



How to Use Custom Materials in the Materials Tab

I. INTRODUCTION

The "Materials" section of the EDGE app includes a feature where users can input the embodied carbon for custom materials. This is useful when the pre-set material options don't match the actual materials used in the project or when the materials can't be accurately described by the available choices.

To use this custom material feature, you need to:

1. Calculate the total weight or volume of the material you're using.
2. Enter the material's embodied carbon value in kilograms of CO₂ per square meter (kg CO₂/m²) into the designated field in the app.

Once you've provided this information, EDGE will automatically calculate the total embodied carbon for that element of your project.

II. ELIGIBILITY REQUIREMENTS

If you can't find a material in the user guide or if it can't be precisely defined by its thickness (in millimeters) and steel rebar content (in kilograms per square meter)—for instance, with complex truss structures in roofs—you can follow the steps outlined in the following section.

III. GUIDANCE FOR CALCULATIONS AND SUBMISSION

How to create a customized material:

1. Calculate the total mass (kg) or volume (m³) of the material type used.
 - Special structural requirements are exempt from this calculation, these may include additional seismic support for certain regions or support required for special operational equipment (e.g. bridge cranes)
2. Divide the total mass (kg) or volume (m³) of the material type by the wall/roof/floor area (m²) to get the material density (kg/m² or m³/m²). For the case of roofs, use the Aggregate Roof Area (m²), in the design tab (yellow box).

Design	Energy 1.44%	Water 0.00%	Materials 40.00%	Operations
Gross Internal Area (m ²)	8,000	Gross Internal Area (m ²)	1,000	
No. of Floors Above Grade	6	No. of Floors Above Grade	1	
No. of Floors Below Grade	2	No. of Floors Below Grade	0	
Floor-to-Floor Height (m)	4.0	Floor-to-Floor Height (m)		
Aggregate Roof Area (m ²)	1,000	Aggregate Roof Area (m ²)	1,000	

- Multiply the primary embodied carbon (kg Co₂/kg or kg Co₂/m³) of the material, ideally reported from an EPD or an equivalent document, by the material density (kg/m² or m³/m²) calculated in step 2 to obtain the embodied carbon (**kg Co₂/m²**) and write it in the EDGE App (red box).

Roof Construction

Base Case Material : Metal Roof | Steel Sheets on Steel Rafters
 Thickness : 1mm & Steel : 35kg/m²
 Type 1

Customized Material ▼

Please enter Customized Material used *

MEM04*

Proportion %	Thickness (mm)	Steel Rebar (kg/m ²)
<input type="text" value="100"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

U-Value (W/m ² ·K)	Embodied Carbon (kg/m ²)
<input type="text" value="0.27"/>	<input style="border: 2px solid red;" type="text" value="30"/>

- Set the Thickness (mm) as 0. If additional fields show up, e.g., Steel Rebar (kg/m²), set them as 0 as well. This is to avoid double counting.
- If another type of material is needed, provide the Proportion % for that type, and repeat steps 1 to 4. Percentages should add up to 100%. Be aware that you can at up to two types of materials in the current EDGE version.

EDGE then calculates the relevant area (m²) and multiplies it by the weighted average of the embodied carbon (when more than one type if selected), to get the total embodied carbon of the customized material.

IV. QUESTIONS

For questions, reach out to your respective certifier or email edge@ifc.org.