Troldtekt®
Acoustic Solutions since 1935
By Kingspan

BREEAM INT New Construction

Documentation package
Technical Manual – SD6073, Version 7.0.0

Content

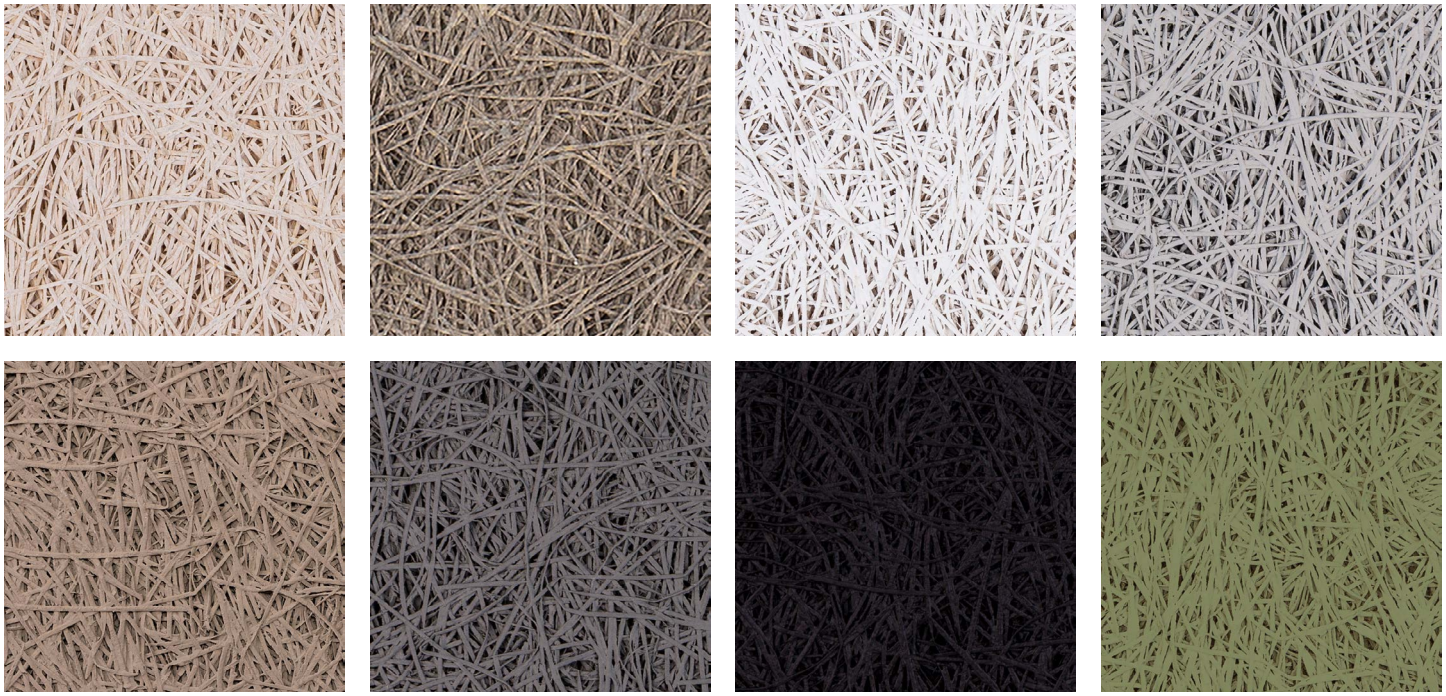
Content in the documentation folder

This documentation package for Troldtekt describes the possible positive contribution to a sustainability certification according to the BREEAM INT Version 7. for New Construction. This documentation package is not a sustainability certification or a BREEAM-certification of Troldtekt's products, but a collection of the documents and information that can be used to document the material in connection with a certification. The primary responsibility for documentation lies with the contractor, however this document offers supplementary information that can contribute to fulfilling the assessment criterions.

Construction materials can be used in different ways and must meet different requirements. Thereby, this documentation package can't be considered as a certification for construction materials, but more as a well-structured information about the product and its properties. This transparency gives contractors, engineers, and architects the basis to choose the right products for their needs.

Troldtekt acoustic panels consist of the natural material wood and cement extracted from the Danish subsoil. The combination of wood and cement creates Troldtekt's unique sound-absorbing properties and ensures good acoustics in the architecture. The material has a natural strength, withstands humid environments and at the same time provides effective fire protection. Troldtekt acoustic panels are a natural product and are documented sustainably throughout the product's life cycle.

When you choose to integrate Troldtekt boards in your building, you also ensure a building with good acoustics, a healthy indoor climate, documented sustainability, effective fire protection, natural strength, and flexible design options. It is a product that offers several acoustic solutions, based on the choice of surface structure, edge profile, suspension, color, plate size and plate expression.



These photos illustrate some of the colors for Troldtekt's panels

BREEAM – Management

Assessment issue	BREEAM's assessment aim	Troldtekt's contribution	Resources
Man 02 Life cycle cost and service life planning	"To deliver whole life value by encouraging life cycle costing and service life planning. This entails improving design, project specification, life-cycle maintenance and operation. Additionally, this issue emphasizes the importance of transparent capital cost reporting to promote economic sustainability" [1].	The required documentation is mainly aimed at the contractor, but Troldtekt can provide supportive data for point achievement for the Life Cycle Cost (LCC) plan. Troldtekt acoustic panels usually require no care, but regular cleaning is recommended. Troldtekt is a robust material with a long lifetime of at least 60 years but reduced if the panels are used in acidiferous or chlorine containing environments. The panels are easy and cheap to install and with no maintenance costs as- sociated with the product. End of life costs associated with the product are for crushing the plates and composting or recycling the materials as a new resource in the production of cement. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Use and maintenance document** **Environmental product declaration (EPD)** **Take back instructions** **Installation guide**
Man 04 Commissioning and handover	"To encourage a properly planned handover and commissioning process that reflects the needs of the building occupants" [1].	To achieve credits in commissioning and handover, a building user guide for the facilities managers must be developed, including Refit, refurbishment and maintenance arrangements or considerations. In relation to handover and when using Troldtekt products in the building, a fully documented product is used. Comprehensive guidance on maintenance, replacement, and recycling can be provided. This ensures that all relevant information can be included in the building's operation and maintenance manual for easy access by facility managers and building users. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Use and maintenance document** **Installation guide** **Take back instructions** **CE Certified** **Declaration of Performance (DoPs)**

[1] BREEAM New Construction – INT Version 7.0.0

BREEAM – Health and wellbeing

Assessment issue	BREEAM's assessment aim	Troldtekt's contribution	Resources
Hea 01/02 Natural/Artificial light	"Hea 01) To ensure daylighting is considered at the design stage and ensure best practice in visual performance, visual comfort, and overall wellbeing for building occupants" [1]. "Hea 02) To ensure artificial lighting and occupant controls are considered at the design stage to ensure best practice in visual performance, visual comfort, and overall wellbeing for building occupants"[1].	Credits in this category can be achieved through an acceptable level of daylighting, control of glare, and appropriate light reflectance. The color of the ceiling affects the lighting requirements, as the ceiling's light reflectance influences the amount of light needed for the ceiling cladding. Troldtekt acoustic panels easily integrate lighting solutions to maintain even brightness distribution across the ceiling. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Reflectance level of panel**
Hea 04 Indoor Air Quality	"To recognise and encourage a healthy internal environment with excellent indoor air quality" [1].	Credits in Indoor Air Quality can be achieved by meeting ventilation requirements and ensuring that products comply with BREEAM standards, including minimum classification class of formaldehyde- E1. Troldtekt panels are tested by Eurofins and meet BREEAM's material emission limits, with a focus on VOCs and formaldehyde; Troldtekt is classified as formaldehyde class E1. The panels do not contain boron or plasticizers, and the paint used for the acoustic panels is water-based with no added solvents. Additionally, Troldtekt panels can be integrated with ventilation systems. For more information and to ensure the newest documentation for, please visit: **Downloads**	**M1 classification** **Allergy Friendly Product-Certificate Danish Indoor** **Climate Labelling certificate** **Der Blaue Engel certificate** **Datasheets and VOC-content** **Troldtekt ventilation**
Hea 06 Acoustic performance	"To ensure the building provides an appropriate acoustic environment to enhance the comfort of building users" [1].	The BREEAM credits for acoustic performance address specific requirements for sound insulation, indoor ambient noise levels, and reverberation times. Troldtekt's solutions are sound-absorbing and help reduce reverberation time, thereby contributing positively to acoustic comfort. To support this, Troldtekt offers an acoustic calculator that provides a quick overview of a room's acoustics, including calculations of absorption area, reverberation time, and other relevant acoustic parameters. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Ceilings (Sound absorption values)** **Walls (Sound absorption values)** **Calculator (Acoustics)**

[1] BREEAM New Construction – INT Version 7.0.0

BREEAM – Materials

Assessment issue	BREEAM's assessment aim	Troldtekt's contribution	Resources
Mat 01 Building life cycle assessment (LCA)	"To optimise the use of materials and reduce the environmental burden of construction products over the life cycle of the building" [1].	Troldtekt provides Environmental Product Declarations (EPDs) for the majority of the assortment of Troldtekt panels and can therefore support documentation for purpose of Life Cycle Assessment (LCA) and Life Cycle Costing (LCC) with relevant third-party verified data. For more information about Troldtekt energy-saving and circular initiatives, which has impacted the EPD's and to ensure the newest documentation for, please visit: **Downloads**	**Environmental product declaration (EPD)** **Cradle to Cradle Certification** **Take back instructions** **ESG report**
Mat 02 Environmental product declarations (EPD)	"To encourage availability of robust and comparable data on the impacts of construction products through the provision of environmental product declarations (EPD)" [1].	Credits in this category can be achieved by using building components with documented Environmental Product Declarations (EPDs). Troldtekt can provide EPDs for the majority of the assortment of Troldtekt's panels. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Environmental product declaration (EPD)** **ESG report**
Mat 03 Responsible sourcing of construction products	"To ensure construction products that end up in the completed asset minimise negative environmental, economic, and social impacts across their supply chain"[1].	To achieve credits for responsible sourcing, a prerequisite is legal harvested and traded site timber. Troldtekt timber is FSC and PEFC certificated. Troldtekt provides effective rules for all major suppliers and focus to achieve a sustainable purchasing policy throughout the supply chain. Furthermore, Troldtekt is committed to the UN Global Compact that helps driving and directing guidelines for Troldtekts CSR initiatives. For more information and to ensure the newest documentation for, please visit: **Downloads**	**FSC and PEFC certification** **Troldtekt Supplier Policy** **ESG report**
Mat 05 Material efficiency	"To recognise and encourage measures to optimise material efficiency to minimise the environmental impact of material use and waste without compromising on structural stability, durability or service life of the building" [1].	Breeam credits can be appointed if material efficiency opportunities are utilized. This includes, using materials that can be recycled or reused at the end of their service life and designing for deconstruction and material reuse. Troldtekt panels are made of 100% natural raw materials and are biodegradable and recyclable. Troldtekt are Cradle to Cradle-certified with focus on e.g., Material reutilization as well as Take-Back Service Agreements. Furthermore, the panels offer a high potential of reuse since they can be easily uninstalled (often installed using screws) and thereby sold and reused in another construction and thereby help reduce waste. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Cradle to Cradle Certification** **Recycling instructions** **Take back instructions**

[1] BREEAM New Construction – INT Version 7.0.0

BREEAM – Waste

Assessment issue	BREEAM's assessment aim	Troldtekt's contribution	Resources
WST 01 Construction waste management	"To promote resource efficiency via the effective and appropriate management of construction waste" [1].	Troldtekt acoustical panels are both biodegradable and recyclable providing that the product is grinded into small pieces. Troldtekt are Cradle to Cradle- certified with focus on e.g., Material reutilization as well as Take-Back Service Agreements. Furthermore, the panels offer a high potential of reuse since they can be easily uninstalled (often installed using screws) and thereby sold and reused in another construction. The packaging consists of cardboard and/or foil wrap (plastic). Both waste groups can be recycled on the construction site, however, there is a tendency to recycle the cardboard and incinerate the foil wrap. Packages are delivered on wooden pallets that are returned to Troldtekt and reused. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Cradle to Cradle Certification** **Take back instructions** **ESG report**
WST 06 Design for disassembly and adaptability	"To minimize costs and use of materials due to future adaptations and to promote circular economy principles" [1].	Credits for Wst 06 can be achieved by exploring different designs scenarios potential of adaptation and disassembly and creating a disassembly and adaptability manual. Troldtekt panels contributes to multifunctional design solutions and provide full flexibility and adaptability when rebuilding or designing new. Disassembly, reuse and recycling are possible with Troldtekt acoustic panels. The panels offer a high potential of reuse since they can be easily uninstalled (often installed using screws) and thereby sold and reused in an- other construction. They are easy to handle and move and thereby very adaptable. Moreover, the panels can be repainted and customized in various configurations. For more information and to ensure the newest documentation for, please visit: **Downloads**	**Recycling instructions** **Flexible design options** **Take back instructions**

[1] BREEAM New Construction – INT Version 7.0.0