Optional Criteria for Electrical and Electronic Equipment

SCS-103 Recycled Content Standard Annex A

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SCS standards

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1. Overview of the Annex

1.1 Purpose

The purpose of the SCS Certification Standard for Recycled Content Annex A: Optional Criteria for Electrical and Electronic Equipment (hereinafter SCS-103 Annex A) is to provide product category specific criteria to meet the SCS-103 Certification Standard for Recycled Content for Electric and Electronic Equipment (EEE) products.

The objectives of this Annex are to:

- Support the manufacturers' efforts towards the highest levels of environmental sustainability performance.
- Promote innovation in material recycling processes to minimize waste to landfills.
- Stimulate increased use of recycled materials in products.
- Enable the continuous improvement of the functionality and performance of recycled materials.
- Support transparency in product claims to increase consumer confidence and purchases of products with higher levels of recycled content.

1.2 Intended Users

Intended users of the SCS-103 Annex A are product manufacturers of all sizes, including but not limited to brands and Original Equipment Manufacturers (OEMs), located around the globe. Any manufacturer or brand may apply for certification against the SCS-103 Standard with the application of Annex A: Optional Criteria for Electrical and Electronic Equipment.

1.3 Scope and eligibility

SCS-103 Annex A applies to all products defined under Electric. See Appendix 1 for a list of eligible products.

1.4 Annex Framework

SCS-103 Annex A provides criteria for EEE products based on the product sub-categories and product types for EEE products listed in Appendix 1, in addition to the core requirements of the SCS-103 Certification Standard for Recycled Content.

1.5 Conformity

SCS-103 Annex A contains the requirements for a specified product category and product type. Conformity with the requirements of Annex A shall be verified by an SCS-approved third-party certification body.

1.6 Voluntary Standard

SCS-103 Annex A is voluntary. It is not intended to replace the legal or regulatory requirements of any country or geographic area in which EEE products are produced, sold, or purchased.

1.7 Relevant Documents

Additional relevant documents include, but are not limited to:

- Recycled Content Standard Methodology for Setting the Minimum Recycled Content by Industry Specific Product Category: Provides a framework to evaluate and assess criteria for recycled content limits by product category. [to be published]

1.8 Language

The verb "shall" is used to denote a requirement of the standard. The verb "should" is used to express an ability to perform an action, but does not indicate a requirement.

1.9 Limitations

SCS-103 Annex A is limited in data collected to publicly and proprietary data made available to SCS Standards. The recycled content requirements for materials and product types were set by limited data sources and will regularly be updated, at a cadence of at least every two years.

2. Terms and Definitions

Applicant Organization: Organization that seeks certification assessment to the SCS Recycled Content Standard and Annex A. An applicant organization may be new or already certified to the SCS-103 standard and Annex.

Bill of Materials: A final product's disclosed material composition per scope of the recycled content assessment by weight, identifying materials as virgin or recycled (pre/post/mix) and component materials per Tables 1 or 2.

Chemical Recycling: A process that converts polymeric waste by changing its chemical structure to produce substances that are used as raw materials for the manufacturing of new products, which excludes production of fuels or means of energy generation.

Closed-loop: When recyclable materials are mechanically processed to create a product that serves a function that is similar to the original function.

Component: A finished element used in the manufacture of a product, any basic discrete device or physical entity within an electronic system or assembly.

Consumer Electronic Products: Electrical and electronic equipment that is designed for everyday consumer, residential use, such as TVs, tablets, game consoles, laptops, smart phones. They may also be used in commercial and industrial settings.

Electrical and Electronic Equipment (EEE): Equipment that is dependent on electric currents or electromagnetic fields in order to work properly and equipment for the generation, transfer and measurement of such currents and fields. EEE also includes electrical and electronic accessories, both wired and non-wired and battery and non-battery operated.

Feedstock: A raw material that is used for processing or manufacturing another product.

Mass-balance: The accounting of all material inputs, outputs, and distribution of substances between streams in a process or stage. For example, a traceability protocol to match outputs with inputs according to a specific conversion factor, within a predefined system boundary during a given time period, typically three months.

Mechanical Recycling: Processing of waste material into secondary raw material or products using mechanical unit operations only and without significantly altering the chemical structure of the material.

Organic Fiber Textiles: Organic fiber includes cotton, wool, hemp, flax (linen), and other natural fibers grown without the use of pesticides, synthetic fertilizers, or genetic engineering.

Product Category: A grouping of products that have similar key material bases and serve similar functions.

Product Type: A specific product set or group of products under a product category.

Rare Earth Elements (REE): A set of seventeen chemical elements in the periodic table, specifically fifteen lanthanides plus scandium and yttrium. Common recycled REEs used for electronics include but are not limited to: Neodymium, Dysprosium, Praseodymium, and Terbium.

Recycled Content: Proportion, by mass, of recycled material in a product or packaging. Only pre-consumer and post-consumer materials are considered as recycled content.

Recycled Material: Material that has been reprocessed from recovered or reclaimed material by means of a manufacturing process and made into a final product or into a component for incorporation into a final product.

- **Post-Consumer:** Material generated by households or by commercial, industrial, and institutional facilities in their role as an end-user of the product that is no longer used for its intended purpose. This recycle stream includes materials that are collected from the reverse distribution chain.
- **Pre-Consumer:** Material diverted from the waste stream during the manufacturing process. Excluded is reutilization of material such as rework, regrind or scrap generated in a process of capable of being reclaimed within the same process that generated it.
- **Post-Industrial:** Another term for Pre-Consumer

Restricted Substance List (RSL): A list of chemical substances that are restricted or banned in a final product. Examples of restricted substance lists promulgated by government agencies include the European Restriction of Hazardous Substances (RoHS), Chinese Ministry of Industry and Information Technology (MIIT) RoHS, and the U.S. Toxic Substances Control Act (TSCA).

Standard Technical Committee (STC): Industry experts appointed by the Standards Development Committee to support on the ongoing maintenance of the standard, including but not limited to technical interpretations requests.

Synthetic Fiber Textiles: Synthetic fibers are artificial fibers that are made from synthetic polymers, which come from oil, coal, and other petrol-based chemicals (monomers). Man-made fibers include the polyamides (nylon), polyesters, acrylics, polyolefin, vinyl, and elastomeric fibers. Regenerated fibers include rayon, the cellulose acetates, the regenerated proteins, glass and rubber fibers.

3. Requirements for Recycled Content Certification

The applicant organization shall meet the requirements of SCS-103 in addition to the following criteria.

3.1 Legal Compliance

3.1.1 The applicant organization shall confirm, via an affidavit, that they comply with all applicable international, national, and local laws and regulations.

3.1.2 The applicant organization shall confirm, via an affidavit that they comply with all applicable Restricted Substance Lists (RSLs), including but not limited to European Union Registration, Authorization, and Restriction of Chemicals (REACH) and Restriction of Hazardous Substances (RoHS).

3.1.3 The applicant organization shall provide documented evidence that they have an implemented process to ensure compliance with both applicable legal requirements and applicable RSLs for their scope of products.

3.2 Supplier Verification and Validation

3.2.1 If recycled material suppliers are not direct suppliers (such as second or third-tier suppliers), the recycled material shall be certified, either independently or through the scope of a SCS-103 certificate, to confirm that the material has been qualified using ISO 14021 recycled material definitions.

3.2.2 Direct suppliers of recycled material may submit a supplier affidavit to be evaluated by the approved certification body. The direct suppliers may be required to undergo an additional audit.

3.3 Material Due Diligence and Know Your Counterparty

3.3.1 The applicant organization shall provide evidence of an implemented due diligence and Know Your Counterparty (KYC) procedure for materials in scope for recycled content claims for Gold, Silver, Platinum, Palladium, Tin, Tungsten, Tantalum, and Cobalt.

3.4 Material Input Documentation and Evaluation

3.4.1 The applicant organization shall maintain a product bill of materials or supporting documentation to determine the material content per input by weight to qualify for certification against SCS-103 Annex A.

3.4.2 The applicant organization shall include non-recycled materials in the material input evaluation. When recycled material is available as indicated in Tables 1 and 2, the applicant organization shall provide rationale for not utilizing recycled material and a timeline to reassess recycled material options.

3.5 Minimum Recycled Content Criteria

3.5.1 To achieve certification, EEE products shall meet one of two scenarios below:

Option 1: The product shall meet the minimum recycled content for applicable product type as detailed in Table 3 with at least two recycled material inputs identified in Table 1 and/or Table 2, at or above the specified minimum recycled content. The recycled material input criteria shall be achieved by the total input by weight in the product; it shall not be met by a single component within a multi-component product.

Option 2 (available when Option 1 cannot be achieved): The applicant organization shall provide a material review per section 3.4.1. The product's minimum material recycled content shall achieved with at least three material inputs from Table 1 and/or Table 2. The recycled material input criteria shall be achieved by the total input by weight in the product, it shall not be met with a single component within a multi-component product.

3.5.2 Allowable Exceptions

A single recycled material input may be eligible for certification against SCS-103 Annex A if all of the following are met:

a) The product is primarily made of a single material input, i.e., the material must be more than 50% by weight of the product.

b) The applicant organization provides documentation of the rationale where recycled material inputs do not meet the minimum criteria in Table 1 and Table 2. This rationale may include regulatory requirements for food or medical grade criteria for plastics.

3.6 Recycled Material Inputs

The following tables provide current recycled materials available in the market for EEE products, but not specific to a product sub-category or product type.

Table 1 and Table 2 detail the currently available recycled material claims by input material for metals and plastics, respectively. Limitations may exist based on product type functionality, performance, or regulatory criteria. The applicant organization may follow Section 3.5.2 for allowable exceptions.

The applicant organization may be exempt from meeting the requirements of Tables 1 and 2 if they cannot track trace input material for purchased components. For example, the copper criteria would

be exempt for inputs into components like a Printed Circuit Board (PCB) or wires. In such instances, the final claim language shall indicate any exclusions or exemptions.

Table 1. Currently Achievable Metals Recycled Content Levels in the Market

Material Input	Minimum Percent Recycled Input Material (Pre-Consumer/Post-Consumer)
Aluminum	***30***
Cobalt	***15***
Copper	***50***
Gold*	***70***
Magnesium	***70***
Platinum*	***50***
Rare Earths	***15***
Steel	***20***
Tin*	***20***
Titanium	***50***
Tungsten*	***70***

*Metal must meet Section 3.3 criteria.

Table 2. Currently Achievable Plastics Recycled Content Levels in the Market

Material Input	Minimum % Recycled Content (Pre-/Post-Consumer)
Polyethylene (PE)	***30***
Polyethylene Terephthalate (PET)	***30***
Polycarbonate (PC)	***30***
Carbon Fiber	***30***
Polypropylene (PP)	***30***
ABS; PC/ABS	***30***
Other (includes, but not limited to PA6, PA66, HIPS, SAN, POM, PBT, PETG)	***25***

Note: Post-Consumer and Pre-Consumer Recycled Content criteria will be evaluated individually in the next Annex revision.

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Product Sub-Category	Product Type(s)	Accepted Minimum Total Recycled Content (%)	Special Exceptions
Small Household Appliances	Heating	25	
Small Household Appliances	Portable A/C	5	
Small Household Appliances	Dehumidifier	10	
Small Household Appliances	Coffee Machines	15	**Food/Medical Grade Requirements Apply*
Gaming	Gaming Consoles, Gaming Devices, Gaming Controllers	10	
PC/Laptop Accessories	Mouse, Keyboard	50	
PC/Laptop Accessories	Headset	30	
PC/Laptop Accessories	Webcam	15	
Small Network Equipment (SNE)	Smartplug	15	
Small Network Equipment (SNE)	Wi-Fi Router	15	
Small Network Equipment (SNE)	Streaming Device	50	
Electronic Accessories (Non-Wired/Non-Battery)	Case/book covers	35	
Electronic Accessories (Non-Wired/Non-Battery)	Stands	50	
Fixed Computing	Desktop PC, All-in-One Computing	15	
Mobile Computing	Mobile Laptop, Notebook	15	
Audio/Visuals	PC Display/Monitor	15	
Infrastructure Computing	Server, Storage	20	
Printer	Printers (Inkjet/Laser)	25	
Mobile Devices	Smartphone, Tablets, E-reader, Smart Display, Wearables	30	

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4. Elective: Material & Product Innovation

4.1 An applicant organization can provide additional data and supplemental documentation to support the objectives of this Annex.

4.2 An applicant organization may apply for innovative credits with the certification body.

4.3 The certification body may approve the innovative credits to be included as additional material claims on the applicant organization's certificate. The certification body shall report existing innovative credits to SCS Standards to inform the standard revision process.

Appendix 1: Eligible Electric and Electronic Equipment Products

Product Sub-Category	Product Type	Material Composition	Optional Material Compositions
Infrastructure Computing	PC/laptop Storage, Server storage	Steel, Aluminum	Plastics
PC/Laptop Accessories	Keyboard, Mouse, Webcams, Headsets, Stand, Streaming Device, Wi-Fi router, SmartPlug, Power Supplies	Plastics	
PC/Laptop Accessories	Case/book Cover,	Textile, Plastic, Metals	
Audio & Visual and Speakers	Smart TVs, TVs, Speakers, Display	Steel, Plastics, Copper, Zinc	
Mobile Devices	Smartphone, Tablets, E-reader, Smart Display, Wearables	Gold, Rare Earth, Tungsten, tin, Aluminum, Plastics	
Small Household Products/Appliances	Coffee Machines, heaters, dehumidifiers, portable air conditioners	Plastics, Aluminum, Steel, Copper	
Fixed Computing	Desktop PC	Steel, Copper, Plastics, Aluminum, Zinc	
Mobile Computing	Mobile Laptop/Laptop Notebook	Steel, Plastics, Aluminum, Magnesium, Carbon Fiber	
Gaming	Gaming Consoles and Devices; Gaming Controllers	Plastics	
Printers and Scanners	Ink Jet and Laser	Plastics	

Appendix 2: Product Scenarios for Minimum Recycled Content Criteria, Section 3.5.

<table>
<tr><th>Scenario Type</th><th>Product Type Example</th><th>Material Inputs</th><th>Recycled Content (RC) Details</th></tr>
<tr><td>3.5.1 - Option 1</td><td>Mouse</td><td>Input 1. Polycarbonate
Input 2: Aluminum</td><td>
<table>
<tr><th>Material Input</th><th>Wt (g)</th><th>%RC (Material Input)</th><th>Total RC Wt. (g)</th></tr>
<tr><td>Polycarbonate</td><td>20</td><td>50%</td><td>12.0g</td></tr>
<tr><td>Aluminum</td><td>3</td><td>30%</td><td>0.9g</td></tr>
<tr><td>Polyethylene</td><td>2</td><td>50%</td><td>1.0 g</td></tr>
<tr><td>Product Total: Mouse</td><td>25</td><td>56% (Total Product %RC)</td><td>13.9g</td></tr>
</table>
These criteria are met because the total product recycled content for the product type is more than the minimum specified in Table 3 and the recycled content inputs are at or above the criteria specified in Table 1 and Table 2.
</td></tr>
<tr><td>3.5.1 - Option 2; 3.5.2</td><td>Coffee Maker</td><td>Input 1: Aluminum
Input 2: PBT
Input 3: PET</td><td>
<table>
<tr><th>Material Input</th><th>Wt (g)</th><th>%RC (Material Input)</th><th>Total RC Wt. (g)</th></tr>
<tr><td>Aluminum</td><td>25</td><td>35</td><td>3.75</td></tr>
<tr><td>PBT</td><td>15</td><td>25</td><td>8.75</td></tr>
<tr><td>PET (food grade exception)</td><td>10</td><td>10</td><td>1.0</td></tr>
<tr><td>Steel</td><td>10</td><td>20</td><td>2.0</td></tr>
<tr><td>Other</td><td>40</td><td>0</td><td>0</td></tr>
<tr><td>Product Total: Coffee Maker</td><td>100</td><td>15.5%</td><td>15.5</td></tr>
</table>
These criteria are met because the total product recycled content for the product type is more than the minimum specified in Table 3 and the recycled content inputs are at or above the criteria with the exception of PET, because it is a food grade plastic.
</td></tr>
</table>