

Guidance for “light” Product Circularity DataSheet (v3.2)

The present document establishes principles and gives guidelines for the compilation and completion of a light Product Circularity DataSheet (PCDS). Statements shall be completed in accordance with this guidance document.

0 Revisions

Statement	Changes	Version
Changes from version 3.11 to 3.2		
2000-2120	Reorder statements related to the product composition disclosure and chemical substance threshold. Add clarifications to the statements and the guidance to avoid misinterpretation	3.2
2300	Remove the term “chemical”	3.2
2310	Remove the term “chemical” and rephrase the part related to the classified harmonization	3.2
2320	Replace the term “article” by product	3.2
2300-2330	Add negative and affirmative statements related to hazards in order to ensure that the information is showed in the PCDS in any case. Decision to include no specific hazards-related regulation (i.e. specific to some product categories like RoHS) in the “light” version of the PCDS	3.2
2430 & 2530	Statements removed => Reserved for the extended version because of the complexity of non-hazardous contaminant	3.2
2600-2610	Remove the term “rapidly” from “rapidly renewable content” Remove the definition of “rapidly renewable materials” in the Terms and Definitions Remove the terms “during the production” in the statement 2610	3.2
3100	Add UL Greenguard program in the examples described in the guidance	3.2
5001	Add statement related to CE mark	3.2
Changes from version 3.0 to 3.11		
1402-1404	Replace “party” by “person”	3.11
1501-1504	Replace “party” by “person”	3.11
2000-2002	Add precision for the product composition in the guidance	3.11
2300-2320	Turn the negative statements into affirmatives	3.11
2310	Reformulate statement and guidance to be compliant with the regulation REACH	3.11
2320	Replace “product” by “article”	3.11
2330	Add a statement related to California Proposition 65	3.11
2400-2406	Adjust the ranges for pre-consumer recycled content	3.11
2410-2411	Add precision for the reference weight => “weight of recycled content”	3.11
2500-2506	Adjust the ranges for post-consumer recycled content	3.11
2510-2511	Add precision for the reference weight => “weight of recycled content”	3.11
2600-2606	Adjust the ranges for rapidly renewables resources	3.11
2610	Add statement related to the sustainable management of renewable resources	3.11
3002-3003	Turn the negative statements into affirmatives	3.11
3100	Add precision in the guidance for product emission or dispersion	3.11
3200	Add clarifications in the definition “actively positive impacts”	3.11

4000-4206	Re-organize the guidance for statements => Adjust the ranges and add further clarifications for the definitions of demounting, disassembling and dismantling	3.11
5030-5036	Adjust the ranges and reformulate statements for clarification and add explanations in the definition of “same level of quality”	3.11
5040	Add statement for leakage <1% of product content	3.11
5050	Add clarifications related to the collection system in the guidance	3.11
5060	Reformulate statement for clarification	3.11
5091	Add clarifications in the guidance for the term “clean incineration”	3.11
Changes from version 2.0 to 3.0		
113	Add comment in guidance to allow entry by semicolons in case of product with different sizes	3.0
114	Add statement for the GTIN	3.0
125	Add statement for the country specific corporate identification number	3.0
126	Add statement for the GLN	3.0
24X-25X	Statements for recycled content split to consider pre-consumer recycled content and post-consumer recycled content	3.0
20X	Add statements for product composition disclosure	3.0
21X	Reformulate statements regarding chemical substance threshold	3.0
22X	Reformulate statements regarding chemical composition	3.0
23X	Modify formulation of the statement regarding substances classified as CMR. Add statement for “article” which does not contain restricted substances defined in Annex XVII of REACH.	3.0
305	Add definition for “functional use period”	3.0
4XX and 5XX	Move content of the Section 4 – Design for Re-Use to Section 5 Move content of the Section 5 – Design for Disassembly to Section 4	3.0
400	Add definition for “minimal modification”	3.0
430-438	Add statements to distinguish the level of quality and leakage in the context of recycling Add definitions to clarify the terms “same level of quality” and “leakage”	3.0
Changes from version 1.0 to 2.0		
113	change the statement as follows: Manufacturer ID code Guidelines: Internal identification code used by the manufacturer	2.0
143	Add statement “Function or department of party responsible for PCDS issuance”	2.0
144	Add “email of department”	2.0
145	Add “phone number of department”	2.0
152	Add statement “Function or department of party responsible for PCDS revision”	2.0
153	Add “email of department”	2.0
154	Add “phone number of department”	2.0
20X & 21X	Reformulate the statements and guidance to address two aspects: information on granularity and chemical composition of the product	2.0
230 & 231	Reformulate the statements considering SVHC of REACH regulation and the CLP framework	2.0
250 & 251	Reformulate the statements to align with the guidance.	2.0
260 & 261	Reformulate the statements considering SVHC of REACH regulation and CLP framework	2.0
240	For the definition of “recycled content”, add clarifications for the in-house scrap in Terms and Definitions, based on ISO 14021	2.0
300	Replace “on site” by “location of the product use”	2.0
301	Replace “on site” by “location of the product use”	2.0
302	Replace “prescribed usage” by “intended usage of the product” (referring to the first use cycle of the product in the light set)	2.0

303	Add in the guidance: "Damage is interpreted as anything that interferes with the intended use of the product."	2.0
305	Add a statement related to the "availability of spare parts": "spare parts are made available by the manufacturer or an authorized representative during the functional use period of the product"	2.0
310	Reformulated for grammar to "according to 3rd party tests". Add in the Guidelines: "The definition of "harm" depends on the product group type."	2.0
440	Rephrase statement by adding "for recycling of the product at the same level of quality" Add in the guidance: "The term "dedicated" does not mean that the manufacturer has to close the loop and get their own products back to their site. Instead, the collection system and subsequent recycling could result in other manufacturers receiving high quality materials for their products."	2.0
473	Add in the guidance "In these examples, the product is the coating which is designed to be burnt cleanly and at the same time, generates energy. Simultaneous energy generation is desirable, but it is not an end on its own."	2.0
500	Replace "removed" by "demounted"	2.0
500-52X	Reorganize the statements with 3 levels to be more generic - Demounting is at the product level - Disassembling is at the component level => to be reused - Dismantling is at the material level => to be recycled Add definitions of demountability, disassemblability, dismantlability	2.0

Points of discussion:

Working Session in October 2019 (PCDS version 1.0)

- *Add a statement "The product can be maintained by sending it to a maintenance site within XX km".*

This additional was rejected due to difficulties applying a standardized distance depending on the type of product and practical realities of repair.

After some internal examination of this question, the Steering Group reached the conclusion that setting a specific kilometre radius is problematic. Some repairs are most effectively performed in terms of trained personnel, waste management and safety at a central facility. That facility could be 50 - 800 km away. Other systems like ships have repair facilities strategically positioned around the world over thousands of kilometres.

As well the issue of CO2 related to transport is closely tied to the question of renewable energy. If train transport to a repair facility is electrified and renewably powered, then the CO2 footprint is dramatically different than for fossil fuel powered transport. This gets into LCA issues which are not the focus of the PCDS. So, setting an arbitrary distance when the footprint calculations vary is also problematic.

The more important question seems to be that to assure longevity of the product, the repair occurs in a way that is convenient for the customer. In this respect we suggest the statement read:

"A system is in place for the customer to conveniently provide and receive back the product for repair in a specified time period."

- *Broader sustainability aspects related to life cycle assessment (such the transportation and the location of spare parts) will not be covered in the light PCDS.*

Physical meeting in December 2019 (PCDS version 3.0)

At the physical meeting, the Dataset Working Group recommended to:

Recommendations from the DWG	Answer from the Steering Group
<u>Related to the structure of the PCDS</u>	
<p>Define clearly the differences between “TRUE”, “FALSE”, “Not Applicable” and potentially add a 4th possibility “data not available/known” or “data not assessed”</p> <ul style="list-style-type: none"> • Add Possibility that the statement stays even if it is false? • If all statements of a subheading are false, (e.g. positive impact or recycled content), should we delete the sub-heading ? Allow for N/A at chapter level 	<ul style="list-style-type: none"> • If the data are not available/known, statement should be set to “FALSE”. The 4th possibility could be considered in the extended PCDS. • For testing the PCDS, recommendation is to keep all statements in the document and write after the statement “TRUE”, “FALSE” or “N/A”. At a later stage, an IT system will facilitate the generation of a PCDS and will handle the appearance of statements in the PDF document.
<p>Add a description part at the beginning of the PCDS, so the manufacturer can explain the intended use of the product:</p> <ul style="list-style-type: none"> • Designed for use ? • Product A => application A, B, C, D, E 	<p>The functional use of the product is not part of the PCDS, and the circular use is part of it.</p>
<p>Add a product family</p>	<p>This will be addressed in the Extended version of the PCDS.</p>
<p>Give the possibility to provide additional information related to the statement with a link or specific field (e.g. chemical composition => add link to HPD for example)</p>	<p>This will be addressed in the Extended version of the PCDS.</p>
<p>Allow links to other PCDS along the value chain</p>	<p>This will be addressed in the Extended version of the PCDS.</p>
<u>Related to the statements of the PCDS</u>	
<p>Transform negative statements into positive statements with the same meaning</p>	<p><i>Done whenever possible in version 3.11</i></p>
<p>Mention more clearly when there is a multiple choice and only one statement can be true</p>	<p><i>Done in version 3.11</i></p>
<p>Harmonize the questions regarding the % in weight</p>	<p><i>Done in version 3.11</i> The Steering Group is currently evaluating with the IT expert the possibility to add the exact numerical value. If this is possible, the content of some statements could change. For example: The weight fraction of all disclosed chemical substances is (XX) %.</p>
<p>Add a statement with CE marking (for quality reasons) / (quid of other countries outside of Europe ?)</p>	<p>See statement 5001</p>
<p>Modify definition of “renewable resources” => managed in a sustainable way</p>	<p>Done in version 3.11 (statement 2610)</p>

1 Objectives & Design Principles

See “Terms and definitions” for a brief definition of the PCDS and “Light” PCDS”.

1.1 Objectives of the PCDS

1. To provide basic data related to the product circularity to all the relevant stakeholders;
2. To improve the sharing efficiency of circularity-related data across supply chains;
3. To encourage the improvement of the product performance in terms of circularity.

1.2 Design principles

1.2.1 Support other systems

The PCDS is **designed to enable later circular evaluations of the product** by providing basic information to others (for example, platforms or consultants). It is **not designed for ranking or rating product circularity itself**, although it might refer to certifications or labels that have already evaluated some aspects of the product performance. Therefore, content of the PCDS is simply designed with a standard text set, facilitating the extraction of data.

1.2.2 Limitations on predicting final usage

The **PCDS is intended to be completed on the basis on how the manufacturer designed its own product**, and not on how the next user in the value chain/the customer intends to use this product. The same product is often used in different applications, leading to different circularity scenarios.

The reason for this is to avoid confusion about multiple pathways because each manufacturer is responsible for how its product is designed/manufactured and these pathways are often impossible for the manufacturer to predict. Therefore, the “*Design for...*” statements in the PCDS provide valuable information to support the evaluation of the product circularity but are not definitive descriptions of all potential future uses.

For example: a manufacturer designs a product X to be demountable/recyclable. However, the next user in the value chain uses this product X in a product Y in a way that is not demountable/recyclable (e.g. due to mixing, gluing, etc.). In this case, it becomes the responsibility of the user at that point in the supply chain to describe the demountability/recyclability of the product Y.

1.2.3 Confidentiality vs. Transparency

To **solve the conflict between confidentiality of information and the need for transparency when implementing a true circular approach**, we are using “**statements**” to describe a certain set of features that can be transparently stated as true or false without having to disclose to every party the manufacturer’s production secrets. To ensure trustworthy content, the originating data are verified by an independent audit.

1.2.4 Standalone structure

The content of a PCDS is **designed to have a standalone structured content**. The PCDS does not include sector-specific provisions and its content is independent of the later use scenario of the product. Depending on the complexity of the product constituents, some statements may not be applicable, and instructions are given on how to complete the PCDS in such cases.

1.2.5 Supplier network integration

The PCDS is **designed to be integrated throughout the supply chain**. A standardized approach allows the assembly of information from multiple sheets in cases where a product contains multiple components each with its own sheet. Statements are therefore formulated in a way to facilitate the assembly of information, which will be automatized, at a later stage, by an IT solution.

2 Contents and general layout of a light PCDS

2.1 Sections & numbering

A light PCDS is organized in the following 6 document sections. Text of the headings, numbering and sequence shall not be altered. Each statement will be numbered according a logic given by the overall PCDS structure. It will help to facilitate automatization of the document creation and reading. For the PCDS itself, a specific serial number combined with PCDS validity identification should be entered for easier identification.

- SECTION 1: Product and Company Identification
- SECTION 2: Composition/Information on product constituents
- SECTION 3: Design for better use
- SECTION 4: Design for disassembly
- SECTION 5: Design for re-use
- SECTION 6: Third-party verification

The 6 sections are sometimes subdivided by means of subheadings. However, the subheadings are not numbered as they are not themselves statements; they are for clarity only.

2.2 Requirement for statements

Under each of the 6 document sections, each statement is mandatory and shall be considered to be true or false or “Not Applicable”. The terms “true” or “false” are not themselves entered into the PCDS.

- If the statement is true, then the statement is included in the PCDS.
- If the statement is false, then the statement is excluded from the PCDS.
- If information is not applicable, then the reason for non-applicability shall be stated. If the statement is not applicable, the following phrase is inserted in lieu of the statement: “XXX statement is not applicable for this product”.

Numbered blanks shall not be entered for any statement; either the statement is included, or it is excluded or shown as not applicable.

2.3 Competent persons

The PCDS shall be prepared by a competent person who shall know or have access to the product specific composition and design principles. This person could rely upon additional competences and should ensure the consistency of the PCDS, especially if he/she acts as the coordinator of a group of people. Manufacturers of product shall ensure that such competent persons have received appropriate training.

2.4 Revision

The PCDS should be revised as soon as there is a change in the product composition or when new information/regulations on related hazards or other circular characteristics becomes available. The new, dated version of the information, identified as 'Revision: (date)' with a version number shall be available to all former recipients of the product and shall refer to the old version to be replaced. However, in the case of a new model of a product, a new PCDS shall be issued.

3 Instructions for the compilation and completion of a light PCDS

This section contains guidelines and instructions to complete the statements in each of the 6 sections of the PCDS. Definition of key terms are provided in the section Terms and Definitions.

SECTION 1: Product and Company Identification

Product Identifiers

- 1100 Product name
- 1101 Brand
- 1102 CAS-No
- 1103 Product ID code
- 1104 Global Trade Item Number (GTIN)

Manufacturer Identification

- 1200 Company name
- 1201 Street address
- 1202 City
- 1203 Postal Code
- 1204 Country
- 1205 Country specific corporate identification number
- 1206 Global Location Number (GLN)

Production Site Information

- 1300 Production Site Name
- 1301 Street address
- 1302 City
- 1303 Postal Code
- 1304 Country

PCDS issuance

- 1400 Version number
- 1401 Date of initial PCDS issuance
- 1402 Name of person responsible for PCDS issuance
- 1403 Function of person or department responsible for PCDS issuance
- 1404 Email of person or department responsible for PCDS issuance
- 1405 Telephone number of person or department responsible for PCDS issuance

PCDS revision

- 1500 Date of updated PCDS version
- 1501 Name of person responsible for PCDS revision
- 1502 Function of person or department responsible for PCDS revision
- 1503 Email of person or department responsible for PCDS revision
- 1504 Telephone number of person or department responsible for PCDS revision

Statement number	Guidelines and principles to complete the statement
	This section gives information on how the product and its production location shall be identified and how the name and contact details of the manufacturer of the product shall be provided in the PCDS.
1100	The product name provided on the label where the product is sold.
1101	The brand name provided on the label where the product is sold.
1102	CAS number is a unique numerical identifier assigned by the Chemical Abstracts Service (CAS) to every chemical substance described in the open scientific literature. Provide the CAS number whenever applicable. See link for more details https://web.archive.org/web/20080725010848/http://www.cas.org/expertise/cascontent/registry/regsys.html
1103	Internal identification code used by the manufacturer. When the manufacturer has different ID codes for different product sizes, several product ID codes separated by semicolons can be entered. If changes appear in the product composition (or any other changes affecting the statements in the PCDS) between the different product sizes, separate PCDS should be issued.
1104	Global Trade Item Number (GTIN) whenever available. Not mandatory. GTIN is an identifier for trade items, developed by GS1.
1200	The manufacturer name provided on the label where the product is sold
1201/1202/ 1203/1204	The manufacturer business full postal address
1205	Country specific corporate identification number is the unique number used to identify the legal entity of the corporate registered in the country (often used e.g. for taxation purposes).
1206	Global Location Number (GLN) whenever available. Not mandatory. GLN is part of the GS1 systems of standards.
1300	The production site name
1301/1302/ 1303/1304	The production site full postal address
1400	The first version should be identified as version 1. All new versions should be identified with sequential numbering.
1401	Date of initial PCDS issuance expressed as DD/MM/YYYY.
1402	Full name of the competent person providing or gathering the information for all PCDS sections expressed with family name first and given name second
1403	The function title or department name of the competent person providing or gathering the information for all PCDS sections
1404	Business email of the competent person or department named in 1402
1405	Business phone of the competent person or department named in 1402
1500	Date of revision of the PCDS issuance expressed as DD/MM/YYYY. The PCDS should be revised when new information on product chemical composition and related hazards becomes available (see 2.4 Revision).
1501	Full name of the competent person revising the PCDS expressed with family name first and given name second
1502	The function title or department name of the competent person revising the PCDS
1503	Business email of the competent person or department named in 1501
1504	Business phone of the competent person or department named in 1501

SECTION 2: Composition/Information on product constituents

Chemical substance threshold

- 2000 The chemical substance threshold used by the manufacturer for disclosing the product composition is 1% (10000 ppm).
- 2001 The chemical substance threshold used by the manufacturer for disclosing the product composition is 0.1% (1000 ppm).
- 2002 The chemical substance threshold used by the manufacturer for disclosing the product composition is 0.01% (100 ppm).

Product composition disclosure

- 2100 The product composition disclosed at the defined threshold is publicly available.
- 2101 The product composition disclosed at the defined threshold is available to the customer under secrecy agreement.
- 2110 The product composition disclosed at the defined threshold has been validated by a third party.
- 2120 The product has been awarded an independent certification or standard related to its composition.

Chemical composition

- 2200 The weight fraction of all disclosed chemical substances is 0%.
- 2201 The weight fraction of all disclosed chemical substances is >0-10%.
- 2202 The weight fraction of all disclosed chemical substances is >10-25%.
- 2203 The weight fraction of all disclosed chemical substances is >25-50%.
- 2204 The weight fraction of all disclosed chemical substances is >50-75%.
- 2205 The weight fraction of all disclosed chemical substances is >75-95%.
- 2206 The weight fraction of all disclosed chemical substances is >95-99%.
- 2207 The weight fraction of all disclosed chemical substances is >99%.

Hazard Statements

- 2300 The product contains Substances of Very High Concern from the REACH Candidate list in concentration above 0.1% by weight.
- 2301 The product does not contain Substances of Very High Concern from the REACH Candidate list in concentration above 0.1% by weight.
- 2310 The product contains substances that have a harmonized classification as CMR 1A or 1B in concentration above classification criteria for mixtures and/or specific concentration limits related to a substance defined in the CLP regulation (EC) n° 1272/2008.
- 2311 The product contains substances that have a harmonized classification as CMR 1A or 1B in concentration above classification criteria for mixtures and/or specific concentration limits related to a substance defined in the CLP regulation (EC) n° 1272/2008.
- 2320 The product contains restricted substances that could exceed limits defined in Annex XVII of REACH, related to the specific use which is relevant for this product.
- 2321 The product does not contain restricted substances that could exceed limits defined in Annex XVII of REACH, related to the specific use which is relevant for this product.
- 2330 The product requires a warning under California Proposition 65.
- 2331 The product does not require a warning under California Proposition 65.

Pre-consumer recycled content

- 2400 The product contains 0% pre-consumer recycled content by weight.
- 2401 The product contains >0-10 % pre-consumer recycled content by weight.
- 2402 The product contains >10-25 % pre-consumer recycled content by weight.

- 2403 The product contains >25-50 % pre-consumer recycled content by weight.
 2404 The product contains >50-75 % pre-consumer recycled content by weight.
 2405 The product contains >75-95 % pre-consumer recycled content by weight.
 2406 The product contains >95 % pre-consumer recycled content by weight.
- 2410 Any chemical substance present in the pre-consumer recycled content above 10% by weight of recycled content is disclosed.
 2411 Any chemical substance present in the pre-consumer recycled content above 1% by weight of recycled content is disclosed.
- 2420 The pre-consumer recycled content contains hazardous substance(s) in concentration above 0.1% by weight of pre-consumer recycled content.

Post-consumer recycled content

- 2500 The product contains 0% post-consumer recycled content by weight.
 2501 The product contains >0-10 % post-consumer recycled content by weight.
 2502 The product contains >10-25 % post-consumer recycled content by weight.
 2503 The product contains >25-50 % post-consumer recycled content by weight.
 2504 The product contains >50-75 % post-consumer recycled content by weight.
 2505 The product contains >75-95 % post-consumer recycled content by weight.
 2506 The product contains >95 % post-consumer recycled content by weight.
- 2510 Any chemical substance present in the post-consumer recycled content above 10% by weight of recycled content is disclosed.
 2511 Any chemical substance present in the post-consumer recycled content above 1% by weight of recycled content is disclosed.
- 2520 The post-consumer recycled content does not contain any hazardous substance in concentration above 0.1% by weight of post-consumer recycled content.

Sourcing statements

- 2600 The product contains 0% renewable content by weight.
 2601 The product contains >0-10 % renewable content by weight.
 2602 The product contains >10-25 % renewable content by weight.
 2603 The product contains >25-50 % renewable content by weight.
 2604 The product contains >50-75 % renewable content by weight.
 2605 The product contains >75-95 % renewable content by weight.
 2606 The product contains >95% renewable content by weight.
- 2610 A certification is available showing that the renewable content is managed in a sustainable way.

Statement number	Guidelines and principles to complete the statement
	This section of the PCDS shall describe the product composition including chemical substances, recycled content and its contaminants and renewable materials. Appropriate and available hazard information on chemical substances shall also be provided. Documentation of the details of the product composition and related hazards should be stored and made available by the manufacturer of the product for the verification by a third party.
2000	All chemical substances present in the product above 1% by weight (threshold) are disclosed.

	For the term “disclosed”, see definition 4.10. If statement 2000 is “true”, then statement 2001 & 2002 should be set to “false”.
2001	All chemical substances present in the product above 0.1% by weight (threshold) are disclosed. If statement 2001 is “true”, then statements 2000 & 2002 should be set to “false”.
2002	All chemical substances present in the product above 0.01% by weight (threshold) are disclosed. If statement 2002 is “true”, then statements 2000 & 2001 should be set to “false”.
2100	The product composition at the defined threshold (cf. statements 2001-2002), i.e. the list and associated quantities of substances that are present in the product expressed in weight percentage, is made available on publicly accessible platforms or manufacturer’s site e.g. a Health Product Declaration, a Material Health Statement, a Declare label ... If the statement 2100 is “true”, then statement 2101 should be stated to “false”.
2101	The product composition at the defined threshold (cf. statements 2001-2002), i.e. the list and associated quantities of substances that are present in the product expressed in weight percentage, is made available to the customer under certain conditions (secrecy agreement, Non-Disclosure Agreement (NDA)). If the statement 2101 is “true”, then statement 2100 should be set to “false”.
2110	The product composition at the defined threshold (cf. statements 2001-2002), i.e. the list and associated quantities of substances that are present in the product expressed in weight percentage, has been made available to a third-party body who verified and validated the data.
2120	The product has been awarded an independent certification or standard which validated the data of the product composition e.g. Cradle-to-Cradle certification and Blue Angel certification.
2200	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents 0% of total product weight. For the term “disclosed”, see definition 4.10. If statement 2200 is “true”, then statements 2201-2207 should be set to “false”.
2201	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 0% and is below or equal to 10% of total product weight. For the term “disclosed”, see definition 4.10. If statement 2201 is “true”, then statements 2200 and 2202-2207 should be set to “false”.
2202	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 10% and is below or equal to 25% of total product weight. If statement 2202 is “true”, then statements 2200-2201 & 2203-2207 should be set to “false”.
2203	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 25% and is below or equal to 50% of total product weight. If statement 2203 is “true”, then statements 2200-2202 & 2203-2207 should be set to “false”.
2204	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 50% and is below or equal to 75% of total product weight. If statement 2204 is “true”, then statements 2200-2203 & 2205-2207 should be set to “false”.

2205	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 75% and is below or equal to 95% of total product weight. If statement 2205 is “true”, then statements 2200-2204 & 2206-2207 should be set to “false”.
2206	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 95% and is below or equal to 99% of total product weight. If statement 2206 is “true”, then statements 2200-2205 & 2207 should be set to “false”.
2207	The weight percentage of all disclosed chemical substances in the product (according to the threshold) represents more than 99% of total product weight. If statement 2207 is “true”, then statements 2200-2206 should be set to “false”.
2300-2301	Chemical substances from the REACH candidate list are present in the composition at weight percentage above 0.1%. This list can be found on the ECHA website: https://echa.europa.eu/candidate-list-table .
2310-2311	Chemical substances classified as carcinogenic, mutagenic or toxic for reproduction (CMR) category 1A or 1B in the annex VI of the CLP regulation (Classification, Labelling and Packaging), are present in the composition at weight percentage above classification criteria for mixtures and/or specific concentration limits related to a substance defined in the CLP regulation (EC) n° 1272/2008. See the detailed list via this link https://echa.europa.eu/information-on-chemicals/cl-inventory-database . In case of articles, this statement should be set as Non-Applicable (NA).
2320-2321	Based on the potential use scenarios of the product, the manufacturer should evaluate if its product contains restricted substances as defined by Annex XVII of REACH (https://www.echa.europa.eu/substances-restricted-under-reach) for these specific use scenarios.
2330-2331	The product requires (or not) a warning under California Proposition 65, either because it contains chemicals listed on the Prop 65 List (most recent list according to the PCDS publishing date) or the exposure to any chemical is such that it poses significant risk of cancer or is above levels observed to cause birth defects or other reproductive harm. Prop 65 list: https://oehha.ca.gov/proposition-65/about-proposition-65
2400	The weight percentage of pre-consumer recycled materials out of the total product weight is 0%. The definition of recycled content 4.27 and pre-consumer material 4.23 in <i>Terms and Definitions</i> should be used. If statement 2400 is “true”, then statements 2401-2406 should be set to “false”.
2401	The weight percentage of pre-consumer recycled materials out of the total product weight is above 0% and below or equal to 10%. If statement 2401 is “true”, then statements 2400 and 2402-2406 should be set to “false”.
2402	The weight percentage of pre-consumer recycled materials out of the total product weight is above 10% and below or equal to 25%. If statement 2402 is “true”, then statements 2400-2401 and 2403-2406 should be set to “false”.
2403	The weight percentage of pre-consumer recycled materials out of the total product weight is above 25% and below or equal to 50%.

	If statement 2403 is “true”, then statements 2400-2402 and 2404-2406 should be set to “false”.
2404	The weight percentage of pre-consumer recycled materials out of the total product weight is above 50% and below or equal to 75%. If statement 2404 is “true”, then statements 2400-2403 and 2405-2406 should be set to “false”.
2405	The weight percentage of pre-consumer recycled materials out of the total product weight is above 75% and below or equal to 95%. If statement 2405 is “true”, then statements 2400-2404 and 2406 should be set to “false”.
2406	The weight percentage of pre-consumer recycled materials out of the total product weight is above 95%. If statement 2406 is “true”, then statements 2400-2405 should be set to “false”.
2410	For the term “disclosed”, see definition 4.10. This statement is included because recycled content is often not defined. All chemical substances present in pre-consumer recycled content above 10% by weight of recycled content (threshold) are disclosed. Example: if recycled content is 250g, then the threshold is above 25g. If statement 2410 is “true”, then statement 2411 should be set to “false”.
2411	For the term “disclosed”, see definition 4.10. This statement is included because recycled content is often not defined. All chemical substances present in pre-consumer recycled content above 1% by weight of recycled content (threshold) are disclosed. If statement 2411 is “true”, then statement 2410 should be set to “false”.
2420	A hazardous substance is a chemical substance that is either on the REACH candidate list or classified as carcinogenic, mutagenic or toxic for reproduction (CMR) category 1A or 1B in the annex VI of the CLP. The <u>cumulative</u> concentration of hazardous substances should be considered. The purpose of this statement is to allow the calculation of risk to exposure. However, it is not intended as a measure of risk on its own. For example, risk = hazards x exposure. This statement only converts the hazards.
2500	The weight percentage of post-consumer recycled materials out of the total product weight is 0%. The definition of recycled content 4.27 and post-consumer material 4.22 in Terms and Definitions should be used. If statement 2500 is “true”, then statement 2501-2506 should be set to “false”.
2501	The weight percentage of post-consumer recycled materials out of the total product weight is above 0% and below or equal to 10%. If statement 2501 is “true”, then statement 2500 and 2502-2506 should be set to “false”.
2502	The weight percentage of post-consumer recycled materials out of the total product weight is above 10% and below or equal to 25%. If statement 2502 is “true”, then statement 2500-2501 and 2503-2506 should be set to “false”.
2503	The weight percentage of post-consumer recycled materials out of the total product weight is above 25% and below or equal to 50%. If statement 2503 is “true”, then statement 2500-2502 and 2504-2506 should be set to “false”.
2504	The weight percentage of post-consumer recycled materials out of the total product weight is above 50% and below or equal to 75%.

	If statement 2504 is “true”, then statement 2500-2503 and 2505-2506 should be set to “false”.
2505	The weight percentage of post-consumer recycled materials out of the total product weight is above 75% and below or equal to 95%. If statement 2505 is “true”, then statement 2500-2504 and 2506 should be set to “false”.
2506	The weight percentage of post-consumer recycled materials out of the total product weight is above 95%. If statement 2506 is “true”, then statements 2500-2505 should be set to “false”.
2510	For the term “disclosed”, see definition 4.10. This statement is included because recycled content is often not defined. All chemical substances present in post-consumer recycled content above 10% by weight of recycled content (threshold) are disclosed. If statement 2510 is “true”, then statement 2511 should be set to “false”.
2511	For the term “disclosed”, see definition 4.10. This statement is included because recycled content is often not defined. All chemical substances present in post-consumer recycled content above 1% by weight of recycled content (threshold) are disclosed. If statement 2511 is “true”, then statement 2510 should be set to “false”.
2520	A hazardous substance is a chemical substance that is either on the REACH candidate list or classified as carcinogenic, mutagenic or toxic for reproduction (CMR) category 1A or 1B in the annex VI of the CLP. The <u>cumulative</u> concentration of hazardous substances should be considered. The purpose of this statement is to allow the calculation of risk to exposure. However, it is not intended as a measure of risk on its own. For example, risk = hazards x exposure. This statement only covers the hazards.
2600	The weight percentage of renewable materials out of the total product weight is 0%. The definition of renewable materials (4.31) should be used. If statement 2600 is “true”, then statements 2601-2506 should be set to “false”.
2601	The weight percentage of renewable materials out of the total product weight is above 0% and below or equal to 10%. If statement 2601 is “true”, then statements 2600 and 2602-2506 should be set to “false”.
2602	The weight percentage of renewable materials out of the total product weight is above 10% and below or equal to 25%. If statement 2602 is “true”, then statements 2600-2601 and 2603-2506 should be set to “false”.
2603	The weight percentage of renewable materials out of the total product weight is above 25% and below or equal to 50%. If statement 2603 is “true”, then statements 2600-2602 and 2604-2506 should be set to “false”.
2604	The weight percentage of renewable materials out of the total product weight is above 50% and below or equal to 75%. If statement 2604 is “true”, then statements 2600-2603 and 2605-2506 should be set to “false”.
2605	The weight percentage of renewable materials out of the total product weight is above 75% and below or equal to 95%. If statement 2605 is “true”, then statements 2600-2604 and 2506 should be set to “false”.
2606	The weight percentage of renewable materials out of the total product weight is above 95%.

	If statement 2606 is “true”, then statements 2600-2605 should be set to “false”.
2610	Examples of certifications: FSC and GOTS

SECTION 3: Design for better use

Designed for maintenance & repair	
3000	The product can be maintained & repaired by untrained personnel at the location of the product use.
3001	The product can be maintained & repaired by trained personnel at the location of the product use.
3002	The product requires no maintenance or repair if the intended use of the product is followed.
3003	Maintenance or repair of the product during its use period is not possible due to the design of the product.
3010	Consumables are easily replaced by untrained personnel.
3020	Spare parts are made available by the manufacturer or an authorized representative during the functional use period of the product.
Designed for safe operation	
3100	No harmful dispersion or emission occurs during use phase according to third party tests.
Designed for actively positive impacts	
3200	The product is designed for actively positive impacts.

Statement number	Guidelines and principles to complete the statement
Designed for maintenance & repair	
These statements are designed to describe the ease of maintenance & minor repairs in order to conserve as long, as possible the original condition of a product. It includes e.g. cleaning, lubrication, protective coating, adjustments, worn parts replacement, and minor repairs. It excludes major repairs like refurbishment, which are covered in ‘design for reuse’. “Trained personnel” refers to contractors or manufacturer’s own personnel who are trained in ongoing maintenance of the product. Statements 3000, 3001 & 3020 are not applicable to fast moving consumer goods where single use is anticipated in a short timeframe and are normally not applicable to base materials like plastics, glass, base metals, and chemicals.	
3000	Many manufacturers and independent websites offer guides to maintaining & repairing products. To make this statement true, the manufacturer should be able to show to a third-party verifier a related manual or website for untrained users. Examples: cell phones designed for repair by users.
3001	The manufacturer should be able to show to the third-party verifier that it has a program for providing trained personnel to do this. Examples: elevator, photocopier, other office equipment. In some cases, some of the product might be maintainable by non-trained personnel while other parts might require a skilled technician. In this case, statements 300 and 301 could both be set to “true”.

3002	For the term intended use , see definition 4.16. Example: Most Fast Moving Consumer Goods (see definition 4.12) are consumed within 90 days and normally do not require maintenance.
3003	For the term use period , see definition 4.39. Damage is interpreted as anything that interferes with the intended use of the product. Examples: single use camera or glass bottle that are not designed for repair.
3010	Examples: paper for photocopier, beverage pods for coffee & tea machines.
3020	For the term functional use period , see definition 4.13.
Designed for safe operation Safe operation helps to determine the utility of the product for present use especially for e.g. indoor air quality.	
3100	Many products off-gas or emit particulates but only some of those emissions are harmful as defined by standards like REACH. For products like metals and related alloys, tests might also have to be performed for skin contact or releases caused by friction or heating. These tests need to be performed by a qualified laboratory. The definition of “harm” depends on the product group type and on the geographic location. For example, the U.S. has CDPH as a minimum compliance, but this is not used in Europe. If the manufacturer anticipates that the product will be sold in different jurisdictions, then the manufacturer has an obligation to conform with the definition of harm in each of those jurisdictions in order to make this statement “true”. Examples of offgassing standards include ASTM E595 – 15 and harmonized test procedures based on <u>Construction Products Regulation (EU 2011/305) (CPR)</u> , as well as UL Greenguard program. Testing for offgassing and particulates are well-established practices by laboratory companies like Eurofins.
Designed for actively positive impacts Positive impacts are one of the main value propositions that contribute to healthy abundance and utility as well as economic value of the product for users. For the term actively positive impacts , see definition 4.1.	
3200	Examples: floor and wall covering that are designed to capture or metabolise pollutants. The manufacturer should provide any documentation to the third-party verifier which supports their claim. For example, if a floor covering manufacturer claims metabolizing pollutants, then scientific test results will be provided.

SECTION 4: Design for disassembly

Demounting

4000 The product is designed to be installed and demounted using reversible connectors.

Disassembling

4100 0 % of the product (weight in kg) is designed to be cleanly removed from the product.

4101 >0-10 % of the product (weight in kg) is designed to be cleanly removed from the product.

4102 >10-25 % of the product (weight in kg) is designed to be cleanly removed from the product.

4103 >25-50 % of the product (weight in kg) is designed to be cleanly removed from the product.

4104 >50-75 % of the product (weight in kg) is designed to be cleanly removed from the product.

4105 >75-95 % of the product (weight in kg) is designed to be cleanly removed from the product.

4106 Above 95 % of the product (weight in kg) is designed to be cleanly removed from the product.

Dismantling

4200 0% of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

4201 >0-10 % of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

4202 >10-25 % of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

4203 >25-50 % of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

4204 >50-75 % of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

4205 >75-95 % of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

4206 Above 95 % of the product (weight in kg) is designed to be dismantled to the level of materials that can be reused or recycled for other products.

Statement number	Guidelines and principles to complete the statement
	<p>There are 3 possible steps before recycling of a product:</p> <ol style="list-style-type: none"> 1) Demounting 2) Disassembling 3) Dismantling <p>Some products will only require one or two of those steps depending on their complexity and use.</p>
4000	<p>For the term demounting, see definition 4.8</p> <p>If the product is designed to be demounted without damage or contamination and can be directly reused, please set the statements 4000 and 5000 to “true”.</p>
4100 - 4106	<p>For the term disassembling, see definition 4.9.</p>
4200 - 4206	<p>For the term dismantling, see definition 4.11.</p>

SECTION 5: Design for re-use

Circularity pathways/scenarios – Product designed for ...

- 5000 The product is designed for re-use as-is or with minimal modification.
- 5001 The product has the CE mark.
- 5010 The product is designed for refurbishment.
- 5020 The product is designed for remanufacturing.
- 5030 0% of the product is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5031 >0-10% of the product is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5032 >10-25% of the product is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5033 >25-50% of the product content is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5034 >50-75% of the product content is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5035 >75-95% of the product content is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5036 >95-99% of the product content is designed for recycling at the same level of quality. The remainder of the materials is foreseen by the manufacturer to be recycled at a lower quality than the original content.
- 5037 >99-100% of the product content is designed for recycling at the same level of quality.
- 5040 less than 1% of the product content is anticipated to become leakage during the use phase due to for example wear & tear, oxidation, erosion, etc.
- 5041 >1-10% of the product content is anticipated to become leakage during the use phase.
- 5042 >10-25% of the product content is anticipated to become leakage during the use phase.
- 5043 >25-50% of the product content is anticipated to become leakage during the use phase.
- 5044 >50-75% of the product content is anticipated to become leakage during the use phase.
- 5045 >75-95% of the product content is anticipated to become leakage during the use phase.
- 5046 Above 95% of the product content is anticipated to become leakage during the use phase.
- 5050 The manufacturer/ industry association has a dedicated collection system in place to gather and deliver products for recycling.
- 5060 The portion of the product known to be emitted into the environment during use is designed for that purpose.
- 5070 The product is designed for industrial cascading in the biosphere.
- 5080 The product is designed for composting in an industrial facility.
- 5081 The product is designed for composting in a home composter.
- 5090 The product is designed for clean biodigestion.

5091 The product is designed for clean incineration/pyrolysis.

Statement number	Guidelines and principles to complete the statement
	<p>Circularity pathways/scenarios – Product designed for ...</p> <p>These statements provide valuable information on how to handle a product in order to effectively support resource cycles.</p> <p>Here, biological or technical cycles are reflected more specifically in the intended circularity pathway in order to be practical for users.</p>
5000	<p>For the definition of minimal modification, see definition 4.20.</p> <p>Example. Steel beam. Portable room divider. Reusable packaging. It should be possible to reuse the product in another location without damaging the product when it is removed from its present location.</p>
5001	<p>The purpose of this statement is to provide re-users with value-added information on product verified quality. This saves the costs of reapplying for CE mark.</p> <p>However, if the product will be modified (i.e. refurbished), it will be necessary to check if the CE mark is still valid.</p>
5010	See definition 4.29 for the term refurbishment
5020	See definition 4.30 for the term remanufacturing
5030-5037	<p>The leading challenges with recycling are quality and leakage. Manufacturer considers if the product is designed for recycling at the same level of quality, instead of down-cycled. The manufacturer should be able to demonstrate to a third-party verifier that the major constituents of the product are designed for recycling at the same level of quality.</p> <p>See definition 4.28 for the term recycling and definition 4.34 for the term same level of quality. There are many standards for recycling and recyclability including the Global Recycling Standard. However, it is often difficult to distinguish between recycling and downcycling using these standards.</p> <p>In order to be recycled effectively, a product should also be designed for demounting, disassembly and dismantling where applicable. See Section 4.</p>
5040-5046	See definition 4.17 for the term leakage .
5050	<p>Most collection systems mix many products together. In order to improve recycling and recyclability, dedicated collection systems are coming on line. The term “dedicated” does not mean that the manufacturer has to close the loop and get their own products back to their site. Instead, the collection system and subsequent recycling could result in other manufacturers receiving high quality materials for their products.</p> <p>The manufacturer should be able to demonstrate to a third-party verifier that a dedicated collection system is in place. Examples include solar panels, carpets, high quality office paper. These systems can vary from local to global. The “light” PCDS does not distinguish this level of detail and customers normally will ask the manufacturer what applies in their region.</p> <p>A collection system does not guarantee effective recycling, but recycling is covered in other sections.</p> <p>If the product is designed to be released into the environment, then the statement is to be classified as “N/A”.</p>
5060	Consumer products that are truly designed to be ‘consumed’ just once should be designed to be compatible with the environment they are released into.

	<p>Cosmetics, fuels, and many sanitary products are examples. Aerosols are often immediately dispersed into their environment. Other more durable products like furniture textiles or products with coatings will release part of their contents into the environment through wear and tear, so are best designed for this. The manufacturer should be able to demonstrate to a third-party verifier that this type of design has been implemented for the product. Compliance with standards is one way to demonstrate this. However, an active program to go beyond regulatory compliance is a more effective proof.</p>
5070	<p>Cellulose based products are examples of products that are eventually cascaded into a lower level of product then eventually released into the environment. In these cases, the additives in the products are especially relevant for cascading. For the term cascading, see definition 4.3.</p> <p>The manufacturer should be able to demonstrate to a third-party verifier that the substrate and its additives have been designed for cascading into other products at original quality level. There are no standards for cascading, however the EU has published a best practice guide to cascading. There are also recycling and biodigestion and composting standards and labels referred to elsewhere in this document that could let the manufacturer validate its claim.</p>
5080	<p>Industrial facilities have specified time periods that are normally shorter than for home composting. The manufacturer should be able to demonstrate to third party validators that the product is fully compostable within that time period and process.</p> <p>There are more than 20 standards and labels for industrial composting including EU composting standard EN 13432, various TUV standards, OK Compost industrial etc.</p>
5081	<p>Standards for home composting include OK Compost Home, TUV Vinçotte, and AS5810 – 2010 Home Compost {Australasia}. The manufacturer should be able to demonstrate that it is following one of these standards.</p>
5090	<p>Many foods and disposable products end up in biodigesters in order to generate biogas and healthy effluents as fertilizer.</p> <p>The manufacturer should be able to demonstrate that it is consciously designing the ingredients in its biodigestible products for this purpose. In this case, clean biodigestion means avoidance of any contaminants that negatively affects biodigestion.</p>
5091	<p>“Clean incineration “is interpreted as burning something without the need for specialized filters to remove severe carcinogens and other toxins. Every incineration process has some emissions but if the product is properly designed, these only require normal inexpensive filtration. Examples of candidates for clean incineration include coatings and inks on metals that are re-smelted. In these examples, the product is the coating which is designed to be burnt cleanly and at the same time, generates energy. Simultaneous energy generation is desirable, but it is not an end on its own.</p> <p>The manufacturer should be able to demonstrate to a third-party verifier that its products are designed for this end-use if it is probable. For example, if the product will likely end up as waste to energy in a cement kiln, then design for clean burning is a requirement in order to make this statement true.</p>

SECTION 6: Third-party verification

This section will be revised based on the outcomes of the work with the Auditing Sub-Group.

- | | |
|------|--|
| 6001 | Data in the actual PCDS has been audited by an independent third-party. |
| 6100 | The total supply chain is known up to the 1 st level. |
| 6101 | The total supply chain is known up to the 2 nd level. |
| 6102 | The total supply chain is known up to the 3 rd level. |
| 6103 | All levels of the supply chain down to raw material suppliers are known. |
| 6200 | The supply chain is audited up to the 1 st level. |
| 6201 | The supply chain is audited up to the 2 nd level. |
| 6202 | The supply chain is audited up to the 3 rd level. |
| 6203 | All levels of the supply chain down to raw material suppliers are audited. |

4 Terms and Definitions

For the purposes of Standardization and of common understanding, the following terms and definitions apply.

NOTE: Terms are not defined where they retain their normal dictionary definition. Where bold type is used within a definition, this indicates a cross-reference to another term defined in this clause, and the number reference for the term is given in parentheses.

4.1. **actively positive impacts**

An actively positive impact is defined by a specific feature that is deliberately designed into the product to actively improve the environment rather than just incrementally reducing negative impacts.

Examples: Floor and wall coverings that extract pollutants from the air and metabolize them using e.g. microfibers or Titanium Dioxide (TiO₂). Digesters that convert waste nutrients into food for species like algae that are then used for products. Solar water heating.

Reforestation. Sustainable water purification. There are no official standards defining positive impacts in a circular economy but there are standards to measure them by.

Examples include activities that generate carbon offsets, measuring outputs of renewable energy and rates of metabolizing pollutants.

A high level of positive impact is when a product actively uses pollutants to improve the performance of a product. Example: concrete production that captures and uses CO₂ to improve product performance by making the concrete stronger and less expensive.

Examples of less negative rather than positive impacts include fossil fuel engines that emit fewer pollutants, or packaging that is light weighted to reduce its waste. Those are limited to reducing negative impacts of the product rather than reversing negative effects that are already in the environment or providing safe nutrients for the environment.

4.2. **article**

an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition. (e.g. manufactured goods such as textiles, electronic chips, furniture, books, toys, kitchen equipment).

(Regulation (EC) No 1907/2006, Article 3, Definition 3)

4.3. **cascading**

This definition will be taken from one of more of these links;

See EU publication; Guidance on cascading use of biomass with selected good practice examples on woody biomass ISBN 978-92-79-93134-5

<https://www.ceguide.org/Strategies-and-examples/Dispose/Cascading>

https://thecirculareconomy.fandom.com/wiki/Cascading_Materials

4.4. **compost**

organic soil conditioner obtained by biodegradation of a mixture principally consisting of various vegetable residues, occasionally with other organic material and having a limited mineral content

([ISO 21701:2019, Definition 3.1](#))

4.5. **composting**

aerobic process designed to produce **compost** (4.4)

[\(ISO 21701:2019, Definition 3.2\)](#)

- 4.6. **(product) constituent**
any single species (**article** (4.2), **mixture** (4.21) or **substance** (4.35)) needed to fabricate a product
- 4.7. **consumer**
individual member of the general public purchasing or using goods, property or services for private purposes
(ISO/IEC, The consumer and standards — Guidance and principles for consumer participation in standards development. COPOLCO, March 2003, subclause 4.3)
- 4.8. **demounting**
ability of a **product** to be removed from its mounting or setting, without damaging the product or its performance (e.g. static and mechanical functions) or contaminating other products or assemblies. For example, a product being demounted from a building or vehicle. ([ISO 6707-3:2017](#), Definition 3.4.30 adapted)

Clean installation and demounting of products are fundamental for their repair and next use. These can occur at many levels. For example, an assembled product designed to be installed in a more complex product e.g. a battery in a computer. Or the assembled product designed to be installed in a building or vehicle.

In architecture, an example is temporary houses (in the emergency context of a natural disaster, e.g.) made with light materials and easily assembled components. They are planned to be only for limited time, after that they can be moved somewhere else (demounted and then mounted again).

In furniture, a shelf designed to be demounted means that the shelf can be removed from the wall without damaging it and can be reinstalled in another location.

The demounting characteristic must be foreseen in the conception phase. The product must be designed to be readily reassembled or repositioned after demounting. For this, reversible connection types are essential.

It is recommended that the manufacturer have the capacity to describe to third party verifiers which types of connectors are used for installing their products. Example of preferred connection types are listed in the enclosed table and the connection types (III, V, VI, VII, VIII, XI) are reversible connectors.

Connection Types	Description
Type I	> Direct chemical connection. Two materials are permanently fixed by chemical connection (no reuse or upcycling).
Type II	> Indirect connection with irreversible chemical connection, which is stronger than the connected elements/materials/products.
Type III	> Direct connection with reversible chemical connection. Two elements are connected with softer chemical substances, which can be removed or delaminated (reuse by refurbishment is possible).
Type IV	> Direct insert connection. Two elements are connected by upland insertion of accessories into the element (element is weakened after disassembly).
Type V	> Direct connection with mechanical fixing devices. Two elements are connected with mechanical connection, which can be removed without damaging the elements (reuse and reconfiguration/adaptability is possible).
Type VI	> Indirect connection via dependent third component. Two elements are separated with third element/component, but they have dependence in assembly (reuse is partly possible).
Type VII	> Interlock connection. Two elements are connected without being damaged by fixing devices (direct reuse and reconfiguration/adaptability possible).
Type VIII	> Intermediary connection. Two elements are connected by third element using dry/mechanical connections. Disassembly of one element does not affect the other (direct reuse and reconfiguration/adaptability possible).
Type XI	> Gravity. Two elements are connected only by gravity force.

Table 4: Connection Types. Tooloav developed by E. Durmisevic Twente University BAMB Project.

4.9. **disassembling**

ability of a **product** to be taken apart at the end of its useful life in such a way that the constituent sub-elements or components can be re-used or recycled. ([ISO 6707-3:2017](#), Definition 3.7.31)

This is distinct from demounting where the product is being removed from another context like a structure or vehicle.

Example of disassembling: cell phone or computer that is easily separated into constituent components.

Clean separation of product parts determines cost and quality of next use.

The “disassembling” characteristic of a product must be foreseen in the conception phase and therefore reversible assembling methods must be used that allow the clean separation of the components, without damaging the product and its sub-elements or compromising their functional performance (e.g. static and mechanical function).

The manufacturer should be able to demonstrate to a third-party verifier how much of the product is designed to be cleanly separated without contaminating other parts of the product.

4.10. **disclosure**

disclosure occurs when information is made available either publicly or under secrecy agreement.

4.11. **dismantling**

ability of a **product** to be dismantled cleanly and easily into all the constituent materials in such a way that these materials can be reused in other applications or recycled.

This is distinct from disassembling where the product is only separated into its components but not necessarily individual materials, although some components might be mono-materials. For example, a cell phone might be disassembled into parts that include the screen, but the screen might have several component materials that need to be separated to be recovered. This might be done with heat or chemicals or biological processes. It

destroys the re-usability of the component so goes beyond disassembly, and instead maintains the reusability of the materials.

Example of dismantling; Printed paper products that can be cleanly de-inked for high quality recovery of the fibres. The resulting de-inking sludge should be safe enough to be reusable for another purpose.

Other examples: carpets often contain different materials for the backing and surface. Computers and other personal data devices contain hundreds of different materials. A window is generally composed of a wooden or plastic frame, a glazed slab and various metal elements. If the window is designed with reversible methods, it will be possible to cleanly separate all the various materials, to a level that is more detailed than just disassembly. The manufacturer should be able to demonstrate to a third-party verifier a design that allows for clean separation of product materials.

4.12. **Fast moving consumer goods (FMCG)**

Frequently purchased essential or non-essential goods such as food, toiletries, soft drinks, disposable diapers.

For more details, please refer to <http://www.businessdictionary.com/definition/fast-moving-consumer-goods-FMCG.html>

4.13. **functional use period**

refers to the working life of a **product**. The working life is the period of time during which the product will fulfil its essential performance parameters (i.e. the essential characteristics of a product meet or exceed minimum acceptable values, without incurring major costs for repair or replacement).

In establishing this period, the manufacturer considers the economically reasonable working life, taking into account costs of design, construction and use; costs arising from hindrance of use, risks and consequences of failure of the works during its working life and costs of insurance covering these risks, planned partial renewal, costs of inspections, maintenance, care and repair, costs of operation and administration, disposal, environmental aspects. (Construction Products Directive - 89/106/EEC – Guidance Paper F, Adapted from Definition 3.2)

4.14. **harm**

physical injury or damage to health of people, or damage to property or the environment (ISO/IEC Guide 51:2014, definition 3.1)

4.15. **hazard**

potential source of **harm** (4.14)
(ISO/IEC Guide 51:2014, definition 3.2)

4.16. **intended use**

use of a **product** in accordance with the specifications, instructions and information provided by the manufacturer

Note to entry: This definition is consistent with the European Regulation EU No 305/2011. (ISO/IEC Guide 51:2014, Definition 3.6 adapted)

4.17. **leakage**

product content which is released into the biosphere without being designed for release. This occurs through elution, erosion, evaporation, wear and tear, volatilization, oxidation, and chemical reaction. Examples are: 1) particulates from tires, floor coverings & textiles, where wear and tear are expected; 2) biological materials that are contaminated by technical cycle materials and are released into the biosphere without being separated.

Leakage does not include material that is designed for release into the biosphere (cf. statement 5070)

4.18. **« light » Product Circularity Data Sheet (PCDS)**

Product Circularity Data Sheet (PCDS) (4.25) contains a limited set of information related to the circularity aspects of the product and which are non-confidential. The “light” PCDS is primarily intended for use in business-to-business communication, but its use in business-to-consumer communication under certain conditions is not precluded.

4.19. **manufacturer**

party who produces a **product** (4.24) for sale

4.20. **minimal modification**

modifications that do not alter the original functionality of the product.

Example: repairing damage to a steel beam that occurred during its use, or changing the connectors on a room divider, or cleaning a circuit board to remove contaminants

4.21. **mixture**

mixture or solution composed of two or more **substance** (4.35) in which they do not react. Typical examples of mixtures include paints, varnishes and inks.

([ISO 11014:2009](#))

4.22. **post-consumer material**

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
Note to entry: this includes returns of material from the distribution chain.

([ISO 14021:2016](#))

4.23. **pre-consumer material**

material diverted from the waste stream during a manufacturing process

([ISO 14021:2016](#))

Note to entry: Excluded is reutilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it. ([CEN-CLC JTC10 - prEN 45557:2018](#))

4.24. **product**

an **article** (4.2), **mixture** (4.21) or a **substance** (4.35) that is manufactured or refined for sale.

4.25. **Product Circularity Data Sheet (PCDS)**

product declaration which presents standardized and trustworthy information on the circularity aspects of a product which could be used partially or entirely by other stakeholders (e.g. databases, platforms or consultants) to enable circular evaluation of the product.

Such product declarations:

- are provided by the manufacturer of the product itself: any **supplier** (4.36) regardless to its position within the supply chain should provide a complete PCDS to the **recipient** (4.26). The supplier shall keep the PCDSs up to date and provide the recipient with the latest edition.
- are preferably based on independently verified product information: the organization making the declaration will be required to ensure that data are independently verified.

- 4.26. **recipient**
party receiving a **product** (4.24) for industrial or professional **use** (4.38) from a **supplier** (4.36).
([ISO 11014:2009](#), Definition 18, modified – The words “chemical product” have been replaced by “product” and the words “such as storage, handling, processing or packaging” have been removed.)
- 4.27. **recycled content**
materials that have been recovered, or otherwise diverted, from the waste stream, either from the manufacturing process (i.e. recycling of **pre-consumer material**) or after consumer use (i.e. recycling of **post-consumer material**), and are reused in the manufacture of new products.
([ISO 14021:2016](#), Based on definition 7.8.1.1a)
- 4.28. **recycling**
processing of waste materials for the original purpose or for other purposes, excluding energy recovery. Waste materials are either from the manufacturing process (i.e. **pre-consumer material**) or after consumer use (i.e. **post-consumer material**).
([ISO 14021:2016](#), Based on definition 7.8.1.1b)
- 4.29. **refurbishment**
renovation and restoration to intended use condition
([ISO 10785:2011](#), Definition 3.27)
- 4.30. **remanufacturing**
industrial process performed by the original equipment manufacturer or its associates, or formally authorized entity, by which a previously sold, worn or non-functional product, is returned to a “like new” or “better-than-new” condition from both a quality and a performance perspective.
(Based on [ISO 10987-2:2017, Definition 3.2](#))
- 4.31. **renewable materials**
materials that have been produced from a source, usually plant or animal biomass, that can be renewed by short- to medium-term regeneration.
([ISO/TR 24699:2009, Definition 3.11](#))
The aim here is to be able to replace the feedstock for the product in a sustainable way that does not deplete the supply.
- 4.32. **repair and repairability**
Term used in the PCDS. Can be interpreted widely in terms of how repairable a product is. Guidance can be taken for example from the I Fix It platform that provides manuals for repair of thousands of consumer devices. The I Fix It platform also has a repairability ranking from 1 – 10 based on criteria described here <https://www.ifixit.com/smartphone-repairability?sort=score> When considering if your product is designed for repair, consider the I Fix It criteria.
- 4.33. **reuse**
activity of recovering a **product** (4.24) for further use without reprocessing
- 4.34. **same level of quality**
In the context of recycling, the quality of the recycled content is the same as the content in the original product. However, this recycled content does not have to be used in the same product. Examples: 1) nylon 6 could be extracted from a carpet and used in packaging or a

mattress at the same level of quality; 2) a pure polymer that keeps its quality, compared to e.g. vulcanized rubber that by its design and manufacturing requires a downcycling and loss of constituent materials when they are recycled.

If it is anticipated that a constituent material will re-used at the same level of quality but in an application where its functionality is diminished, this is also downcycling. Examples: grinding a mono-material that was previously used as a functional part of a product into filler that only provides bulk. However, it is difficult for the manufacturer to predict this type of downcycling if it loses control of its product. For this 'light' PCDS, the manufacturer is only expected to foresee high probabilities rather than every potential.

4.35. **substance**

chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

([ISO 11014:2009](#))

4.36. **supplier**

party responsible for making a **product** (4.24) available to a **recipient** (4.26)

([ISO 11014:2009](#), Definition 18, modified – The words “ chemical product” have been replaced by “product”)

4.37. **third party**

person or body that is recognized as being independent of the parties involved, as concerns the issues in question

([ISO 14024:1999](#))

4.38. **use**

any processing, formulation, consumption, storage, keeping, treatment, filling into containers, transfer from one container to another, mixing, production of any product

(Regulation (EC) No 1907/2006, Article 3, Definition 24, modified – The words “an article or any other utilization” have been replaced by “any product”)

4.39. **use period**

the timeframe during which a product is used by a user. Sometimes referred to as useful lifetime.

4.40. **verification**

confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

([ISO 9000:2005](#))

4.41. **verifier**

person or body that carries out **verification** (4.40)

([ISO 14025:2006](#))