Quality and testing regulations

Circular product

Gesellschaft für Klimaschutz München

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1 Scope

The requirements of this quality standard apply to the recyclability of products, components and constructions.

The tests include requirements for:

- a recyclable and resource-efficient product design
- the use of renewable raw materials and recycled materials
- ensuring product quality and durability
- the reduction of CO2 emissions
- the protection of human health

protection of the ecosystem, and

social responsibility of the users of the quality mark.

To be awarded the quality mark, full compliance with the requirements specified in the following quality and testing specifications must be demonstrated.

In the context of this quality standard, a product, component or construction (hereinafter referred to as a product) is understood to be a product that is manufactured according to a corresponding design and construction specification. In practice, it may happen that for sales-related reasons, different names are given to (approximately) the same products. The awarding of the “Circular Product” quality mark includes a clearly defined and delimited product series or range. The evaluated product should serve as a reference for the entire product series or range and reflect the average according to the possible configurations. This means that it should be neither the minimum nor the maximum equipped or configured variant of the product series. The following laws, regulations, guidelines and standards, among others, in their latest edition, must be consulted, considering the respective product:

- Act Reorganising the Law on Closed Cycle Management and Waste (LkSG)
- Packaging Act (VerpackG)
- Altholzverordnung (AltholzV)
- Directive (EU) 2022/2464 on corporate sustainability reporting (Corporate Sustainability Reporting Directive, CSRD)
- Directive 2009/125/EC establishing a framework for the setting of ecodesign requirements for energy-related products (EU Ecodesign Directive)
- Regulation (EU) No. 305/2011 laying down harmonized conditions for the marketing of construction products (EU Construction Products Regulation, CPR)
- Regulation (EU) No. 995/2010 laying down the obligations of operators who place timber and timber products on the market (EU Timber Regulation, EUTR)
- Regulation (EU) 2023/1115 on the making available of certain raw materials and products linked to deforestation and forest degradation (EUDR)

- Regulation (EU) No. 528/2012 concerning the making available on the market and use of biocidal products (Biocidal Products Regulation)
- Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH Regulation) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Appendix I and II
- DIN EN ISO 9001 „specifies requirements for quality management systems “
- DIN EN ISO 140001 „Environmental management systems - Requirements with guidance for use”
- DIN EN ISO 14021 „ Environmental labels and declarations – environmental declarations by suppliers (Type II environmental labelling)”
- DIN ISO 10635 “Plastics – Type-specific identification and marking of plastic molded parts”
- DIN ISO 38200 “Supply chain of wood and wood-based products”
- VDI 2243 ”Recycling-oriented product development

GKM GmbH does not verify compliance with the requirements of the above-mentioned regulations. Rather, GKM GmbH requires compliance with these as a binding basis for the right to use the quality mark. Appropriate evidence must be provided during the initial and monitoring audits.

2. Quality standards for products

2.1 Basic requirements

To be awarded the quality mark, it is essential that all legal and normative requirements are met. Users of the quality mark are obliged to provide relevant documentation and evidence for verification.

A comprehensive list of all materials and components used or installed in the product must be provided. This list should include detailed information, including the designation, type of material, number of elements used, quantity, dimensions, the respective unit, weight and weight per type of material. In addition, information on recycled materials and renewable raw materials is required. An example of this list is provided in the test report.

The following requirements regarding product quality must be met.

2.2 Materials

2.2.1 Wood and wood-based materials

Solid wood and wood-based materials must come from sustainably and legally managed forestry in accordance with FSC 100%, FSC recycled, PEFC regional, PEFC or a comparable recognized standard, e.g. DIN ISO 38200, and comply with the Timber Trade Regulation (Regulation (EU) No. 995/2010). The use of regional wood is to be preferred due to shorter procurement channels.

Wood of an endangered species may only be used if the wood demonstrably meets the requirements of the “Convention on International Trade in Endangered Species of Wild Fauna and Flora” (CITES) Appendix I and II.

Wood-based materials must meet the requirements of the AltholzV. The supplier must obtain the relevant proof.

Verification:

Verification can be provided by submitting the relevant documents, such as the risk assessment according to the Timber Trade Regulation, test certificates for the Waste Wood Regulation (AltholzV) (alternatively, self-declaration by the suppliers), PEFC certificates and, if necessary, CITES certificates.

2.2.2 Plastics

In principle, plastics with a recycled content are to be used wherever technically possible. In addition, all plastic parts with an individual weight of ≥ 50 g must be labelled for recycling in accordance with DIN EN ISO 11469. Alternatively, the information relevant for recycling can also be provided in the product information. The same applies to parts for which labelling by the quality mark user is demonstrably not technically possible (e.g. product geometry or design).

Verification:

A description must be provided indicating which plastics are used for which components (including their individual weight). The description must also include the type of labelling (e.g. embossing on the object, product information, etc.).

2.2.3 Metals

In principle, metals with a recyclate content are to be used wherever technically possible.

In addition, the information relevant for recycling must be provided in the product information for all metal parts. This does not apply to fasteners and components with a weight of ≤ 100g. The same applies to parts for which labelling by the quality mark user is demonstrably not technically possible (e.g. product geometry or design).

Verification:

A description must be provided indicating which metals are used for which components or as fasteners (including their individual weight).

2.2.4 Other materials

Other materials that cannot be assigned to any of the materials listed in paragraph 2.2 are collected in the form of a list, including information on the type of material, component, weight, quantity, supplier, origin, pollutant test (e.g. REACH, Bioc idVO, etc.), relevant material standards, (potential) recyclability, renewable raw material (if applicable, proportion of renewable raw materials), recycled material (if applicable, proportion of recycled material) of each material.

Verification:

The information is to be enclosed with the test documents in the form of a list/table.

2.2.5 Surface coating agents for wood, plastic and metal parts

The following requirements relate to products that are used for surface coating before they are applied to the product.

Any varnishes used must not exceed the following proportions of organic solvents (unless otherwise required for the intended application):

- water-based systems: < 10%,
- other systems: < 30%.

Verification:

A list of all substances used for surface treatment must be available, along with material safety data sheets, technical data sheets or equivalent documentation, to verify compliance with the above requirements.

2.2.6 Wood preservation

Priority must be given to the use of constructive (construction-related) wood preservation measures. The use of preventive chemical wood preservation measures is reserved for well-founded cases only. The use of chemical wood preservatives is only permissible if constructive wood preservation measures or the use of appropriately durable types of wood are not possible or do not make sense. The basis for decision-making here should be a careful consideration of the environmental impacts in addition to a technical one.

Verification:

If chemical wood preservation is necessary for technical or normative reasons, the wood preservatives used must be declared by submitting the relevant documents (e.g. safety data sheets). The documents submitted must show compliance with the requirements of

- Biocidal Products Regulation
- REACH Regulation

The quality mark user uses lists that are no older than one year at the time of submission of the application to GKM GmbH, or, if the last update of a list is older than one year, their last available version.

2.2.7 Adhesives

For products installed in the interior, the VOC content of adhesives used by the quality mark user must not exceed 10 percent by weight for water-based systems and 30 percent by weight for solvent-based systems. Solvent-based adhesives may only be used if the use of water-based adhesives is not technically possible.

For all applications, the adhesives used must be proven to be harmless to humans and the environment in the cured or set state in accordance with the REACH regulation.

Verification:

A list of all adhesives used and the associated safety data sheets, technical data sheets or other equivalent documents (e.g. manufacturer's declarations) must be provided.

2.2.8 Packaging material

Packaging must be made of recyclable material and/or materials that come from natural raw materials or belong to a reusable system (e.g. blankets, pallets, etc.).

The use of non-recyclable composite materials is permissible if the packaging is reusable and the user of the quality mark can prove that it is reused multiple times.

All composite packaging materials must be separable into recyclable parts that consist of one material (e.g. cardboard, corrugated paper, paper, plastic, textile) with little effort.

Note: Composite and packaging materials are to be avoided as far as technically possible. Plastic packaging must have a recycled content of at least 40%. Furthermore, the obligations under the Packaging Act apply, including the return and recovery of packaging waste and, if applicable, registration, system participation and regular reporting of quantity data.

The user of the quality mark is obliged to continuously check the type and quantity of the necessary packaging materials and to implement reduction measures.

Verification:

The user of the quality mark must submit a description of the packaging with a self-declaration regarding the above requirements. In addition, the user of the quality mark must submit a declaration stating the percentage of recycled material used. This requirement is met for packaging with information on the minimum percentage of recycled material in accordance with DIN EN ISO 14021 (e.g. with the circle of the Moebius symbol together with the corresponding percentage of recycled material) or DIN EN ISO 14024 “Type I environmental label”. Furthermore, the presentation of the DSD fees is considered proof of compliance with the obligations under the VerpackG.

3 Circular economy

3.1 Design for circularity

An integrated approach to product design is taken, encompassing the entire life cycle and focusing on resource efficiency, reuse and recyclability. The holder of the quality mark is committed to ensuring a resource-efficient design and construction in line with the applicable regulatory requirements and available technical options. This commitment includes an efficient use of materials and components to reduce the consumption of raw materials without negatively affecting the product's lifespan. This includes the following areas:

- Reduction of raw material costs: The consumption of raw materials in the production phase should be avoided or reduced wherever possible. This includes optimizing the utilization of components;
- Use of a modular design approach that enables extensions, dismantling and repurposing in order to maximize the adaptability and longevity of the product;
- Use of standardized formats and components;
- Use of non-destructive, separable connections to facilitate reuse and recycling;
- Design of components and parts that allow for unmixed separation to support effective material flow separation
- Instructions available for disassembly of the model for the end customer, digitally or as a document
- Information on materials in the product information to facilitate the separation by material and the identification of materials that require special handling
- List of materials used, including assignment to components;
- Information on proper disposal for later recycling purposes.

Verification:

The user of the quality mark is required to submit comprehensive documentation that explains how the R-strategies (Reduce, Reuse, Recycle) are implemented in product development. This documentation should not only illustrate the integration of these strategies into the design process, but should also be supplemented by technical drawings and other relevant documents that demonstrate the practical feasibility of the circular product design. Conformity with these requirements is confirmed by a careful examination of the submitted materials and component efficiency, as well as the constructive adaptability, as part of the certification process.

3.1.1 Durability and ease of repair

Quality-assured products must be designed in such a way that long-term use is guaranteed. In particular, this requires ensuring that the materials and components used have an adequate service life and that the product is generally easy to repair and maintain. Planned obsolescence is excluded.

To ensure the longest possible product life, it is necessary to use materials and construction solutions that are specifically tailored to the requirements of the application. The selection of materials must be in accordance with the requirements of relevant standards and regulations and, if necessary, verified by wear tests that demonstrate that they meet the specified requirements for the intended installation situation and service life.

Repair management requires that the products are repairable and that the availability of spare parts is guaranteed. The quality mark user is obliged to provide spare parts that fulfill equivalent functions for the planned product life cycle, but for at least 5 years from the date of manufacture of the product. Clear usage, maintenance and repair instructions must be provided for end customers. These requirements are to be decided upon and published through a corresponding company policy.

Information for consumers on the products must be made available to the end customer before or upon delivery of the goods and must contain at least the following basic information – if applicable:

- Information on the required maintenance;
- Information on wear parts and their repair or replacement, stating that spare parts will be available for a period of at least 5 years;
- Information on a repair service;
- Information on the assembly of the products;
- Information on dismantling.

Verification:

- Submission of product or design descriptions that demonstrate an adequate service life.
- Documentation of the protection of components against weathering and corrosion for outdoor use.
- If applicable, results of wear tests confirming conformity with the relevant standards.
- Provision of maintenance instructions, information on regular maintenance, product labelling and spare parts order forms.
- Declaration of the availability of spare or replacement parts for at least 5 years from the date of manufacture.

- Description of the availability, interchangeability and ordering process for spare parts.

3.2 Use of renewable raw materials and recycled materials

The quality-assured product must – where technically possible – consist of a total of 30% by weight of renewable or recycled raw materials. At a minimum, documentation of the actual state must be provided via material lists.

As part of external monitoring, the auditor must be shown which steps have been taken to increase the proportion of renewable or recycled raw materials where technically possible.

Verification:

Technical documentation must be provided that proves that the product consists of at least 30% by weight of renewable or recycled raw materials. To do this, the quality mark user must provide a list for all materials used, showing their specific share of the total weight of the product. In addition, independent certifications such as FSC recycling or PEFC recycling for wood-based materials or declared environmental requirements based on DIN EN ISO 14021 may be accepted for other materials. As part of external monitoring, the steps taken to increase the proportion of renewable or recycled raw materials must be explained, provided this is technically possible.

3.3 Production

3.3.1 Resource-efficient prefabrication

The user of the quality mark must demonstrate the level of prefabrication in the production of the products to be certified as circular. Depending on the product, the aim is to achieve prefabrication that conserves as many resources as possible and that has been optimized in terms of material use, value creation, transport and handling of the product at the intended place of use.

Verification:

The user of the quality mark is instructed to describe the manufacturing processes descriptively and to explain the degree of prefabrication. Furthermore, the considerations regarding the resource-saving prefabrication described above must be explained.

3.3.2 Product quality

The user of the quality mark must strive for consistently high product quality and implement and verify certain measures to achieve this.

These include, among other things:

- certified quality control (if certified control according to e.g. DIN EN ISO 9001 takes place, the following points under no. 4.2 do not need to be checked further. Proof is provided by a corresponding certificate stating the certificate number and validity (date))
- defined quality assurance system
- defined product requirements
- provision of human resources for quality assurance
- incoming goods inspection.

  Note: Incoming goods inspections are carried out in accordance with a defined procedure that provides for both sampling and full inspections. Responsibilities for this process must be clearly defined. Checking delivery notes and creating incoming goods inspection reports are part of the documentation requirement. To ensure consistent quality, documented intermediate and final inspections as well as outgoing goods inspections are carried out. These inspections are based on defined quality criteria and quality inspection instructions.
- Supplier relationship
- Incorrect entry

  Note: Systematic recording and documentation of errors, including evaluation and archiving. Measures must be defined to avoid future errors and employees must be informed about errors that have occurred and the measures taken.

These measures are an integral part of quality management and serve to ensure consistently high product quality. Consistent implementation and documentation of these measures forms the basis for the right to use the quality mark.

3.3.3 Disposal in manufacturing

A comprehensive and proper disposal policy is to be implemented in production, which includes both the separation of waste and the recycling of residual materials as well as the safe disposal of critical residual materials. The quality mark user is obliged to maintain a separate collection rate of at least 90%. At the same time, continuous measures to reduce environmental pollution are to be pursued.

Verification:

The user of the quality mark must ensure:

- the proper and professional disposal of production waste (especially of hazardous substances),
- the proper waste separation of production waste and the disposal or feeding into the material recycling of residual materials in production,
- the proper disposal of critical residual materials or hazardous substances.

If a sustainability report is submitted, this does not have to be verified separately.

4 Requirements for corporate policy and CO_2 emissions

4.1 Sustainability report

The user of the quality mark is obliged to make statements about the company's sustainability efforts. It is desirable to produce a regular sustainability report. Companies subject to CSRD reporting requirements shall indicate this and make the report available. If possible, companies not subject to reporting requirements should voluntarily prepare and submit a report in accordance with the criteria of the ESRS, the UN Global Compact, the Global Reporting Initiative (GRI), the German Sustainability Code or EMAS.

Verification:

Verification takes place via the presentation of one of the reports mentioned above.

4.2 Climate protection and energy

4.2.1 CO_2 emissions and energy consumption

The determination and presentation of the energy consumption and the CO_2 emissions from production and buildings is a prerequisite for the right to use the “Circular Product” quality mark.

4.2.2 Corporate Carbon Footprint

The user of the quality mark should create a corporate carbon footprint and, if possible, offset the resulting emissions with recognized offset certificates (Gold Standard, Verra, UN CER) and thus be awarded climate neutrality. In addition to the classic CCF of the Greenhouse Gas Protocol, a comparable list indicating the greenhouse gas emissions at the company level can also be submitted.

Verification:

The CCF should be based on the Greenhouse Gas Protocol and take into account the relevant Scope 3 categories. The award criteria for climate neutrality of GKM GmbH provides a template for this.

4.2.3 Energy consumption in buildings

A template of the energy consumption should be submitted to provide an overview of the average basic energy consumption for the company's buildings. If the company submits a CCF with a detailed emissions report or a certification according to, for example, DIN EN ISO 50001, this can be seen from this. Only buildings that are directly connected to production and final assembly are considered relevant.

4.2.3.1 Energy consumption from renewable sources

The company's energy requirements in buildings and in production must cover at least 5% of renewable energies. If the company submits a CCF with a detailed emissions report or a certification according to, for example, DIN EN ISO 50001, this can be seen from this. Preferably, the use of renewable energies should not come from guarantees of origin. In-house electricity generation, such as photovoltaic systems, or the purchase of renewable energies from local sources, are preferred.

4.2.4 Product Carbon Footprint

The quality mark user must create a Product Carbon Footprint (PCF) or a comparable list for the products relating to the “Circular Product” label and, if possible, offset the emissions generated by the products with recognized offset certificates (Gold Standard, Verra, UN CER) and thus carry the label of the climate-neutral product. A comparable breakdown of the PCF can be provided by an EPD (Environmental Product Declaration) or an LCA (Life Cycle Assessment). The breakdown should show the relevant greenhouse gases caused by the production of the product and its materials.

Submission of a product carbon footprint or a comparable list such as an EPD (Environmental Product Declaration) or an LCA (Life Cycle Assessment), which quantifies the relevant greenhouse gas emissions of the product over its life cycle, is mandatory.

Verification:

The PCF should be based on the Greenhouse Gas Protocol. The GKM GmbH Basic Award Criteria provide a template for this. The material weight proportions and the assignment of the CO_2e data should be visible and available in tabular form to derive a weighted emission factor. The weighted emission factor is part of the circular score.

4.3 Social Responsibility

About sustainable human resources development and to ensure health, occupational safety and social working conditions, the user of the quality mark must define and document responsibilities and procedural rules in this regard in accordance with good management practice. The 17 UN Sustainable Development Goals should be adhered to as far as possible by the user of the quality mark and throughout the supply chain.

In particular, the following must be provided:

- Compliance guidelines
- Health and safety policy for employees
- Measures to avoid working conditions that violate human and environmental rights within the supply chain (Note: Companies with up to 50 employees can submit a self-declaration. Companies with 50 or more employees should disclose the company's procurement criteria. If companies are subject to the German LkSG (i.e. at least 10000 employees) or the European CSDDD, this must be taken into account.

Verification:

The user of the quality mark must provide verification of compliance with the above requirements by means of suitable documents (e.g. compliance guidelines, framework contracts with suppliers that also include compliance with social standards, as well as internal procedural rules such as risk analyses in the sense of the Supply Chain Act and documented responsibilities and ecologically oriented and communicated corporate policy, etc.).

5 Circularity index

The circularity index is introduced as part of the assessment of the circularity of product. This index records the essential aspects of the circular economy, based on the parameters defined in sections 2 to 5, and visualizes them in a clear dashboard for communication by the quality mark user. The assessment is based on an evaluation matrix that considers measures in the areas of circular product design, use of materials and manufacturing processes.

5.1 Assessment criteria and parameters

The following criteria and parameters form the basis of the circularity index:

- **Resource efficiency**: The utilization of the resources used is evaluated, particularly regarding minimizing material consumption and optimizing product lifespan.

- **Durability and ease of repair**: Materials, components and the overall design are evaluated in stages based on the information provided, with the aim of promoting durability and ease of repair.
- **Use of renewable raw materials and recycled materials**: Products must consist of at least 30% by weight of renewable or recycled materials.
- **Resource-efficient prefabrication**: This criterion assesses the extent to which R-strategies (reduce, reuse, recycle) have been implemented in the product design to ensure resource efficiency, reuse and recyclability.
- **Securing product quality**: Measures to ensure a high and consistent quality of the product.
- **CO_2 emissions**: This criterion assesses the weighted emission factor of the product's materials.

Each of these aspects is rated on a scale of 0 to 10, with 0 representing the lowest and 10 the highest level of fulfilment of the criteria.

5.2 Presentation

The circularity index is presented in the form of a dashboard, which displays the results both in points and visually using bar charts. The following categories are distinguished:

Use of renewable raw materials and recycled materials

- Circular product design
- Longevity of products
- Sustainability in the production process

The share of renewable raw materials used in the product and the use of recycled raw materials are displayed in percent by weight on the certificate. In addition, the weighted CO2 emission factor is shown separately as an important indicator of the environmental impact of the product. The overall result of the assessment process is presented as a circularity score.

The index serves as an effective tool for users of the quality label to communicate the recyclability of their products. It enables a transparent presentation of compliance with the principles of the circular economy and can be used both digitally and in printed form. This makes sustainability and circular economy efforts visible and comprehensible to consumers and stakeholders.

6 Monitoring

6.1 Initial inspection

Passing the initial inspection is a prerequisite for being awarded and using the “Circular Product” quality mark. The initial inspection is carried out at the applicant's manufacturing plant(s). If the applicant can present corresponding test certificates or certificates for supplier products or materials, the scope of testing is reduced. These documents (test certificates not older than 1 year) must be based on the current state of the art and the tests must be carried out by competent, neutral testing institutes.

6.2 Self-monitoring

Every user of the quality mark is obliged to carry out continuous and reproducible self-monitoring. They must carefully record the results of the self-monitoring, store them for at least five years and, upon request, present them to the assigned inspector for inspection as part of the external monitoring.

6.3 External monitoring

In the first three years, the monitoring inspection is carried out annually. In order to ensure the consistent quality of the quality-assured products thereafter, a monitoring inspection is carried out at the quality mark user's premises in the fourth year at two-year intervals. This inspection includes an inspection of the results of all quality-assured measures and a check that the production of quality-assured models is carried out properly.

6.4 Repeat inspection

If defects in the quality assurance are detected during the external monitoring, the Quality Committee may order a repeat inspection, with the type, content and scope of this inspection being determined by the GKM GmbH Quality Committee. If the repeat inspection also yields negative results, the Quality Committee, in consultation with the Executive Board, may take further measures in accordance with Section 5 of the Implementation Regulations for the Award and Use of the Quality Mark.

6.5 Inspection and monitoring report

The commissioned external inspectors must prepare corresponding inspection reports of the inspections and monitoring carried out; one copy each is sent to the applicant and the quality mark user.

Based on the passed inspections, the GKM office issues a right to use the quality mark (license) for the products listed there for a specific period.

6.6 Inspection costs

The applicant or quality mark user shall bear the costs of testing and monitoring.

6.7 Inspection agents

The Quality Association shall commission suitable, expert testing institutes to carry out the tests and monitoring measures.

The institutes entrusted with this task shall identify themselves by presenting written authorization before commencing their work at the applicant's or quality mark user's premises.

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Appendix

Appendix I - Circularity index Evaluation criteria

Kriterium	Anforderungen/ Einreichungen zur Prüfung	Angaben zu den Anforderungen	Form der Unterlagen beispielhaft	Bewertung
Konstruktion - Kreislaufgerechte Produktgestaltung				
Ressourceneffizienz	Berücksichtigung der Wiederverwendung, Wartung oder das Recycling der einzelnen Komponenten und Materialien bei der Konstruktion des Produktes oder Bausatzes	- Statik ist auf Auslastungsgrade der Bauteile hin optimiert - Modularer Aufbau der Konstruktion; Erweiterungen, Rückbau und Umnutzung sind möglich - Einsatz von standardisierten Formaten und Bauteilen - Verwendung von zerstörungsfrei trennbaren Verbindungen - Möglichkeit der sortenreinen Trennung der Bauteile und Komponenten	- **Statische Berechnungen:** Es ist eine präzise Dokumentation der statischen Berechnungen vorzulegen, welche die Belastbarkeit und die Auslastungsgrade der Bauteile aufzeigt. Diese sollte die angewandten Rechenverfahren, die zugrunde liegenden Lastannahmen sowie die resultierenden Sicherheitsnachweise enthalten. - **Zeichnungen und Pläne:** Die eingereichten Zeichnungen müssen die Gesamtkonstruktion mit allen relevanten Details abbilden. Hierbei ist insbesondere auf die Darstellung des modularen Aufbaus zu achten, der Erweiterungen, Rückbauten und Umnutzungen ermöglicht. Die Pläne sollten die Positionierung und Verbindung der standardisierten Bauteile aufzeigen und die Art der Verbindungen hervorheben, die eine zerstörungsfreie Trennung erlauben. - **Deskriptive Dokumente:** Deskriptive Dokumente zur Trennbarkeit müssen die Art der Verbindungen spezifizieren und erläutern, wie diese ohne Beschädigung der Bauteile gelöst werden können. Es sollte auch beschrieben werden, wie eine sortenreine Trennung der Materialien bei der Demontage gewährleistet wird.Dokumente, die Konstruktionsumbauten thematisieren, sollten Richtlinien für die Modifikation der Struktur bereitstellen. Dies beinhaltet Informationen darüber, wie die Konstruktion erweitert oder verkleinert werden kann, ohne die Integrität oder Sicherheit des Gesamtbauwerks zu beeinträchtigen.	Checkliste (85% der Punkte müssen mit „ja“ beantwortet sein, um Zertifizierung zu erreichen)
Dauerhaftigkeit und Reparaturfreundlichkeit	Verwendung von Materialien und Konstruktionslösungen, die auf die Anforderungen des Anwendungsbereichs abgestimmt sind, um eine hohe Produktlebensdauer sicherzustellen	Einschlägige Normen und öffentlich zugängliche Bauteiltabellen	Deskriptiv und durch Normen: Witterungsschutz:, Korrosionsschutz, Konstruktiver und chemischer Holzschutz, öffentlich zugängliche Bauteiltabellen zu Nutzungsdauern (z.B. BNB Nutzungsdauern von Bauteilen des BBSR)	
	Reparaturmanagement	- Ersatzteilbereitstellung - Reparatur-, Wartungs- und Nutzungsanleitungen	Deskriptiv: Lieferbarkeit, Austauschbarkeit, Bestellvorgang Deskriptiv: gibt es Wartungsanleitungen, (regelmäßgige Wartungen), Kennzeichnungen, Ersatzteilbestellformulare?	
Materialien				
Einsatz nachwachsender Rohstoffe und Rezyklate	- Art der verwendeten Materialien - Anteil nachwachsender Rohstoffe und Rezyklate	'- Anteile der Materialien (über Gewicht) - Quote nachwachsende und recycelte Materiaien	- Materialliste - berechnete Quoten recycelter oder nachwachsender Materialien am Produkt	Punktesystem basierend auf dem Anteil der verwendeten nachwachsenden Rohstoffe und Rezyklate; Mindestens 30%-Gewichtsanteil an nachwachsenden und rezyklierten Materialeinsatz
Produktion				
Ressourcenschonende Vorfertigung		(Teil-)Vorfertigung im Werk	Deskriptive Angaben	Punktesystem basierend auf Checkliste (Gewichteter Emissionsfaktor (CO2-arme Materialien)
Sicherung der Produktqualität	Qualitätsmanagements Nachweise	- Nachweise zum Qualitätsmanagement wie ISO 90001 - QM-Handbuch mit einzelnen Maßnahmen, wie Fehlererfassung, Lastenhefte, Qualitätskriterien, Wareneingangsprüfung, Prüfanweisungen	Nachweise durch (externe) Validierung Kriterienkatalog	
CO2-Emissionen als Entscheidungsgrundlage	PCF Optional: Lebenszykluanalyse	- Product Carbon Footprint (PCF) - Umwelt- und Energiemanagement des Unternehmens	CO2-Daten Zertifizierung nach ISO 14001, ISO 50001, EMAS oder ähnlichen Standards	

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Appendix II – Circularity index dashboard