



# ***Life Cycle Impact Reduction Action Plan***

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

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*Company:*

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

*Products Included:*

***GKF 12,5-15 mm  
plasterboards***

***Build on us.***

## Life Cycle Impact Reduction Action Plan Report

### Impact information and Reduction Summary

<b>Manufacturer:</b>	Knauf di Knauf S.r.l S.a.s				
<b>Manufacturer Contact Information:</b>	<a href="mailto:paola.andrisano@knauf.com">paola.andrisano@knauf.com</a>				
<b>Product Name:</b>	GKF 12,5-15 mm plasterboard, manufactured by Knauf di Knauf S.r.l. S.a.s.				
<b>Product Type:</b>	Commercial Building Product				
<b>Product Description:</b>	Building product designed for use in the residential sector				
<b>Location where the product was manufactured:</b>	Castellina Marittima (PI), Italy				
<b>Title of the Life Cycle Assessment/ Environmental Product Declaration that the Assessment is Based Upon:</b>	Life Cycle Assessment delle lastre in cartongesso: GKB, GKI, GKF, A-ZERO, F-ZERO, DIAMANT, KASA, FLEXILASTRA Prodotti da: Knauf di Knauf S.r.l. S.a.s. Stabilimento di Castellina Marittima (Pisa), Italia				
<b>Life Cycle Assessment/ Environmental Product Declaration Type:</b>	<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)				
<b>Link to publicly available LCA or EPD</b>	<a href="https://sostenibilita.knauf.it/EPD.aspx">https://sostenibilita.knauf.it/EPD.aspx</a>				
<b>LCA Framework/PCR</b>	PCR 2012:01 Construction products and construction services, Version 2.3				
<b>Date of LCA or EPD:</b>	EPD 2020/05/06				
<b>Scope:</b>	<i>Product stage</i>	<i>Construction process stage</i>	<i>Use stage - No impacts</i>		<i>End of Life stage</i>
	<input checked="" type="checkbox"/> A1 <input checked="" type="checkbox"/> A2 <input checked="" type="checkbox"/> A3	<input checked="" type="checkbox"/> A4 <input checked="" type="checkbox"/> A5	<input type="checkbox"/> B1 <input type="checkbox"/> B2 <input type="checkbox"/> B3 <input type="checkbox"/> B4	<input type="checkbox"/> B5 <input type="checkbox"/> B6 <input type="checkbox"/> B7	<input checked="" type="checkbox"/> C1 <input checked="" type="checkbox"/> C2 <input type="checkbox"/> C3 - Not applicable <input checked="" type="checkbox"/> C4
	<input type="checkbox"/> Module D: Future, reuse, recycling or energy recovery potentials – <b>Not applicable</b>				
<b>Describe how the scope of the product LCA or EPD aligns with actions identified in this Action Plan</b>	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 <sub>2</sub> emissions, reduction of chemicals in products and reduction of water and energy consumption.				
<b>LCA Software and Version:</b>	SIMAPRO 9				
<b>LCA Dataset:</b>	Ecoinvent 3.5 Database				
<b>Action Plan Creation Date:</b>	November 29, 2023				

<b>Action Plan Expiration Date:</b> (must be 4 years or less)	April 22, 2025																																																																																																																																																																																																																																					
<b>Is this Action Plan applicable to all products listed in the corresponding LCA or EPD, or only a subset?</b>	Yes, 100%. The Action Plan is applicable to all plasterboard thicknesses indicated in the corresponding EPD manufactured by Knauf di Knauf S.r.l. S.a.s. since the Castellina Marittima (PI) facility is our only manufacturing location for this product.																																																																																																																																																																																																																																					
<b>Table or Summary of Largest Life Cycle Impacts identified in the Analysis (must include GWP):</b>	<table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="2">2020</th> <th colspan="2">2022</th> <th colspan="2">2020/2022</th> </tr> <tr> <th>GKF 12,5 mm</th> <th>GKF 15 mm</th> <th>GKF 12,5 mm</th> <th>GKF 15 mm</th> <th colspan="2">%</th> </tr> </thead> <tbody> <tr> <td rowspan="6"> <b>GLOBAL WARMING</b>            KG CO<sub>2</sub> EQ/DU         </td> <td>Product A1-A3</td> <td>2,54</td> <td>3,38</td> <td>2,53</td> <td>3,13</td> <td></td> <td></td> </tr> <tr> <td>Transport A4</td> <td>0,65</td> <td>0,84</td> <td>0,64</td> <td>0,803</td> <td></td> <td></td> </tr> <tr> <td>Installation A5</td> <td>0,07</td> <td>0,07</td> <td>0,06</td> <td>0,06</td> <td></td> <td></td> </tr> <tr> <td>Use (B)</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>End of cycle (C)</td> <td>0,13</td> <td>0,16</td> <td>0,13</td> <td>0,16</td> <td></td> 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Figure 1 - Comparison of potential environmental impacts between 2020 and 2022, values referring to 1 m<sup>2</sup> of GKF 12,5-15 mm plasterboard

Figure 1 illustrates the changes in the five environmental impacts categories with reference to the years 2020 and 2022. The percentage number on the left refers to the difference between the total GKF 12.5 mm in 2020 and the total GKF 12.5 mm in 2022. The percentage number on the right follows the same pattern but with reference to GKF 12.5 and 15 mm. Overall, the environmental performance of 12.5 mm GKF and 15 mm GKF improved between the two reference years. Only Non-Renewable Resource Consumption category referring to 12.5 mm GKF and Waste Production of 15 mm GKF did not change. Regarding the Energy Consumption item, the yellow number refers to a small variation that did not result in a change in EPD. This change may be caused by improved quality of the input data or an update of the modeling software.

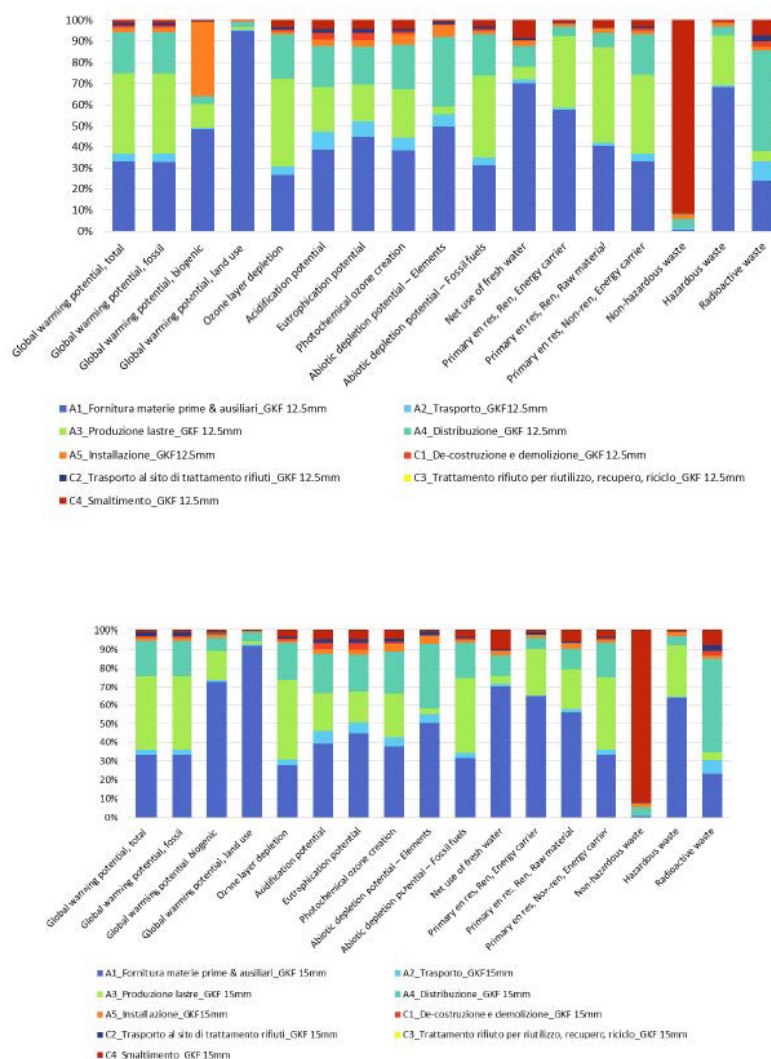


Figure 2 - Impacts by life cycle stages referred to 1 m<sup>2</sup> of GKF 12,5-15 mm plasterboard.

The following interpretation refers to Knauf GKF 12.5mm plasterboard sheet. However, the statements in general are also valid for GKF sheet with thickness 15mm. In Figure 2 most of the impacts are in the upstream and core phases. The processes that contribute the most to impacts are the raw material supply/useful materials and slab production phase (modules A1-A3), with contributions ranging from 67% to 96% for all impact categories.

This is followed by the distribution phase (Transport in module A4) of the finished product with an average percentage of 16%. Regarding transportation in modules A2 and C2, the contribution to impacts is no more than 9%. The installation phase (Form A5) has a negligible contribution on the impact categories, less than 5%. Regarding total energy consumption, the stages of raw material supply/supply and plasterboards production (modules A1 - A3) contribute the most, with a maximum percentage of 92%. The same trend in results occurs about the category of Water Resource consumption, in which modules A1 - A3 are the largest contributors to impacts, participating with a percentage of 78%.

Since the entire product is sent to landfill, the phase that contributes most to the impacts is the waste landfilling phase (module C4), with an average contribution on the impact categories of 7%. Specifically, regarding the non-hazardous waste category, the contribution of Form C4 goes up to a maximum of 91%.

<p><b>Narrative Description of the Impact Areas Targeted for Reduction</b> (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 CO<sub>2</sub> 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 CO<sub>2</sub> 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="539 452 1297 815"> <thead> <tr> <th>GOALS</th> <th>KPI</th> </tr> </thead> <tbody> <tr> <td>CO<sub>2</sub> Emission (Scope 1&amp;2)</td> <td>50% reduction by 2032</td> </tr> <tr> <td>CO<sub>2</sub> Emission (Scope 3)</td> <td>30% reduction by 2032</td> </tr> <tr> <td>CO<sub>2</sub> Emission (Scope 1, 2 &amp; 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 <sub>2</sub> Emission (Scope 1&2)	50% reduction by 2032	CO <sub>2</sub> Emission (Scope 3)	30% reduction by 2032	CO <sub>2</sub> 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><b>This Action Plan was prepared by:</b> (must be prepared by someone with experience conducting product-specific LCAs)</p>	<p>Marharyta Litvinava - Sustainability Specialist</p>																
<p><b>This Action Plan was confirmed by an executive of the manufacturer:</b></p>	<p>Paola Andrisano - Sustainability Manager</p>																



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

**Sede legale e Stab.to: Castellina Marittima (PI)** - 56040 Via Livornese 20  
Tel. 050 69211 - Fax 050 692301

**Stab.to Gambassi Terme (FI)** - 50050 Località Treschi  
Tel. 0571 6307 - Fax 0571 678014

**Knauf Milano - Rozzano (MI)** - 20089 Via Alberelle, 72  
Tel. 02 52823711 - Fax 02 52823730

C.F. e CCIAA di Pisa 00050890524 - P.I. 02470860269 - R.E.A. 115078 -  
Cod. Dest. SDI CS8NOAM - Cap. Soc. Int. Vers. Euro 20.000.000  
UNICREDIT SPA - Roma - IBAN IT10K0200805364000102098066  
BIC/Swift UNCRITMM

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