

Green Building Product Analysis



BEYOND FLOORING

 IVC GROUP

About IVC

IVC is the commercial division of IVC Group, dedicated to creating unique floors for corporate & office, retail, hospitality & leisure, housing, education and healthcare projects. Founded in 1997, IVC Group is Europe's leading manufacturer of Carpet Tiles, Luxury Vinyl Tiles (LVT) and Heterogeneous Vinyl.

With 1,800 employees and 10 production units in Belgium, Luxembourg, the United States and Russia, IVC Group produces over 180 million m² of flooring per year.



 Verified by Encon, BREEAM LICENSED ASSESSOR COMPANY

Building Research Establishment Environmental Assessment Method (BREEAM)

BREEAM was established in the UK by the Building Research Establishment (BRE). It is an international scheme that provides independent third party certification of the assessment of the sustainability performance of individual buildings, communities and infrastructure projects.

As a quality label, it encourages the market to focus on sustainability in building design as well as the environmental impact of products in buildings. Hereby it invites customers to create safe, innovative, sustainable buildings and give them the necessary support. By developing BREEAM, the BRE seeks to attain the following objectives:

- Creating sustainable buildings with minimum environmental impact;
- Increasing the number of sustainable buildings;
- Creating the possibility of comparison of the sustainability of buildings;
- Placing on the market a credible voluntary benchmark;
- Integrating best practices in construction techniques;
- Setting standards and extra-legal requirements to stimulate research towards creative and innovative solutions.

As this label assesses the overall building concept, BREEAM specifies 10 main categories, with multiple issues, on which the building is evaluated. Credits are awarded and weighted for each category in order to generate the final score for the building, in levels from pass to outstanding. The maximum amount of credits available can differ slightly depending on building type.

Now BREEAM has been explained, how can IVC flooring products contribute towards achieving a BREEAM rating?

The main categories with their number of credits to be earned:

	Max Credits	Weightings	
Management (MAN)	21 credits	11,11%	BREEAM rating Outstanding ≥ 85% Excellent ≥ 70% Very good ≥ 55% Good ≥ 45% Pass ≥ 30%
Health & Wellbeing (HEA)	25 credits	18,66%	
Energy (ENE)	36 credits	15,69%	
Transport (TRA)	13 credits	5,98%	
Water (WAT)	10 credits	8,47%	
Materials (MAT)	12 credits	12,50%	
Waste (WST)	9 credits	5,98%	
Land Use & Ecology (LE)	10 credits	11,20%	
Pollution (POL)	13 credits	9,96%	
Innovation (INN)	10 credits	10,00%	

When using IVC Flooring solutions in combination with other building components, according to BREEAM International New Construction 2016, up to 17 credits can be gained in the following categories:

	MAN	HEA	ENE	MAT	WST	Total
Carpet Tiles	3	5	1	5	3	17
Luxury Vinyl Tiles	3	4	1	5	3	16
Heterogeneous Vinyl	3	4	1	5	3	16
Accessories	2	4	1	3	3	13

In this brochure IVC wishes to elaborate more on the categories in which credits can be gained with the use of IVC flooring solutions.

How to use this brochure

- Needless to say, a building does not consist only of IVC floors. BREEAM evaluates the totality of the project, including heating, isolation, doors and windows, which will all gain credits that are not detailed here.
- This brochure explains which credits can be gained with four IVC flooring solutions: **Carpet Tiles, Luxury Vinyl Tiles, Heterogeneous Vinyl and Accessories.**
- The sections 'AIM' and 'PARAMETER' come straight from the BREEAM standards. In the section 'IVC APPROACH', we go into the specifics for our products and how they can contribute to obtaining the BREEAM credits.
- Although the final decision remains up to the certifying agency, it is very likely that the BREEAM credits will be awarded as mentioned in the tables. IVC has documented this process well and has the necessary material to back up the decision.
- If other floors are used in combination with the IVC products, the certifying agency will look at the percentages of materials used in the flooring and decide how many credits will be awarded.
- 'Product suitability' refers to the intrinsic quality of the material for a specific criterium:
 - + (suited)
 - ++ (well suited)
 - +++ (perfectly suited)

This is useful information for the building contractor or project leader, but it will not determine the credits awarded by the certifying agency. For example, if the contractor cares a lot about thermal conductivity, he might prefer **Heterogeneous Vinyl (+++)** instead of **Carpet Tiles (++)**, even if both will gain **1 BREEAM credit.**
- The IVC Group Sales Representatives and Technical Support Managers will be happy to respond to further questions.

Management (MAN)

MAN 02 LIFE CYCLE COST (LCC) AND SERVICE LIFE PLANNING

Max 4 credits

AIM

To deliver whole life value by encouraging the use of life cycle costing to improve design, specification, through-life maintenance and operation, and through the dissemination of capital cost reporting to promote economic sustainability.

PARAMETER

Component Level LLC options appraisal (Max 1 credit):

- A component level LCC options appraisal has been developed in line with ISO 15686-5:2008;
- Demonstrate how the component level LCC options appraisal has been used to influence building and systems design, and specification to minimize life cycle costs and maximize critical value.

IVC APPROACH

The cost of the floor throughout its life cycle can be determined (more specifically a systematic economic evaluation of the life cycle costs). For this purpose, IVC can provide information regarding installation, durability, maintenance, replacement, ...

IVC Product	BREEAM Man02 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	-	-

MAN 03 RESPONSIBLE CONSTRUCTION PRACTICES

AIM

To recognize and encourage construction sites which are managed in an environmentally and socially considerate, responsible and accountable manner.

PARAMETER

Environmental management (1 credit):

- The principal contractor operates an environmental management system (EMS), third party certified to ISO 14001/EMAS or an equivalent standard;
- Implement best practice pollution prevention policies and procedures on site.

IVC APPROACH

The IVC Group truly believes in the strategic importance of a low environmental impact. Taking all sustainability risks and opportunities into account, IVC promises to implement and maintain an efficient ISO 14001 environmental management system.

To get the ISO certificate contact your IVC sales contact.

IVC Product	BREEAM Man03 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

MAN 04 COMMISSIONING AND HANDOVER

AIM

To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants.

PARAMETER

Handover (1 credit):

- A building or home user guide is developed;
- A training schedule is prepared for building occupiers
 - The design intent of the building;
 - The available aftercare team;
 - Introduction to, and demonstration of, installed systems;
 - Introduction to the building user guide;
 - Maintenance requirements, including any maintenance contracts and regimes in place.

IVC APPROACH

The IVC technical support team can provide all the required test reports, installation advices and maintenance instructions, at any time before, during or after installation. In addition, clear installation and maintenance instructions for all products are free to download from the IVC website. For specific questions, the local Technical Product Support Manager will be glad to help.

IVC Product	BREEAM Man04 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

Health & Wellbeing (HEA)

HEA 02 INDOOR AIR QUALITY

AIM

To recognize & encourage healthy internal environment through the specification & installation of appropriate ventilation, equipment and finishes.

PARAMETER

Component Level LLC options appraisal (Max 1 credit):

- Emissions from building products (1 credit);
- Indoor air quality measurement (1 credit)
 - Measurement by external party in the building

IVC APPROACH

IVC products were designed for optimal Indoor Air Quality performance after installation. The IVC Group commits to quality management according to ISO 9001. Independent laboratories and quality system audits extensively analyzed the products and granted Floorscore and GUT certifications (to be downloaded from the IVC Group website). It's good to point out that IVC products perform much better at Indoor Air Quality than prescribed by the following national legislations and other quality labels:

French VOC Regulation		Regulation of March and May 2011 (DEVL1101903D and DEVL1104875A)
French CMR Components	Pass	Regulation of April and May 2009 (DEVP0908633A and DEVP0910046A)
AgBB/ ABG	Pass	Anforderungen an bauliche Anlagen bezüglich des Gesundheitsschutzes (ABG), Entwurf 31.08.2017
Belgian Regulation	Pass	Royal Decree of May 2015 (C-2014/24239)
Indoor Air Comfort®	Pass	Indoor Air Comfort 6.0 of February 2017
Indoor Air Comfort GOLD®	Pass	Indoor Air Comfort GOLD 6.0 of February 2017
EN 717 -1	E1	2004
Blue Angel (RAL UZ 120)	Pass	Resilient Comfort Covering, February 2011
BREEAM International	Compliant	GN22 v2.3 (March 2018): BREEAM Recognised Schemes for VOC Emissions from Building Products
LEED v4 (outside U.S.)	Compliant	LEED v4 for Building Design and Construction (April, 2015)
BREEAM® NOR	Pass	BREEAM-NOR New Construction v1.1. (May 2017)

IVC Product	BREEAM HEA02 credits	Product suitability
Carpet Tiles	2	+++
Luxury Vinyl Tiles	2	+++
Heterogeneous Vinyl	2	+++
Accessories	2	+++

Several IVC floorings can be installed without using adhesives (see also WST 06). If installed with adhesives, IVC Group advises to use the Accessories adhesives or underlays with very low emissions and Indoor Air Quality Certification.

HEA 04 THERMAL COMFORT

AIM

To ensure that appropriate thermal comfort levels are achieved through design and controls are selected to maintain a thermally comfortable environment for occupants within the building.

PARAMETER

- Thermal modelling;
- Analysis of thermal comfort level using Predicted Mean Vote (PMV) & Predicted Percentage of Dissatisfied (PPD);
- Thermal comfort levels in accordance with European Standard EN ISO 7730:2005.

IVC APPROACH

Underfloor heating will bring extra comfort to any IVC floor, especially in the colder seasons. All IVC floors have an R-value $\leq 0,15 \text{ m}^2\text{K/W}$ and combine well with underfloor heating.

IVC Product	BREEAM HEA04 credits	Product suitability
Carpet Tiles	1	++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

HEA 05 ACOUSTIC PERFORMANCE

AIM

To ensure the building’s acoustic performance, including sound insulation meets the appropriate standards for its purpose.

PARAMETER

- Indoor ambient noise and sound insulation (1 credit):
 - All unoccupied spaces comply with the indoor ambient noise level targets;
 - An SQA carries out ambient noise measurements;
 - The sound insulation complies with the privacy index
- Reverberation times (1 credit).

IVC APPROACH

No one should suffer excessive noise in the workplace, or in any space for that matter. Whatever the environment may be, IVC will be on the lookout to adapt its products. To ensure this high performance, the IVC Group runs an acoustical lab in its headquarters in Avelgem (Belgium), where the team gained a complete understanding of the science behind the sound.

IVC floors will support the end user with improved ratings for impact sound reduction (ISO 10140). For superior sound absorption values (EN ISO 354), Carpet Tiles will do the job.

IVC Sales Representatives and Technical Support Managers can provide acoustical analysis reports from independent laboratories. In case of doubt, they help to choose the right flooring for the right sound.

IVC Product	BREEAM HEA05 credits	Product suitability
Carpet Tiles	2	+++
Luxury Vinyl Tiles	1	++
Heterogeneous Vinyl	1	++
Accessories	1	++

Energy (ENE)

ENE 01 REDUCTION OF ENERGY USE AND CARBON EMISSIONS

(credits gained by approved Building Energy Calculation Software)

AIM

To recognize and encourage buildings that minimize their operational energy consumption through good design.

PARAMETER

- Defining the building energy performance using building energy calculation software:
 - Assessed building compared to notional equivalent;
 - Notional building = local regulations or ASHRAE Standard (if local regulations are less rigorous);
 - Minimum 6 credits needed for excellent rating;
 - Minimum 10 credits needed for outstanding rating.
- Energy modelling study & qualified engineer required:
 - Modelling software = National Calculation Methodology or BRE approved (country specific);
 - Approved software: Design builder , TRNSYS, EPB Software 3G.

IVC APPROACH

Flooring has a limited impact on the energy use within buildings, depending on its thermal conductivity. The Technical Specification (on the IVC Group’s website) gives details about thermal conductivity and resistance of all materials.

IVC Product	BREEAM Ene01 credits	Product suitability
Carpet Tiles	1	++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

Materials (MAT)

MAT 01 LIFE CYCLE IMPACTS

AIM

To recognize & encourage the use of robust appropriate life cycle assessment tools & specification of materials with low environmental impact over full building life cycle.

PARAMETER

- Measuring the life cycle environmental impact of building elements:
 - Building fabric, services & landscaping;
 - Evaluating a range of material options for the building with a Life Cycle Assessment (LCA) tool according to the BREEAM MAT1 Calculator (5 credits)
- EPD Environmental product declarations (1 credit)

IVC APPROACH

The IVC Group uses Live Cycle Assessment (LCA) methodology, in line with the requirements of ISO 14040, ISO 14044 and ISO 21930. The aim is double: we reduce the environmental impact of our products and additionally help building contractors or project leaders in reducing their building's environmental impact.

The outcome of the LCA assessment is an Environmental Profile Declaration (EPD) for the entire life cycle of a product: from extraction to processing, manufacturing, installation and maintenance, up to its end-of-life treatment. The EPD addresses all the environmental key issues: climate change, ozone depletion, acidification, consumption of minerals and water, air and water pollution and the amount of waste. In the past years, IVC ran the extra mile for the environment, which also positively impacted the EPD's. Some examples:

- Startup of two PVC recycling plants in IVC Avelgem Belgium, ensuring that the Luxury Vinyl Tiles and Layred products hold an average of 30% recycled PVC content.
- Construction of 3 wind turbines that supply the Avelgem Belgium production plant with green energy. The plant also uses the water of the river Scheldt to cool the internal production.
- Maximal sun power electricity supply for the US Dalton plant and the Flooring Development Center in Waregem.
- Transportation overseas by ship, loading goods directly at the production plant in Avelgem.

To get an EPD for a specific kind of flooring, contact your IVC sales contact or download it directly from www.greenbooklive.com or the IVC Group Website.

IVC Product	BREEAM Mat01 credits	Product suitability
Carpet Tiles	3	+++
Luxury Vinyl Tiles	3	+++
Heterogeneous Vinyl	3	+++
Accessories	3	+

MAT 03 RESPONSIBLE SOURCING OF CONSTRUCTION PRODUCTS

AIM

To recognize and encourage the specification and procurement of responsibly sourced construction products.

PARAMETER

Using materials with responsible origin (3 credits):

- Environmental Management System (EMS) needed;
 - ISO14001
- Output BREEAM MAT03 Calculator required.

IVC APPROACH

IVC Group helps to obtain credits for MAT03 by proving that the flooring has been produced in line with ISO14001 environmental management systems. Our raw materials were sourced responsibly and the environmental impact for the product's entire life cycle has always been assessed (see the Environmental Profile Declaration or EPD).

IVC Product	BREEAM Mat03 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

MAT 05 DESIGNING FOR DURABILITY AND RESILIENCE

AIM

To recognize and encourage adequate protection of exposed elements of the building and landscape, therefore minimizing the frequency of replacement and maximizing materials optimization.

PARAMETERS (1 Credit)

- Protecting vulnerable parts of the building from damage
 - Suitable durability and protection measures to prevent damage to vulnerable parts of the internal and external building and landscaping elements
- Protecting exposed parts of the building from material degradation.

IVC APPROACH

IVC products stand out in durability. Reports demonstrate wear resistance, thermal resistance and electrical resistance, proving that our products comply with European standards. Our flooring solutions truly protect vulnerable parts of buildings from damage.

IVC Product	BREEAM Mat05 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	++

Waste (WST)

WST 01 CONSTRUCTION WASTE MANAGEMENT

AIM

To promote resource efficiency via the effective and appropriate management of construction waste.

PARAMETER (1 Credit)

Diversion of resources from landfill

IVC APPROACH

To promote circularity, the IVC Group powers two PVC Recycling Plants in Avelgem (Belgium), where no less than 40,000 tons of PVC are recycled per year to generate new flooring materials.

Furthermore, IVC supports initiatives to collect and recycle:

- PVC cutting waste from construction plants;
- End-of-life Looselay Heterogeneous Vinyl, Looselay LVT, Click LVT;
- Polyamide Tufted Carpet Tiles to extract minerals from the backing, which will be recycled into raw material for cement production and new energy.

IVC Product	BREEAM Wst01 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	++

WST 04 SPECULATIVE FINISHES

AIM

To encourage the specification and fitting of finishes selected by the building occupant and therefore avoid unnecessary waste of materials.

PARAMETERS (1 Credit)

- For tenanted office areas prior to full fit-out works, carpets, other floor finishes and ceiling finishes have been installed in a show area only;
- In an office building developed for a specific occupant, that occupant has selected the specified floor and ceiling finishes;
- For multiple dwellings (where the future occupant is not known), floor, kitchen and bathroom finishes have been installed in a show area only;
- In a residential building, future occupants have selected at least three of the specified floor, kitchen and bathroom finishes.

IVC APPROACH

It's always the building's user or tenant who has the final word about the floor finish. IVC, as the supplier of floors, is well-placed to advise its clients in gaining this BREEAM credit.

IVC Product	BREEAM Wst04 credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

WST 06 FUNCTIONAL ADAPTABILITY

AIM

To recognize and encourage measures taken to accommodate future changes of use of the building over its lifespan.

PARAMETERS

- Functional adaptability (1 Credit):
 - A building-specific functional adaptation strategy study;
 - Functional adaptation measures have been implemented in the design.

IVC APPROACH

IVC Group designs floorings and flooring systems which allow for multiple usage during its lifetime, because they can be installed without adhesives. All these products score high in functional adaptability: LVT Click, LVT looselay, LayRed, Heterogeneous Vinyl looselay, Cushion Vinyl with polyester backing or LVT dryback on Accessories Symbio / Flexpro and Carpet Tiles.

IVC Product	BREEAM Wst06credits	Product suitability
Carpet Tiles	1	+++
Luxury Vinyl Tiles	1	+++
Heterogeneous Vinyl	1	+++
Accessories	1	+++

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