence is available for virgin wood sources:

- Forest Stewardship Council – "Certified" or "Controlled Wood" (www.fsc.org).
- Programme for the Endorsement of Forest Certification (PEFC)[1] - "Certified" or "Controlled Sources" (www.pefc.org).
- SGS Timber Legality & Traceability Verifications service (TLTV) Verification of Legal Compliance certification (TVTL-VLC) (http://www.sgs.com/en/Public-Sector/Monitoring-Services/Timber-Traceability-and-Legality.aspx).
- Rainforest Alliance SmartWood Verification of Legal Compliance (VLC) certification (http://www.rainforest-alliance.org/forestry/verification/legal).
- System Verifikasi Legalitas Kayu - Timber Legality Verification System (SVLK) certified, or SVLK/PHPL (Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management) certified (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans (supported with Annual Logging Plans) that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993).
- Indigenous Timber Milling statement and Personal Use Approvals that have been prepared and approved under Part 3A of the New Zealand Forests Act 1949 (amended in 1993).
- Evidence of legal harvesting from the Global Forest Registry (www.globalforestregister.org).

Sustainable Forest Management (SFM):

The FSC and PEFC certification schemes each have a range of certificates/labels. Some of these allow for wood from certified sustainably managed plantations or forests to be mixed with non-certified wood. Under FSC Mixed Credit or PEFC Volume Credit methods, wood or products associated with the certification claim or label may or may not actually contain wood from the certified sustainably managed source. Certifications for solid wood accepted by the Trust are those which will ensure that the required minimum percentages of wood from sustainably managed forests, as required by Supplementary Module 1, will be actually present in the final ECA-licensed product. These are set out below.

Types of FSC claims[2] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- FSC 100%.
- FSC Mix X % – Transfer or Percentage system (rolling average or batch).
- FSC Mix Credit – only if the manufacturer can demonstrate that wood from SFM is actually present in the ECA products.
- FSC Recycled – provided it contains 100% recycled material.

FSC Controlled Wood does not demonstrate SFM.

Types of PEFC claims[3] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

[1] The New Zealand Forest Certification Association (NZFCA), Australian Forest Certification Scheme (AFCS/AFS), and Sustainable Forest Initiative (SFI) (for Forest Management only NOT chain-of custody) are recognised as part of PEFC. For details of other PEFC-approved schemes, please check the PEFC website: http://pefc.org/resources/technical-documentation/national-standards

[2] *FSC Chain of Custody Certification – factsheet*. FSC UK, 14 January 2013.

[3] *PEFC Chain of Custody Certifications – The Key to Selling Certified Products*. PEFC, 2012

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- PEFC Certified – Physical Separation method.
- X % PEFC Certified – Average Percentage method.
- X % PEFC Certified – Volume Credit method – only if the manufacturer can demonstrate that wood from SFM is actually present in the ECA products.

PEFC Controlled Sources does not demonstrate SFM.

The following certification schemes will be accepted as equivalent to FSC or PEFC certification of SFM:

- Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management certified (PHPL) (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans, supported with Annual Logging Plans, that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993). These Plans must be prepared in accordance with Standards and Guidelines for the Sustainable Management of Indigenous Forests[4] and guidance for preparing Sustainable Management Plans and Annual Logging Plans[5]. Wood sourced from New Zealand indigenous forests covered by approved plans will be accepted as equivalent to FSC sustainably managed forest certification provided compliance with the approved plans is demonstrated through independent on-site assessment.
- For any other schemes to be considered, the applicant will be required to provide detailed information that demonstrates the certification scheme is credible and equivalent.

1.2 Wood preservatives

Criteria

a Wood used in the product must not be treated with preservatives that are classified by the World Health Organisation (WHO) as type 1A (extremely hazardous pesticides) or type 1B (highly hazardous pesticides).

b Wood preservatives shall only be used on outdoor products.

c Timber that is naturally durable shall not be treated.

d Wood preservatives used on products must not have active substances that are based on organic tin compounds or creosote oil.

e For products that are not permanently outdoors, wood preservatives must not contain active substances, pigments or additives that are based on arsenic, boron or copper.

f For products that are not permanently outdoors, wood preservatives that do not contain biocides must not be classified as ecotoxic, toxic or allergenic by inhalation.

g For products that are not permanently outdoors, the organic solvent content of the wood preservatives used must not exceed 5% by weight. The aromatic content of the solvent must not exceed 5% by weight.

[4] *Standards and Guidelines for the Sustainable Management of Indigenous Forests*, Fourth Edition. Ministry of Agriculture and Forestry 2009.

[5] *Indigenous Forestry Sustainable Management: A Guide to Preparing Draft Sustainable Forest Management Plans, Sustainable Forest Management Permit Applications and Annual Logging Plans*. Sustainable Programmes, Ministry of Agriculture and Forestry Policy 2009.

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Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- identifies all biocides that are used and demonstrates these have been checked against the WHO lists and confirmed not to be on those lists;
- lists all wood preservatives used (including CAS No. where available);
- includes Safety Data Sheets for wood preservatives and for active substances and additives;
- identifies the classifications that apply to each preservative; and
- demonstrates that the requirements are met for each product.

Compliance with requirements f) may be demonstrated by providing data indicating that the preservative does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins, or respiratory sensitisers.

1.3 Surface treatment of wood products

The criteria below apply to each wood type (e.g. solid pine) which amounts to more than 5% by weight in the finished product.

Criteria

a The surface treatment products must not be classified as toxic or allergenic by inhalation.

b The surface treatment process must meet either (i) or (ii).

i Content and classification of the surface treatment agents:
The treatment substances must not:

- be classified ecotoxic; and
- contain more than 7% by weight x efficiency of organic solvents (boiling point < 250 °C)

OR

ii Calculation of applied quantity of ecotoxic and organic solvent substances:

- The product may be treated with a maximum of 10 g/m^2 of substances that are classified as ecotoxic, except in cases where UV-varnishes are used in which case 14 g/m^2 of ecotoxic substances are permitted; and
- The amount of organic solvent (boiling point < 250 °C) added in the surface treatment must not exceed 35 g/m^2.

NOTE: these options are to provide greater flexibility in the choice of surface treatment systems. It should not be interpreted that (b)(i) is for non-ecotoxic substances and (b)(ii) is for ecotoxic substances.

c The content of aromatic solvent in products used on indoor products must not exceed 1% w/w and for outdoor products must not exceed 5% w/w.

d Where a surface treatment is applied and the treatment substance or preparation contains formaldehyde, formaldehyde emissions from the treated component shall not exceed 0.5 mg/L. (For surface laminations onto a wood-based panel, the substrate edges must be sealed for testing).

Verification required

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Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- identifies the surface treatment products used in the product (including CAS No. where available);
- includes Safety Data Sheets for the treatment substances;
- identifies classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded; and
- demonstrates the formaldehyde levels are met.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins or respiratory sensitisers.

For b), the following efficiency figures are to be used:

Spray coating without recycling	50 %
Spray coating with recycling	70 %
Spray coating, electrostatic	65 %
Spraying, bell/disc	80 %
Roller coating	95 %
Curtain coating	95 %
Vacuum coating	95 %
Dipping	95 %
Rinsing	95 %

For example, for spray coating without recycling, the organic solvent content limit will be 7/100 x 50 % = 3.5 %.

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2 Engineered wood products

The product shall meet the requirements below for engineered wood if engineered wood contributes more than 5% of the weight of the product.

2.1 Sources of wood for engineered wood products

Criteria

a If the product contains fibre from native forests, the forest sources used must have current Sustainable Forest Management (SFM) certification.

Please see the notes section below for details of accepted SFM certifications.

b If the product contains fibre from plantation forests, or native or plantation fibre derived from waste wood, sawdust or wood chips:

i. the sources must be legally harvested; AND

- a total of at least 40% of the fibre in the product must be from sources that have current SFM certification. This 40% may include any fibre from native forests that meets b) above.

Please see the notes section below for details of accepted evidence of legal harvesting and SFM certifications.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation (as relevant):

- demonstrating the proportion of wood types included in each product;
- recording the supplier, nature (native forest or plantation) and geographical source of all virgin wood inputs;
- including certificates or other evidence, for example invoices or packing slips showing FSC or PEFC claims, on forest management certification and chain of custody (to confirm the virgin wood from native forests is from a certified sustainably managed source, and virgin wood from plantations is from legally harvested sources);
- a calculation, spreadsheet or other evidence to demonstrate that a minimum of 40% of the virgin wood in the product is from SFM; and
- describing management systems in place to ensure that these requirements are consistently met.
- an ECA licence for the product, issued under the EC-32 specification.

Notes

This Clause requires details of forest management certifications, chain-of-custody certifications, and physical controls for SFM certified wood through the supply chain from the forest to the manufacturer. It does not require that the finished product carry a FSC or PEFC (or equivalent) label, nor does it require any information about FSC or PEFC credits generated in the supply chain or assigned to the finished products.

Legal harvesting

The following will be accepted as sources of information to demonstrate legal harvesting, where chain of custody evidence is available for virgin wood sources:

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- Forest Stewardship Council – "Certified" or "Controlled Wood" (www.fsc.org).
- Programme for the Endorsement of Forest Certification (PEFC)[6] - "Certified" or "Controlled Sources" (www.pefc.org).
- SGS Timber Legality & Traceability Verifications service (TLTV) Verification of Legal Compliance certification (TVTL-VLC) (http://www.sgs.com/en/Public-Sector/Monitoring-Services/Timber-Traceability-and-Legality.aspx).
- Rainforest Alliance SmartWood Verification of Legal Compliance (VLC) certification (http://www.rainforest-alliance.org/forestry/verification/legal).
- System Verifikasi Legalitas Kayu - Timber Legality Verification System (SVLK) certified, or SVLK/PHPL (Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management) certified (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans (supported with Annual Logging Plans) that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993).
- Indigenous Timber Milling statement and Personal Use Approvals that have been prepared and approved under Part 3A of the New Zealand Forests Act 1949 (amended in 1993).
- Evidence of legal harvesting from the Global Forest Registry (www.globalforestregister.org),
- An ECA licence for the product, issued under the EC-32 specification.

Sustainable Forest Management (SFM)

The FSC and PEFC certification schemes each have a range of certificates/labels. Some of these allow for wood from certified sustainably managed plantations or forests to be mixed with non-certified (but verified legally harvested) wood. Under FSC Mixed Credit or PEFC Volume Credit methods, wood or products associated with the certification claim or label may or may not actually contain wood from the certified sustainably managed source. These credit systems provide a pragmatic approach for managing fibre sources such as wood chips which are rarely segregated from non-certified fibre in the supply chain. Both FSC and PEFC require that any non-certified fibre included in FSC Mixed Credit or PEFC Volume Credit methods must be from legally harvested sources.

Types of FSC claims[7] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- FSC 100%.
- FSC Mix X % – Transfer or Percentage system (rolling average or batch).
- FSC Mix Credit.
- FSC Recycled – provided it contains 100% recycled material.

FSC Controlled Wood does not demonstrate SFM.

Types of PEFC claims[8] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- PEFC Certified – Physical Separation method.
- X % PEFC Certified – Average Percentage method.

[6] The New Zealand Forest Certification Association (NZFCA), Australian Forest Certification Scheme (AFCS/AFS), and Sustainable Forest Initiative (SFI) (for Forest Management only NOT chain-of custody) are recognised as part of PEFC. For details of other PEFC-approved schemes, please check the PEFC website: http://pefc.org/resources/technical-documentation/national-standards

[7] *FSC Chain of Custody Certification – factsheet*. FSC UK, 14 January 2013.

[8] *PEFC Chain of Custody Certifications – The Key to Selling Certified Products*. PEFC, 2012

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- X % PEFC Certified – Volume Credit method.

PEFC Controlled Sources does not demonstrate SFM.

The following certification schemes will be accepted as equivalent to FSC or PEFC certification of SFM:

- Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management certified (PHPL) (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans, supported with Annual Logging Plans, that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993). These Plans must be prepared in accordance with Standards and Guidelines for the Sustainable Management of Indigenous Forests[9] and guidance for preparing Sustainable Management Plans and Annual Logging Plans[10]. Wood sourced from New Zealand indigenous forests covered by approved plans will be accepted as equivalent to FSC sustainably managed forest certification provided compliance with the approved plans is demonstrated through independent on-site assessment.
- For any other schemes to be considered, the applicant will be required to provide detailed information that demonstrates the certification scheme is credible and equivalent.

2.2 Hazardous substances used in engineered wood products

Criteria

a Engineered wood products must not contain substances exceeding 0.5 g/kg that are classified toxic or allergenic by inhalation.

Substances or materials which change their properties through processing and thus become no longer bioavailable (i.e. physically and chemically bound in the product), or undergo chemical modification in a way that removes the previously identified hazard are exempt from this requirement.

b Engineered wood products must not contain substances exceeding 0.5 g/kg panel that are classified as ecotoxic.

c Where wood-based materials (excluding raw timber) comprise more than 5% by weight of the furniture or building product, the formaldehyde emissions from the wood-based components shall not exceed the following limits:

i 1.5 mg/L for raw particleboard; and

ii 1.0 mg/L for other engineered wood materials (manufactured until 31 December 2018)

0.5 mg/L for other engineered wood materials (manufactured from 1 January 2019)

(these limits applied as per AS/NZS 1859, i.e. 95 percentile compliance, Desiccator method).

NOTE: These limits are met by E_1 particleboard and E_0 MDF or other engineered wood material as defined by AS/NZS 1859.

d For products manufactured with pMDI resin, the VOC emission rate limit shall not exceed ≤0.500 mg/m^2/hr.

e Licence holders for particleboard products must:

[9] *Standards and Guidelines for the Sustainable Management of Indigenous Forests*, Fourth Edition. Ministry of Agriculture and Forestry 2009 (or any more recent edition applicable at the time of application for an ECA licence).

[10] *Indigenous Forestry Sustainable Management: A Guide to Preparing Draft Sustainable Forest Management Plans, Sustainable Forest Management Permit Applications and Annual Logging Plans*. Sustainable Programmes, Ministry of Agriculture and Forestry Policy 2009.

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- Document, implement and report on a programme to monitor resin and manufacturing technology of particleboard both domestically and internationally;
- Develop, maintain, implement and report on an improvement programme to produce lower formaldehyde emission particleboard products;
- Record performance of particleboard manufacturing processes (including achieved product emission levels and product reject rates); and
- Record information on the types of businesses that purchase their particleboard products.

f Licence holders for products manufactured using pMDI resin must:

- Document, implement and report on a programme to monitor pMDI resin and manufacturing technology of the products both domestically and internationally; and
- Record performance of pMDI resin manufacturing processes (including achieved product emission levels and product reject rates).

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- lists all hazardous substances and products included in each wood panel product used in the product (including CAS No, where available);
- includes Safety Data Sheets for hazardous substances;
- identifies the classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded in each product;
- includes test reports for formaldehyde;
- includes test reports for products manufactured with pMDI resin, as required by 2.2(d);
- includes documentation for the implemented formaldehyde emission programme (for particle board products only; 2.2(e)); and
- includes documentation for the implemented pMDI resin programme, as required by 2.2(f).

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the substance does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins and respiratory sensitisers.

Testing method

Compliance with c) and where applicable, d) shall be demonstrated by providing test reports from a competent laboratory. For c) use one of AS/NZS 2098.11, AS/NZS 4266.16, ASTM D5116-2017 or JIS A 1460. If an alternative testing method is used, such as an air chamber method under ASTM E1333 or ASTM D6007, the applicant must supply information demonstrating equivalence with the desiccator method, including conversion of the test results to mg/L for comparison with the applicable limit. For d), the test report must demonstrate compliance with the VOC emission-rate limit stated in that criterion.

Notes

It is sufficient to test the worst-case scenario product (i.e. the highest weight or the product containing the most engineered wood) from each product range.

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2.3 Surface treatment of engineered wood products

The criteria below apply to each wood type (e.g. MDF) which amounts to more than 5% by weight in the finished product.

Criteria

a The surface treatment products must not be classified as toxic or allergenic by inhalation.

b The surface treatment process must meet either (i) or (ii).

i Content and classification of the surface treatment agents:
The treatment substances must not:

- be classified ecotoxic; and
- contain more than 7 % by weight x efficiency of organic solvents (boiling point < 250 °C)

OR

ii Calculation of applied quantity of ecotoxic and organic solvent substances:

- The product may be treated with a maximum of 10 g/m^2 of substances that are classified as ecotoxic, except in cases where UV-varnishes are used in which case 14 g/m^2 of ecotoxic substances are permitted; and
- The amount of organic solvent (boiling point < 250 °C) added in the surface treatment must not exceed 35 g/m^2.

NOTE: these options are to provide greater flexibility in the choice of surface treatment systems. It should not be interpreted that (b)(i) is for non-ecotoxic substances and (b)(ii) is for ecotoxic substances.

c The content of aromatic solvent in products used on indoor products must not exceed 1% w/w and for outdoor products must not exceed 5% w/w.

d Where a surface treatment is applied and the treatment substance or preparation contains formaldehyde, formaldehyde emissions from the treated component shall not exceed 0.5 mg/L. (For surface laminations onto a wood-based panel, the substrate edges must be sealed for testing).

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- identifies the surface treatment products used in the product (including CAS No. where available);
- includes Safety Data Sheets for the treatment substances;
- identifies classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded; and
- demonstrates the formaldehyde levels are met.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins or respiratory sensitisers.

For b), the following efficiency figures are to be used:

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Spray coating without recycling	50 %
Spray coating with recycling	70 %
Spray coating, electrostatic	65 %
Spraying, bell/disc	80 %
Roller coating	95 %
Curtain coating	95 %
Vacuum coating	95 %
Dipping	95 %
Rinsing	95 %

For example for spray coating without recycling, the organic solvent content limit will be 7/100 x 50 % = 3.5 %.

Test Methods

Compliance with d) shall be demonstrated by providing test reports from a competent laboratory using the relevant test method below:

- AS/NZS 4266.16 Reconstituted wood-based panels – Methods of test – Formaldehyde emission – Desiccator method
- AS/NZS 2098.11 Determination of formaldehyde emission from plywood
- AS/NZS 4357.4 Structural laminated veneer lumber- Part 4 Determination of formaldehyde emissions.

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3 Other wood fibre

The product shall meet the requirements below for other wood fibre if other wood fibre contributes more than 5% of the weight of the product.

Criteria:

a If the product contains fibre from native forests, the forest sources used must have current Sustainable Forest Management (SFM) certification.

Please see the notes section below for details of accepted SFM certifications.

Fibre includes that from harvested trees and that derived from waste wood, sawdust or wood chips.

b If the product contains fibre from plantation forests, the plantations used must be legally harvested.

Please see the notes section below for details of accepted evidence of legal harvesting.

Fibre includes that from harvested trees and that derived from waste wood, sawdust or wood chips.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation (as relevant):

- demonstrating the proportion of fibre types included in each product;
- demonstrating the source of any waste wood fibre;
- recording the supplier, nature (native forest or plantation) and geographical source of all virgin fibre inputs;
- including certificates or other evidence, for example invoices or packing slips showing FSC or PEFC claims, on forest management certification and chain of custody (to confirm the virgin fibre from native forests is from a certified sustainably managed source, and virgin fibre from plantations is from legally harvested sources); and
- describing management systems in place to ensure that these requirements are consistently met.

Notes

This Clause requires details of forest management certifications, chain-of-custody certifications, and physical controls for SFM certified fibre through the supply chain from the forest to the mill. It does not require that the finished product carry a FSC or PEFC (or equivalent) label, nor does it require any information about FSC or PEFC credits generated in the supply chain or assigned to the finished products.

These criteria and supporting explanatory information have been prepared specifically for the New Zealand Ecolabelling Trust as part of the Eco Choice Aotearoa programme's life cycle approach and its principles and procedures for developing Licence criteria for specific product categories. The Trust accepts no responsibility for any use by any party of information in the document in any other context or for any other purpose.

Legal harvesting

The following will be accepted as sources of information to demonstrate legal harvesting, where chain of custody evidence is available for virgin fibre sources:

- Forest Stewardship Council – "Certified" or "Controlled Wood" (www.fsc.org).
- Programme for the Endorsement of Forest Certification (PEFC)[11] - "Certified" or "Controlled Sources" (www.pefc.org).
- SGS Timber Legality & Traceability Verifications service (TLTV) Verification of Legal Compliance certification (TVTL-VLC) (http://www.sgs.com/en/Public-Sector/Monitoring-Services/Timber-Traceability-and-Legality.aspx).
- Rainforest Alliance SmartWood Verification of Legal Compliance (VLC) certification (http://www.rainforest-alliance.org/forestry/verification/legal).
- System Verifikasi Legalitas Kayu - Timber Legality Verification System (SVLK) certified, or SVLK/PHPL (Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management) certified (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans (supported with Annual Logging Plans) that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993).
- Evidence of legal harvesting from the Global Forest Registry (www.globalforestregister.org).

Sustainable Forest Management (SFM):

The FSC and PEFC certification schemes each have a range of certificates/labels. Some of these allow for wood/fibre from certified sustainably managed plantations or forests to be mixed with non-certified wood/fibre. Under FSC Mixed Credit or PEFC Volume Credit methods, wood/fibre or products associated with the certification claim or label may or may not actually contain wood/fibre from the certified sustainably managed source. These credit systems provide a pragmatic approach for managing fibre sources such as wood chips which are rarely segregated from non-certified fibre in the supply chain

Types of FSC claims[12] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- FSC 100%.
- FSC Mix Credit.

FSC Controlled Wood does not demonstrate SFM.

Types of PEFC claims[13] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- PEFC Certified – Physical Separation method.
- X% PEFC Certified – Volume Credit method .

PEFC Controlled Sources does not demonstrate SFM**.**

[11] The New Zealand Forest Certification Association (NZFCA), Australian Forest Certification Scheme (AFCS/AFS), and Sustainable Forest Initiative (SFI) (for Forest Management only NOT chain-of custody) are recognised as part of PEFC. For details of other PEFC-approved schemes, please check the PEFC website: http://pefc.org/resources/technical-documentation/national-standards.

[12] *FSC Chain of Custody Certification – factsheet*. FSC UK, 14 January 2013.

[13] *PEFC Chain of Custody Certifications – The Key to Selling Certified Products*. PEFC, 2012.

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The following certification schemes will be accepted as equivalent to FSC or PEFC certification of SFM:

- Pengelolaan Hutan Produksi Lestari – Sustainable Production Forest Management certified (PHPL) (http://liu.dephut.go.id/).
- Sustainable Forest Management Plans, supported with Annual Logging Plans, that have been prepared and approved under the New Zealand Forests Act 1949 (amended in 1993). These Plans must be prepared in accordance with Standards and Guidelines for the Sustainable Management of Indigenous Forests[14] and guidance for preparing Sustainable Management Plans and Annual Logging Plans[15]. Wood sourced from New Zealand indigenous forests covered by approved plans will be accepted as equivalent to FSC sustainably managed forest certification provided compliance with the approved plans is demonstrated through independent on-site assessment.

For any other schemes to be considered, the applicant will be required to provide detailed information that demonstrates the certification scheme is credible and equivalent.

4 Metals

The product shall meet the requirements below for metals if metals contribute more than 5% of the weight of the product.

4.1 Metal materials

Criteria

It must be possible to separate the metal from other materials in the product without the use of special tools. This requirement does not apply to metals used in surface treatments.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by appropriate documentation of product specifications, production methods and quality controls.

4.2 Surface treatment of metals

The criteria below apply to each metal type (e.g. anodised aluminium or powder coated steel) which amounts to more than 5% by weight in the finished product.

Criteria

a Preparatory treatment and surface treatment chemicals must not be classified as toxic or allergenic by inhalation.

b Surface treatment chemicals for products which are intended to be stored or used outdoors must not be classified as ecotoxic.

c Metals must not be coated with cadmium, chrome, nickel or tin, or their compounds.

[14] *Standards and Guidelines for the Sustainable Management of Indigenous Forests*, Fourth Edition. Ministry of Agriculture and Forestry 2009 (or any more recent edition applicable at the time of application for an ECA licence).

[15] *Indigenous Forestry Sustainable Management: A Guide to Preparing Draft Sustainable Forest Management Plans, Sustainable Forest Management Permit Applications and Annual Logging Plans*. Sustainable Programmes, Ministry of Agriculture and Forestry Policy 2009.

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In exceptional cases, metal surfaces may be treated with chromium or nickel where this is necessary on the grounds of heavy physical wear or in the case of parts that require particularly tight connections (e.g. gas lifters, table and chair legs). Such chromium plating should not use chromium VI compounds.

Small parts such as screws, hinges, locks, bolts etc. are exempt from the requirements in c) unless they are parts that are intended to come into frequent contact with skin.

d The content of organic solvents in treatment substances must not exceed 5% w/w of which the content of aromatic solvent must not exceed 1% w/w.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- lists all hazardous substances and products included in each surface treatment of the product (including CAS No. where available);
- includes Safety Data Sheets for hazardous substances;
- identifies classifications that apply to each substance; and
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins or respiratory sensitisers.

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5 Plastics

The product shall meet the requirements below for plastics if plastics contribute more than 5% of the weight of the product, unless otherwise specified. Polymers used as padding material and textiles are not to be included in the calculation to determine if plastics make up 5% by weight of the product.

5.1 Plastic materials

Criteria

a Plastic parts in the product shall be documented with type of plastics and portion of filler and/or reinforcement.

b Information shall be provided to the Trust at application and thereafter through year-on-year reporting submitted at each three-yearly audit, or when requested between audits, on PVC and/or phthalates used in the product. This should include information from production records and/or suppliers on:

- i the percentages by weight of recycled and virgin PVC;
- ii the particular production processes (membrane cells, non-asbestos diaphragms, modified diaphragms, graphite anodes, mercury cells, closed-lid production etc.) used to produce chlorine and VCM for the PVC being used in an EC-licensed product (including the locations of the production);
- iii information, where available, on waste disposal, wastewater treatment and emissions to air (occupational exposure, emissions from the factory and emissions from the final PVC resin);
- iv information on any Environmental Management System (EMS) for the production process, including requirements for waste, water, air and product-related requirements;
- v the types of stabilisers used;
- vi the types and amounts of any phthalate plasticisers present in recycled content of the PVC (if that information is available) and/or added when manufacturing PVC;
- vii research and initiatives implemented on substitutes for phthalates identified as of concern by regulators; and
- viii any product stewardship arrangements for the PVC.

NOTE: Regulators have identified the following phthalates to be of concern – dibutyl phthalate (DBP), diisobutyl phthalate (DIBP), butyl benzyl phthalate (BBP), di-n-pentyl phthalate (DnPP), di(2-ethyhexyl) phthalate (DEHP), di-n-octyl phthalate (DnOP), diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP). These phthalates may be prohibited by the Hazardous Substances criteria in clause 5.3.1.

iii Licence holders must:

- i maintain records of the types and percentages of recycled plastic used in licensed products; and
- ii have and implement an ongoing programme to review options and increase recycled plastic content in licensed products until an optimal level is achieved, as determined by the required performance characteristics and availability of recycled materials.

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Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by appropriate documentation of product specifications, strength/durability test results for parts with recycled content, production methods, calculations and quality controls including:

- records of the types of plastics used; and
- an initial report to the Trust on PVC and plasticisers used, followed by year-on-year reporting submitted at each three-yearly audit, or when requested between audits.

NOTE: The Trust intends to monitor recycled plastic availability and content in licensed products with the expectation that a minimum recycled content limit will be set in future.

5.2 Recycling of plastics

Criteria

a Plastic parts that are recyclable or reusable must be able to be separated from other materials in the product without the use of special tools.

b Plastic parts > 100 g shall be labelled in accordance with ISO 11469 or a similar standard to indicate the plastic type. Exemptions may be made for products where the nature of the manufacturing process or the size and shape of the product prevent or restrict labelling. Where a product or component is exempt, information about the plastic types and recyclability shall be available to those purchasing, using or disposing of the product.

c Plastic parts must not be treated or coated in a way that would prevent recycling or reuse.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by appropriate documentation of product specifications, production methods, information provided to consumers and quality controls.

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6 Textiles, skins and leather

The product shall meet the requirements for textiles, skins or leather below if leather, skins or textiles contribute more than 5% of the weight of the product.

Criteria

Textiles, skins or leather must meet the relevant ECA requirements for Textiles, Skins and Leather in EC-31.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by a copy of the Environmental Choice certificate or assessment report demonstrating compliance for the textiles used.

NOTE: EC-31 covers the following materials:

- Cotton and natural seed fibres
- Flax and other bast fibres
- Wool fibres
- Skins and leather
- Acrylic fibres
- Elastane
- Man-made cellulose fibres (including viscose and cupro)
- Polyamide
- Polyester
- Polypropylene

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7 Glass

The product shall meet the requirements below for glass if glass contributes more than 5% of the weight of the product.

Criteria

a No lead glazing, crystal glass, wire reinforced glass or laminated glass shall be used.

Wire-reinforced or laminated glass is exempt from these requirements if it is required by law in order to meet specific safety requirements.

b Glass parts of the product must be able to be easily replaced.

c If the glass component is greater than 20% by weight of the finished product, licence holders must:

- maintain records of the types and percentages of recycled glass used in licensed products; and
- have and implement an ongoing programme to review options and increase recycled glass content in licensed products until an optimal level is achieved, as determined by the required performance characteristics and availability of recycled materials, and provide year-on-year reporting at each three-yearly audit, or when requested between audits.

d Glass parts of the product must be either pre-consumer or post-consumer recyclable.

e Metal coatings used for mirror glass:

- must not contain copper; and
- must not contain more than 0.2% by weight of lead.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by appropriate documentation of product specifications, production methods and quality controls.

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8 Padding materials

The product shall meet the requirements below for padding materials if padding materials contribute more than 5% of the weight of the product.

8.1 Hazardous materials in paddings

Criteria

a Paddings shall not be manufactured using blowing agents with a global warming potential (GWP) of more than 25, measured over a 100-year timeframe.

b Blowing agents must have an ozone depleting potential (ODP) of zero.

c The concentration of 1,3-butadiene in foam or latex components must not exceed 1 ppm (1 mg/kg).

d Chlorophenols, PCB or organic tin compounds must not be used during storage or transport of padding materials.

e Chloro-organic bleaching agents must not be used in production of padding materials.

f No aniline-based amines or pigments dispersed in alkyl phenols are to be added to polyurethane foams used in ECA-licensed products.

g Dyes may only be used for distinguishing between different qualities within the same range of padding materials.

h Azo dyes shall not be used that may cleave (or bind) to any one of the following aromatic amines:

4-aminodiphenyl	(92-67-1)
Benzidine	(92-87-5)
4-chloro-o-toluidine	(95-69-2)
2-naphthylamine	(91-59-8)
o-amino-azotoluene	(97-56-3)
2-amino-4-nitrotoluene	(99-55-8)
p-chloroaniline	(106-47-8)
2,4-diaminoanisol	(615-05-4)
4,4'-diaminodiphenylmethane	(101-77-9)
3,3'-dichlorobenzidine	(91-94-1)
3,3'-dimethoxybenzidine	(119-90-4)
3,3'-dimethylbenzidine	(119-93-7)
3,3'-dimethyl-4,4'-diaminodiphenylmethane	(838-88-0)
p-cresidine	(120-71-8)
4,4'-methylene-bis-(2-chloraniline)	(101-14-4)
4,4'-oxydianiline	(101-80-4)
4,4'-thiodianiline	(139-65-1)
o-toluidine	(95-53-4)
2,4-diaminotoluene	(95-80-7)
2,4,5-trimethylaniline	(137-17-7)
4-aminoazobenzene	(60-09-3)
o-anisidine	(90-04-0)

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2,4-Xylidine	(87-62-7)
2,6-Xylidine	(95-68-1)

i Organic tin catalysts may be used in the production of flexible polyurethane if the manufacturer has in place a contract with a hazardous waste disposal company for the disposal of the waste and can demonstrate that the hazardous waste is correctly disposed of.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- identifies the hazardous substances, dyes and products used in production of padding (including CAS No. where available);
- includes Safety Data Sheets for relevant hazardous substances and dyes;
- signed declaration from the producer of latex or foam or test reports that demonstrate the concentration of 1,3-butadiene in foam or latex components;
- identifies the blowing agents used and their GWPs and ODPs; and
- includes records of disposal of hazardous waste from the use of organic tin.

GWP and ODP of common blowing agents are given in tables 8.1 and 8.2 below. For determining the ODP and GWP of substances not included in the tables, reference should be made to one of the following:

- Daniel, J.S., and G.J.M. Velders (Lead Authors), A.R. Douglass, P.M.D. Forster, D.A. Hauglustaine, I.S.A. Isaksen, L.J.M. Kuijpers, A. McCulloch, and T.J. Wallington, Halocarbon scenarios, ozone depletion potentials, and global warming potentials, Chapter 8 in Scientific Assessment of Ozone Depletion: 2006, Global Ozone Research and Monitoring Project—Report No. 50, 572 pp., World Meteorological Organization, Geneva, Switzerland, 2007. http://www.wmo.ch/pages/prog/arep/gaw/ozone_2006/ozone_asst_report.html
- US EPA Ozone Depleting Substances website http://www.epa.gov/ozone/science/ods/index.html
- Forster, P., V. Ramaswamy, P. Artaxo, T. Berntsen, R. Betts, D.W. Fahey, J. Haywood, J. Lean, D.C. Lowe, G. Myhre, J. Nganga, R. Prinn, G. Raga, M. Schulz and R. Van Dorland, 2007: Changes in Atmospheric Constituents and in Radiative Forcing. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. http://ipcc-wg1.ucar.edu/wg1/wg1-report.html

If alternative reference sources are used, the Trust will require full details of the reference source or a copy of the document, if it is not readily and freely available.

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Table 8.1: Fluorinated blowing agents[16, 17, 18]

	HCFC-22	**HCFC-142b**	**HCFC-141b**	**HFC-134a**	**HFC-152a**	**HFC-245fa**	**HFC-365mfc**	**HFC-227ea**	**HFO-1234ze[19]**	**HFO-1336mzz(Z)[20]**	**HFO-1233zd[21]**
Chemical formula	$CHClF_2$	CH_3CClF_2	CCl_2FCH_3	CH_2FCF_3	CHF_2CH_3	$CF_3CH_2CHF_2$	$CF_3CH_2CF_2CH_3$	CF_3CHFCF_3	$CH_3CH=CHF$	$CF_3CH=CHCF_3$(Z)	(E)CF_3-CH=CClH
Molecular weight	86	100	117	102	66	134	148	170	114	164	130
Boiling point (°C)	-41	-9	32	-26	-25	15.3	10.2	-16.5	-18.95	33.4	19
Gas conductivity (mW/mK at 10 °C)	9.9	8.4	8.8	12.4	14.3”	12.5*	10.6*	11.6	13.6”	+	10.2
Flammable units in air (vol %)	None	6.2 – 17.9	7.6 – 17.7	None	3.9 – 16.9	None	3.8 – 13.3	None	None	None	None
TVL or OEL (ppm) (USA)	1000	1000	500	1000	1000	n/a	n/a	1000	5000	+	800
GWP (100 year) **	1810	2310	725	1430	124	103	840	3220	7	9	1
ODP	0.055	0.065	0.11	0	0	0	0	0	0	0	0

“ measured at 25 °C * measured at 24 °C ** IPCC Report 1996 + no data available

[16] UNEP, Report of the Rigid and Flexible Foams Technical Options Committee, 2010 Assessment
[17] UNEP, Report of the Rigid and Flexible Foams Technical Options Committee, 2014 Assessment Report
[18] UNEP Ozone Secretariat, Fact Sheet 13: Insulating Foam, 2015
[19] Honeywell, *Solstice® ze Refrigerant (HFO-1234ze)*, 2015
[20] OARS Weel, *cis-1,1,1,4,4,4,-Hexafluoro-2-butene (1336mzz-Z),* 2014
[21] Honeywell, *Solstice® Liquid Blowing Agent (HFO-1233zd)*, 2017

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Table 8.2: Non-fluorinated blowing agents[11, 12, 13]

	Methylal	Dimethyl ether	Isopentane	Cyclopentane	N-pentane	Carbon dioxide	Isobutane	n-butane	Methyl formate (Ecomate®)
Chemical formula	$CH_2(OCH_3)_2$	$CH_3O\ CH_3$	$CH_3CH(CH_3)CH_2CH_3$	$(CH_2)_5$	$CH_3(CH_2)_3CH_3$	CO_2	C_4H_{10}	C_4H_{10}	$CH_3(HCO)$
Molecular weight	76.1	46.1	72.1	70.1	72.1	44	58.1	58.1	60
Boiling point (°C)	42	-24.8	28	49	36	-139	-11.7	-0.45	31.5
Gas conductivity (mW/mK at 10 °C)	+	15.5	13.0	11.0	14.0	14.5	15.9	13.6***	10.7”
Flammable units in air (vol %)	2.2 – 19.9	3.0 – 18.6	1.4 – 8.3	1.5 – 8.7	1.4 – 8.0	None	1.8 – 8.4	1.8 – 8.5	5.0 – 23.0
TVL or OEL (ppm) (USA)	1000	1000	1000	600	610	n/a	800	800	100
GWP (100 year) **	< 25	1	< 25	< 25	< 25	1	< 25	< 25	< 25
ODP	0	0	0	0	0	0	0	0	0

“ measured at 25 °C
** IPCC Report 1996
*** measured at 0 °C
+ no data available

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8.2 Recycled content and recycling of foam padding materials

Criteria

a A minimum of 90% of total waste from production of the padding materials is to be recyclable.

b Licence holders must maintain records of waste from production processes for licensed products. These records must include information on each waste component's ability to be recycled and volumes of waste that are recycled.

c Licence holders must have, implement and report on an ongoing programme to maximise the proportion of waste from production of padding materials that is recycled.

Verification required

Conformance with this requirement shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by appropriate documentation including:

- details of production waste and its recyclability;
- volumes of wastes recycled; and
- waste recycling programme.

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9 Cement

The product shall meet the requirements below for cement if cement contributes more than 5% of the weight of the finished product.

9.1 Cement

Criteria

Cement used in the manufacturing of a fibre cement board must meet the ECA requirements for EC-42 Portland Cement and Portland Cement Blends with the exception of clause 5.2.2 Non-Kiln Materials.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by a copy of the ECA certificate or assessment report demonstrating compliance for the cement used.

9.2 Cement Alternatives (Non-Kiln Materials)

Criteria

a Licence applicants/holders must have and implement a formal process to increase the use of cement alternatives in the licensed products or use of non-kiln materials in the cement blend used in licensed products.

b Licence holders must report annually to the Trust on the volume of cement alternatives used, including:

- percentage and type of cement alternative material used in a specific product;
- results of any chemical analysis for contaminants undertaken on any cement alternative; and
- material used, or determined to be inappropriate.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation (as relevant):

- demonstrating the proportion of cement alternative materials used in each product;
- demonstrating the source and type of any cement alternatives used;
- including results of any chemical analysis for contaminants undertaken on any cement alternative material used, or determined to be inappropriate;
- annual reports on the cement alternative programme; and
- describing management systems in place to ensure that these requirements are consistently met.

Explanatory Notes

The specification does not require the testing of cement alternative materials for contaminants. However, if any testing is undertaken either voluntarily or as a requirement of a resource consent or permit, then the results are to be reported to the Trust.

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Cement alternatives may contain heavy metal and radioactive contaminants. The licence applicant/holder will be required to demonstrate the product complies with the heavy-metal and radioactive limits set within the hazardous substance criteria in section 5.5 and in all applicable supplementary modules.

10 Sand, Aggregates and Minerals

The product shall meet the requirements below for sand, aggregates and minerals if these materials contribute more than 5% of the weight of the product.

Criteria

a Virgin mined or quarried materials must come from operations with documented mine or quarry remediation/restoration programmes.

b The applicant/licence holder must ensure that natural raw materials do not come from environments that are protected for biological and/or social reasons.

iii Mines and quarries from which materials are obtained for an ECA-licensed product must have and implement management plans including any policies and management procedures to minimise adverse effects from the following potential impacts:

- noise;
- vibration;
- dust; and
- discharges to surface water, groundwater, oceans or land.

NOTE: Sand sources may contain heavy metal and radioactive contaminants. The licensed product will be required to comply with the heavy metal requirements and radioactive limits set within the hazardous substance criteria in section 5.5 of EC-32 and in all applicable supplementary modules.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation (as relevant):

- certificates or other evidence of a documented mine remediation programme;
- description of the raw material procurement management systems in place to ensure that the requirements in a) and b) are consistently met;
- copies of the relevant management plans required by c); and
- records demonstrating the management plans are being effectively implemented (including monitoring results).

Notes

Where a component of the product is manufactured by others, then the component will be considered to meet the requirements of supplementary module 10 if:

- The component manufacturer holds an ECA licence under a specification with criteria equivalent to supplementary module 10; AND
- The component manufacturer provides confirmation that the raw materials and supply chain for the component are identical to the raw materials and supply chain for the ECA-licensed product. An example of this would be sand used in glass wool included in a product, for its

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acoustic properties, that has the same raw materials and supply chain as glass wool that is licensed under EC-25 Building Insulants for its thermal properties.

Documentation must be provided identifying the specific component(s) used and confirming that the raw materials and supply chain for the component are the same as the raw materials and supply chain for the component manufacturer's ECA-licensed product.

10.1 Heavy metals

Criteria

The raw materials used in the product must contain less than the following amounts of heavy metals:

- Arsenic 17 mg/kg
- Inorganic lead 160 mg/kg*
- Cadmium 0.8 mg/kg
- Inorganic mercury 200 mg/kg**
- Chrome (III) 290 mg/kg

* This limit is for inorganic lead and does not apply to elemental (pure) lead.

** This limit is for inorganic mercury and does not apply to elemental (pure) mercury.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement of compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation, including test results for heavy metals in raw materials.

Test Methods for heavy metals

Metals should be extracted from an air-dried sample in accordance with US-EPA Method 200.2 for "Total Recoverable Metals". The extracted metals should be analysed by ICP-MS (Inductively Coupled Plasma Mass Spectroscopy).

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11 Crystalline silica

The product shall meet the requirements below for crystalline silica if crystalline silica contributes more than 5% of the weight of the product.

Criteria

a Effective measures must be in place to control exposure of workers to crystalline silica; and test results must be provided to confirm compliance with the Workplace Exposure Standard Time Weighted Average (WES-TWA) for cristobalite crystalline silica as respirable dust of 0.1 mg/m^3 and quartz crystalline silica as respirable dust of 0.2 mg/m^3.

b In addition, licence holders must:

- develop, document and implement an ongoing continual improvement programme to reduce crystalline silica and impacts resulting from exposure to crystalline silica in the workplace; and
- provide year-on-year reporting to the Trust at each three-yearly audit, or when requested between audits, on the continual improvement programme and its implementation in the production facility where the ECA-licensed fibre cement products are manufactured.

c Only work with Level 2 or 3 accredited engineered stone fabricators under the New Zealand Respirable Crystalline Silica (RCS) Accreditation Programme*.

*For a list of compliant engineered stone fabricators, please refer to the New Zealand RCS accreditation website https://impac.co.nz/rcs-accreditation/home/.

Verification required

Conformance with this requirement shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by appropriate documentation such as:

- Test results of workplace exposure for a). These should include results for average and maximum exposure over an eight-hour working day. In New Zealand, exposure to crystalline silica must meet the Workplace Exposure Standard Time Weighted Average (WES-TWA) of 0.1 mg/m^3 for cristobalite crystalline silica as respirable dust and 0.2 mg/m^3 for quartz crystalline silica as respirable dust.
- For b), year-on-year reporting on the crystalline silica continual improvement programme is to be provided at each three-yearly audit, or when requested between audits.
- For c), documentation confirming the level of the NZ RCS accredited engineered stone fabricators.

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12 Bamboo

The product shall meet the requirements below for bamboo if bamboo contributes more than 5% of the weight of the finished product.

12.1 Sources of bamboo

Criteria

a If the bamboo is from native forests, the forest sources used must have current Sustainable Forest Management (SFM) certification.

Please see the notes section below for details of accepted SFM certifications.

b If the bamboo is from plantation forests:

i. the plantations used must be legally harvested, AND

- a total of at least 50% of the fibre in the product must be from sources that have current SFM certification. This 50% may include any fibre from native forests that meets b) a) above.

Please see the notes section below for details of accepted evidence of legal harvesting and SFM certifications.

ii. Bamboo fibre must not come from bamboo species that appear on the Convention on International Trade in Endangered Species (CITES) list.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation (as relevant):

- recording the supplier, nature (native forest or plantation) and geographical source of all bamboo inputs to the product;
- including certificates or other evidence for example invoices or packing slips showing FSC or PEFC claims, on forest management certification and chain of custody (to confirm the bamboo from native forests is from a certified sustainably managed source, and bamboo from plantations is from legally harvested sources);
- a calculation, spreadsheet or other evidence to demonstrate that a minimum of 50% of the bamboo in the product is from SFM; and
- describing management systems in place to ensure that these requirements are consistently met.

Explanatory Notes

This Clause requires details of forest management certifications, chain-of-custody certifications, and physical controls for SFM certified bamboo through the supply chain from the forest to the manufacturer. It does not require that the finished product carry a FSC or PEFC (or equivalent) label, nor does it require any information about FSC or PEFC credits generated in the supply chain or assigned to the finished products.

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Legal harvesting

The following will be accepted as sources of information to demonstrate legal harvesting, where chain of custody evidence is available for virgin wood sources:

- Forest Stewardship Council – "Certified" or "Controlled Wood" (www.fsc.org).
- Programme for the Endorsement of Forest Certification (PEFC)[22] - "Certified" or "Controlled Sources" (www.pefc.org).
- Evidence of legal harvesting from the Global Forest Registry (www.globalforestregister.org).

Sustainable Forest Management (SFM)

The FSC and PEFC certification schemes each have a range of certificates/labels. Some of these allow for bamboo from certified sustainably managed plantations or forests to be mixed with non-certified bamboo. Under FSC Mixed Credit or PEFC Volume Credit methods, bamboo or products associated with the certification claim or label may or may not actually contain bamboo from the certified sustainably managed source. These credit systems provide a pragmatic approach for managing fibre sources such as wood chips which are rarely segregated from non-certified fibre in the supply chain.

Types of FSC claims[23] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- FSC 100%.
- FSC Mix X % – Transfer or Percentage system (rolling average or batch).
- FSC Mix Credit.

FSC Controlled Wood does not demonstrate SFM.

Types of PEFC claims[24] on invoices or packing slips which can be used to demonstrate compliance with the SFM requirements:

- PEFC Certified – Physical Separation method.
- X % PEFC Certified – Average Percentage method.
- X % PEFC Certified – Volume Credit method

PEFC Controlled Sources does not demonstrate SFM.

For any other schemes, such as programmes run by the International Network for Bamboo and Rattan (INBAR), to be considered, the applicant will be required to provide detailed information demonstrating that the certification scheme is credible and equivalent.

12.2 Hazardous substances used in bamboo products

Criteria

a Bamboo products must not contain substances exceeding 0.5 g/kg that are classified toxic or allergenic by inhalation. Wood dust (which is physically and chemically bound in the product) is exempt from this requirement.

[22] The New Zealand Forest Certification Association (NZFCA), Australian Forest Certification Scheme (AFCS/AFS), and Sustainable Forest Initiative (SFI) (for Forest Management only NOT chain-of custody) are recognised as part of PEFC. For details of other PEFC-approved schemes, please check the PEFC website: http://pefc.org/resources/technical-documentation/national-standards

[23] *FSC Chain of Custody Certification – factsheet*. FSC UK, 14 January 2013.

[24] *PEFC Chain of Custody Certifications – The Key to Selling Certified Products*. PEFC, 2012

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b Bamboo products must not contain substances exceeding 0.5 g/kg panel that are classified as ecotoxic.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- lists all hazardous substances and products included in each bamboo product used in the product (including CAS No. where available);
- includes Safety Data Sheets for hazardous substances;
- identifies the classifications that apply to each substance; and
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded in each panel product.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the substance does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins and respiratory sensitisers.

12.3 Surface treatment of bamboo

Criteria

a The surface treatment products must not be classified as toxic or allergenic by inhalation.

b The surface treatment process must meet either (i) or (ii).

i Content and classification of the surface treatment agents:
The treatment substances must not:

- be classified ecotoxic; and
- contain more than 7 % by weight x efficiency of organic solvents (boiling point < 250 °C)

OR

ii Calculation of applied quantity of ecotoxic and organic solvent substances:

- The product may be treated with a maximum of 10 g/m^2 of substances that are classified as ecotoxic, except in cases where UV-varnishes are used in which case 14 g/m^2 of ecotoxic substances are permitted; and
- The amount of organic solvent (boiling point < 250 °C) added in the surface treatment must not exceed 35 g/m^2.

NOTE: these options are to provide greater flexibility in the choice of surface treatment systems. It should not be interpreted that (b)(i) is for non-ecotoxic substances and (b)(ii) is for ecotoxic substances.

c The content of aromatic solvent in products used on indoor products must not exceed 1% w/w and for outdoor products must not exceed 5% w/w.

d Where a surface treatment is applied and the treatment substance or preparation contains formaldehyde, formaldehyde emissions from the treated component shall not exceed 0.5 mg/L. (For surface laminations onto a wood-based panel, the substrate edges must be sealed for testing).

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Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- identifies the surface treatment products used in the product (including CAS No. where available);
- includes Safety Data Sheets for the treatment substances;
- identifies classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded; and
- demonstrates the formaldehyde levels are met.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins or respiratory sensitisers.

For b), the following efficiency figures are to be used:

Spray coating without recycling	50 %
Spray coating with recycling	70 %
Spray coating, electrostatic	65 %
Spraying, bell/disc	80 %
Roller coating	95 %
Curtain coating	95 %
Vacuum coating	95 %
Dipping	95 %
Rinsing	95 %

For example, for spray coating without recycling, the organic solvent content limit will be 7/100 x 50 % = 3.5 %.

Test Methods

Compliance with d) shall be demonstrated by providing test reports from a competent laboratory using the relevant test method below:

- AS/NZS 4266.16 Reconstituted wood-based panels – Methods of test – Formaldehyde emission – Desiccator method.
- AS/NZS 2098.11 Determination of formaldehyde emission from plywood.
- AS/NZS 4357.4 Structural laminated veneer lumber- Part 4 Determination of formaldehyde emissions.

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13 Paper/cellulose fibre

The product shall meet the requirements below for paper/cellulose fibre if paper or cellulose fibre contributes more than 5% of the weight of the finished product.

13.1 Fibre materials

Criteria

a Paper or cellulose fibre shall contain 100% recycled content with 80% post-consumer recycled, when calculated on a 12-month rolling basis and measured by weight of the final product.

b The paper shall not be bleached for reuse. It is accepted that the paper may have been bleached during its previous lifecycle.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation (as relevant):

- demonstrating whether the fibre is pre- or post-consumer; and
- including relevant production or quality control information.

13.2 Surfactants and foam inhibitors

Criteria

a Where surfactants are used for de-inking recycled paper input, these surfactants shall be readily biodegradable.

b Foam inhibitors used in manufacturing processes must meet either (i) or (ii) below:

i. No use is allowed of foam inhibitors that are classified as ecotoxic

ii. 95% by weight of the constituent substances that have a foam inhibiting or retarding effect must be either readily or ultimately biodegradable.

Verification required

Conformance with this requirement shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by documentation including:

- Safety Data Sheets for foam inhibitors to demonstrate compliance with b) i, if applicable.
- Safety Data Sheets, test reports or information from the DID list (see below) to demonstrate biodegradability of any surfactants or foam inhibitors used.
- relevant production and quality control information.

Compliance with the requirements in (b) (i) may be demonstrated by providing data indicating that the foam inhibitor does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for ecotoxins.

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14 Gypsum plasterboard substrates

The product shall meet the requirements below for gypsum plasterboard substrates if gypsum plasterboard contributes more than 5% of the weight of the finished product.

Criteria

Gypsum plasterboard substrates must meet the relevant ECA requirements in EC-19 Plaster and Plasterboard Products.

Verification required

Conformance with this requirement shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by a copy of the ECA certificate or assessment report demonstrating compliance for the gypsum plasterboard used.

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15 Glass wool and mineral wool

The product shall meet the requirements below if the glass or mineral wool contributes more than 5 % of the weight of the finished product.

Criteria

a Products containing mineral and/or glass wool must meet the following minimum recycled content requirements, when calculated on a 12-month rolling basis and measured by weight of the material:

- 65% for glass
- 40% for mineral, rock or slag

b Licence holders must:

i. maintain records of the types and percentages of recycled content used in licensed products;

ii. have and implement an ongoing programme to review options and increase recycled content in licensed products until an optimal level is achieved, as determined by the required performance characteristics of the product or availability of recycled materials; and

iii. provide year-on-year reporting to the Trust at each three-yearly audit, or when requested between audits, on the progress of the programme.

c Non-recycled sand and rock for use as raw materials in glass and mineral wools must come from mining operations with documented mine remediation programmes.

d The applicant/licence holder must have a procurement programme which ensures that virgin raw materials do not come from environments that are protected for biological and/or social reasons.

e Licence holders must have and implement an ongoing programme to review options to replace formaldehyde-containing binders in licensed products and report annually to the Trust on the progress of the programme.

f Licence holders must have and implement an ongoing programme to review options to replace borax (boron) in licensed products and provide year-on-year reporting to the Trust at each three-yearly audit, or when requested between audits, on the progress of the programme.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. This statement shall be supported by:

- documentation including year-on-year records for the period since the previous audit, demonstrating that the recycled content limits are being met;
- information about the recycled content review programme, including performance testing, if relevant, and year-on-year reporting as required by b), provided at each three-yearly audit or when requested between audits;
- Certificates or other evidence of a documented mine remediation programme;

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- Information about the virgin fibre procurement programme and records of the supplier, nature and geographical source of all raw material inputs;
- Description of the raw material procurement management systems in place to ensure that the requirement a) and b) are consistently met;
- Safety data sheets (SDS) for all binders used; and
- Annual report to ECA on replacement of formaldehyde-containing binders and procurement of recycled content.

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16 Cork

The product shall meet the requirements below for cork if cork contributes more than 5% of the weight of the finished product.

16.1 Cork materials

Criteria

The applicant/licence holder must:

a have a policy for sustainable material procurement for cork and a system to trace and verify the origin of cork;

b maintain records of any certification of cork material used in licensed products; and

c have and implement an ongoing programme to review options to include certified sustainably managed cork content in licensed products, and provide year-on-year reporting at each three-yearly audit, or when requested between audits.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company. The statement shall be supported by documentation (as relevant):

- recording the supplier, nature and geographical source of cork inputs to the product;
- describing management systems in place to ensure that these requirements are consistently met;
- describing the programme to review options to include FSC or equivalent certified content in licensed products; and
- including year-on-year reporting to the Trust on the procurement programme, provided at each three-yearly audit or when requested between audits.

16.2 Hazardous substances used in cork products

Criteria

a Cork products must not contain substances exceeding 0.5 g/kg that are classified toxic or allergenic by inhalation. Cork dust (which is physically and chemically bound in the product) is exempt from this requirement.

b Cork products must not contain substances exceeding 0.5 g/kg panel that are classified as ecotoxic.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- lists all hazardous substances and products included in each cork product used in the product (including CAS No. where available);
- includes Safety Data Sheets for hazardous substances;
- identifies the classifications that apply to each substance; and

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- demonstrates that thresholds for groups or individual hazardous substances are not exceeded in each panel product.

Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the substance does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins and respiratory sensitisers.

16.3 Surface treatment of cork

Criteria

a The surface treatment products must not be classified as toxic or allergenic by inhalation.

b The surface treatment process must meet either (i) or (ii).

i Content and classification of the surface treatment agents:
The treatment substances must not:

- be classified ecotoxic; and
- contain more than 7% by weight x efficiency of organic solvents (boiling point < 250 °C)

OR

ii Calculation of applied quantity of ecotoxic and organic solvent substances:

- The product may be treated with a maximum of 10 g/m^2 of substances that are classified as ecotoxic, except in cases where UV-varnishes are used in which case 14 g/m^2 of ecotoxic substances are permitted; and
- The amount of organic solvent (boiling point < 250 °C) added in the surface treatment must not exceed 35 g/m^2.

NOTE: these options are to provide greater flexibility in the choice of surface treatment systems. It should not be interpreted that (b)(i) is for non-ecotoxic substances and (b)(ii) is for ecotoxic substances.

c The content of aromatic solvent in products used on indoor products must not exceed 1% w/w and for outdoor products must not exceed 5% w/w.

d Where a surface treatment is applied and the treatment substance or preparation contains formaldehyde, formaldehyde emissions from the treated component shall not exceed 0.5 mg/L. (For surface laminations onto a wood-based panel, the substrate edges must be sealed for testing).

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation that:

- identifies the surface treatment products used in the product (including CAS No. where available);
- includes Safety Data Sheets for the treatment substances;
- identifies classifications that apply to each substance;
- demonstrates that thresholds for groups or individual hazardous substances are not exceeded; and
- demonstrates the formaldehyde levels are met.

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Compliance with the requirements in a) and b) may be demonstrated by providing data indicating that the surface treatment does not have any of the classifications (or combinations thereof) listed in Table 4 (Appendix B of EC-32) for toxins, ecotoxins or respiratory sensitisers.

For b), the following efficiency figures are to be used:

Spray coating without recycling	50 %
Spray coating with recycling	70 %
Spray coating, electrostatic	65 %
Spraying, bell/disc	80 %
Roller coating	95 %
Curtain coating	95 %
Vacuum coating	95 %
Dipping	95 %
Rinsing	95 %

For example for spray coating without recycling, the organic solvent content limit will be 7/100 x 50% = 3.5%.

Test methods

Compliance with d) shall be demonstrated by providing test reports from a competent laboratory using the relevant test method below:

- AS/NZS 4266.16 Reconstituted wood-based panels – Methods of test – Formaldehyde emission – Desiccator method.
- AS/NZS 2098.11 Determination of formaldehyde emission from plywood.
- AS/NZS 4357.4 Structural laminated veneer lumber- Part 4 Determination of formaldehyde emissions.

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17 Rubber

The product shall meet the requirements below for rubber if rubber contributes more than 5% of the weight of the finished product.

Criteria

The applicant/licence holder must:

a have, implement and report on a procurement policy to prefer natural rubber and/or recycled rubber and to avoid or minimise the use of hazardous additives, such as 1,3-butadiene, N-nitrosamines or styrene;

b have a system to trace and verify the origin of any natural rubber;

c maintain records of any certification of rubber material used in licensed products; and

d have, implement and report on an ongoing programme to review options to include sustainably managed rubber content in licensed products.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation (as relevant):

- recording the supplier, nature and geographical source of all rubber inputs (including synthetics) to the product;
- where applicable for natural rubber including certificates or other evidence on forest management and certification; and
- including an initial report to the Trust on the procurement programme and subsequent year-on-year reporting at each three-yearly audit, or when requested between audits.

NOTE: The use of some phthalates or additives may be prohibited by the Hazardous Substances criteria in clause 5.3 of EC-32.

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18 Linoleum

The product shall meet the requirements below for linoleum if linoleum contributes more than 5% of the weight of the finished product.

Criteria

a. The licence applicant/holder must have, implement and report on a procurement policy to prefer material from sustainably managed sources or from waste and/or recycled sources; and

b. Collect and record and report information on the environmental attributes of materials, suppliers and the supply of material from sustainably managed sources such as Forest Stewardship Council or equivalent in licensed products.

Verification required

Conformance with these requirements shall be demonstrated by providing a written statement on compliance, signed by the Chief Executive Officer or other authorised representative of the applicant company/licence holder. The statement shall be supported by documentation (as relevant):

- recording the supplier, nature and geographical source of inputs to the product;
- including an initial report to the Trust on the procurement programme, and subsequent year-on-year reporting at each three-yearly audit, or when requested between audits; and
- describing management systems in place to ensure that these requirements are consistently met.

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19 Engineered stone

The product shall meet the requirements below if engineered stone contributes more than 5% of the weight of the product.

Engineered stone covered by this supplementary module includes material engineered from natural minerals such as stone (including sintered stone), and resin.

Criteria

19.1 Sourcing of raw materials

The applicant/licence holder or manufacturer (if different) must request the following plans from the mining operations where non-recycled mined/quarried materials come from:

a) Management plans, including any necessary policies and management procedures, to minimise adverse effects from the following potential impacts:
   - Noise;
   - Vibration;
   - Dust; and
   - Discharges to surface water, groundwater, oceans or land.

b) A quarry restoration plan.

c) A biodiversity management plan that includes:
   - Assessment of risk and materiality of the impacts on biodiversity from the land use and activities on the mining site.
   - Consultation with relevant local groups (i.e. indigenous communities).
   - Addressing impacts in accordance with the mitigation hierarchy.
   - Implementing measures to prevent accidental or deliberate introduction of non-native species that could have significant adverse impacts on biodiversity.
   - A mine restoration plan for when the site is no longer operational.
   - Information on how biodiversity outcomes are shared with stakeholders, made publicly available, periodically reviewed, and updated where necessary.

19.2 Crystalline silica

a) For engineered stone made with Crystalline Silica, **see module 11: Crystalline Silica**, including criterion c).

Verification required

Conformance with these requirements shall be stated in writing and signed by the Chief Executive Officer or other authorised representative of the applicant/licence holder company. This statement shall be supported by:

- Copies of the relevant management plans for 19.1, a) – c).
- Records demonstrating the management plans are being effectively implemented (including monitoring results). For a) iii) this could include actions with time-bound targets to address material impacts and monitor effectiveness of the actions.

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