

# Guidelines for preparing electronic construction product declarations eBVD 2015

Version 2016-03-17



The guidelines have been developed in order to facilitate the preparation of a building product declaration in the eBVD-application based on the standard for eBVD-2015. The eBVD-application is provided as a joint service by Bygghandelsindustrierna and IVL Swedish Environmental Research Institute.

© IVL Svenska Miljöinstitutet and Bygghandelsindustrierna 2016.

IVL Svenska Miljöinstitutet AB, Box 210 60,100 31 Stockholm, Tel: 010-788 65 00, [www.ivl.se](http://www.ivl.se)

---

## Contents

<b>0. Introduction</b>	4
<b>1. Basic data</b>	6
<b>2. Sustainability work</b>	10
<b>3. Declaration of contents</b>	12
<b>4. Raw materials</b>	20
<b>5. Environmental impact during the product's life cycle</b>	24
<b>6. Distribution of finished product</b>	26
<b>7. Construction phase</b>	26
<b>8. Usage phase</b>	26
<b>9. Demolition</b>	27
<b>10. Waste management</b>	27
<b>11. Indoor environment</b>	28
<b>12. References</b>	31

---

## 0. Introduction

*A construction product declaration (BVD) represents a combined and agreed basis on which to provide information on the environmental aspects of the construction product in different phases of its life cycle. The purpose of the information is to prioritise the selection of construction products from the environmental point of view and to make it easier to document mounted construction products for subsequent operation and administration.*

The guidelines contain the background concerning what information to provide and instructions on how to produce the information through instructions directly contained in this document and through references to relevant sources and other reference documents. Instructions are also given on how the information can be put to further use in prioritising and assessing, as well as for documentation.

What information has to be provided and why

How to prepare the information

How the information can be used

Do I, as a supplier, have to fill in a construction product declaration, and what is the definition of an article?

In principle it is the purchaser who decides whether the product is a construction product and whether there has to be a construction product declaration. The term article is used in the BVD, except when we are specifically discussing a chemical product. These two terms are clearly defined in the legislation. The term material, on the other hand, does not have any basis in legislation but is also used in BVDs. The definitions used are as follows:

- **Chemical product** is a chemical substance or a preparation of chemical substances which is not an article (definition according to Chapter 14 Section 2 of the Environmental Code (1998:808)).
- **An article** is 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 (definition according to REACH, Chapter 9, Article 33).
- **Material** is not defined in legislation. The word material is used here in the sense that articles can consist of different materials, for example wood, steel and plastic.

The contents of the construction product declaration are prepared partly on the basis of **statutory requirements** or future statutory requirements where the industry wishes to take a lead, and partly on the basis of **market requirements** in order to be able to adopt a preventive approach to environmental issues linked to articles, as well as requirements linked to the **certification systems** for buildings on the Swedish market.

The declaration has three different types of information: **mandatory, voluntary and supporting documentation for environmental certification systems** in 11 different sections. In some cases these overlap, as they may be both mandatory and a basis for the certification of buildings, or voluntary and a basis for the certification of buildings. The fields that create a basis for certification systems provide guidance for the supplier on what requirements have to be met by construction products in the various systems used in Sweden and have been highlighted by colours as stated below:

#### The different fields in the construction product declaration (BVD)

- Mandatory information that is agreed in the built environment sector – purple fields in the data entry form.
- Information that is voluntary but that the industry agrees is important and should appear in the basic version of the BPD – white fields in the data entry form.
- Information as a basis for the certification systems for the Swedish Green Building Council Miljöbyggnad, BREEAM.se, BREEAM International, LEED 2009 and LEED 4 – grey fields in the data entry form.

The different sections of the construction product declaration (BVD) that have to be filled in on the website are described the following sections:

1. Basic data
2. Sustainability work
3. Declaration of contents
4. Raw materials
5. Environmental impact
6. Distribution
7. Construction phase
8. Usage phase
9. Demolition
10. Waste management
11. Indoor environment

# 1. Basic data

*Basic data contains basic information about the supplier, with the aim of establishing traceability and identity for the document that constitutes the BVD, the product and the various items in the product.*

## Document data

**Enter document ID system:** You can choose between **GLN, DUNS or VAT numbers** to create a unique document ID number together with a unique serial number and version number for each prepared BVD, see below for explanation. A-GLN serial numbers are primarily recommended.

- **A-GLN serial number**

Separate field for version number. A BVD can then be updated with a new equivalent item that is added. GLN (Global Location Number, GS1 location number) is used to identify a company or an organisation uniquely.

Example: A-7350053850019-000000001

<http://www.gs1.se/en/Standards/Identify/gln/>

- **B-DUND sequential number – serial number**

Separate field for version number. You must keep track of the serial number as a company. Foreign suppliers who do not have a Swedish corporate identity number may alternatively enter what is known as a DUNS number, which is a global identification number allocated by Dun and Bradstreet Sverige AB.

Example: B-150483782-000000001

<http://www.dnbsweden.se/en/Information-pages/About-DnB/Our-database/D-U-N-S-Number->

- **C-VAT number – serial number**

Separate field for version number. You must keep track of the serial number as a company.

Example: C-SE556116244601-000000001

**Serial number:** Is automatically generated when preparing a declaration.

**Version:** State how the changed article or construction product declaration can be identified. Automatically generated by the eBVD-application.

**Created / Last changed:** Date when the declaration was prepared for the first time or the date when the most recent change was made to the document. Automatically generated by the eBVD-application.

**Valid from:** Date from which the declaration applies. This date you fill in yourself.

**Valid to:** The declaration until the next version of the BVD has been published. When the next version has been published, a "Valid to" date is automatically generated in the previous version.

**Status / Published:** In the data entry view you can see whether the declaration has been published, i.e. whether it has been made publicly available in the database for others to search. It is up to you to

decide when the declaration shall be published. The declaration is published through the publish-button. It is only when you have published your declaration that others can view your declaration.

**Change relates to:** As a user, you need to know whether a change has been made to the declaration due to the design of the product or whether it is an addition to information already provided. State what information has been changed in plain text or whether it applies, for example, to a verification of existing information.

## Article

**Article name:** The article name is the supplier's sales designation for the article. A new declaration must always be prepared if the article name is changed.

## Item number and ID

To ensure traceability and searchability between supplier, submitted environmental information about an article, the following identities and product group classification must be provided. To provide information on items relevant to this declaration, click on New item No/ID for each item you wish to add. **Item No/Item ID:** All item numbers relevant to the construction product declaration must be entered here. The following item identities can be chosen, at least one of which must be used. GTIN is strongly recommended in order to increase the traceability:

- GTIN at least at article number, but optionally also at other levels (0-n) A GTIN number is entered and is a unique item series provided through the company GS1. GTIN is used by companies that sell to the construction product trade, which makes it possible to seek the articles in FINFO. Ask your sale organisation about the GTIN-number.

Example: 7350053850019

<http://www.gs1.se/sv/Standarder/Identifiering/GS1-artikelnummer-GTIN/GTIN-13/>

- E-number

Example: E338

- RSK number
- VAT-ID: VAT number-Manufacturer's or Supplier's item number (0-n)

Example: SE556116244601-1093

- VAT-NAME: VAT number-Product name (0-n)  
Example: SE556116244601-Article name

## Product group/Product group classification

The article is classified according to the type of product it belongs to in order to simplify future entering into various logbooks, etc. The product group classification to be used is one of the following. The most commonly used are BK04 and BSAB. If you can classify your article in more than one system, this is the best alternative in order to increase the possibility to cross-refer to different systems in the future.

- **BK04** (including which version): BK 04 is intended to ensure industry-wide grouping of product ranges in the construction and ironmongery trade and is managed by the industry council Wilma.

- **BSAB:** BSAB was developed by and is managed by the Swedish Building Centre (Svensk Byggtjänst ) and is an industry-wide information structure through the whole construction and administration process. Work on BSAB 2.0 has not been completed, but it will replace BSAB 96 when it is ready.
- **ETIM:** ETIM is a system to classify items launched in the Netherlands in the 1980s and is principally used for installation articles.
- **UNSPSC:** UNSPSC (United Nations Standard Products and Services Code) is the UN's standard for classifying products and services. GS1 US maintains the standard on behalf of the UN.
- **CN:** The Combined Nomenclature (CN) is the customs tariff and statistical nomenclature of the Customs Union. The CN number consists of 8 digits. The CN number is used in exports to countries outside the EU and for statistics on import and export in trade between EU Member States.
- **SNI:** The Swedish Standard Industrial Classification (SNI, for which Statistics Sweden is responsible) is primarily a statistical standard used to classify units such as companies and places of work according to their economic activities.

**Article description:** The article is briefly described here.

#### **Has a declaration of performance been prepared?**

Under the Construction Products Regulation, all construction products covered by a harmonised standard or a European technical assessment (ETA) must be CE-marked and have a declaration of performance to be allowed to be sold within the EU. Enter here whether a declaration of performance has been prepared. The purpose is to link the environmental information about the article to other functional requirements contained in the declaration of performance. **Also enter the number of the declaration of performance.**

**Other information:** You can enter other information relevant to article identification or other important information about supporting documentation supplied here.

#### **Company information**

**Company name:** enter for the supplier who places the article on the Swedish market and who is therefore responsible for the contents of the construction product declaration.

**Corporate identity number:**

**VAT registration number (VAT-number):**

**GLN:**

**DUNS number:**

**Contact** the person at the company who can answer questions about the construction product declaration. As default the eBVD-application will add the person who is entered as contact in the company information, but this can be changed to the person relevant for each construction product declaration. The contact shall be able to answer questions concerning the construction product declaration. Please enter also the telephone number and e-mail address of the contact concerned. Also enter here the company's address and website URL:

**Telephone:**



E-mail:

Logo upload here the logo that will then appear in your construction product declaration:

### **Environmental certification systems**

The guidelines also contain guidance on what information needs to be provided as supporting documentation for the environmental certification systems LEED version 4, LEED 2009 or BREEAM-SE and BREEAM International. A completed basic declaration is sufficient supporting documentation for the requirements in Miljöbyggnad to be met. You can also state here whether this type of information is provided on request by checking one or more of the boxes.

### **References**

Indicate here whether there are any references to other documents or information relevant to the construction product declaration. More references can be entered by clicking on the New reference button.

## 2. Sustainability work

*Provide information here on the supplier's overall environment, quality and corporate social responsibility (CSR). This type of requirement is mainly voluntary. The information given is relevant to assessing how the company organises its overall sustainability work.*

### **The company is certified according to**

Enter here whether the company is certified according to any environmental or quality system, such as ISO 9001, ISO 14001 or another system. If another system is used, describe this in the free text field "other".

### **Management systems or guidelines:**

Indicate whether the company has a code of conduct, policy or guidelines to address CSR issues. The following are the most commonly occurring guidelines for CSR work.

- UN guiding principles for companies and human rights
- The ILO's eight core conventions
- OECD Guidelines for Multinational Enterprises and Human Rights
- The UN's Global Compact
- ISO 26000
- Other

Work on social aspects should extend at least one step back in the supply chain and contain requirements for the most immediate subcontractor with regard to one or more of the following issues to indicate that there is a CSR report in the BVD.

- Child labour and minimum age
- Forced and penal labour
- Corporal punishment or degrading treatment
- Discrimination on the grounds of ethnicity, gender, age, pregnancy, religion, social origin, disability or sexual orientation
- Freedom of association and protection of the right to organise
- The right to organise and bargain collectively
- Written contract of employment
- Wages paid directly to the employee on time and in full. The employee must not pay any deposits
- Fair and satisfactory pay that guarantees the individual and his or her family a dignified existence
- Good and healthy working environment
- Corruption and bribery

### **Examples of how companies can work:**

- Have a code of conduct/policy/guidelines that contain one or more of the above points.
- Have conducted a survey of one or more of the above points.
- Have conducted risk assessments regarding one or more of the above points.
- Have drawn up an action plan based on the risk assessment.
- Have a plan for follow-up.

- Procedures in the supply chain to ensure that the requirements in the code of conduct/policy/guidelines regarding one or more of the above points are met.
- Have conducted or undergone third-party auditing in the supply chain regarding one or more of the above points.
- The company undertakes annual sustainability reporting according to some guideline.

Check the boxes for points relevant to work on CSR in the company.

**For LEED v4 certification:** See requirements in *MR Credit: Building Product Disclosure and Optimisation – Sourcing of Raw Materials* under “Raw materials”, where option 1 means that sustainability reporting as above has to be done.

### 3. Declaration of contents

*The section on contents is the part of the construction product declaration that has been given highest priority by the various players in the community development sector. There are both statutory requirements and market requirements as a basis for reporting chemical content. The information is used to document the chemical contents of an article in a finished building. It is also used to prioritise articles that do not contain substances of very high concern. It is therefore important that the information is correctly filled in and that any deficiencies in information supplied are stated in the comments field or in a similar way.*

**Is there a safety data sheet for the product?** This is to be filled in if a chemical product is concerned. A chemical product may consist of a pure chemical substance or a mixture of more than one chemical substance. Articles and materials may contain or be treated with hazardous chemical substances and therefore be covered by rules on chemicals and require a safety data sheet. The rules on safety data sheets contained in Title IV of the REACH Regulation (Council Regulation (EC) **No 1907/2006**).

**Is there a classification of labelling of the article?** Classification and labelling of a substance or a mixture reflect the seriousness of the hazard and the type of hazards associated with the substance or mixture, that is to say its potential to harm humans or the environment. The CLP Regulation (Council Regulation (EC) No 1273/2008) provides criteria for assessing whether the classification of a substance or mixture is appropriate. The labelling shows what type of hazard a particular substance or mixture poses.

**The Candidate List:** If your product contains substances included on the Candidate List, see the ECHA website <http://echa.europa.eu/en/candidate-list-table>; you must enter the date of updating of the list you have consulted.

**Complex articles:** Application of the limit value with respect to complex articles is based on the principle of “once an article – always an article”. This means that the content of SVHCs (Substances of Very High Concern) in complex products has to be calculated at component level. State under this point whether the contents are based on component level or the weight of the whole product. See also the guidance below for classification.

It is also relevant to provide the customer with information on whether the article is covered by the RoHS Directive (2011/65/EU), which contains rules on certain hazardous substances taking account of technical functions, possible technology and costs.

**Enter the weight of the article:** Enter the weight of the article, for example kg, kg/m<sup>3</sup> or kg/m<sup>2</sup> if possible, otherwise check the “Not applicable” box.

**Enter how large a proportion of the contents has been declared:** Enter in %.

Some products may **contain nanomaterials**: if so, indicate that this is the case.

According to the EU Recommendation on the definition of a nanomaterial, a nanomaterial is *“A natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm.”*

You only have to check the Yes box if nanomaterial has been deliberately added to the product in order to fulfil a particular function. The reason for this is that such small particles that can be classified as nanomaterials also naturally occur in some products.

Enter also whether the article is **registered in the BASTA** system. If the article is registered in BASTA, this means that the article meets the phasing-out criteria according to the requirements in Miljöbyggnad.

**Enter the proportion of volatile organic substances:** Enter in g/litre. This is only applicable to paints, varnishes and adhesives.

**Other information:** You can enter here information that is relevant with regard to the information on chemical contents.

## Article and/or sub-component

### State below the chemical composition of the product:

State here the chemical composition of the article. If the chemical composition of the article is different after mounting than at the time of supply, the contents of the installed article can instead be entered into the table for mounted article according to the same procedure as below. You should only select the phase for which the substance is reported, i.e. on supply or after mounting.

Start filling in the table for the chemical contents of your article by clicking on the Add, Edit or Delete button. All the components in the article should be stated, as well as the materials they contain, for example wood, steel, creating a new line for each chemical substance your product, component and/or material contains.

### New article or sub-component

**Phase:** Enter here for which phase the product/sub-component is declared. You must enter the composition of the article both at the time of supply and after mounting if it is a product whose chemical composition changes when mounted. This may, for example, apply to thermosetting plastics that change chemical composition after they have set in place in the building. The table will therefore contain the composition at the time of supply and any mounting phase.

**Article/sub-component in the article:** If it is a complex article, the different sub-components of the article must be entered here. If this is not possible or if the product consists of a single component, state the name of the article in its entirety.

**Materials contained in the article or the sub-component:** State here which materials the article consists of or what materials each sub-component consists of.

**Substances contained in the material:** Enter here what chemical substances are contained in all the materials listed in the previous column.

**Percentage by weight in the product/sub-component** State here the percentage by weight of the substance concerned, calculated on the sub-component concerned or, if this is not relevant, the weight of the whole product. Note that substances of very high concern under legislation have to be stated and calculated at component level based on the principle of 'once an article – always an article' in Article 33 of the REACH Regulation. You must create a new component for each substance you wish to report.

You can enter here either the value in a concentration range, see further instructions below, or an absolute value. If you wish to state the precise concentration limit, choose the method  $x=\min$ . If not, choose a relevant method to report the concentration of the substance within an interval, see instructions below.

**Concentration range:** If you are making a declaration that covers a product line where the product contents vary, base the declaration on one product from the product line. For concentrations that vary, enter the range within which the value can vary. The interval has to cover the maximum concentration in the product group of the substance that is reported.

If a concentration interval is used in reporting chemical contents, the following intervals are suggested:

<= 1 wt. %  
1–2.5 wt. %  
2.5–10 wt. %  
10–25 wt. %

20–50 wt. %  
50–75 wt. %  
75–100 wt. %

Remember to choose intervals so that the classification of a substance is not missed, see the example below.

Example:

The concentration of substance A is 15%. A particular property of the substances in a mixture occurs at concentrations above 12.5% and another property at concentration above 20%. A good interval to enter is 13–19%.

**EC number/CAS No (alloy):** EC numbers are used for chemical substances on the market in the EU. A CAS number (Chemical Abstracts Service number) is a registration number for chemicals. It serves as an international identification number for chemical substances. The EC number should primarily be used. If an alloy is concerned and there is no CAS number, enter type instead, for example for stainless steel enter the type of grade by specifying the relevant standard for the alloy (EN/UNS/AISI).

**Classification:** classification means information on all known properties of a substance hazardous to human health and the environment. The chemical content must be assessed in the construction product declaration on the basis of the best imaginable supporting documentation, which means that harmonised classification of a particular substance, which is always binding in chemicals legislation, has to be applied, but if this is not available your own classification is to be applied. It means that other available information, for example through agreed OECD methods or other equivalent data from tests, is used to assess the hazardous nature of the substance for human health and the environment. This means that it is not sufficient just to check whether the substance is classified or is on any list or in any database. It is important that an assessment is made of the properties of each substance with regard to known properties hazardous to human health and the environment.

The reporting of substances in as well chemical products as articles must comply with the reporting requirements that apply to safety data sheets and that are stated in Article 31 of the REACH Regulation and Annex II to REACH (Regulation (EC) No 1907/2006) and with the amendments stated in Article 59 of the CLP Regulation (EC) No 1272/2008.

- In the case of chemical products classified as hazardous under Regulation (EC) No 1272/2008, substances must be reported when they are present at concentrations equal to or higher than the concentrations that result in the mixture being classified as hazardous. *Further guidance concerning concentration limits is contained in the text of Regulation (EC) No 1272/2008 and in its guidance document (Guidance on the Application of the CLP Criteria).*
- For mixtures that do not fulfil the criteria to be classified as hazardous according to Titles I and II in Regulation (EC) No 1272/2008, substances must be reported when they are present in

concentrations equal to or exceeding the concentrations applicable to when safety data sheets have to be provided on request under Article 59(2)(b) of the CLP Regulation (EC) No 1272/2008 (which replaces Article 31(3) of the REACH Regulation (EC) No 1907/2006).

- The same reporting requirements apply to articles as for mixtures not classified as hazardous, with the exception of those cases where the presence of the substance at a concentration lower than that in the reporting requirement would have meant classification of a mixture as hazardous. In these cases it is the concentration that would have meant a mixture being classified as hazardous that represents the concentration limit.
- Non-classified substances not covered by the requirements for safety data sheets must be reported when they are present at concentrations of 2% or higher.

### Substances on the Candidate List

Information must be supplied for products concerning substances of very high concern that are included on the candidate list under Article 33 of REACH. The Candidate List contains substances of very high concern (SVHCs).

Under the REACH Regulation, suppliers of articles are required to notify their customers of the presence in an article of a substance that appears in the candidate list at a concentration in excess of 0.1% by weight. This applies as soon as a substance has been placed on the candidate list and in cases where a substance has been assessed as having these properties by the supplier.

The information has to be provided to anyone who uses articles professionally and on request also to consumers. Suppliers of building products also have to supply this type of information together with the declaration of performance in accordance with the requirements linked to the Construction Products Regulation.

To be identified as an SVHC, a substance has to fulfil one or more of the following criteria under Article 57 of Regulation (EC) No 1907/2006 (REACH):

- substances meeting the criteria for classification as carcinogenic, mutagenic or toxic for reproduction (CMR) in categories 1A and 1B
- persistent, bioaccumulative and toxic substances (PBT)
- very persistent and very bioaccumulative (vPvB)
- substances for which there is evidence which gives rise to an equivalent level of concern.

For simple articles, application of the above rule is clear: the weight of the SVHC substance is divided by the total weight of the article and the concentration is calculated as a percentage by weight. Application of the limit value with respect to complex articles is based on the principle of “once an article – always an article”. This means that the content of SVHCs in complex products has to be calculated at component level.

The Swedish Chemicals Agency (KemI, 2014b) writes in its guidance:

*This principle is in accordance with how an article is defined in REACH and reads:*

*“after an object during the production process has become a separate article, it will remain an article until it eventually becomes waste after it stops being used.”*

This means as follows:

- *If two articles are joined together to form a complex article, both retain their status as articles.*
- *The 0.1% limit thus applies to every object in a complex article that is covered by the definition of an article in REACH and that was therefore already an article before the joining together.*

### Substances with phasing-out properties

In a BVD you also have to examine, by using all available information on the properties of the substances (see the section above on classification), if your product contains substances with phasing-out properties that relate to the Swedish environmental quality objective A Non-Toxic Environment. This is based partly on the REACH criteria for substances of very high concern, but in addition there are particularly hazardous metals, endocrine disrupting substances and ozone depleting substances, see below. For further information about these, see [www.kemi.se](http://www.kemi.se) and the PRIO database.

- Phasing-out properties that must be taken into account in assessing the various substances contained in the article. CMR (carcinogenic, mutagenic, toxic to reproduction), categories 1 and 2
- PBT/vPvB (Persistent, Bioaccumulative and Toxic/very Persistent and very Bioaccumulative)
- Particularly hazardous metals (mercury, cadmium, lead and their compounds)
- Endocrine disrupting
- Ozone depleting

**Comments:** Here you can enter relevant information linked to declaration of the substance.

The example of acrylamide and what has to be entered in the BPD in the classification field: Enter substance properties and hazard statement in the field using the H-phrases, the explanation in brackets need not be entered.

- Acute toxicity category 3; H301 (toxic if swallowed)
- Acute toxicity category 4; H312 (harmful in contact with skin) and H332 (harmful if inhaled)
- Skin irritation category 2; H3151 (causes skin irritation)
- Skin sensitisation category 1; H317 (may cause an allergic skin reaction)
- Eye irritation category 2; H319 (causes serious eye irritation)
- Mutagenicity category 1B; H340 (may cause genetic defects)
- Carcinogenicity category 1B; H350 (may cause cancer)
- Reproductive toxicity category 2; H361f (suspected of damaging fertility or the unborn child)
- Specific target organ toxicity – repeated exposure STOT RE category 1; H372 (causes damage to organs through prolonged or repeated exposure)

As acrylamide is also a substance included in the Candidate List and has phasing-out properties, check the following boxes:

- Substance on the Candidate List
- Substance with phase-out properties

The requirements for the various certification systems for buildings are stated below. References are also given to relevant sections in the manual concerned. These should always be read at the same time when the information is provided as not all documentation is included in this guidance.

### For BREEAM-SE certification:

Mat 8 – Phasing-out of hazardous substances: For credit achievement it must be established that the article is free from substances with phasing-out properties. This must have been done with an accepted system for assessment of building products, examples of such systems being BASTA,



Byggsvarubedomningen and SundaHus. This applies to the following: *cast in-situ concrete, brick work, constructions of prefabricated elements, constructions of section, layers of thermal insulation material, layers of building paper, sealing compound, asphalt, sheeting, plastic foil, troughed sheet, coated board, plaster (render), painting, protective coatings, impregnation etc., laminates, component products and construction of various compounds.*

The requirement can be checked by the declaration of contents not showing any substances of very high concern. Note here that substances assessed by the supplier as having SVHC properties must also be reported in the declaration of contents.

Hea 9 – Volatile organic compounds (VOCs): For credit achievement paints and varnishes must have been tested to EN ISO 118890-2:2006, and must comply with phase II limit values for VOC content in Annex II to Directive 2004/42/EC, and all indoor paints in wet areas must be resistant to fungi and algae. This requirement is interpreted such that it is possible to calculate the VOC content in the products and not use measurement of the VOC content as a basis. The level of VOCs must be stated in BVDs in g/litre in accordance with Directive 2004/42/EC.

#### **For BREEAM international certification:**

Hea 02 Indoor air quality: Materials containing asbestos are prohibited from being specified and used within the building, and also the following requirements must be met:

- Paints and varnishes (*VOC content limit*); compliant performance standard EN 13300:2001 or EU Directive 2004/42/CE21, compliant testing standard ISO 11890-2:2006 – Paints and varnishes – Determination of VOC content, part 2 – Gas Chromatographic method. As an alternative to these test methods, a method of calculation may be used if the manufacturer confirms that the method of calculation is in accordance with CLP (European Regulation on Classification, Labelling and Packaging of Substances and Mixtures) and that the manufacturing process is in line with ISO 9001 or equivalent.
- Flooring adhesives: Absence of all carcinogenic and sensitising substances – in accordance with the globally harmonised system (GHS) of classification and labelling of chemicals

*Also, the requirements described in Hea 02 in the chapter on Indoor environment should be fulfilled.*

#### **For LEED v4 certification:**

EQ Credit: Low-Emitting Materials: For credit achievement, *interior paints and coatings and interior adhesives and sealants applied on site (including flooring adhesive)* must comply with the European Decopaint Directive (2004/42/EC), regarding VOC content. The level of VOCs should be entered into the field for VOC in g/l.

EA Prerequisite: Fundamental Refrigerant Management: For credit achievement, do not use chlorofluorocarbon (CFC)-based refrigerants in new heating, ventilating, air-conditioning, and refrigeration (HVAC&R) systems. This requirement can be assessed on the basis of a check that no CFCs are listed in the declaration of chemical contents.

MR Credit: Building Product Disclosure and Optimisation – Material Ingredients: For credit achievement, use products and materials that do not contain substances that meet REACH criteria. This can be shown by no substances of very high concern (SVHCs) appearing in a complete declaration of contents for the construction product according to the declaration of contents filled in on BVD. In this case it is the supplier's own assessment of the properties of the substance concerned, so that these are not classified as being of very high concern. It is therefore not sufficient merely to take the

candidate list as a basis, and the supplier's own combined assessment is also applicable in ensuring that the article does not contain SVHCs.

**For LEED 2009 certification:**

IEQ Credit 4.1: Low-Emitting Materials – Adhesives and Sealants: For credit achievement, all adhesives and sealants used on the interior of the building must comply with requirements of South Coast Air Quality Management District (SCAQMD), rule 1168. All aerosol adhesives must comply with Green Seal Standard for Commercial Adhesives GS-36 requirements in effect on October 19, 2000. See table in IEQ Credit 4.1 for further information.

Or use Option 2 in the certification project – Budget Calculation Method in *LEED v.4 EQ Credit: Use Low-Emitting Materials*. This means that the product supplier can use test methods of LEED v.4, which include test requirements that are used more in Europe.

IEQ Credit 4.2: Low-Emitting Materials – Paints and Coatings: For credit achievement the following should be met:

- Architectural paints and coatings applied to interior walls and ceilings must not exceed the volatile organic compound (VOC) content limits established in Green Seal Standard GS-11, Paints, 1st Edition, May 20, 1993.
- Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must not exceed the VOC content limit of 250 g/L established in Green Seal Standard GC-03, Anti-Corrosive Paints, 2nd Edition, January 7, 1997.
- Clear wood finishes, floor coatings, stains, primers, sealers, and shellacs applied to interior elements must not exceed the VOC content limits established in South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004.

Or use Option 2 in the certification project – Budget Calculation Method in *LEED v.4 EQ Credit: Use Low-Emitting Materials*. This means that the product supplier can use test methods of LEED v.4, which include test requirements that are used more in Europe.

IEQ Credit 4.3: Low-Emitting Materials – Flooring Systems: For credit achievement the following should be met:

- All carpet adhesive must meet the requirements of IEQ Credit 4.1: Adhesives and Sealants, which includes a volatile organic compound (VOC) limit of 50 g/L. Compliance can be demonstrated with test results of ASTM D2369, ASTM D6886, EPA method 24 or ISO 11890, part 1 or 2.
- Concrete, wood, bamboo and cork floor finishes such as sealer, stain and finish must meet the requirements of South Coast Air Quality Management District (SCAQMD) Rule 1113, Architectural Coatings, rules in effect on January 1, 2004. Compliance can be demonstrated with test results of ASTM D2369, ASTM D6886, EPA method 24 or ISO 11890, part 1 or 2.
- Tile setting adhesives and grout must meet South Coast Air Quality Management District (SCAQMD) Rule 1168. Compliance can be demonstrated with test results of ASTM D2369 or ISO 11890, part 2,

and also be compliant with the alternative described here in *IEQ Credit 4.3 in section 11. Interior environment*.

Or use Option 2 in the certification project – Budget Calculation Method in *LEED v.4 EQ Credit: Use Low-Emitting Materials*. This means that the product supplier can use test methods of LEED v.4, which include test requirements that are used more in Europe.

*IEQ Credit 4.4: Low-Emitting Materials – Composite Wood and Agrifibre Products*: For credit achievement, composite wood and agrifibre products must contain no added urea-formaldehyde resins.

**For certification in Miljöbyggnad**

*Indicator 15 Phasing-out of hazardous substances*: For credit achievement, the construction product has to be assessed on the basis of content and concentration of phasing-out substances in accordance with the KEMI's PRIO criteria. Alternatively, a product database such as BASTA, Byggvarubedömningen (Building Product Assessment) or SundaHus may be used. The construction products reviewed are included in categories E, F, G, H, I, J, K, L, M, N, Z according to BSAB 96.

## 4. Raw materials

*The manufacturing process for construction products requires inputs in the form of raw materials and energy. The certification systems in many cases demand information on what types of raw materials have been used and where they come from, the purpose being to promote the use of local materials. The requirements shown in this section concern in particular the various certification systems for buildings. However, some of the fields are also included on a voluntary basis in the basic version of the BVD by agreement in the industry.*

### Raw materials

By clicking on the New raw material button, you can add information on the raw materials contained in the article. The button is below the table at all times.

The table stating where various components and raw materials come from should be filled in to meet the requirements of the various certification systems. It can sometimes be difficult to specify this type of information, and a number of different countries can sometimes be entered. This can be described and commented on in the comments field. In some cases it is not possible to state country and place of extraction of raw materials, for example for secrecy reasons. If so, this can be described in a separate box. Enter also the country of final manufacturing if relevant. If recycled material is used, this can be stated in the table.

**Is recycled material included in the article?** State whether recycled material is included in the article. If recycled material is included in the article, this must be specified by entering the type of material by clicking on the New recycled material button for each material that is recycled.

Then enter into the table: proportion in % by weight or grams of the total weight in the article of the recycled material; how large a proportion of the recycled material has *not* passed the consumer stage. This is called “pre consumer waste”, and an example is industrial waste, for example industrial gypsum from coal-fired power stations or waste from construction sites. Waste from your own manufacturing must *not* be counted as pre consumer. Enter also the proportion of “post consumer waste” which is recycled material that *has* passed the consumer stage, this may, for example, be collected gas cylinders or waste gypsum from demolition.

**Enter proportion of renewable material in the article (short cycle, <10 years):** This requirement applies to the certification systems, see also information below.

**Enter proportion of renewable material in the article (long cycle, >10 years):** This also applies to the certification systems.

**Has an included biobased raw material been tested according to ASTM test method?** See further information on certification systems below.

**Is there supporting documentation for the raw materials for third-party certified systems for checking of origin?** See also the certification systems below.

**If wood raw material is included:** The origin of wood raw material must be stated separately in the certification systems; this may also be relevant for buildings that are not certified. State here whether the wood raw material is **certified**, **how large a proportion is certified**, and what **certification system** has been used, including **reference number for certification**.

If the wood raw material is not certified, the country of logging must be stated, as well as whether the type of wood is included in the **CITES appendix** of endangered species. You must also state whether the timber has been **logged legally**.

**Requirements concerning raw materials, recycled material and marking of origin according to the various certification systems:**

**For BREEAM-SE certification:**

Mat 5 – Choice of material based on responsible manufacturing and extraction: For credit achievement, building elements such as *structural frame, ground floor, upper floors (including separating floors), external walls, internal walls, foundation/substructure, fittings: includes stair case, windows (frame and glazing units), doors (internal and external), skirting strips, panels, equipment and strips consisting of the following materials* must be sourced responsibly:

- *Brick (including clay tiles and other ceramics)*
- *Resin-based composites and materials, including GRP and polymeric.*
- *Concrete (including in-situ and pre-cast concrete, blocks, tiles, mortars, cementitious renders etc.)*
- *Glass*
- *Plastics and rubbers (including EPDM, TPO, PVC and VET roofing and other membranes and polymeric renders)*
- *Metals (steel, aluminium etc.)*
- *Stone and gravel*
- *Timber, timber composite and wood panels (including Glulam, plywood, OSB, MDF, chipboard and cement bonded particleboard)*
- *Plasterboard and plaster*
- *Bituminous materials, such as roofing membranes and asphalt*
- *Other mineral-based materials, including fibre cement and calcium silicate*
- *Products with recycled content*

Make the assessment based on the level of certification and extent attained. This is valid for the whole supply chain. See *Tables 21 and 22* in BREEAM-SE. If timber which is not certified is used, none of the types of wood may appear on the CITES list (Appendix I, II or III). In addition, there must be confirmation that the timber has been logged legally. The criteria are to have third-party certification with chain of custody (CoC) certificates and/or EMS certificates (EMAS/ISO 14001) and/or BES6001. Examples of systems that fulfil the requirements are FSC, CSA, SFI with CoC, PEFC, BES6001:2008. See also *technical checklist A5* in BREEAM-SE. If a new system is used, see *Table 39* in BREEAM-SE for evaluation criteria.

Mat 6 – Insulation: For credit achievement, at least 80% of the thermal insulation specified for use within the following building elements: *external walls, ground floor, roof and installation systems* must be responsibly sourced, i.e. each insulation product must be certified in accordance with either tier levels 1, 2 or 3 in Mat 5, see also EMS criteria for insulation products in Table 24 in Mat 6.

Man 3 – Impact of construction site: For credit achievement, the main contractor must apply an environmental management system and have an environmental policy. With regard to choice of materials, the environmental policy must promote the following (*technical checklist A3*):

- If possible, use materials that are local, responsibly sourced, recycled, non-toxic (refrigerants with low heating potential), low environmental impact during the life cycle, sustainable and reused materials. See *technical checklist A3* for complete assessment criteria.

- Timber must be responsibly sourced and legally logged, which is to be confirmed by certification documents or chain-of-custody (CoC) certificates. If timber that is not certified is used, it must be possible to certify that it comes from an approved source and that none of the types of wood are included in the CITES list (Appendix I, II or III).

#### **For BREEAM international certification**

##### Mat 03 Responsible sourcing of materials:

For credit achievement, the materials and building elements described in *BREEAM-SE Mat 5 – Material choice based on responsible manufacturing and extraction* must be assessed according to the tier levels described in *Mat 03 in BREEAM International*. The assessment is made on the basis of the certification shown by the supplier/manufacturer for the material/product. This is valid for the whole supply chain. See *Table 42 in Mat 03* for different certifications and their tier levels. In addition, all timber must be legally logged according to relevant definitions described under “*Additional information*” in *Mat 03*.

##### Mat 04 Insulation

For credit achievement, at least 80% of the thermal insulation specified for use within the following building elements: *external walls, ground floor, roof and installation systems* must be responsibly sourced, i.e. each insulation product must be certified in accordance with the tier levels in *Mat 03 – Responsible sourcing of materials*. See also *Table 44 in Mat 04* for key processes for insulation products.

#### **For LEED v4 certification:**

For credit achievement calculation, products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued higher during credit calculation. *This is valid for all types of products.*

MR Credit: Building Product Disclosure and Optimization – Sourcing of Raw Materials: For credit achievement at least one of the following criteria for alternative 1 or 2 should be met (*this is valid for all types of products*):

##### Option 1:

- Products sourced from manufacturers with self-declared reports from their raw material suppliers regarding ecologically responsibly extraction of raw material.
- Third-party corporate sustainability report (CSR). Acceptable CSR frameworks include the following:
  - Global Reporting Initiative (GRI) Sustainability Report
  - Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises
  - U.N. Global Compact: Communication of Progress.
  - ISO 26000: 2010 Guidance on Social Responsibility
  - Other USGBC approved programmes meeting the CSR criteria.

Option 2:

- Products purchased from a manufacturer (producer) that participates in an extended producer responsibility programme or is directly responsible for extended producer responsibility.
- Biobased products must meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Biobased raw materials must be tested using ASTM Test Method D6866 and be legally logged.
- Wood products must be certified by the Forest Stewardship Council or USGBC-approved equivalent.
- Material reuse including reuse of salvaged, refurbished or reused materials.
- Recycled content: The recycled content is determined by weight and includes both postconsumer and preconsumer recycled content.
- Other USGBC approved program meeting extraction criteria.

**For LEED 2009 certification:**

MR Credit 3: Materials Reuse: Credits can be achieved if reused material is used.

MR Credit 4 Recycled content: For credit achievement, use recycled materials where the recycled amount constitutes a certain part of the total value of the materials in the project. The recycled content is determined by weight and includes both postconsumer and preconsumer recycled content. *This is valid for all building elements except mechanical, electrical and plumbing components.*

MR Credit 5: Regional Materials: For credit achievement, use building materials or products that have been extracted, logged or recovered, as well as manufactured, within 500 miles (800 km) of the project site. *This is valid for all building elements except electrical and plumbing components.*

State also how large a proportion of the product/material this is applied to; this can be done in the comments field. According to the ACP document, account can be taken in the calculation of what mode of transport has been used, and you can therefore, if possible, enter the form of transport used from raw-material extraction to manufacturing of the product.

MR Credit 6: Rapidly Renewable Materials: For credit achievement, use rapidly renewable building materials and products, meaning they are made from plants that are typically harvested within a 10-year or shorter cycle. Consider materials such as *bamboo, wool, cotton insulation, agrifibre linoleum, wheatboard, strawboard and cork.*

MR Credit 7: Certified Wood: For credit achievement use *wood-based materials and products* (permanently installed) that are certified in accordance with the Forest Stewardship Council's principles and criteria, for wood building components. Confirmation should be provided by the supplier.

## 5. Environmental impact during the article's life cycle

*Manufacturing of an article always has some impact on the environment that can arise during the various phases of the article's life cycle, for example during extraction of raw materials and/or during the production phase. The whole life cycle must therefore be considered in quantifying and calculating the total environmental impact of an article. Conducting a life-cycle assessment (LCA) is one way of quantifying, calculating and evaluating the environmental impact of an article.*

An environmental product declaration (EPD) is a third-party certified declaration that summarises the environmental impact (environmental profile) of a product or service, based on the life cycle data (LCA) in accordance with EN 15804 or ISO 14025. Each EPD has a unique registration number and follows a PCR. If an EPD has been drawn up for the article this can be stated, as well as the registration number and which PCR has been used. These fields are voluntary and are included in the basic version of the Building Product Declaration.

As it is not possible for all companies and organisations to draw up EPDs for their articles, they can nevertheless operate on the basis of a life-cycle perspective, where this work can be described qualitatively in the BVD. On the other hand, it is not possible to fill in quantified figures that have not been certified by a third party.

### **For BREEAM-SE certification:**

Mat 1 – Material selection based on life-cycle perspective: For credit achievement the following should be met:

Option 1 – Green Guide:

Specification for the following building elements: *external walls, windows, roofs, floor structures, internal walls, and floor surfaces* must be assessed in the Green Guide and entered into the BREEAM assessor's Mat 1 tool. Green Guide ratings for each building element can be found at [www.thegreenguide.org.uk](http://www.thegreenguide.org.uk).

For suppliers who supply building elements as above, state here whether calculation has been done in the Green Guide, and if so what rating the calculation has given. The information is used integrated by the BREEAM assessor, but the value can be used as an indicator for the assessor to assess whether the building element can provide credits in certification.

Option 2 – Other tools for material assessment:

The project planning group uses an accepted national LCA tool with functions as above, for assessment of materials in the building AND it can be shown that the result has influenced the choice of design of all building elements. Here too, the ICA work needs to be integrated with the building project, and no information is therefore presented in the BVD. The results from the EPD can be used as input for LCA work.

Mat 2 - Hardstanding and boundary protection outdoors: For credit achievement the following should be met:

Option 1 – Green Guide:

1. At least 80% of all hardstanding and boundary protection outdoors (area) must achieve the rating A or A+.

Green Guide. The Green Guide is at: [www.thegreenguide.org.uk](http://www.thegreenguide.org.uk) and is used for rating building elements.

Option 2 – Other tools:

1. An accepted national tool for Life Cycle Analysis (LCA) is used to assess and analyse material options for hardstanding and boundary protection outdoors:



2. The project planning group has to show how the analysis has had a positive effect on the design.
3. The nationally accepted LCA tool used has at least the following functions:
  - a. At least three environmental indicators including climate change (the indicators can be weighted for total score).
  - b. The life cycle of the whole building is assessed, including service life and waste management.
  - c. It is based on LCA principles according to the following international standards.  
ISO 14040 2006 Environmental management – Life Cycle Assessment – Principles and Framework  
ISO 14044 2006 Environmental management – Life Cycle Assessment – Requirements and Guidance  
ISO 14025:2010 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures  
ISO 21930 2006 Sustainability in building construction

The calculations also have to be adapted to the construction project concerned for this requirement. However, the results presented in the BVD concerning life cycle data in accordance with EN 15804 or ISO 14025 can be used as supporting documentation and input to the LCA calculations to demonstrate that a sustainable choice of materials has been made for *hardstanding and boundary protection outdoors*.

**For BREEAM international certification:**

Mat 01 Life cycle impacts:

For credit achievement the following should be met:

The environmental impact of the building elements must be assessed based on a life-cycle perspective, which is to be done using an LCA tool.

The calculations also have to be adapted to the construction project concerned for this requirement. However, the results reported in the BVD concerning life-cycle data in accordance with EN 15804 or ISO 14025 can be used as supporting documentation and input for the LCA calculations to demonstrate that a sustainable choice of materials has been made for hardstanding and boundary protection outdoors.

**For LEED v4 certification:**

MR Credit: Building Product Disclosure and Optimization – Environmental Product Declarations: This is valid for all types of products. For credit achievement at least one of the following should be met:

Use permanently installed products that fulfil one of the following criteria:

- Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope.
- Products have Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930.
- Products that comply with other USGBC approved environmental product declaration frameworks.

or the product complies with one of the criteria below:

- Third party certified products that demonstrate impact reduction below industry average in at least three of the following categories: GWP, ODP, AP, EP, POCP, ADP (MJ).
- Products that comply with other USGBC approved multi-attribute frameworks.

The results in the EPD represent supporting documentation to fulfil this requirement.

## 6. Distribution of finished article

*In Sweden there is the Producer Responsibility for Packaging Ordinance, the purpose of which is to limit the volume and weight of packaging and attain the recycling targets (Ordinance 2014:1073). In this section it is specified in what way the supplier relates to various systems for the recycling of packaging.*

State whether **Retursystem Byggpall** is used. Retursystem Byggpall is a pallet return system adapted to the industry to standardise the handling of load pallets to reduce costs, simplify handling and reduce environmental impact. Retursystem Byggpall is industry-owned and is operated by the construction industry through the sector organisations.

State also whether there is a system of **multiple-use packaging** for the article and whether the supplier **takes back packaging** for the article and whether this is connected to a **system for producer responsibility for packaging**.

## 7. Construction phase

*To ensure good management of the construction product at the site, information should be provided on whether particular requirements have to be met for storage of the article and whether requirements have to be met by surrounding articles.*

An example of this is that plasterboards must not be exposed to moisture during the construction process as this may cause problems with mould growth and later problems with the indoor environment.

It may also be the case that special requirements have to be met by surrounding construction products, for example carpets must not be affixed with adhesive to wet concrete floors, the concrete must have reached a particular moisture level before adhesive bonding can take place. This type of information can be entered in this section.

## 8. Usage phase

*Particular information concerning the article in question when it is used or maintained must be entered here.*

Information should be provided for the use phase on whether the article requires **input materials** for operation and maintenance and whether it requires **energy supply**.

**Estimated technical service life must be stated for the article:**

Reference service life for the article should be stated. If you cannot specify a reference service life, you can provide an explanation in the comments field. The term reference service life is used in ISO standard 15686-1 because durability always depends on surroundings, use, etc. For a particular service life to be understandable, it must be linked some reference conditions. These may, for example, be that the service life applies to a particular location, in a particular application or under particular conditions for which the article has been tested. The term service life is to be regarded here as indicative information, alternatively based on practical experience, measurements, etc. Conditions that shorten service life can be described. If there is an industry standard for how a stated service life is to be achieved, state this. The reference service life can be stated as an absolute number or with a

range.

State also whether there is **energy labelling under the Energy End-use Efficiency and Energy Services Directive**. The Energy End-use Efficiency and Energy Services Directive demonstrates the article's energy use and makes it easier for consumers who want to make energy-smart choices. There is a grading system, from G to A and A+, A++, A+++.

## 9. Demolition

*Re-use, recycling and other material recovery of non-hazardous construction and demolition waste have to increase by at least 70% by 2020 under the EU Waste Directive. It is therefore important in demolition to know how different materials are to be managed to make reuse and recycling easier.*

With regard to information about the article at the demolition stage, the supplier should state whether the article is prepared for disassembly.

If the article requires special measures for the protection of human health and the environment in demolition/disassembly, this must be stated here.

## 10. Waste management

*With regard to construction products, there are more or less only voluntary agreements on producer responsibility for the waste stage when the article has reached the end of its life. At present only electrical and electronic products are covered by statutory producer responsibility. The different stages of the construction process therefore need to receive information on the possibility of reuse and material recovery for various articles, as well as how residual waste is to be managed.*

There is statutory producer responsibility for eight different product groups, of which only "electrical and electronic products" are relevant to construction products. The box should therefore be checked if the article is **covered by the Swedish Responsibility for Electrical and Electronic Equipment Ordinance (2014:1075)**.

If the answer is yes, all questions concerning waste management are settled on this basis and subsequent questions therefore do not need to be answered. If no, the supplier should provide information on what is applicable to the article in waste management.

**Is reuse, material recovery or energy recovery possible for the article?** If so, state also what component(s) this applies to and the proportion that is reusable/recyclable. This information is given in the field "If yes, specify". State also whether the supplier has recommendations or restrictions with regard to this management. It should also be stated what waste code the supplied article has and whether the supplied article is classified as hazardous waste under the Swedish Waste Ordinance (2011:927).

Reuse means that an article or component is used again to fulfil the same function as it was originally intended for.

Recycling means that the waste will be put to use as a replacement for other material, or be prepared to be put to such use or for a waste management that means preparation for reuse.

## 11. Indoor environment

With regard to emissions, standardisation work linked to the Construction Products Regulation is in progress. The work is taking place under CEN/TC 351 Construction products – assessment of release of dangerous substances, and a standard is expected to be published by CEN during the spring 2016 (CEN 16516:2015). When the harmonised standard is ready, information on emissions from the construction product should be supplied in accordance with it.

The following information must be provided in the various fields:

- Whether the article is not intended for indoor use.
- The article does not produce any emissions
- Emissions from the article have not been measured
- If the article has a critical moisture level, this must also be stated. The moisture level can be entered as relative humidity (RH %) or moisture content (u kg/kg or %). The unit that is simplest to use in check measurements at the construction site should be entered. Critical moisture level is defined as *Moisture level at which the intended properties and function of a material are not fulfilled. For microbial impact, the moisture level is critical when growth occurs* (National Board of Housing, Building and Planning building rules BBR 216:511 definitions).
- It is also relevant to state whether the article can give rise to its own noise, electrical or magnetic fields, which should be entered in the input fields.
- If used in wet areas, is the article resistant to fungi and algae? Information that is relevant to the certification systems, see below.

### Emissions

Emissions should be stated for the construction product if they have been measured. Enter by clicking on the New emissions button. More types of emissions can be added if relevant. Enter the following into the table:

Type of emissions, result (for measuring points 1 and 2, the measuring point indicates at what time the measurement has been made), and unit and method of measurement/standard for each measuring point concerned should be entered. Times of emissions measurement are different for different products and there are thus different “measuring points” for different products, which are not mutually comparable. VOC emissions and emissions of formaldehyde should be shown if they are measured for the construction product. Formaldehyde emissions can be stated in ppm if appropriate.

#### For BREEAM-SE certification:

For paints and varnishes, it must be stated according to BREEAM-SE whether the product is resistant to fungi and algae if it is to be used in wet areas. An example of this is the article being treated with preservatives to withstand fungi and algae.

Hea 9 – Volatile organic compounds (VOCs): With regard to VOC emissions, at least five of the six product categories below must have been tested according to test requirement (1) or (2) and comply with relevant standards:

Test requirement (1): EN 717-1:2004: Formaldehyde E1

Test requirement (2): EN 12149:1997 Vinyl chloride monomer (VCM)

- Wood panels (including particle board, fibreboard including MDF, OSB, cement bonded particle board, plywood, solid wood panel and acoustic board): EN 13986:2002 (1)
- Timber structures (e.g. glue laminated timber): EN 14080:2005 (1)
- Wood flooring (e.g. parquet): EN 14342:2005 (1)
- Resilient textile and laminated floor coverings (e.g. vinyl, linoleum, cork, rubber, carpet, laminated wood flooring): SS-EN 14041:2005 (1)
- Suspended ceiling tiles: EN 13964:2004 (1)
- Wall coverings (finished wall papers, wall vinyls and plastic wall covering, wall papers for subsequent decoration, heavy duty wall coverings, wall coverings in roll form): SS-EN 233:1999, SS-EN 234:1989, EN 259:2001, EN 266:1992 (1) and (2)

**For BREEAM international certification:**

Hea 02 Indoor air quality: For credit achievement, the products have to comply with the following requirements (other national and/or local standards can be proposed):

- Formaldehyde E1 compliant with testing standard EN 717-1:2004 Wood based panels – Determination of Formaldehyde release by chamber method or be compliant with the Formaldehyde level of 0.1 mg/m<sup>3</sup> tested according to ISO 16000-9 or California Specification 01350 (California Department for Public Health CDPH). Manufacturer shall also confirm the absence of regulated wood preservatives. This applies to the following product types:
  - Wood panels (including particle board, fibreboard including MDF, OSB, cement bonded particle board, plywood, solid wood panel and acoustic board)
  - Timber structures (e.g. glue laminated timber)
  - Wood flooring (e.g. parquet)
  - Resilient textile and laminated floor coverings (e.g. vinyl, linoleum, cork, rubber, carpet, laminated wood flooring)
  - Suspended ceiling tiles.

In the case of some flooring materials and wood-based panels the requirement for formaldehyde cannot be applied as no materials containing formaldehyde have been added during manufacturing. In such cases the manufacturer must confirm that it has made a declaration of formaldehyde class E1 without testing.

- Flooring adhesives shall either be compliant with the requirements in *Hea 02 in the chapter on chemical contents* or classification and labelling of chemicals referring to C1, C2 and C3 classifications identified in Annex A of EN 13999-1:2007. Compliant testing standard; EN 13999:2007 Adhesives, part 2, 3 and 4.
- Wall coverings must fulfil the performance requirements of vinyl chloride monomer (VCM) content, formaldehyde level and migration of heavy metals:
  - EN 233:1999, section 5.7 – Finished wall papers and EN 233:1999, section 5.7 – Wall vinyls and plastic wall covering.
  - EN 234:1997, section 9.0 wall papers for subsequent decoration
  - EN 259-1:2001, section 4.5 to 4.7 – Heavy duty wall coverings
  - EN 12149:1998 – Wall coverings in roll form, test A, B, and C.

**For LEED v4 certification:**

IEQ Credit: Low-Emitting Materials: For credit achievement, the product categories below should be in compliance with the following emission standard:

- VOC emissions (valid for interior paints and coatings, interior adhesives and sealants, flooring adhesive, flooring, ceilings, walls, thermal and acoustic insulation):
  - California Department of Public Health (CDPH) Standard Method v 1.1-2010.
  - German AgBB Testing and Evaluation Scheme (2010).
  - ISO 16000-3: 2010, ISO 16000-6: 2011, ISO 16000-9: 2006, ISO 16000-11: 2006
  - DIBt testing method (2010).
- **Formaldehyde** emissions (valid for *composite wood*): California Air Resources Board ATCM.

**For LEED 2009 certification:**

IEQ Credit 4.3: Low-Emitting Materials – Flooring Systems: For credit achievement, all flooring must comply with the following regarding VOC emissions:

- Maximum VOC concentrations for all fitted carpets are less than or equal to those specified in the *California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small Scale Environmental Chambers, including 2004 Addenda*. Projects may use the European AgBB/DIBt testing method and all testing methods based on AgBB/DIBt method, such as GUT, EMICODE, Blue Angel, using test results obtained at the 3 day or 7 day or 14 day time point. Other testing methods are described in ACP Global, however, here only the ones adapted for Europe have been chosen.
- All carpet cushion installed in the building interior must meet the requirements of the Carpet and Rug Green Label Programme.
- All hard surface flooring must meet the requirements described for fitted carpets above.

or

All flooring elements installed in the building interior must meet the testing and product requirements of the California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda. There are exceptions for example for concrete floors, stone floors and untreated wood floors, see page 69–70 in *IEQ Credit 4.3*.

Or use Option 2 in the certification project – Budget Calculation Method in *LEED v.4 EQ Credit: Use Low-Emitting Materials*. This means that the product supplier can use test methods of LEED v.4, which include test requirements that are used more in Europe.

## 13. References

- Swedish National Board of Housing, Building and Planning, 2013, Byggproduktdirektivet och Byggproduktförordningen (The Construction Products Directive and the Construction Products Regulation) <http://www.boverket.se/Bygga--forvalta/CE-markning-och-marknadskontroll/Byggproduktdirektivet/>
- Swedish National Board of Housing, Building and Planning, 2015, personal communication with Sara Elfving, Swedish National Board of Housing, Building and Planning, 26 February 2015.
- BREEAM International New construction Technical Manual, Issue date: 09-04-2014
- BREEAM-SE Swedish manual for new construction and refurbishment, version 1.0 edition of 01.05.13
- BSI, 2015, <http://www.bsigroup.com/en-GB/bes-6001-responsible-sourcing-of-construction-products/>
- Byggpall, 2015, Retursystem Byggpall (Bygpall return system), <http://www.byggpall.se/>
- Construction Products Regulation CPR (EU Regulation No 305/2011)
- CLP Regulation (EC/1272/2008)
- CSA, 2015, Canadian Standards Association, <http://www.csasfmforests.ca/>
- Elfving, Sara, 13 September 2012, Presentation SIS CPR seminar on the Construction Products Regulation <http://www.byggmaterialindustrierna.se/wp-content/uploads/2013/12/131209-CPR-seminarium-Sara-Elfving-Bvoerket.pdf>
- Regulation (EC) no. 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging (CLP)
- Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- European Chemical Agency, 2015, Candidate list <http://echa.europa.eu/sv/web/guest/candidate-list-table>.
- FSC, 2015, Forestry Steward Council, <http://se.fsc.org/index.htm>
- Goodpoint 2012, [http://upphandling24.idg.se/polopoly\\_fs/1.459778.1344523054!csr-risker\\_i\\_leverantorskedjan.pdf](http://upphandling24.idg.se/polopoly_fs/1.459778.1344523054!csr-risker_i_leverantorskedjan.pdf)
- Swedish Chemicals Agency, 2013. The REACH Regulation <http://www.kemi.se/reach>
- Swedish Chemicals Agency, 2014a, Safety data sheets, information sheets
- Kemikalieinspektionen, 2014b, Vägledning för leverantörer av varor (Guidance for suppliers of articles) [http://www.kemi.se/Documents/Forfattningar/Reach/Vagledning\\_for\\_leverantorer\\_av\\_varor\\_SV.pdf?epslanguage=sv](http://www.kemi.se/Documents/Forfattningar/Reach/Vagledning_for_leverantorer_av_varor_SV.pdf?epslanguage=sv)
- Swedish Chemicals Agency, 2015a, REACH Information i distributionskedjan (REACH Information in the distribution chain), <http://www.kemi.se/sv/Innehall/Lagar-och-andra-regler/Reach/Information-i-distributionskedjan/>
- Swedish Chemicals Agency, 2015b, Kort om CLP (CLP in brief) <http://www.kemi.se/sv/Innehall/Lagar-och-andra-regler/Dags-att-klassificera-och-marka-om-kemiska-produkter/Kort-om-CLP/>
- Swedish Chemicals Agency, 2015c, RoHS-direktivet (The RoHS Directive) <http://www.kemi.se/sv/Innehall/Fragor-i-fokus/Elektrisk-och-elektronisk-utrustning---RoHS-direktivet/>
- Swedish Chemicals Agency, 2015d, VOC-direktivet (The VOC Directive) <http://www.kemi.se/sv/Innehall/Fragor-i-fokus/Flyktiga-organiska-foreningar---VOC-direktivet/>
- LEED 2009 ACP, with alternative compliance paths for Europe
- LEED 2009 for new construction and major renovations, updated October 2010
- LEED v4 for building design and construction, updated October 1, 2014
- Monica Björk – Byggmaterialindustrierna (Swedish Association of Construction Product Industries), Anna Jarnehammar and Johanna Freden – IVL Swedish Environmental Research Institute, Elin Salomonsson, Robert af Wetterstedt and Håkan Nilsson – WSP, 2014, Framtidens Byggvarudeklaration i digitalt format (The building product declaration of the future in digital format), SBUF report ID: 12775
- MTCC, 2015, Malaysian Timber Certification Council, <http://www.mtcc.com.my/>
- Swedish Environmental Protection Agency, 2015, Producentansvar, elektronik (Product responsibility, electronics) <http://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Uppdelat-efter-omrade/Producentansvar/Elektronik/>
- PEFC, 2015, Programme for the Endorsement of Forest Certification, <http://pefc.se/om-svenska-pefc/>
- REACH (EC Regulation No 1907/2006)
- RoHS Directive (2011/65/EU).
- SFI, 2015, Sustainable Forestry Initiative, <http://www.sfiprogram.org/about-us/basics-of-sfi/>

SGBC (2013). BREEAM-SE Swedish manual for new construction and refurbishment, version 1.0 edition of 01.05.13

SGS, 2015, <http://www.sgs.com/en/Agriculture-Food/Forestry/Forest-Management-Certification.aspx>

SIS (2012) Standard · Swedish Standard SS-EN 15804:2012. Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products.

Sweden Green Building Council (2011). Miljöbyggnad (Environmental construction), manual 2.1.

Sweden Green Building Council, 2014a, BREEAM <http://www.sgbc.se/certifieringssystem/breeam>

Sweden Green Building Council, 2014b, LEED <https://www.sgbc.se/var-verksamhet/leed>

Sweden Green Building Council, 2014c, Miljöbyggnad (Environmental construction) <http://www.sgbc.se/certifieringssystem/miljobyggnad>

Svensk författningssamling (Swedish Code of Statutes) 1998:808. Swedish Environmental Code SFS 1998:808

TFT, 2015, The Forest Trust, <http://www.tft-forests.org/>

USGBC (2009). LEED 2009 ACP, with alternative compliance paths for Europe

USGBC (2009). LEED 2009 for new construction and major renovations, updated October 2010

USGBC (2014). LEED v4 for building design and construction, updated October 1, 2014

The WEEE Directive (2002/96/EC)