

KNAUF



Life Cycle Impact Reduction Action Plan

For LEED version 4.1 credit:
Environmental Product Declarations, Option 2
(BD+C and ID+C rating systems)

Company:

Knauf di Knauf S.r.l S.a.s

Products Included:

***Knauf Fugenfuller
Advanced Joint Filler -
Gypsum based***

Build on us.

Life Cycle Impact Reduction Action Plan Report

Impact information and Reduction Summary

Manufacturer:	Knauf di Knauf S.r.l S.a.s																												
Manufacturer Contact Information:	paola.andrisano@knauf.com																												
Product Name:	Knauf Fugenfuller Advanced Joint Filler - Gypsum based manufactured by Knauf di Knauf S.r.l S.a.s.																												
Product Type:	Commercial Building Product																												
Product Description:	Building product designed for use in the residential sector																												
Location where the product was manufactured:	Gambassi Terme (FI), Italy																												
Title of the Life Cycle Assessment/ Environmental Product Declaration that the Assessment is Based Upon:	Life Cycle Assessment della famiglia di stucchi per giunti Fugenfüller. Prodotti da: Knauf di Knauf S.r.l S.a.s. Stabilimento di Gambassi Terme (FI), Italia																												
Life Cycle Assessment/ Environmental Product Declaration Type:	<input type="checkbox"/> Publicly available, critically reviewed LCA (conforming to ISO 14044) <input type="checkbox"/> Internally verified LCA with a product specific EPD (conforming to ISO 14025, EN 15804, or ISO 21930) <input checked="" type="checkbox"/> Product specific Type III EPD (external verification of LCA and EPD)																												
Link to publicly available LCA or EPD	https://sostenibilita.knauf.it/EPD.aspx																												
LCA Framework/PCR	PCR 2019:14 Construction products and construction services, Version 1.2.5.																												
Date of LCA or EPD:	EPD 2023/02/14																												
Scope:	<table border="1"> <thead> <tr> <th>Product stage</th> <th>Construction process stage</th> <th colspan="2">Use stage - No impacts</th> <th>End of Life stage</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> A1</td> <td><input checked="" type="checkbox"/> A4</td> <td><input type="checkbox"/> B1</td> <td><input type="checkbox"/> B5</td> <td><input checked="" type="checkbox"/> C1</td> </tr> <tr> <td><input checked="" type="checkbox"/> A2</td> <td><input checked="" type="checkbox"/> A5</td> <td><input type="checkbox"/> B2</td> <td><input type="checkbox"/> B6</td> <td><input checked="" type="checkbox"/> C2</td> </tr> <tr> <td><input checked="" type="checkbox"/> A3</td> <td></td> <td><input type="checkbox"/> B3</td> <td><input type="checkbox"/> B7</td> <td><input type="checkbox"/> C3 - Not applicable</td> </tr> <tr> <td></td> <td></td> <td><input type="checkbox"/> B4</td> <td></td> <td><input checked="" type="checkbox"/> C4</td> </tr> </tbody> </table>	Product stage	Construction process stage	Use stage - No impacts		End of Life stage	<input checked="" type="checkbox"/> A1	<input checked="" type="checkbox"/> A4	<input type="checkbox"/> B1	<input type="checkbox"/> B5	<input checked="" type="checkbox"/> C1	<input checked="" type="checkbox"/> A2	<input checked="" type="checkbox"/> A5	<input type="checkbox"/> B2	<input type="checkbox"/> B6	<input checked="" type="checkbox"/> C2	<input checked="" type="checkbox"/> A3		<input type="checkbox"/> B3	<input type="checkbox"/> B7	<input type="checkbox"/> C3 - Not applicable			<input type="checkbox"/> B4		<input checked="" type="checkbox"/> C4	<input type="checkbox"/> Module D: Future, reuse, recycling or energy recovery potentials – Not applicable		
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Describe how the scope of the product LCA or EPD aligns with actions identified in this Action Plan	The Knauf Group has set important targets in terms of reducing the environmental impacts of all its production activities. The themes on which these goals are identified are: circular economy, reduction of CO ₂ emissions, reduction of chemicals in products, and reduction of water and energy consumption.																												
LCA Software and Version:	SIMAPRO 9.4																												
LCA Dataset:	Ecoinvent 3.8 Database																												
Action Plan Creation Date:	December 01, 2023																												
Action Plan Expiration Date: (must be 4 years or less)	April 22, 2025																												
Is this Action Plan applicable to all products listed in the corresponding LCA or EPD, or only a subset?	Yes, 100%. The Action Plan is applicable to Knauf Fugenfuller Advanced Joint Filler – Gypsum Based indicated in the corresponding EPD manufactured by Knauf di Knauf S.r.l S.a.s. since the Gambassi Terme (FI) facility is our only manufacturing location for this product.																												

Table or Summary of Largest Life Cycle Impacts identified in the Analysis (must include GWP):

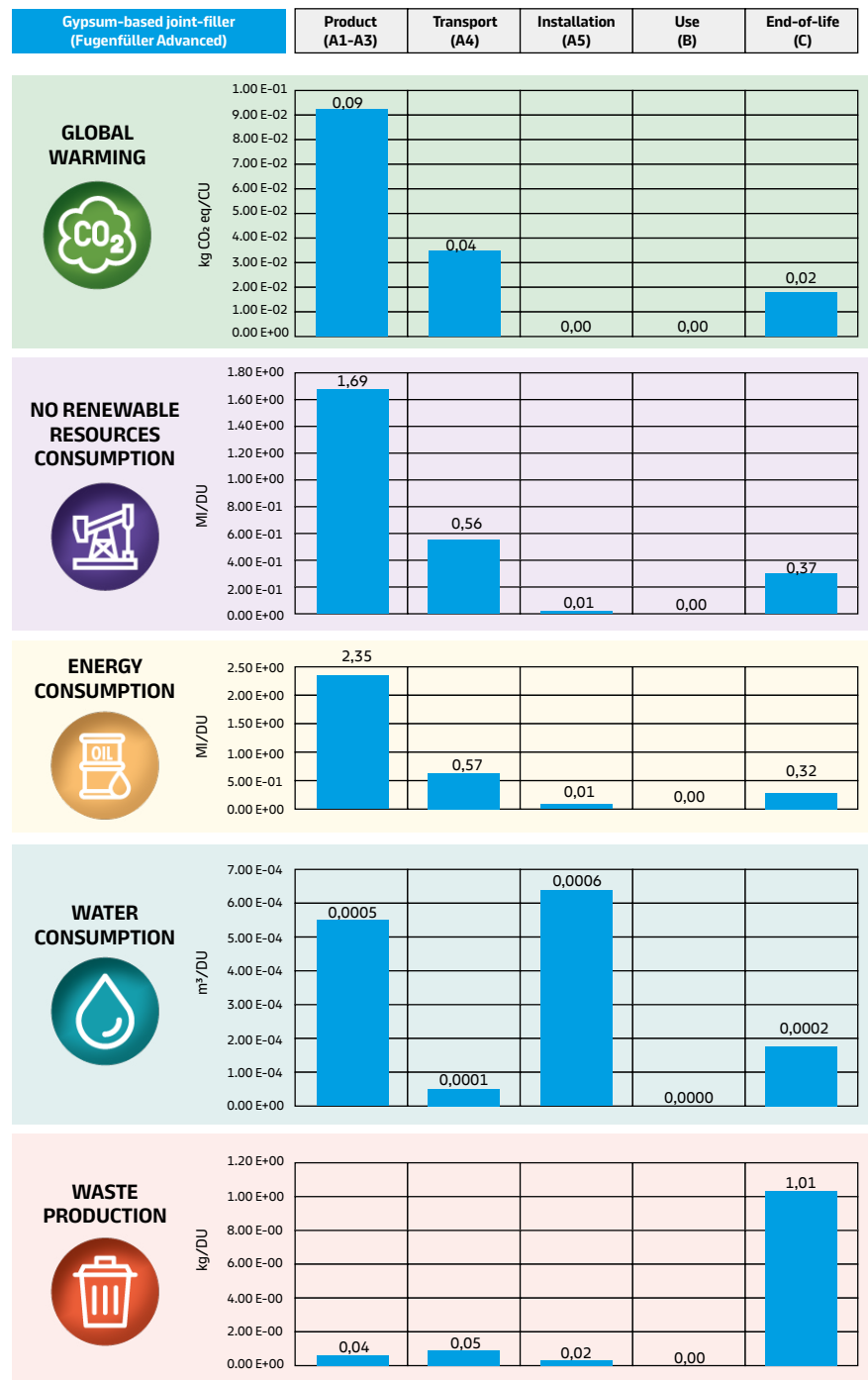


Figure 1 - The impact of Knauf Fugenfüller Advanced for each life cycle stage on 5 key parameters.

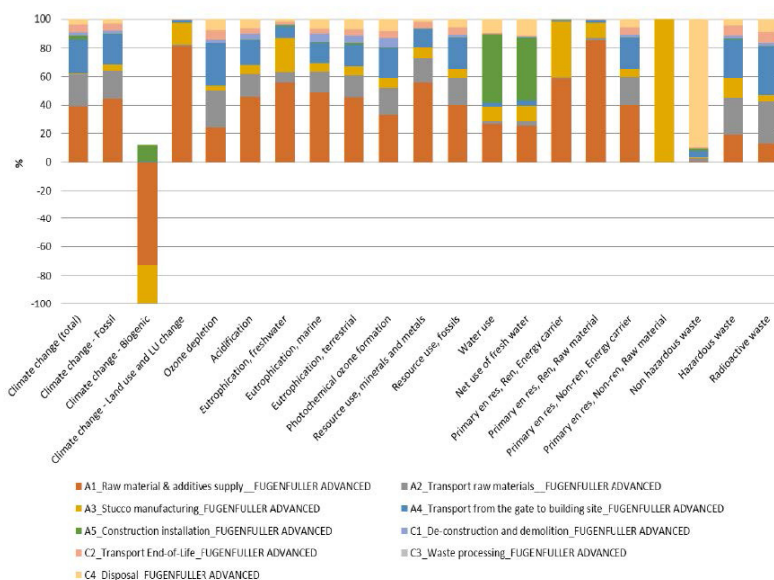


Figure 2 - Percentage contribution of life cycle stages (modules A-C) referring to 1kg of Fugenfüller Advanced (representative product).

The main contribution to the environmental impact categories in the product life cycle comes from extraction and processing of raw materials (module A1). Its relative contribution is over 70% in some categories (such as climate change-biogenic, climate change-land use, renewable primary energy resources used as raw material). The production stage (module A3) is relevant especially for the climate change-biogenic, with a negative contribution due to the packaging components, eutrophication freshwater, renewable primary energy resources used as energy carrier. In terms of climate change module A5 gives a relevant contribution especially in the biogenic carbon impact category.

This is due to the disposal of the packaging that is the principal responsible of the biogenic carbon content. Distribution of finished product (transport in module A4) has relevant importance in terms of climate change-fossil, ozone depletion, photochemical ozone formation, depletion of abiotic resources- fossils, hazardous waste, radioactive waste. By contrast, transport in module A2 has an average contribution of 14% whereas the module C2 contributes only 7% at maximum. The installation phase (module A5) has a negligible contribution to the impact categories, less than 2%, except for net use of fresh water and water use where it contributes up to a maximum of 48%.

About total energy consumption, the product stage (modules A1 - A3) has the highest contribution to this indicator, with a maximum percentage of 85%. The effect of disposal life cycle stage has a contribution less than 11% on life cycle impacts, except for non-hazardous waste where the contribution of gypsum joint-filler disposal (module C4) to the overall results is 90%.

<p>Narrative Description of the Impact Areas Targeted for Reduction (must include specific steps, dates, and timeline for completion, and include why/why not GWP is targeted for reduction and include a numeric impact reduction target. Actions must correspond to impact modules analyzed in the LCA or EPD):</p>	<p>The Sustainability project in Knauf involved the setting up of eight working groups with the aim of defining a shared strategy covering different topics: the circular economy, the reduction of chemicals and the amount of water used in factories, the goal of zero waste sent to landfill and the reduction of CO₂ emissions covering all three scopes. In order to achieve the targets, set in the area of emissions, Knauf has mapped all its factories worldwide with the aim of gaining a detailed knowledge of CO₂ emissions, both per individual production site and in overall terms. The monitoring is necessary to identify critical areas and implement measures to reduce emissions.</p> <table border="1" data-bbox="592 483 1214 842"> <thead> <tr> <th>GOALS</th> <th>KPI</th> </tr> </thead> <tbody> <tr> <td>CO₂ Emission (Scope 1&2)</td> <td>50% reduction by 2032</td> </tr> <tr> <td>CO₂ Emission (Scope 3)</td> <td>30% reduction by 2032</td> </tr> <tr> <td>CO₂ Emission (Scope 1, 2 & 3)</td> <td>Net zero by 2045</td> </tr> <tr> <td>Circular Economy</td> <td>Promoting the circular economy in all plants</td> </tr> <tr> <td>Chemicals of concern</td> <td>Zero products containing chemicals by 2032</td> </tr> <tr> <td>Waste</td> <td>Zero waste sent to landfill by 2032</td> </tr> <tr> <td>Water</td> <td>2% annual reduction in water resource consumption</td> </tr> </tbody> </table>	GOALS	KPI	CO ₂ Emission (Scope 1&2)	50% reduction by 2032	CO ₂ Emission (Scope 3)	30% reduction by 2032	CO ₂ Emission (Scope 1, 2 & 3)	Net zero by 2045	Circular Economy	Promoting the circular economy in all plants	Chemicals of concern	Zero products containing chemicals by 2032	Waste	Zero waste sent to landfill by 2032	Water	2% annual reduction in water resource consumption
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<p>This Action Plan was prepared by: (must be prepared by someone with experience conducting product-specific LCAs)</p>	<p>Marharyta Litvinava - Sustainability Specialist</p>																
<p>This Action Plan was confirmed by an executive of the manufacturer:</p>	<p>Paola Andrisano - Sustainability Manager</p>																



KNAUF di Knauf S.r.l. s.a.s.

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