Core Sustainable Development Goals

Hard Surfacing

Standard No: HSv2.0i-2019

Type 1 ecolabel standard in accordance with ISO 14024

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(Good Environmental Choice Australia Ltd)

GOOD ENVIRONMENTAL CHOICE AUSTRALIA

GECA

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Hard Surfacing

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Versions	Date Published	Summary of Changes
1.0	30 April 2008	Revision
1.1i	February 2017	Update: Alignment with GHS in relevant criteria; "Definitions and Acronyms"; Inclusion of notes in 'How to apply for GECA Certification' and 'Social and Legal Compliance' sections.
2.0	April 2019	Revision: Exclusion of concrete paving units; new Fitness for Purpose section: criteria Water Resource Use and Site Rehabilitation updated; many documents of conformance added; sections 3.3, 3.4, 3.5 updated; criterion 20 (Radioactivity) updated; criterion 21 (Water Emissions) updated; criterion 23 (silica dust) added; criterion 27 (Recycled Content Requirements) updated. Criterion 23 added which addresses problems with respirable crystalline silica dust and introduces preventive measures. change of GECA address, change of text in "USE OF GECA STANDARDS", change of text in "HOW to APPLY FOR GECA CERTIFICATION", change of DOCUMENT HISTORY, change of audit, auditor and auditing body to assessment, assessor and assurance provider, respectively, adding the definitions for above terms, updating links for gender equality, replacing OHSAS18001 by ISO45001:2018 in DoC 36.3
2.0i	July 2021	Update: Change of social criteria, addition of SDGs, addition of new terminologies, change of GECA address, change of text in "USE OF GECA STANDARDS", change of text in "HOW to APPLY FOR GECA CERTIFICATION", change of DOCUMENT HISTORY.

HOW TO APPLY FOR GECA CERTIFICATION

Organisations interested in GECA certification using the Good Environmental Choice Australia Ecolabel are encouraged to read carefully through the entire standard. A **checklist at the back of the standard** provides a helpful list of all criteria within the standard.

Please contact us via email enquiries@geca.org.au or complete the brief form located here on the GECA website to begin the application process. We will then forward an **information pack** and a link to complete an **obligation-free application form**. After receiving the completed application form, an approved GECA Assurance Provider will contact the applicant and give a clear overview of the steps needed to achieve certification and provide a quote for assessment.

Note: GECA reserves the right to refuse, suspend or postpone an application if (a) the organisation does not meet minimum compliance with Environmental Law, Labour Law, Fair Pay, Work, Health and Safety, Lawful behaviour (e.g. pending or ongoing lawsuits), (b) the organisation does not have transparent reporting that is available/accessible on request or (c) the core mission of the organisation and/or product is in conflict with GECA's mission and/or is perceived by GECA to pose a risk to the GECA brand or reputation.

DEFINITIONS & ACRONYMS

Agglomerated stones: Industrial products manufactured from a mixture of aggregates (typically natural stone grid of various size and type, sometimes mixed with other compatible material), additions and binder. The binder can be resin, hydraulic cement or a mixture of both in various percentages. The products are realised in form of blocks or slabs, which can be transformed in finished slabs, tiles, vanity tops or similar elements complementary to products for flooring and wall finishes, obtained by moulding technique which can or cannot be subsequently cut to size. Products realised with the technology of the agglomerated stones could be impregnated by suitable chemicals in order to impermeabilize the open pores.

The agglomerated stone products are classified according to the manufacturing technology, the type of binder and the type of stone elements.

Assessment: Process performed by the assessor to determine if the product conforms with the applicable GECA standard.

Assessment report: Full document composed by the assurance provider that states how the nominated product conforms or fails to conform to GECA standards. This report shall include appropriate and substantial evidence to jusitfy conformance decision.

Assessor: The individual performing the assessment as an employee or contractor of the assurance provider.

Assurance provider: Person or organisation accredited by the Independent Appointment Panel performing the conformance assessment.

Classification according to the type of binder: Agglomerated stone products can be bound by unsaturated polyester resin or other cross-linking resin. Agglomerated stone products can be bound by cement (white or grey). Agglomerated stone products can be bound by a mixture of resin and cement.

Classification according to the mineral composition of the stone elements: Agglomerated stone products can be constituted of stone elements of carbonate minerals. Agglomerated stone products can be constituted of stone elements of silica minerals. Agglomerated stone products can be constituted of stone elements both of carbonate and silica minerals.

Cement: For the purpose of this standard, cement refers to any binder substance used to bind and harden a product. This includes both non-hydraulic and hydraulic cements (including Portland cement and its various blends).

Ceramic tiles: Thin slabs made from clays or other inorganic raw materials extruded or pressed at ambient temperature, followed by firing at temperatures sufficient to develop the required properties.

Clay tiles: Thin slabs used for the surface course of pavements and manufactured predominantly from clay minerals. The areal density of such tiles shall not exceed 40 kg/m^2. This restriction does not apply for fired clay pavers.

Clinker: A general name given to waste from industrial processes - particularly processes that involve smelting metals, burning fossil fuels and using a blacksmith's forge. Clinker often forms a loose, black deposit that can consist of coke, coal, slag, charcoal, grit, and other waste materials. Clinker may be reused to make hard paths. It is laid and rolled and forms a hard path with a rough surface.

Concrete: A material obtained by mixing sands, gravel, cement, inorganic pigments and additives, to form a man-made rock.

Confined aquifer: An aquifer (composed of porous rock) that is bound above and below by dense

layers of non- porous rock. The aquifer contains water under pressure which is significantly greater than atmospheric pressure.

Dimensional stones: Stone materials that are sawn to particular dimensions and finished to particular textures.

EPBC: Is the acronym for the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth).

Exception : An exception is granted when an applicant is given permission by the GECA CEO or Board to become certified despite not meeting a particular criterion in the standard as identified during the assessment process, usually with a mandatory transition period.

GECA-Label: Means the Good Environmental Choice Australia Label.

GHS: Global Harmonized System of Classification and Labeling of Chemicals**.**

Granite: A common mineral assembly classified as a "natural stone" for the purposes of this standard.

Scientific definition: Geological granite is a plutonic igneous rock having visibly crystalline texture of medium to coarse graining; generally composed of feldspar and mica and quartz crystals (see "natural stone" definition).

Commercial definition: Commercial granite is a visibly granular, igneous rock generally ranging in colour from pink to light or dark grey and consisting mostly of quartz and feldspars, accompanied by one or more dark minerals. The texture is typically homogeneous but may be gneissic or porphyritic. Some dark granular igneous rocks, though not geologically granite, are included in the definition.

Commercial and scientific definitions of the granite group are explained in detail in ASTM C119.

Glass: An amorphous, highly silicious material which can incorporate various impurities or additives. Examples include soda-lime glass and borosilicate glass.

Gypsum: A very soft mineral composed of calcium sulphate dihydrate, with the chemical formula $CaSO_4 \cdot 2H_2O$.

H-Statements: GHS hazard statements refer to a standard phrase assigned to a hazard class and category to describe the nature and severity of a chemical hazard; and are assigned a unique numerical code.

ICP-AAS: Means Inductively-Coupled Plasma Atomic Absorption Spectroscopy.

ISO: Is the acronym for the International Organisation for Standardisation.

IARC: Is the acronym for the International Agency for Research on Cancer.

Limestone: A sedimentary rock composed largely of the mineral calcite (calcium carbonate: $CaCO_3$) that is the deposited remains of marine animals. For the purpose of this standard limestone is classified as natural stone (see "Natural Stones" definition).

Marble: A hard crystalline metamorphic rock resulting from the metamorphism of limestone that takes a high polish. For the purposes of this standard marble is classified as natural stone (see "Natural Stones" definition).

NATA: Is the acronym for the National Association of Testing Authorities (see: http://www.nata.asn.au/).

Natural stones: Pieces of naturally occurring rock, including marble, granite and other naturally occurring stones.

Pegmatites (geological): Very coarse-grained granite that has a grain size of 20 mm or more. Pegmatites crystals are composed mainly of quartz, feldspar and mica.

Primary material: The main economic product made in the operation.

Processed products: Products that are either fired products (e.g. ceramic tiles, clay tiles, glass tiles) or hardened products (e.g. agglomerated stone tiles, terrazzo tiles).

Populated area: For the purpose of this standard, populated area is defined as any area with a habitant density of more than 50 habitants per square kilometre (> 50 hab/km^2).

Ramsar wetland is an area of wet habitat composed of vegetation identified under the Ramsar treaty. It provides the framework for national action and international cooperation for the conservation of wetlands and their resources. See http://www.ramsar.org for more information.

Recycled content includes both pre- and post-consumer recycled content. Post-consumer content is material generated by households, or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. Pre-consumer content is material diverted from the waste stream during a manufacturing process. Excluded is re-utilisation of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

R-Phrases: Abbreviation for Risk Phrases. These phrases are defined in Annex III of European Union Directive 67/548/EEC: *Nature of special risks attributed to dangerous substances and preparations.* R-phrases have been mostly replaced by H-statements (Hazard Statements) as part of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Sandstone: A clastic sedimentary rock composed of sand sized grains set in a matrix of silt or clay, and firmly united by a cementing agent (silica, iron oxide, or calcium carbonate). For the purpose of this standard, sandstone is classified as a natural stone (see “natural stone” definition).

SCM: Supplementary Cementitious Materials.

SDGs (Sustainable Development Goals): Adopted by all United Nations Member States in 2015, (SDGs) are a new, universal set of goals, targets and indicators that UN member states will be expected to use to frame their agendas and political policies over the next 15 years.

SDS: Safety data sheet.

Slag: A by-product, containing inert materials, produced during the blast furnace smelting process and other metallurgic operations.

Slate: A fine-grained, metamorphic rock derived from an original shale-type sedimentary rock composed of clay or volcanic ash through low grade regional metamorphism. For the purposes of this standard slate is classified as natural stone (see “Natural Stones” definition).

Suspended solids: Organic or inorganic particles that are suspended in and carried by water. The term includes sand, mud, and clay particles as well as solids in waste water.

Terrazzo tiles: A suitably compacted element of uniform shape and thickness which meets specific geometric requirements. For the purpose of this standard terrazzo tiles are classified as a sub-category of agglomerated stones. The product usually is comprised of irregular, often coloured fragments of marble or stone, set in a matrix of white or coloured cement.

ABOUT GECA

At GECA, we help organisations and individuals to *make*, *buy* and *do* better for people and planet. We are a purpose-driven not-for-profit that stands for **integrity**, **independence** and **impact**.

We offer a suite of services designed for anyone committed to continuous improvement in their sustainability, including Australia's only not-for-profit multi-sector ecolabelling program.

GECA has proudly been a Certified B Corp since November 2015. We are part of a global movement of organisations in over 50 countries across 130 industries trying to make the world a better place.

AN OVERVIEW OF GECA'S STANDARDS

Following ISO 14024: *Environmental labels and declarations - Type I environmental labelling - Principles and procedures* and ISEAL frameworks for global best practice in ecolabelling, we've developed our rigorous standards, which are independently assessed by GECA Approved Assurance Providers.

ISO 14024 is internationally recognised and has been adopted as a benchmark for life cycle-based ecolabels by GEN, the international federation of ecolabelling bodies. Our standards are relevant to critical Australian industries, and GECA is the only Australian GEN member.

ISO 14024 requires environmental labelling specifications to include criteria that are objective, reasonable and verifiable. The purpose of voluntary environmental labels and declarations is to communicate **verifiable and accurate** information for the numerous environmental and social aspects of goods and services. As required by the Trade Practices Act, the information cannot be misleading. Such transparent information encourages the demand for, and supply of, those products or services that cause less harm to people and planet, thereby stimulating the potential for market-driven continuous environmental and social improvement.

While following ISO 14024 for environmental, health and fit for purpose criteria, **GECA's standards go above and beyond**, including social impact criteria. At GECA, we know that nothing can be truly sustainable if it only looks at environmental impacts and ignores the treatment of people. GECA standards identify the **environmental**, **human health**, **fit for purpose** and **social impact** criteria that the top environmentally and socially performing products or services sold in the Australian marketplace can meet to be recognised by GECA as "environmentally and socially preferable".

All GECA standards are based on life cycle thinking, allowing organisations to understand their sustainability impacts and where they occur within their operation's life cycle, **from raw materials to end-of-life**. We have used these principles to set criteria to address relevant sustainability loads typical in a product category. As such, this standard may also offer guidance for organisations to reduce the harmful impacts of their products or services. Organisations may use the criteria in this standard as an optimisation tool to design and refine the processing, manufacturing, packaging and delivery of their products or services. Also, organisations may uncover other sustainability issues and potential measures within the product's or service's life cycle.

At GECA, we encourage both manufacturers and retailers to include and adapt improvements in their processes and product designs that will enable them to achieve even better sustainability results where technically possible. GECA welcomes feedback where this has occurred.

While all GECA ecolabelling standards are voluntary, nevertheless they contain criteria that address compliance with specific laws. Also, a GECA standard may recognise specific Australian standards. A prerequisite for certification under the GECA ecolabel is to satisfy the relevant Australian and international standards, where required by law. However, Australia's compulsory standards typically focus on fit for purpose criteria instead of assuring environmental and social preferability. **GECA's ecolabelling standards go beyond mandatory Australian standards** and define an environmental and social benchmark for specific product categories.

Where a product or service is certified under our standard, it may display the GECA ecolabel (the "Good Environmental Choice Australia Mark") to show that it has been independently assessed and demonstrates conformance with the environmental and social criteria detailed in this standard.

Products or services certified as conforming to our standards may gain a marketing advantage in government and business procurement programs, as well as greater market recognition in general because of their independently verified sustainability attributes. GECA certification demonstrates leadership and may help to future-proof supply chains and improve economic performance. By generating genuine benefits for people and planet, it is possible to gain increased customer loyalty.

For further information please contact GECA
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STRUCTURE OF THE STANDARD

Within each section of this standard, you will find criteria and Demonstrations of Conformance (DoCs). The criteria outline the requirements for the product and applicant company regarding its sustainability performance. The DoCs list the information required to verify compliance with the criteria. Selected sections also contain introductory text which outlines the purpose behind the criteria or the reason for its inclusion in the standard.

REQUESTING ADDITIONAL EVIDENCE

DoCs are listed for each criterion within this standard; however, a GECA Approved Assessor may request additional information to ensure conformance on a case-by-case basis. Therefore, the DoCs listed below should be considered a guide to the applicant organisation's minimum DoCs.

RELEVANCE WITH SUSTAINABLE DEVELOPMENT GOALS

Each of GECA's standards is linked to specific Sustainable Development Goals (SDGs) set by the United Nations. The 17 SDGs are an internationally agreed framework for urgent action to achieve the 2030 Agenda for Sustainable Development adopted by all UN member states in 2015, including Australia. The goals address global challenges, including global inequality, climate change, environmental degradation, peace and justice. Each standard criterion answers specific SDG targets.

Each criterion within this standard answers to a specific SDG target. These specific SDGs are shown below and are highlighted throughout each section of the standard, including the core SDGs related to this standard as further illustrated.

Core SDGs relevant to GECA's Hard Surfacing standard

CORE SDG: 3 GOOD HEALTH AND WELL-BEING

GECA Standard Criterion

- Hazardous and prohibited substances: criteria 3-8
- Protection from silica dust: criterion 23
- Workplace health and safety: criterion 36

SDG 3 Specific target 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

SDG 3 Specific target 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

CORE SDG: 10 REDUCED INEQUALITIES

GECA Standard Criterion

- Social and legal compliance: criteria 34-40

SDG 10 Specific target 10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, or economic or other status.

SDG 10 Specific target 10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard.

SDG 10 Specific target 10.4 10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality.

CORE SDG: 12 RESPONSIBLE CONSUMPTION AND PRODUCTION

GECA Standard Criterion

- Hazardous substances: criteria 3-7
- Usable material ratio: criterion 12
- Energy management: criteria 24, 25
- Waste management: criterion 26
- Recycled content requirements: criterion 27

SDG 12 Specific target 12.2 By 2030, achieve the sustainable management and efficient use of natural resources.

SDG 12 Specific target 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.

SDG 12 Specific target 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse.

CORE SDG: 15 LIFE ON LAND

GECA Standard Criterion

- Environmental remediation: criterion 11
- Environmental legislation: criterion 34

SDG 15 Specific target 15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements.

SDG 15 Specific target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

SDG 15 Specific target 15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

BACKGROUND

Naturally occurring substances, such as clay, sand and rocks, have been quarried and used for construction work for as long as history can recall. In Australia, hard surfacing products play a significant part in the multi-billion dollar building and construction industry. You can find these materials in homes, schools, hospitals, roads and many other places across the built environment.

However, the impacts of hard surfacing on people and planet can be significant, including the energy spent in sourcing the raw materials and the adverse effects of quarries and air and water pollutants emitted during the finishing operations.

For example, quarries can be located close to human habitation, leading to noise, vibration, and dust that may impact residents. Stone quarrying can also be disruptive to the balance of wildlife, plant life, and water bodies in the area. Improper methods can lead to the removal of crucial native vegetation, erosion and pollution of waterways from site runoff.

Considering the size of this industry and the amount of sourced, finished and installed hard surfacing products, it is important that the key environmental impacts of this category of products are identified and minimised.

Quarrying, fabrication and testing of hard surfacing products are more sophisticated than ever before, allowing for the establishment of best practice methods to lower the stone industry sector's impacts. The GECA standard seeks to support and reward such efforts. Hard surfacing products that comply with this standard will have considerably lower adverse environmental, social and health impacts than its competitors.

The standard sets requirements that aim to provide a benefit by:

- minimising the impacts of mining and quarrying operations on the surrounding environment
- restricting the sourcing of petrochemical products
- limiting emissions to water and air
- encouraging the use of recycled content
- requiring efficient energy, water and waste management
- encouraging recovery, reuse, recycling and responsible disposal of materials and packaging
- preventing the use of specific hazardous materials and toxic heavy metals such as known carcinogens and mutagens
- ensuring workers and suppliers through the supply chain can expect fair pay, equal opportunity, and a safe working environment

FIT FOR PURPOSE CRITERIA

1. STANDARD CATEGORY SCOPE

1.1 Scope schedule

Criterion 1: This standard is applicable to the following categories of hard surfacing products for interior or exterior use, without any structural function, and suitable for use as horizontal or vertical surfacing:

- Natural stone
- Agglomerated stones
- Terrazzo tiles
- Ceramic tiles
- Clay tiles
- Glass tiles

Other environmentally innovative hard surfaces that do not directly fit the above categories may be considered for certification provided the product fulfils the requirements of relevant sections of this standard. This standard is regularly reviewed so other categories may be added at a later date.

Exclusion and Notes

This standard excludes roof tiles and exterior building cladding.

This standard excludes hybrid and composite products and those containing materials not directly specified in the scope of this standard.

Demonstration of Conformance

DoC 1.1: Detailed description of the product(s) or product range; AND

DoC 1.2: Explanation of applicability of the product(s) to the scope of this standard.

2. FITNESS FOR PURPOSE

To be certified, the product(s) shall be fit to perform their intended purpose or application. A minimum level of quality and durability is implicit before the Good Environmental Choice Australia Ecolabel can be displayed on the product. The producer/manufacturer shall ensure that the product is fit for its intended purpose.

2.1 Applicable Standards and Demonstrated Fitness

Criterion 2: The product shall meet the performance requirements of relevant Australian or international standards for its intended application. The product shall be supplied with a data sheet with details on the test procedure and results.

Demonstration of Conformance

DoC 2.1: A detailed description of the product as it relates to relevant Australian (or other equivalent) standards; AND

DoC 2.2: Copy of the data sheet. Details of the test procedures and results shall be included in the data sheet together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table 1 outlines minimum data requirements (additional details can be found in APPENDIX A). The test methods can be used as guideline. Other test methods might be used if they lead to comparable results.

Table 1. Summary of minimum data requirements for the data sheet.

Product Type	Material/Other specifications	Standard/Test Method	Properties
Dimensional Stone	Granite	ASTM C615 - Standard Specification for Granite Dimension Stone	Absorption; density; compressive strength; flexural strength; abrasion resistance[1]
	Marble	ASTM C503 - Standard Specification for Marble Dimension Stone	Absorption; density; compressive strength; flexural strength; abrasion resistance[1]
	Limestone	ASTM C568 - Standard Specification for Limestone Dimension Stone	Absorption; density; compressive strength; modulus of rupture; abrasion resistance[1]
		AS/NZS 4456 Masonry Units and Segmental Pavers - Methods of Test	Resistance to salt attack
	Sandstone	ASTMC616 - Standard Specification for Quartz-Based Dimension Stone	Absorption; density; compressive strength; modulus of rupture; abrasion resistance[1]
		AS/NZS 4456 - Masonry Units, Segmental Pavers and Flags - Methods of Test	Resistance to salt attack
	Slate	ASTMC629 - Standard Specification for Slate Dimension Stone	Absorption; modulus of rupture; abrasion resistance; acid resistance
	Other Stone	[2]	Absorption; density; compressive strength; modulus of rupture and/or flexural strength; abrasion resistance[1]

Stone Tiles		EN12057- Natural Stone Products. Modular Tiles. Requirements	Flexural strength; water absorption; open porosity; frost resistance; abrasion resistance
Paving Units and Flags	Natural Stone, Fired Clay	AS/NZS 4456 - Masonry Units, Segmental Pavers and Flags - Methods of Test	Dimensional deviation; unconfined compressive strength; breaking load; abrasion resistance; salt attack resistance; moisture expansion; water absorption; modulus of rupture
Agglomerated Stone Products		EN14617 - Agglomerate Stone. Test Methods.	Density and water absorption; flexural strength; abrasion resistance; impact resistance; dimensional stability; compressive strength; geometric characteristics and surface quality
Terrazzo Tiles	Internal Use	EN 13748-1 - Terrazzo Tiles. Terrazzo Tiles for Internal Use	Geometric characteristics; surface characteristics; mechanical strength
	External Use	EN13748-2 -Terrazzo Tiles. Terrazzo Tiles for External Use	Geometric characteristics; surface characteristics; mechanical strength; weather resistance
Ceramic Tiles		AS 4459 - Methods of Sampling and Testing Ceramic Tiles	Dimensional characteristics and surface quality; water absorption; modulus of rupture and breaking strength; impact resistance; surface abrasion; moisture expansion; cadmium and lead release rate
Glass Tiles		AS 4459 - Methods of Sampling and Testing Ceramic Tiles	Dimensional characteristics and surface quality; modulus of rupture and breaking strength; impact resistance
Products for floors		AS/NZS 4586 – Slip Resistance Classification of New Pedestrian Surface Materials	Slip resistance

Notes:

1 – This requirement is optional if the material is used solely for vertical surfaces.

2 – Where the natural stone material cannot be classified within the specific category, the fitness for use will be independently evaluated based on results of appropriate physical property tests.

3. HAZARDOUS MATERIALS

3.1 Prohibited Substances

Criterion 3: The following compounds, their functional derivatives or in-situ precursors shall not be added to products, their component parts, their packaging or be used at any stage of the manufacturing process, including as preparatory agents, cleaners or degreasers in the production facility:

- The heavy metals arsenic, copper, chromium, tin, mercury, lead, cadmium or antimony
- Elemental chlorine or other materials that can give rise to dioxins
- Halogenated organic flame retardants (e.g. decaBDE, chlorinated paraffins, etc.)
- Flaming additives for natural products
- Halogenated organic solvents
- Aniline based amines
- Aziridine or polyaziridines
- The phthalates DEHP, DBP, DAP, BBP, DMP, DMT, DEP, DMEP and DIBP
- Alkylphenolethoxylates (APEO) or their derivatives (APDs)
- 1,3 butadiene

Demonstration of Conformance

DoC 3.1: A schedule of the constituent chemical substances in g/kg used in the manufacture of the product that are classified as harmful, and relevant SDS; AND

DoC 3.2: A signed declaration from an Executive Director of the applicant company stating that the above compounds, their functional derivatives or in-situ precursors are not added to finished products, their component parts or be used at any stage of the manufacturing process, including as preparatory agents, cleaners or degreasers in the production facility.

Criterion 4: Substances bearing any of the following risk phrases or classifications shall not be used in the manufacture of the certified product:

- Acutely toxic substances including any R26-28 (H310, H330, H370) substances, R50-R53 (H400, H401, H402, H410, H411, H412, H413) and R54 – R59 classified) substances and Occupational Safety and Health Administration (OSHA) highly hazardous chemicals, toxics and reactives https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.119AppA
- Irritants and sensitising agents including R36-38 (H319, H335, H315) and R42-43 (H334, H317) substances
- Carcinogens, teratogens and mutagens including:
    - any R45-49 (H350, H340, H373, H372) substances,

- IARC group 1 or 2A substances,
- EU consolidated list of C/M/R category 1 or 2 substances

- Rotterdam Convention Annex III substances

For IARC listed substances dosage, exposure rates and pathways need to be taken into account. Further information on these subjects can be found within the IARC-monographs for listed substances. Summaries of the monographs are available under:
http://monographs.iarc.fr/ENG/Classification/index.php

Demonstration of Conformance

DoC 4.1: A schedule of the constituent chemical substances in g/kg used in the manufacture of the product that are classified as harmful, and relevant SDS.

Criterion 5: Lead, cadmium or antimony can be used in additives for glazing if the total content and release rates of these heavy metals are less than the limits listed in Table 2. Release rate testing shall be undertaken in conformance with ISO 10545-15, or equivalent.

Table 2. Heavy metal content limits and release rate limits for glazes.

Parameter	% by weight of glaze	Release rate (mg/m2)
Lead	0.5	80
Cadmium	0.1	7
Antimony	0.25	na

Demonstration of Conformance

DoC 5.1: Signed declaration by an Executive Officer that lead, cadmium or antimony are not used as additives in glazing; OR

DoC 5.2: Release rate test results using test method ISO 10545-15, or equivalent showing that limits are met; AND

DoC 5.3: Calculations showing that weight limits are met; AND

DoC 5.4: Signed declaration from an Executive Director of the applicant company stating that attempts have been undertaken to replace heavy metal glazes with environmentally preferable alternatives; and documentation clearly outlining how each chemical is used, managed and stored; and evidence that human exposure or environmental contamination is prevented.

3.2 Overall Pollutant Loads

Criterion 6: In order to reduce pollutant hazards in the disposal, landfill and/or recycling at the end-of-life phase of products, these substances shall not be detectable in certified products:

- Tar oils (benzo(α)pyrene)
- Pentachlorophenol (PCP)
- Asbestos
- 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD, dioxin)

The heavy metals listed in Criterion 3: may not comprise more than 0.05 % by weight (in total) of the

finished certified product, regardless of origin (whether a natural impurity or additive).

Demonstration of Conformance

DoC 6.1: Signed declaration by an Executive Officer that listed substances are not present in the product; AND

DoC 6.2: Test results showing that listed substances have not been detected in final product; AND

DoC 6.3: Test results and/or other appropriate documentation showing that heavy metals in the product do not comprise more than 0.05 % by weight of the product.

3.3 Radioactivity

Criterion 7: This criterion applies to products intended for indoor use that contain greater than 75 % by mass of:

- Granites, pegmatites or gypsum,
- Slag, clinker, or other waste from smelting, or
- Ash from coal or peat.

Radioactive safety may be demonstrated in either of the following ways:

a) Gamma Spectrometry (direct measurement):

The product must emit less ionising radiation than the UNSCEAR global median for soils, namely:

- CK < 400 Bq/kg;
- CRa < 35 Bq/kg; and
- CTh < 30 Bq/kg.

b) Chemical composition (indirect measurement):

The finished certified product must not contain more uranium, thorium and potassium than specified in Table 3.

Table 3. Content limits for some potentially radioactive elements

Element	Content limits (mg/kg)
Uranium	8
Thorium	15
Potassium	50000

Demonstration of Conformance

DoC 7.1: Copy of documentation from the producer clearly outlining how the use of each chemical scheduled is limited and managed; AND

(One of the following is required as a minimum)

DoC 7.2: Statement of the composition of the product showing that the composition contains less than 75 % of the stated raw materials; OR

DoC 7.3: Gamma spectrometry results using crushed materials in a laboratory, accompanied by specification of a standard test method (e.g. ASTM C1402 – 04 using crushed materials) or technical

details of the actual test method used. Results must be reported in units of Bq/kg; OR

DoC 7.4: Gamma spectrometry results using a portable gamma spectrometer at the quarry. Results must be reported in units of Bq/kg; OR

DoC 7.5: Results of any strong acid digest ICP-AAS or ICP-MS technique showing concentrations of U, Th and K less than the limits above.

3.4 Adhesives, Coatings, Waterproofing, Sealers, Fillers and Other Treatments

Criterion 8: Recommended adhesives must comply with the labelling requirements in Criterion 31.

All component parts (including adhesives, coatings, waterproofing agents, sealers, fillers, other treatments or backings) used in the manufacture or in the recommended installation of certified products must be previously certified by Good Environmental Choice Australia, carry another ISO 14 024 based ecolabel acceptable to GECA, comply with the requirements of the relevant GECA standard or comply with the following requirements:

i. The content of volatile organic compounds (VOCs) in adhesives shall not exceed 5 % by weight; and

ii. Phthalates, alkylphenolethoxylates, halogenated solvents, or bioaccumulative preservatives shall not be present in the adhesive or used in production (diisodecyl phthalate (DIDP), diisononyl phthalate (DINP)) may be used in the production of industrial adhesives for wood and plastic binding applications); and

iii. The adhesive shall not be capable of exposing users to carcinogenic IARC group 1 or 2A substances.

Demonstration of Conformance

DoC 8.1: A signed declaration from an Executive Director stating that no adhesives, coatings, water proofing, sealers, fillers or other treatments are used in the manufacture or in the recommended installation of the product; OR

DoC 8.2: Schedule of adhesives, coatings, water proofing, sealers, fillers or other treatments used; and one or more of the following as applicable:

DoC 8.3: A copy of the relevant ecolabel certificate; OR

DoC 8.4: Where adhesives, coatings, water proofing, sealers, fillers or other treatments used are not certified by an ecolabel, the applicant can demonstrate that they satisfy the hazardous materials section of this standard or the requirements listed in the criterion.

4. RAW MATERIAL REQUIREMENTS

4.1 Quarried or Mined Materials

Criterion 9: The geographical origin of pre-consumer recycled and virgin quarried or mined material must be documented, to enable confirmation of the origin throughout the supply chain.

Quarried or mined mineral for use as raw materials in hard surfacing products must be sourced from a production facility that complies with Section 10.1 of this standard.

Demonstration of Conformance

DoC 9.1: Information about the virgin material procurement program and records of the supplier, nature and geographical source of all virgin mined or quarried material inputs; AND

DoC 9.2: Evidence as described in Criterion 34 for production facility supplying quarried or mined minerals for use as raw materials.

The requirements of the following sub-sections (4.1.1 to 4.1.8) apply only to the quarry or mine which is the major supplier of quarried or mined raw materials for the certified product.

4.1.1 Water Resource Use

Criterion 10: The quarry or mine pit must not interfere with a confined aquifer. Water may be drawn from confined aquifers provided that the bore is sealed and the flow rate is measured. Bore use must not be continued if the flow rate decreases by greater than 20 % of the initial rate, averaged over a five year period (or in case records are not dated as far back, a shorter period may be sufficient to calculate the initial flowrate). If a flow rate measurement followed by a consecutive measurement shows a flow rate below 80 % of the initial flow rate; bore use shall be discontinued. Test pumping to monitor flow rates may be carried out to establish whether the rate improves again in which case the bore may be reopened.

Surface water must not be used if the water body is located within, or is directly connected to a:

- National park,
- Drinking water catchment area,
- Ramsar Wetland,
- Area identified by the EPBC Act as containing threatened species or ecological communities.

For areas outside Australia, reference to national classification frameworks comparable to the EPBC Act must be provided.

Quarrying and mining operations must be able to demonstrate procedures or measures to minimise the impact of water use. This may include, but is not limited to, water recycling, rainwater collection and settling ponds.

Water released off-site directly from quarrying and mining operations must not exceed 5 l/m^3 of extracted material. This limit does not include natural runoff from the site during rain events or water consumed in closed loop recycling systems. Suppliers are requested to obtain and provide data on water release from the main quarrying operation for the purpose of refining this criterion in future versions of the standard.

Demonstration of Conformance

DoC 10.1: Information about the location and characteristics of the bore; including calculation of the initial flow rate;

DoC 10.2: Relevant bore flow rate reports;

DoC 10.3: Evidence of procedures and measures to minimise the impact of water use.

DoC 10.4: Records of measurements and/or calculations of water released off-site. Where the operation is small, 5 l/m^3 may represent an immeasurable daily amount and in this case appropriate documentation and/or site visit showing that no water is released off-site may be accepted as DoC.

4.1.2 Site Rehabilitation

Criterion 11: The main quarry or mine shall have a documented and publicly available environmental rehabilitation program in place, and where required a suitable rehabilitation guarantee.

The main quarrying and mining operations must be able to demonstrate site-specific weed control measures in relevant areas where existing vegetation is disturbed by the operation.

Demonstration of Conformance

DoC 11.1: Evidence of lodged or published environmental rehabilitation program (and/or rehabilitation guarantee where required); AND

DoC 11.2: Documentation showing that weed control measures are undertaken.

4.1.3 Usable Material Ratio

Criterion 12: The extraction efficiency of the main mining or quarrying operation must meet the requirements listed in Table 4. This requirement only applies to primary materials but not to by-products of mining operations or recycled waste materials.

Table 4. Extraction efficiency requirements for mining and quarrying operations. Figures are given in m^3 of usable material per m^3 of total extracted material.

Primary Material	Primary Material
Marble Granite Sandstone Limestone Slate Other natural stones	0.30
Sand and aggregate	0.60

Demonstration of Conformance

DoC 12.1: Data showing relevant extraction ratios.

4.1.4 Operating Equipment

Criterion 13: All mechanical operating equipment shall be regularly maintained at the intervals recommended by the manufacturer of the equipment.

Used motor oil shall be recycled or disposed of by a licensed waste contractor.

A procurement policy shall be in place that gives preference to operating equipment on the basis of fuel economy and energy efficiency.

Demonstration of Conformance

DoC 13.1: Documentation showing current maintenance schedule for all mechanical operating equipment, including relevant operating manuals and maintenance sheets; AND

DoC 13.2: Documentation showing which licensed waste contractor is used; AND

DoC 13.3: Evidence of implemented procurement policy that meets requirements of the criterion.

4.1.5 Dust Emissions

Criterion 14: The PM_{10} dust emissions to air shall be less than 100 µg/Nm^3 where the main mine or quarry is located within 5 km of a:

- Populated area
- National park
- Drinking water catchment area
- Ramsar Wetland
- Area identified by the EPBC Act as containing threatened species or ecological communities.

The test method must be in line with EN 12341 or equivalent.

Demonstration of Conformance

DoC 14.1: Documentation and calculations showing that criterion is not applicable; OR

DoC 14.2: PM_{10} test results from measurements along border of quarry area in accordance with the relevant test methods.

4.1.6 Water Emissions

Criterion 15: Suspended solids in effluent water shall be less than 30 mg/l, where the operation discharges to surface waters that interact with a:

- National park
- Drinking water catchment area
- Ramsar Wetland

- Area identified by the EPBC Act as containing threatened species or ecological communities. For such areas, suspended solids in effluent water shall not exceed 40 mg/l.

The test method must be in line with ISO 5667-17 or equivalent.

Demonstration of Conformance

DoC 15.1: Documentation and calculations showing that criterion is not applicable; OR

DoC 15.2: Water quality test results using test method in line with ISO 5667-17 or equivalent.

4.1.7 Noise

Criterion 16: Where the main mine or quarry is located within 5 km of a populated area, the noise level from the operation shall not exceed 70 dB(A), measured at the perimeter of the mine or quarry.

Demonstration of Conformance

DoC 16.1: Documentation and calculations showing that criterion is not applicable; OR

DoC 16.2: Test results using test methods in line with ISO 1996-1 or equivalent.

4.1.8 Visual Impact

Criterion 17: Where the mine or quarry is located within 5 km of a populated area, the visual impact of the operation must not exceed 30 as defined in Appendix D of this standard.

Demonstration of Conformance

DoC 17.1: Documentation and calculations showing that criterion is not applicable; OR

DoC 17.2: Calculation of the visual impact of mines and quarries using APPENDIX C.

4.2 Plastics and Other Synthetic Materials

Criterion 18: Petrochemical products for use as raw materials in hard surfacing products shall be sourced from a production facility that complies with Criterion 34 of this standard.

Synthetic resins (including polyester) shall not comprise more than 10 % of the weight of the certified product.

Demonstration of Conformance

DoC 18.1: A signed declaration stating that the production facility supplying quarried or mined minerals for use as raw materials complies with environmental legislation (as described in Criterion 34); AND

DoC 18.2: Material formulation or SDS showing if and how much synthetic resin is used in the product.

4.3 Cement Content of Certified Products

Criterion 19: This criterion applies to products with a cement component of >15 % (by weight).

The cement used in the product/concrete shall meet one of the following requirements:

i. Supplementary Cementitious Materials (SCM): The cement shall contain at least 30 % of

SCM. SCM materials must comply with AS 3582 for SCM for use with general purpose and blended cement series. Or it shall be demonstrated that the cement manufacturing plant(s) has/have implemented technologies/methods that lead to a reduction in CO_2 emissions.

ii. The CO_2 emissions of the cement manufacturing plant(s) must be lower than 605 kg CO_2/tonne of cement.

Demonstration of Conformance

DoC 19.1: SCM: Information about the type and amount of SCM in the cement, and calculations showing the percentage (by mass) of SCM in the product. The amount of SCM that may already be contained in the general purpose cement (maximum 7.5 %) does not count towards the 30 % SCM; OR

DoC 19.2: CO_2 emissions: Information about technologies/methods used together with documentation listing details on CO_2 emissions. The calculation of CO_2 emissions has to be in accordance with the World Business Council on Sustainable Development – Cement Sustainability Initiative's (WBCSD-CSI) "CO_2 and Energy Accounting and Reporting Standard"
(https://www.wbcsd.org/Sector-Projects/Cement-Sustainability-Initiative/Resources/CO2-Accounting-and-Reporting-Standard-for-the-Cement-Industry).

4.4 Transport of Raw Materials

Criterion 20: 50 % of raw materials in the product (based on weight) shall be indigenous raw materials (recovered, harvested; extracted or produced within 800 km radius of the manufacturing site).

Demonstration of Conformance

DoC 20.1: Documentation showing the major raw material suppliers and their location; and calculations showing that 50 % of the raw materials are from within 800 km of the product's manufacturing site.

5. ENVIRONMENTAL EMISSIONS

5.1 Water Emissions

This section applies to all products (both natural and processed).

Criterion 21: Effluent waters discharged to the environment from processing or finishing operations shall not exceed the following limits. These limits apply after water treatment either on- or off-site. Municipal sewage treatment plant emission levels may be used if waste water is discharged directly to the sewer by permit from the relevant local authority.

Table 5. Water emission limits for all finished products.

Emission	Limit (mg/l)	Recommended Test Method
Suspended solids*	40	ISO 5667-17 or equivalent
Cadmium	0.015	ISO 8288 or equivalent
Chromium (VI)	0.15	ISO 11083 or equivalent
Iron	1.5	ISO 6332 or equivalent
Lead	0.15	ISO 8288 or equivalent

* Where finishing operations are conducted on the same site as extraction operations, section 4.1.6 shall be used as the suspended solids emission limit.

The waste water produced by the processes included in the production chain shall reach a recycling ratio of at least 90 %. The recycling ratio shall be calculated as the ratio between the waste water recycled or recovered (by applying a combination of process optimisation measures and process waste water treatment systems, internally or externally at the plant), and the total water that leaves the process.

Demonstration of Conformance

DoC 21.1: The applicant shall provide the corresponding analysis and test reports for each emission parameter measured at all emission points. Where no test method is specified or is mentioned as being for use in verification or monitoring, the assessor may rely as appropriate on declarations and documentation provided by the applicant and/or independent verifications.

DoC 21.2: Calculation of the recycling ratio including raw data on total waste water produced, water recycled and the quantity and source of fresh water used in the process.

5.2 Air Emissions

Criterion 22: Air emissions for each material type are to be measured as follows:

- Agglomerated stone and terrazzo tile – whole manufacturing process
- Clay and ceramic tile – firing stage (cold emissions are covered below)
- Glass tile – whole manufacturing process
- Natural products – finishing stage.

If the finishing operation for natural stone products is conducted at a different site from the extraction operation, a human health risk assessment must be undertaken to identify the nature and possible risks of particulate emissions associated with finishing operations. Where finishing operations for natural stones are conducted on the same site as extraction operations, section 4.1.5 shall apply as the air emission requirement.

Emissions to air shall not exceed the following limits.

Table 6. Air emission limits for certified products. Recommended test methods are the same as specified in Table 2 and ISO/CD 15713 or equivalent for fluorine. The limit values for styrene include the production of any synthetic resin that may be used.

	Limit Values (mg/m² of product)				
Emission	Agglomerated Stones	Ceramic or Glass Tiles	Clay Tiles	Terrazzo Tiles	Natural Products
Dust	300	200	250	300	300
SO_2	850	1500	2000	1500	na
NO_x	1200	2500	3000	2000	na
F	na	200	200	na	na
Styrene	2000	na	na	na	na

Total cold emissions (from pressing, glazing and spray drying) during clay and ceramic tile manufacture shall not exceed 5 g/m^2 of product.

Demonstration of Conformance

DoC 22.1: Appropriate documentation and test reports for each emission parameter mentioned above; or the assessor may rely as appropriate on declarations and documentation provided by the applicant and/or independent verifications.

Criterion 23: Work on materials producing silica dust (respirable crystalline silica) shall be performed using a method that promotes a "low-dust" working environment and minimises the exposure to the respiratory fraction of dust. An effective silica dust management should heavily reduce the dust or completely remove the dust from the environment using exhaust ventilation, extraction hoods, wet working systems (wet cutting) and air filters. If ventilation is used, it shall be well fitted, cleaned, and maintained; the workers shall wear personal protective equipment specifically designed for respiratory protection, gloves, safety glasses and overalls; they shall be given clear safety instructions about working with silica dust producing materials.

The above protective measures should be considered at:

- Production sites where materials producing silica dust are created, cut or processed, and
- Any place where materials with the potential of producing silica dust are installed or placed by workers for different applications.

Demonstration of Conformance

If no respirable silica dust occurring during manufacture or installation of product:

DoC 23.1: Signed declaration from an Executive Officer of the organisation stating that no respirable

silica dust occurs during manufacture or installation of the product; AND

DoC 23.2: Copy of current safety data sheet (SDS).

OR;

If respirable silica dust is likely to occur during manufacture or installation of product:

DoC 23.3: Copy of current safety data sheet (SDS) detailing the handling of respirable crystalline silica dust; OR

DoC 23.4: Product label detailing the handling of respirable crystalline silica dust; AND

DoC 23.5: Copy of procedure describing how materials with respirable crystalline silica are handled during the production process; AND

DoC 23.6: Signed declaration from an Executive Officer of the organisation (manufacture and importer of products) stating that copy of SDS is readily accessible to workers in contact with the hazardous substasnce at the workplace; AND

DoC 23.7: Copy of employee induction records, training records, meeting records and risk assessments of exposure to silica dust.

6. ENERGY AND WASTE MANAGEMENT

6.1 Direct Energy Consumption

Criterion 24: Energy consumption during the production of certified products shall not exceed the limits specified in Table 7 when calculated using the method and figures given in APPENDIX B. Applicants shall undertake an energy audit including all energy flows in the production process for the purpose of informing future energy efficiency improvements and refining this criterion in future versions of the standard.

Table 7. Energy consumption limits for certified products.

Material Type	Limit Value (MJ/m² of product)
Agglomerated stone	100
Terrazzo tile	60
Ceramic tile (specific weight >19 kg/m²)	50
Ceramic tile (specific weight <19 kg/m²)	70
Clay tile	60
Glass tile	50
Flamed natural products	65

Demonstration of Conformance

DoC 24.1: Energy audit documentation; AND (if applicable)

DoC 24.2: Calculations of Process Energy Requirement (PER) or Energy Requirement for Firing (ERF) according to APPENDIX B, and related results and supporting documentation.

6.2 Energy Management

Criterion 25: In order to reduce energy consumption during installation, dimensional stone producers shall be able to provide stone to the exact thickness required for each order (± 2 mm).

For processes involving firing, the manufacturer shall either:

- Be able demonstrate energy recycling and/or heat recovery systems. These may include, but are not limited to, cogeneration systems and/or the re-use of kiln heat for drying; or
- Procure at least 10 % of total energy used in firing from a government approved green power provider, or other renewable energy source acceptable to GECA.

Demonstration of Conformance

DoC 25.1: Appropriate documentation (e.g. saw records) showing that product is monitored at the cut-to-size stage an exact thickness is provided; OR

DoC 25.2: Description of energy recycling and/or heat recovery system supported by relevant production documentation; OR

DoC 25.3: List of all energy sources used in firing; how energy is produced and/or which provider is used and calculation showing what percentage comes from renewable sources.

6.3 Waste Management

Criterion 26: Manufacturers shall be able to demonstrate the following elements, as minimum, in a waste management program covering all operational sites:

- Functioning procedures for diverting recyclable and reusable materials from the waste stream.
- Functioning procedures for the recovery of waste materials for other purposes.
- Contracts with registered hazardous waste contractors, where hazardous waste is generated by the process.
- Waste recovery or diversion from landfill, where technically possible.

Demonstration of Conformance

DoC 26.1: Documentation of policies and procedures in place, and of relevant material flows, details of manufacturing processes, and waste recapture methods, and other appropriate supporting documentation;

DoC 26.2: Site visit confirming the operation of the procedures.

6.4 Recycled Content Requirements

Criterion 27: The product shall comply with the below recycled content requirements as applicable.

Table 8. Recycled content requirements.

Product type	Recycled content %w/w
Glass tiles	50
Ceramic, clay and terrazzo tiles	15
Agglomerated stone	15

Recycled content can be either from post- or pre-consumer waste or a combination of both.

Demonstration of Conformance

DoC 27.1: Declaration of conformance supported by relevant quality control and production documentation.

7. ENVIRONMENTAL MANAGEMENT SYSTEM

An Environmental Management System (EMS) integrates procedures and processes for training of personnel, monitoring and reporting of environmental performance information to stakeholders of an organisation. The EMS aims to identify and address significant environmental impacts of the manufacturing operations.

Criterion 28: The applicant/manufacturer shall have and implement a formal environmental management system, based on ISO 14001 that covers the requirements in this specification and must include energy management and CO_2 emissions related to the production of the product.

Demonstration of Conformance

DoC 28.1: Documentation showing an Environmental Management System (based on ISO 14001) is in place supported by relevant documentation such as ISO14001 certificate, Aspects and Impacts Register, recent certification audit report and any other information as per the discretion of the assessor.

8. POST CONSUMPTION RECYCLING AND LABELLING

8.1 Packaging Requirements

Criterion 29: Chlorinated or halogenated plastics shall not be used in product packaging.

Demonstration of Conformance

DoC 29.1: SDS of packaging and site inspection of final product packaging.

Criterion 30: Packaging shall comply with at least one of the following:

a) Each material constituting >20 % by weight of the total primary and secondary packaging used shall contain at least 50 % recycled content by weight; OR

b) Each material constituting >20 % by weight of the total primary and secondary packaging used shall be derived from plant-based materials (e.g. PLA plastics); OR

c) Each separable item constituting >20 % by weight of the total primary and secondary packaging shall be recyclable in Australia. This may be demonstrated using the Australian Packaging Covenant's Packaging Recyclability Evaluation Portal (PREP).

Material used for the transport of products (tertiary packaging) and whose disposal is not the responsibility of the end-consumer are excepted from the above requirements if they are re-used by the applicant or are recyclable in specialist recycling facilities.

Demonstration of Conformance

DoC 30.1: Details of materials used as packaging, including information on the input of recycled and virgin materials reported by weight if applicable. The recycled content can be averaged over a 12-month period to find the amount or range of recycled content;

DoC 30.2: Evidence of recyclability or copy of PREP assessment report;

DoC 30.3: Details of re-use programs for transport materials within the applicant company.

8.2 Product Information

Criterion 31: The manufacturer shall provide written information to the consumer clearly stating:

- The intended use of the product (incl. the area of use for which the product is intended, and also specifically any exclusions of area/s of use or application. The area of use and any limitations or exclusions shall be highlighted and displayed clearly for the consumer).
- Instructions for correct use and storage so as to maximise the product lifetime (e.g., whether the product needs coating or sealing).
- Installation instructions including recommended techniques and materials. These instructions must not specify nor require the use of any component that does not comply with the materials requirements of this standard.
- Maintenance instructions, if required. Maintenance instructions must not specify nor require the use of any chemical or coating limited by any part of this standard.

- Recycling or environmentally preferable disposal instructions for the product end-of-life.
- A clear declaration on the use of fillers, sealers, coatings or any other treatments that may have been applied to the product during manufacture or processing.

Demonstration of Conformance

DoC 31.1: Copy of labels, care instructions and other information provided with the product; AND

DoC 31.2: Technical data sheets, web pages and any other information freely available to customers or the public.

8.3 Product Stewardship

Criterion 32: The applicant/manufacturer shall maintain annual records of its take-back scheme and/or initiatives taken towards reducing the impact from the product's end-of-life stage including:

- Availability, feasibility, and involvement in product take-back schemes, including for products which are currently installed;
- Initiatives taken to promote or implement take-back schemes;
- Initiatives taken to make products more recyclable; and
- Information that is provided to the user on recycling of the product (e.g. possible options for recycling, with names of recycling facilities where possible).

Demonstration of Conformance

DoC 32.1: Copy of instructions outlining the take-back service and/or other initiatives taken including the costs, contact details of the take-back service, relevant website documentation, records of the take-back scheme; description and efforts towards or proof of recyclability of product; and information provided to the user on recycling of the product.

9. ENVIRONMENTAL CLAIMS

9.1 Public Claims

Criterion 33: Public claims made by the applicant regarding the product environmental performance that are beyond the scope of this standard (other than GECA certified content) shall be independently verified as compliant with ISO 14021: Environmental Labels and Declarations – 'Self-Declared Environmental Claims' (Type II Environmental Labelling) requirements. Also refer to the GECA Rules for the Use of the Good Environmental Choice Australia Mark.

Demonstration of Conformance

DoC 33.1: Report or statement from the applicant listing all public environmental claims regarding the product by the applicant, demonstrating compliance to ISO14021; AND

DoC 33.2: A signed declaration from an Executive Director of the applicant company stating that any environmental claims made by the company regarding the product in the future will be verified using ISO 14021 and/or the GECA certification.

10. SOCIAL AND LEGAL COMPLIANCE

This section addresses compliance with the legal and social attributes of the producer and the applicant company; it also engages with the supply chain to ensure human and labour rights are upheld. These criteria are common to all GECA standards. The social aspect partially addresses the third dimension of sustainability - society. This concept was first understood by producers under the name "Corporate Social Responsibility" (CSR). In this standard, social criteria include laws for equal opportunity, safety and protection of workers, and compliance with human and labour rights. GECA certification cannot be given to any company that illegally exploits workers or their families.

Note: In cases where there is a conflict between GECA requirements in this section and relevant legislation or regulations introduced by governments and agencies, national legislation overrides state legislation and state legislation overrides regulations and standards issued by GECA. Where the GECA requirements go further than the applicable legislation, the producer and/or applicant company shall comply with applicable law while trying as far as possible to act in accordance with the spirit of the GECA requirements.

10.1 Environmental Legislation

Criterion 34: The producer of the product and applicant company shall as per law comply with relevant environmental legislation and government orders at the Local, State, and Commonwealth levels (if these have been issued). Where a producer is from an overseas jurisdiction, it is that jurisdiction's environmental regulations that apply. Where the producer has been found guilty of a breach of any environmental legislation or permit(s) within the last two years, there must be evidence of corrective action.

Demonstration of Conformance

DoC 34.1: Signed declaration from an Executive Officer of the organisation stating compliance with applicable environmental legislation and government orders;

DoC 34.2: Signed declaration disclosing any breaches of environmental legislation or permits and the date of the breach. Applicant shall:

DoC 34.3: Provide a Legal Register listing applicable environmental legislation (including applicable Regulations under that legislation) in, or as an attachment to the above two declarations (34.1 and 34.2). The Legal Register shall:

- For each applicable Act and Regulation listed, state whether the manufacturer and applicant company comply; or have a certified ISO 14001, Eco-Management and Audit Scheme (EMAS) or equivalent environmental management system in place; and;
- List relevant permits granted by the EPA or an equivalent national, state or local body;

DoC 34.4: Evidence of corrective action following identification of a breach of environmental legislation, if applicable.

Note:

In this criterion, 'Regulation' means an entire regulatory instrument (for example, the Environmentally Hazardous Chemicals Regulation 2008) and not the individual sections, provisions or clauses of a regulatory instrument.

10.2 Minimum entitlement including wages

Criterion 35: All employees and contractors must receive at least the applicable minimum wage including penalty rates, allowances and superannuation and be provided with all other minimum entitlements including in relation to hours, leave and termination. All employees shall be covered by a Federal or State award, a certified industrial agreement or registered agreement as determined by the Australian Government Workplace Authority or a State or Territory Workplace Relations Agency, or an agreement that complies with Fair Work Act 2009 section 61 – National Employment Standards. A manufacturer/applicant company shall demonstrate compliance to the following requirements as taken from the ILO Convention: Convention 100 – Equal Remuneration Convention.

Where a producer is from an overseas jurisdiction, it is that jurisdiction's equivalent regulations that apply.

Where a producer/applicant company or a third party has identified a breach of applicable legislation, including underpayment of wages within the last two years, there shall be evidence of corrective action.

Demonstration of Conformance

DoC 35.1: Signed declaration from an Executive Officer of the organisation confirming compliance with all minimum entitlements including wages; and

DoC 35.2: List of applicable awards, certified industrial agreements or registered agreements and the number of workers to which they apply, and number of workers not covered by such; and

DoC 35.3: Text or template of a typical workplace agreement offered to employees of the company; and sample payslips; and

DoC 35.4: Evidence of corrective action following identification of a breach of legislation, if applicable.

10.3 Workplace Health and Safety

Criterion 36: A manufacturer/ applicant company shall demonstrate compliance to the following requirements as taken from the ILO Conventions:

a) Convention 155 – Occupational Safety and Health and its accompanying Recommendation No. 164;

b) Convention 161 – Occupational Health Services and its accompanying Recommendation No. 171

And general compliance with applicable State or Territory Legislation concerning Occupational, Health and Safety (OHS) / Work Health and Safety (WHS) and/or the Commonwealth Safety, Rehabilitation and Compensation Act 1988, where applicable. Where a manufacturer is from an overseas jurisdiction, it is that jurisdiction's equivalent regulations that apply. Where a producer/applicant company has been found guilty of a breach of relevant legislation within the last 2 years, there shall be evidence of corrective action.

Demonstration of Conformance

DoC 36.1: Signed declaration from an Executive Officer of the organisation stating compliance to workplace legislation and government orders, as well as declaration of any breaches of legislation and the date of the breach. Applicants shall list all applicable legislation in, or as an attachment to, this declaration;

DoC 36.2: Copy of the company Occupational / Workplace H&S policy and procedures;

DoC 36.3: Copy of employee induction records, training records, meeting records and risk assessments; or current ISO 45001:2018 (or former OHSAS 18001), AS/NZS 4801 or equivalent certification; or third-party certification stating compliance to Work Health and Safety Act 2011 and the Work Health and Safety Regulation 2011 or equivalent jurisdiction specific legislation; and

DoC 36.4: Evidence of corrective action following a breach of legislation, if applicable; and

DoC 36.5: WHS incidents register

10.4 Equal Opportunity

Criterion 37: The manufacturer/applicant company shall demonstrate general compliance with the requirements of the Racial Discrimination Act 1975, Sex Discrimination Act 1984, Disability Discrimination Act 1992, Equal Opportunity for Women in the Workplace Act 1999, and complementary State Legislation. The manufacturer cannot be in the list of 'named' or non-compliant employers under the Workplace Gender Equality Act 2012. Where a manufacturer /applicant company is from an overseas jurisdiction, it is that jurisdiction's equivalent regulations that apply. Where a manufacturer has been found guilty of a breach of relevant legislation within the last two years, there shall be evidence of corrective action.

Demonstration of Conformance

DoC 37.1: Signed declaration from an Executive Officer of the organisation stating compliance with above legislation;

DoC 37.2: Copy of relevant company policies and procedures;

DoC 37.3: Evidence of corrective action following a breach of legislation, if applicable; and

DoC 37.4: The assessor will verify that the company does not appear on the following list: Non-compliant list | WGEA

10.5 Lawful Conduct

Criterion 38: The manufacturer/applicant company shall not have been convicted of any breach of criminal law, any breach of the Competition and Consumer Act 2010 or the Corporations Act 2001, including prosecution or de-listing by the Australian Stock Exchange (ASX or international equivalent). Where a manufacturer is from an overseas jurisdiction, it is that jurisdiction's equivalent regulations that apply. Where a producer has been found guilty of a breach of relevant legislation within the last two years, there must be evidence of corrective action.

Demonstration of Conformance

DoC 38.1: Signed declaration from an Executive Officer of the organisation stating compliance with above legislation; and

DoC 38.2: Evidence of corrective action following a guilty verdict, if applicable.

10.6 **Modern Slavery**

Criterion 39: The applicant company shall promote the elimination of Modern Slavery through collaboration with their supply chain, in accordance with the Australian Commonwealth Modern Slavery Act 2018 or NSW Modern Slavery Act 2018 and the following requirements as taken from the ILO Conventions:

a) Conventions 29 and 105 – Elimination of Forced and Compulsory Labour; and

b) Convention 182 – Worst Forms of Child Labour

Where an applicant has found instances of modern slavery in their business operations and or supply chains in the past two years, there shall be evidence of corrective action.

This criterion shall be valid for applicant companies of any size and is not restricted to any annual

revenue threshold.

Demonstration of Conformance

DoC 39.1: A copy of the published Modern Slavery Statement from within the previous 12 months. The Modern Slavery Statement shall comply with the seven mandatory criteria of the Act as below:

a) Identify the reporting entity

b) Describe reporting entity's structure, operations and supply chains

c) Describe the risks of modern slavery practices in the operations and supply chains of the reporting entity and any entities it owns or controls

d) Describe the actions taken by the reporting entity and any entities it owns or controls to assess and address these risks, including due diligence and remediation processes

e) Describe how the reporting entity assesses the effectiveness of these actions

f) Describe the process of consultation with any entities the reporting entity owns or controls

g) In addition to the modern slavery report, some supporting documents may be asked to be cited at the main site of manufacturing during the on-site assessment:

If a copy of the Modern Slavery Statement is unable to be presented, a rationale will be required. Also in cases where supportive documentation is unavailable at the time of certification, a grace period of three years or one certification period may be granted (no more than one certification period will be given).

The documents may include but not limited to the following documentation to support the modern slavery report:

h) Employment records

i) List of contractors

j) Leave entitlements policy

k) Any relevant Human Resources policy

l) Payslips/ wage scales/ remuneration policy

m) Minimum age of employment policy

n) Any other relevant information

Where an organisation has not previously reported on the Australian Commonwealth Modern Slavery Act 2018 or NSW Modern Slavery Act 2018 and does not meet the reporting threshold of the NSW or Commonwealth legislation, the organisation shall publish a Modern Slavery Statement within three

years of certification on a voluntary basis. A grace period of up to one cycle of certification may be granted depending on the company's reporting period.

For more information about modern slavery and the *Modern Slavery Act 2018*., please see News and Resources (modernslaveryregister.gov.au).

10.7 Human Rights including Labour Rights

Criterion 40: The manufacturer/applicant company shall respect internationally recognised human rights, including labour rights, including the rights set out in:

- Universal Declaration of Human Rights
- International Covenant on Civil and Political Rights
- International Covenant on Economic, Social and Cultural Rights
- ILO Declaration on Fundamental Principles and Rights at Work

In particular, this includes the following aspects and ILO conventions: No child/forced/bonded labour (ILO 29 and 105), Minimum age convention (ILO 138), Worst forms of child labour (ILO182), Health and safety procedures and training (155, 161 and 171), Right of freedom of association (ILO 87 and 98), Non-discrimination (ILO 100 and 111), Discipline/harassment and grievance procedures, Fair working hours and compensation, Anti-corruption and bribery.

The applicant company shall also take steps to ensure human rights are respected in its supply chain. Where an applicant has been found to breach this criterion in the past two years, there must be evidence of corrective action.

Demonstration of Conformance

DoC 40.1: The manufacturer/applicant company shall provide evidence of its commitments to human rights including labour rights (e.g. policies, published reports containing disclosure in relation to human rights (e.g. sustainability report) commitments to international initiatives such as the UN Global Compact); and

DoC 40.2: The manufacturer/applicant shall provide a map of at least one tier of its supply chain; and

DoC 40.3: Evidence of implementation of a Supplier 'Code of Conduct'; Code of conduct to include Human and Labour Rights, Health and Safety of workers; and

DoC 40.4: Evidence of assessment of suppliers in relation to human rights and recommendations for improvements in their supply chain; and

DoC 40.5: Evidence of ISO20400 implementation; or

- Evidence of valid SA8000® Standard , or other equivalent certification; or
- Evidence of being a signatory to the UN Global Compact; or
- SEDEX membership ; or
- GRI 400 Report (Global Report Initiative); and

If any of DoCs 40.5 cannot be provided, manufacturer/ applicant shall provide:

DoC 40.6: Evidence of commitment to achieve SA 8000 certification within one year; or

DoC 40.7: Evidence of becoming a signatory to the UN Global Compact within six months; and

DoC 40.8: Evidence of corrective action, if applicable.

GECA acknowledges that this is an emerging area of compliance and conformance. Therefore, alternative certifications, standards, ethical membership organisations or compliance reporting may be recognised as demonstration of conformance where an exception is granted by the GECA Board.

EVIDENCE OF CONFORMANCE

Demonstration of Conformance (DoC)

This section lists the sources of evidence to be considered during an assessment to establish conformance against GECA's standards. This list is provided to guide the applicant through the standard's requirements and facilitate the preparation of an application. The DoC requirements are specified along with each criterion in the standard define specific sources of evidence acceptable to GECA. In cases where criteria offer several DoC requirements, it is the sole decision of the appointed assurance provider to choose the appropriate option throughout the preliminary stage of the assessment. If none of the recommended DoC requirements stipulated for a particular criterion in the standard is applicable for a product under assessment, then the appointed assurance provider may choose an alternative but equivalent source of evidence. In cases where alternative sources of evidence have been accepted for the verification of the product, the assurance provider will inform GECA by providing a report on the details as far as appropriate. GECA will use this information to continuously improve the DoC requirements stipulated by that standard.

All laboratory testing and analysis shall be carried out by a NATA accredited laboratory. For tests carried out overseas, all analysis shall be carried out by a reputable lab accredited by an ILAC.

The applicant/manufacturer shall have processes in place to ensure on-going compliance with the criteria in this standard; for example in relation to hazardous substances, having a process in place for completing a checklist (signed and dated by the authorised person) that lists all the substances and requirements in that section prior to using in/with the GECA product/s. The process may be carried out by relevant supplier/s of relevant material/s if there is no in-house capacity within the organisation being assessed to carry out this process. Documented information about any communication in regards to this process (i.e. between applicant and suppliers) shall be maintained.

The DoC requirements are summarised in Appendix D to assist applicants in preparing documentation for the verification process with a GECA designated assessor.

APPENDIX A
PRODUCT DATA SHEET

Data requirements for dimensional stone:

Details of the test procedures and results shall be provided together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table A1 outlines minimum data provision requirements for dimensional stone products.

The test methods recommended in this appendix can be used as a guideline to provide required minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A1: Minimum requirements for data provision for dimensional stone products for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Category	Stone Type	Test Method (or equivalent)	Property	Notes
1	Granite	ASTM C615	Absorption Density Compressive strength Flexural strength Abrasion resistance	1
2	Marble	ASTM C503	Absorption Density Compressive strength Flexural strength Abrasion resistance	1
3	Limestone	ASTM C568 AS/NZS 4456.10(A)	Absorption Density Compressive strength Modulus of rupture Abrasion resistance Resistance to salt attack	1
4	Sandstone	ASTM C616 AS/NZS 4456.10(A)	Absorption Density Compressive strength Modulus of rupture Abrasion resistance Resistance to salt attack	1
5	Slate	ASTM C629	Absorption Modulus of rupture Abrasion resistance Acid resistance	1
6	Other	See Note 2	Absorption Density Compressive strength Modulus of rupture and/or flexural strength Abrasion resistance	1

Notes:

1 – This requirement is optional if the material is used solely for vertical surfaces.

2 – Where the natural stone material cannot be classified within a specific category, the fitness for use will be independently evaluated based on results of appropriate physical property tests.

Data requirements for stone tiles:

Details of the test procedures and results shall be provided together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table A2 outlines minimum data provision requirements for stone tiles.

Where already test data for the product exist which were gained in accordance with Appendix B, no double testing is necessary to provide sufficient information to the customer.

The test methods recommended in this Appendix can be used as a guideline to provide required minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A2: Minimum requirements for data provision for stone tiles for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Requirements and Test Method (or equivalent)	**Property**
EN 12057	Flexural strength
	Water absorption
	Open porosity
	Frost resistance
	Abrasion resistance

Data requirements for paving units and flags:

Details of the test procedures and results shall be provided together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table A3 outlines minimum data provision requirements for paving units and flags as specified in AS/NZS 4455 masonry units and segmental pavers.

Where already test data for a natural stone product exist which were gained in accordance with Appendix B, no double testing is necessary to provide sufficient information to the customer.

The test methods recommended in this Appendix can be used as a guideline to provide required minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A3: Minimum requirements for data provision for paving units and flags for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Material	Test Method (or equivalent)	Property
Natural stone Fired clay	AS/NZS 4456.3	Dimensional deviation
	AS/NZS 4456.4	Unconfined compressive strength
	AS/NZS 4456.5	Breaking load
	AS/NZS 4456.9	Abrasion resistance
	AS/NZS 4456.10	Salt attack resistance
	AS/NZS 4456.11	Moisture expansion
	AS/NZS 4456.14	Water absorption
	AS/NZS 4456.15	Modulus of rupture

Data requirements for agglomerated stone products:

Details of the test procedures and results shall be provided together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table A4 outlines minimum data provision requirements for agglomerated stone products.

The test methods recommended in this Appendix can be used as a guideline to provide required minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A4: Minimum requirements for data provision for agglomerated stone products for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Test Method (or equivalent)	Property
EN 14617.1	Density and water absorption
EN 14617.2	Flexural strength
EN 14617.4	Abrasion resistance
EN 14617.9	Impact resistance
EN 14617.12	Dimensional stability
EN 14617.15	Compressive strength
EN 14617.16	Geometric characteristics and surface quality

Data requirements for Terrazzo tiles:

Details of the test procedures and results shall be provided together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table A5 outlines minimum data provision requirements for Terrazzo tiles.

The test methods recommended in this appendix can be used as a guideline to provide required

minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A5: Minimum requirements for data provision for Terrazzo tiles for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Classification	Requirements and Test Methods (or equivalent)	Property
Terrazzo tiles for internal use	EN 13748-1	Geometric characteristics Surface characteristic Mechanical strength
Terrazzo tiles for external use	EN 13748-2	Geometric characteristics Surface characteristic Mechanical strength Weather resistance

Data requirements for ceramic tiles:

Details of the test procedures and results shall be provided together with a declaration that the product is fit for use based on all other information about the best application by the end-user. Table A6 outlines minimum data provision requirements for ceramic tiles. The properties of the product have to comply with the requirements outlined in the Australian Standard AS 4662 or equivalent international standards.

The test methods recommended in this Appendix can be used as a guideline to provide required minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A6: Minimum requirements for data provision for ceramic tiles for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Test Method (or equivalent)	Property
AS 4459.2	Dimensional characteristics and surface quality
AS 4459.3	Water absorption
AS 4459.4	Module of rupture and breaking strength
AS 4459.5	Impact resistance
AS 4459.7	Surface abrasion
AS 4459.10	Moisture expansion
AS 4459.15	Lead and cadmium release rate

Notes:

Surface abrasion and lead/cadmium release rate are only relevant for glazed ceramic tiles.

The tests described in Table A6 may alternatively be performed in compliance with the Standard ISO 10545.

Data requirements for glass tiles:

Due to the lack of available product standards for this product group, the characteristics of glass tiles shall be determined in accordance with the test methods used for ceramic tiles and as outlined in Table A7.

The test methods recommended in this Appendix can be used as a guideline to provide required minimal information to the customer. Alternative test methods might be used if they lead to comparable results.

Table A7: Minimum requirements for data provision for glass tiles for the purpose of fit-for-purpose assessments by engineers and product specifiers.

Test Method (or equivalent)	Property
AS 4459.2	Dimensional characteristics and surface quality
AS 4459.4	Module of rupture and breaking strength
AS 4459.5	Impact resistance

Slip Resistance

Products which are intended for use on floors must also provide on the product data sheet slip resistance data gained in accordance to AS/NZS 4586 - Slip resistance classification of new pedestrian surface materials or equivalent international standards or equivalent test methods.

APPENDIX B
ENERGY USE

When providing a calculation of process energy requirement (PER) or energy requirement for firing (ERF), the correct energy carriers shall be taken into account (see Table A8). Gross calorific values (high heat value) of fuels shall be used to convert energy units to MJ (see Table A9). In case of use of other fuels, the calorific value used for the calculation shall be specified. Electricity means net imported electricity coming from the grid and internal generation of electricity measured as electric power.

Table A8: Energy flows relevant for the calculation of the PER or ERF for each product group.

Product Category	Requirement Type	Energy flows to take into consideration
Agglomerated stone Terrazzo tiles Cement	PER	All energy flows entering the production plant both as fuels and electricity
Ceramic tile Clay tile Flamed natural products	ERF	All energy flows entering all the kilns as fuels for the firing stage

Table A9: Energy use calculation table for hard surfacing products.

Production Period	Day:	From:	To:	
Quantity of product (tonnes or m^3):				
Equals to surface area of final product (m^2):				
Fuel	**Quantity**	**Units**	**Conversion Factor**	**Energy (MJ)**
Natural gas		kg	54.1	
Natural gas		Nm^3	38.8	
Propane		kg	50	
Butane		kg	49.3	
Kerosene		kg	46.5	
Gasoline		kg	52.7	
Diesel		kg	44.6	
Gas oil		kg	45.2	
Heavy fuel oil		kg	42.7	
Dry steam coal		kg	30.6	
Anthracite		kg	29.7	
Charcoal		kg	33.7	
Industrial coke		kg	27.9	
Electricity		kWh	3.6	
			Total energy use	
			Consumption per tonne of product (MJ/t):	
			or, consumption per m^3 of product (MJ/m^3):	
			Consumption per square meter of finished product (MJ/m^2):	

APPENDIX C
CALCULATION OF THE VISUAL IMPACT

The calculation of the visual impact of mines and quarries for the purpose of this standard is based on the calculation described in the Technical Appendix B of the EU Commission Decision 2002/272/EC.

The calculation of visual impact lies in tracing cross sections passing through the quarry front and other external “visual points”, which are important to determine the visual impact (for example either from nearby towns or from frequented places or major roads, etc.). The calculation of the final score, measured as a percentage, shall be taken from the highest value of originally calculated values (worst case situation). A short explanation for the finally chosen “visual point” should be submitted to the Competent Body. From each visual point (P), the “bottom radius” is traced, tangent to the topographic surface and intercepting the lowest point of the “visible quarry area”. The visible quarry area is regarded as the area where the excavation is carried out or where there is an active dump. Already rehabilitated areas (both in front area and dumps) need not be considered. From the same visual point a second radius (called “top radius”) is traced, intercepting the highest point of the quarry front. The top radius and bottom radius allow the identification on the section of the quarry of the limits of the height of the visible front (the vertical distance from top to bottom radius matching the front). The calculation could be made on the basis of the quarry project. These geometric data are put into the following formula and the result is the quotient of visual impact of the quarry affecting a specific visual point.

$$x[\%] = \frac{h^2}{(L \times tan30°)^2} \times 100\%$$

h = vertical height of front visible from visual point P (meters)

L = Horizontal distance between the worst visual point P and the front

$tan30°$ = Tangent of the average angle of the human eye vison cone

$x[\%]$ = Percent of visual impact

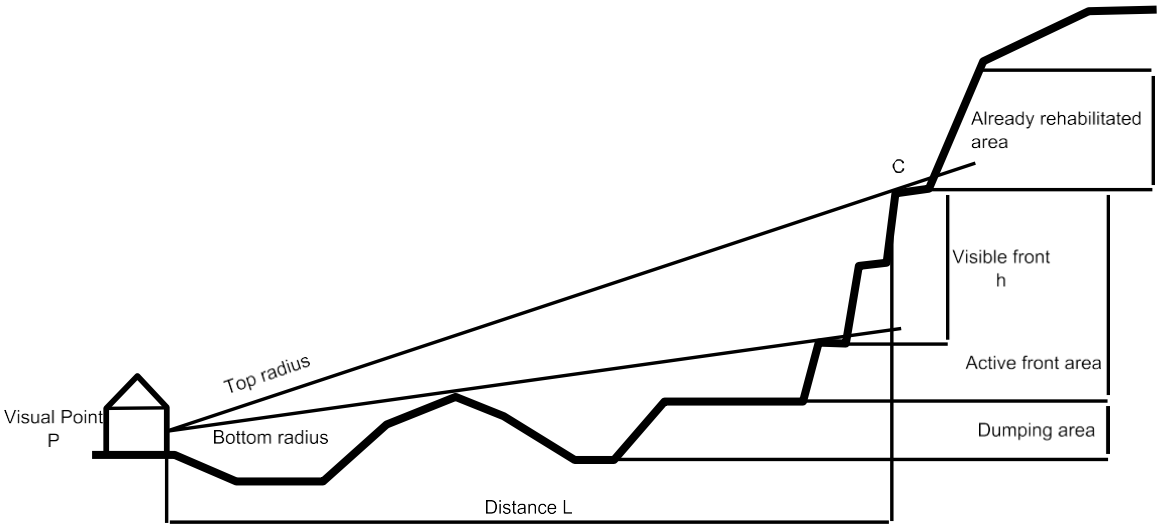

Figure A1: Graphical definition of the visual impact indicator

APPENDIX D

APPLICATION CHECKLIST

The application checklist guides the applicant through the application and verification process. An applicant may collect all information required for the verification of the product and attach the relevant documents to their application. The table below summarises the DoC requirements for each criterion in the standard.

Criterion No.	Criterion Content	**Demonstration of Conformance** See standard body for details	Evidence Attached	Complies Y/N or NA
FIT FOR PURPOSE CRITERIA				
Criterion 1	Standard category scope	Detailed description of the product(s); and	☐	
		Explanation of applicability to the scope of the standard	☐	
Criterion 2	Fitness for purpose supplied	Detailed description of the product(s) as it relates to Australian (or other) standards;	☐	
		Copy of data sheet	☐	
HEALTH CRITERIA				
Criterion 3	Prohibited substances	- Schedule of the constituent chemical substances in g/kg used in manufacture of the product that are classified as harmful, and relevant SDS; and - Signed declaration from an Executive Director of the applicant company stating that the above compounds, their functional derivatives or in-situ precursors are not added to finished products, their component parts or be used at any stage of the manufacturing process	☐	
Criterion 4	Hazard classification	Schedule of the constituent chemical substances in g/kg used in the manufacture of the product that are classified as harmful, and relevant SDS	☐	

Criterion 5	Heavy metals additives	- Signed declaration that lead, cadmium or antimony are not used as additives in glazing; or - Release rate test results using test method ISO 10545-15, or equivalent showing that limits are met; and - Calculations showing that weight limits are met; and - Signed declaration stating that attempts have been undertaken to replace heavy metal glazes with environmentally preferable	☐	
Criterion 6	Overall pollutant loads	- Signed declaration by an Executive Officer that listed substances are not present in the product; and - Test results showing that listed substances have not been detected in final product; and - Test results and/or other appropriate documentation	☐	
Criterion 7	Radioactivity	- Copy of documentation from the producer clearly outlining how the use of each chemical scheduled is limited and managed; and - Statement of the composition of the product; or - Gamma spectrometry results using crushed materials in a laboratory, accompanied by specification of a standard test method or technical details of the actual test method used; or - Gamma spectrometry results using a portable gamma spectrometer at the quarry; or - Results of any strong acid digest ICP-AAS or ICP-MS technique	☐	

Criterion 8	Adhesives, coatings, waterproofing agents, sealers, fillers, other treatments	- Signed declaration from an Executive Director stating that no adhesives, coatings, water proofing, sealers, fillers or other treatments are used; or - Schedule of adhesives, coatings, water proofing, sealers, fillers or other treatments used - Copy of relevant ecolabel certificate; or - Where adhesives, coatings, water proofing, sealers, fillers or other treatments used are not certified by an ecolabel, the applicant can demonstrate that they satisfy the hazardous materials section of this standard or the requirements listed in the criterion	☐	
ENVIRONMENTAL CRITERIA				
Criterion 9	Quarried or mined materials	Information about virgin material procurement program and records of the supplier, nature and geographical source of all virgin mined or quarried material inputs; and	☐	
		Evidence for production facility supplying quarried or mined minerals for use as raw materials	☐	
Criteria 10-17 apply only to the quarry or mine which is the major supplier of quarried or mined raw materials for the certified product.				
Criterion 10	Water resource use	Information about location and characteristics of bore, incl. calculation of initial flow rate	☐	
		Relevant bore flow rate reports	☐	
		Evidence of procedures and measures to minimise the impact of water use	☐	
		Records of measurements and/or calculations of water released off-site	☐	
Criterion 11	Site rehabilitation	Evidence of lodged or published environmental rehabilitation program (and/or rehabilitation guarantee where required); and	☐	
		Documentation showing that weed control measures are undertaken	☐	

Criterion 12	Usable material ratio	Data showing relevant extraction ratios	☐	
Criterion 13	Operating equipment	Documentation showing current maintenance schedule for all mechanical operating equipment including, relevant operating manuals and maintenance sheets; and	☐	
		Documentation showing which licensed waste contractor is used; and	☐	
		Evidence of implemented procurement policy that meets requirements of the criterion	☐	
Criterion 14	Dust emissions	Documentation and calculations showing that criterion is not applicable; or	☐	
		PM_{10} test results from measurements along border of quarry area in accordance with the relevant test methods	☐	
Criterion 15	Water emissions	Documentation and calculations showing that criterion is not applicable; or	☐	
		Water quality test results using test method in line with ISO 5667-17 or equivalent.	☐	
Criterion 16	Noise	Documentation and calculations showing that criterion is not applicable; or	☐	
		Test results using test methods in line with ISO 1996-1 or equivalent.	☐	
Criterion 17	Visual impact	Documentation and calculations showing that criterion is not applicable; or	☐	
		Calculation of visual impact of mines and quarries using APPENDIX C of this standard	☐	
Criterion 18	Plastics and other synthetic materials	Signed declaration stating that the production facility supplying petrochemical products for use as raw materials complies with Criterion 34; and	☐	
		Material formulation or SDS showing if and how much synthetic resin is used in the product	☐	

Criterion 19	Cement content of certified products	Information about the type and amount of Supplementary Cementitious Materials (SCM) in the cement, and calculations showing the % (by mass) of (SCM) in the product; or	☐	
		Information about technologies/methods used together with documentation listing details on CO_2 emissions.	☐	
Criterion 20	Transport of raw materials	Documentation showing the major raw material suppliers and their location and calculations showing that 50 % of raw materials are from within 800 km of the product's manufacturing site	☐	
Criterion 21	Water emissions	Corresponding analysis and test reports for each emission parameter measured at all emission points.	☐	
		Calculation of the recycling ratio including raw data on total waste water produced, water recycled and the quantity and source of fresh water used in the process	☐	
Criterion 22	Air emissions: Limits on dust, SO_2, NO_x, F and styrene emissions	Appropriate documentation and test reports for each emission parameter mentioned above; or the assessor may rely as appropriate on declarations and documentation provided by the applicant and/or independent verifications.	☐	
Criterion 23	Work on materials producing silica dust	Signed declaration from an Executive Officer of the organisation stating that no respirable silica dust occurs during manufacture or installation of the product; and	☐	
		Copy of current safety data sheet (if no respirable silica dust); or	☐	
		Copy of current safety data sheet (SDS) detailing the handling of respirable crystalline silica dust; or	☐	
		Product label detailing the handling of respirable crystalline silica dust; and	☐	

		Copy of procedure describing how materials with respirable crystalline silica are handled during the production process; and	☐	
		Signed declaration from an Executive Officer of the organization (manufacture and importer of products) stating that copy of SDS is readily accessible to workers in contact with the hazardous substasnce at the workplace; and	☐	
		Copy of employee induction records, training records, meeting records and risk assessments of exposure to silica dust.	☐	
Criterion 24	Direct energy consumption: Limit values in MJ/m^2 of product for agglomerated stone, tiles and flamed natural products	Energy audit documentation; and	☐	
		Calculations of Process Energy Requirement (PER) or Energy Requirement for Firing (ERF) according to APPENDIX B, and related results and supporting documentation	☐	
Criterion 25	Energy management	Appropriate documentation showing that product is monitored at the cut-to-size stage an exact thickness is provided; or	☐	
		Description of energy recycling and/or heat recovery system supported by relevant production	☐	
		List of all energy sources used in firing; how energy is produced and/or which provider is used and calculation showing what percentage comes from renewable sources	☐	
Criterion 26	Waste management	Documentation of policies and procedures in place and of relevant material flows, details of manufacturing processes, and waste recapture methods and	☐	
		Site visit confirming the operation of the procedures	☐	
Criterion 27	Recycled contents requirements: 50 % for glass tiles; 15% for tiles and agglomerated stone	Declaration of conformance supported by relevant quality control and production documentation	☐	

Criterion 28	Environmental Management System to be in place	Documentation showing an Environmental Management System (based on ISO 14001) is in place supported by relevant documentation such as ISO14001 certificate, Aspects and Impacts Register, recent certification audit report and any other information as per the discretion of the assessor	☐	
Criterion 29	Packaging requirements: Chlorinated or halogenated plastics shall not be used in product packaging	SDS of packaging and site inspection of final product packaging	☐	
Criterion 30	Packaging requirements: Recycled content, plant-based materials, recyclability	Details of materials used as packaging, including information on the input of recycled and virgin materials reported by weight if applicable	☐	
		Evidence of recyclability or copy of PREP assessment report	☐	
		Details of re-use programs for transport materials within the applicant company	☐	
Criterion 31	Product information	Copy of labels, care instructions and other information provided with the product; and	☐	
		Technical data sheets, web pages and any other information freely available to customers or the public	☐	
Criterion 32	Product stewardship: The applicant/ manufacturer shall maintain annual records of its take-back scheme and' or initiatives taken towards reducing the impact from the product's end-of-life stage	Copy of instructions outlining the take-back service and or other initiatives taken including the costs, contact details of the take-back service, relevant website documentation, records of the take-back scheme; description and efforts towards or proof of recyclability of product; and information provided to the user on recycling of the product	☐	
Criterion 33	Public claims	Report or statement from the applicant listing all public environmental claims regarding the product by the applicant, demonstrating compliance to ISO14021	☐	
		A signed declaration from an Executive Director of the applicant company	☐	

		stating that any environmental claims made by the company regarding the product in the future will be verified using ISO 14021 and/or the GECA certification		
SOCIAL CRITERIA				
Criterion 34	Compliance with environmental legislation	Signed declaration confirming compliance to environmental legislation and government orders; AND Signed declaration disclosing any breaches of environmental legislation	☐	
		Legal register listing applicable environmental legislation • For each applicable Act and Regulation listed, state whether the manufacturer and applicant company comply; or • have a certified ISO 14001, Eco-Management and Audit Scheme (EMAS) or equivalent environmental management	☐	
		List of relevant permits granted by the EPA or an equivalent national, state or local body; and	☐	
		Evidence of corrective action (if applicable)	☐	
Criterion 35	Minimum entitlement including wages	Signed declaration confirming conformance to the criterion	☐	
		List of applicable awards, industrial and registered agreements and number of workers who are covered and not covered, and	☐	
		Text or template of the typical workplace agreement offered to employees; and sample payslips	☐	
		Evidence of corrective action	☐	
Criterion 36	Workplace health and safety regulations	Signed declaration confirming conformance to the criterion	☐	
		OHS/WHS policies and procedures	☐	

		Copy of employee induction records, training records, meeting records and risk assessments; or current OHSAS 18001, AS/NZS 4801 or equivalent certification; or third-party certification stating compliance to Work Health and Safety Act 2011 and the Work Health and Safety Regulation 2011 or equivalent jurisdiction specific legislation	☐	
		Evidence of corrective action (if applicable), and	☐	
Criterion 37	Equal opportunity	Signed declaration confirming conformance to the criterion	☐	
		Copy of relevant policies and procedures	☐	
		Evidence of corrective action following a breach of relevant legislation (if applicable); and	☐	
		The company does not appear on the Workplace Gender Equality Agency's non-compliant list	☐	
Criterion 38	Lawful conduct	Signed declaration confirming conformance to the criterion	☐	
		Evidence of corrective action (if applicable)	☐	
Criterion 39	Modern slavery	Copy of the published Modern Slavery Statement from within the previous 12 months.	☐	
Criterion 40	Human and labour rights	Evidence of commitments to human rights including labour rights	☐	
		Map of at least one tier of their supply chain; and	☐	
		Evidence of implementation of a Supplier Code of Conduct, and	☐	
		Evidence of assessment of suppliers in relation to human rights and recommendations for improvements in their supply chain	☐	
		Evidence of ISO20400 implementation; or	☐	
		Evidence of valid SA8000® Standard certification or other equivalent certification; or	☐	

		Evidence of being a signatory to the UN Global Compact	☐	
		SEDEX Membership, or	☐	
		GRI 400 Report; and	☐	
		Evidence of commitment to achieve SA8000® Standard certification within one year	☐	
		Evidence of becoming a signatory to the UN Global Compact within six months; and	☐	
		Evidence of corrective action (if applicable).	☐	

Our vision is for a sustainable future for people and planet

GECA