LEED V4: 2016 Declaration

Product Data for Certification
Knauf Danoline acoustical materials & Knauf boards for ceilings and walls

These products are manufactured and supplied by:

Knauf A/S,
Kloevermarksvej 6,
9500 Hobro,
Denmark
www.knauf.dk

In connection with LEED approval v4 of the above, Knauf A/S makes the following declaration for use in achieving LEED credits.

Hobro, August 2020-

Erik Flink Ipsen
Head of R&D, Knauf Danoline

LEED V4 2016 credit opportunities using Knauf solutions:

The opportunities for Knauf gypsum-based, acoustic wall and ceiling solutions to contribute to earning credits are found in the following V4 LEED Categories:

For the following LEED Rating systems:

- **New Construction and Major Renovation**
- **Schools New Construction and Major Renovation**
- **Core and Shell Development**
- **Commercial interiors**

Materials and resources

LEED Credit Category Code	Definition	Knauf Danoline products contribution	Contributes towards
1.Materials and resources (MR) Building life cycle impact reduction	Materials that last for long time without missing its basic properties.	The Knauf Danoline & Knauf products have been on the market more than 60 years, tests have showed that the material have the same properties today like when it have been installed. This means that the material can be moved to another destination and still have the same properties.	**5**
2.Materials and resources (MR) Building product disclosure and optimization (EPD)	Properties that shows the environmental impact from production and transportation	Third party verified Environmental Product Declarations (EPDs) are available online for Knauf Danoline & Knauf products	**2**
3.Materials and resources (MR) Building product disclosure and optimization – sourcing of raw materials	Do our raw materials positive or negative effect the naturel	The Knauf board is primary based on gypsum CaSO4 ,H20 The recycled content can be up to 80% - but because of limited source the recycled contends are 20-25% today	**2**
4.Materials and resources (MR)	Products which are on dangerous list can affect the human being, and affect	All the materials which is used do not contain any	**2**

Building product disclosure and optimization – material ingredience	cancer, allergic reactions or like.	parts which are on the a dangerous REACH list In our design manual is a demand that the product can be recycled , this means all materials can be reused or composed	
5.Materials and resources (MR) Construction and demolition waste management	Do the material goes to landfill or can it be reused	The processing of boards gives waste, just as on building sites. To service the building sites there are collection stations, which are crushing down the materials, the crystallic (as plaster, silicate glue) part goes back in the production, the organic part (as cardboard, paint) is used for composing foodstuff. Production waste are used in the same way in our intern system.	**2**

Indoor Environment Quality

2. Indoor Environment Quality (IAQ) Low Emitting Materials	To reduce the concentration of VOC that can damage the human health productivity and the environment. Walls and ceilings release of VOC can affect the air qualities	Knauf products materials are tested as E1 low Emitting materials	**3**
4. Indoor Environment Quality (IAQ) Indoor Air quality Assessment	To reduce emitting from other materials the ceiling and wallboards are mixed in materials that have an air cleaning effect, which have a good effect on rooms with human concentrated.	The Knauf Danoline gypsum core is with built in air cleaning properties by using Zeolite known as Cleaneo effect	**2**
9.Indoor Environment Quality (IAQ) Acoustic performance	To provide workplaces and classrooms that promote well-being productivity and communicate through effective acoustic design	Knauf Danoline have high acoustic performance, and can be used as a primary ventilation ceiling	**1**

10. Evaluation summary

Parameter	Emission 28 days (mg/m^2h)	Requirement (mg/m^2h)
TVOC	0.084	< 0.20
Formaldehyde	0.005	< 0.05
Ammonia	< 0.03	< 0.03
Carcinogens*	< 0.001	< 0.005
Odour	Acceptable	Is not odorous

* The emission of carcinogenic compounds belonging to category 1A or 1B in Annex VI to Regulation (EC) No 1272/2008.

Based on chemical analyses and sensory evaluation the product can obtain the M1 Emission Class for Building Materials.

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Results of the testing and statement of the applied methods are stated on pages 2-6 and they only concern the tested specimens. Extracts from the report may only be published, if the laboratory has approved the extract.

Date/place: 2014.04.14, Danish Technological Institute, Wood Technology, Taastrup

Helene Klinke
Test responsible

Lis Winther Funch
Consultant