



# LEED

## CERTIFICATION

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## ANGELA HARRIS DUNMORE COLLECTION

<b>BUILDING DESIGN + CONSTRUCTION: NEW CONSTRUCTION</b>	
<b>Heat island reduction</b> -Option 1. Nonroof and roof -Option 2. Parking under cover	<b>Possible 2 points</b> Possible 2 points Possible 1 point
<b>Open space</b>	<b>Possible 1 point</b>
<b>Minimum energy performance</b>	<b>Required</b>
<b>Optimize energy performance</b> -Option 1 .whole-building energy simulation -Option 2. Prescriptive Compliance: ASHRAE Advanced Energy Desing Guide -Option 3. Systems Optimization	<b>Possible18 points</b> Possible 18 points Possible 6 points Possible 4 points
<b>Building life-cycle impact reduction</b> -Option 3. Buliding and material reuse -Option 4. Whole-building life-cycle assessment	<b>Possible 5 points</b> Possible 4 points Possible 4 points
<b>Building product disclosure and optimization-Sourcing of raw materials</b> Responsible sourcing of raw materials	<b>Possible 2 points</b> Possible 2 points
<b>Building product disclosure and optimization-Material ingredients</b> Option 1. Material ingredient reporting Option 2. Material ingredient optimization	<b>Possible 2 points</b> Possible 1 point Possible 1 point
<b>Construction and demolition waste management planning</b>	<b>Requerid</b>
<b>Construction and demolition waste management</b> Option 1. Diversion Option 2. Reduction of total waste material	<b>Possible 2 points</b> Possible 2 points Possible 2 points
<b>Low-emitting materials</b>	<b>Possible 3 points</b>
<b>Construction indoor air quality management plan</b>	<b>Possible 1 point</b>
<b>Indoor air quality assessment</b> Option 2. Air testing	<b>Possible 2 points</b> Possible 2 points
<b>Performance-based indoor air quality design and assesement</b> Tier 1. Contaminant-based IAQ desing Tier 3. Demonstrate IAQ Performance	<b>Possible 7 points</b> Possible 1 point Possible 3 points



## ANGELA HARRIS DUNMORE COLLECTION

Ceramic tiles have a useful life equal to that of the building estimated at more than 50 years, without the need for replacement, repair and/ or replacement, and can be reused in the same place where they were originally placed or in another place (\*).

On the other hand, the inherent innocuousness of ceramic tiles, their inert and sterile nature and sterile nature and low water absorption capacity give them resistance properties against possible damage caused by humidity and mold compared to competing coatings. These characteristics make it possible to greatly simplify the Indoor Air Management Plans during the construction stage and in the stages prior to the occupation of the building, as well as the procedures required for medical centers in relation to infection control and the establishment of precautionary measures necessary. Also, the easy maintenance of ceramic tiles does not require the use of energy; Cleaning can be done simply with a damp cloth and if the surface is dirty or greasy, cleaning agents can be added.

These properties reside in both MAINZU ceramic tiles classified as BIII ( according to the UNE EN ISO 14411:2016 (ISO 13006:2018)). Likewise, MAINZU also performs the Mohs Scale (EN-101), Stain Resistance (ISO 10545-14) and Chemical Resistance (ISO 10545-13) tests, to guarantee the characteristics previously exposed.

For more information on the technical performance of MAINZU tiles and suitability for use, please contact the sales network or through its website <https://www.mainzu.com/>

The specific scores of the Rating System New Construction LEED v4.1. are presented below::

**\* Building life-cycle impact reduction**

OPTION 3. Building and material reuse - Possible 4 points

**Construction indoor air quality management plan** – Possible 1 point

MAINZU CERÁMICA adheres to an **Integrated Container and Packaging Management System** authorized by a contract with the entity ECOEMBALAJES ESPAÑA, S.A. (ECOEMBES) with the number 13787. This adhesion is intended to correct the costs of managing the packaging waste placed on the market in Spanish territory.

In addition, they adhere to the LUCID DASHBOARD management system and to a Return and Return System (SDDR) with the ceramic glaze containers and packaging.

Likewise, on an annual basis, MAINZU makes an **Annual Declaration of packaging** and is also affected by the **Sectorial Prevention Plans**, with annual contributions of preventive measures to advance in the quantitative aspects of prevention, promoting the application of recyclability criteria in the packaging design and content.

For more information, contact through the commercial network or through its website: <https://www.mainzu.com/>

The specific scores of the Rating System New Construction LEED v4.1. are presented below:

**Building product disclosure and optimization - Sourcing of raw materials** – Possible 2 points



# ANGELA HARRIS DUNMORE COLLECTION

Ceramic tiles, in relation to the **REACH Regulation**, do not contain substances of high concern(SVHC).

“Tiles, bricks, tiles crockery, toilets, bricks and refractory pieces and products decorated by third fire, among many others, meet the legal definition of “article”. The mandatory registration of substances contained in articles is only applicable if the substances present in them are intended to be released under condition of normal or reasonably foreseeable use, and therefore NOT applicable to ceramic articles.

Likewise, the notification to ECHA of a substance present in articles must be carried out when the three requirements detailed below are jointly met:

1. Be a Substance of Very High Concern(SVHC) and have been included in the list of Candidate Substances for Authorization.
2. Be present in the articles in a total annual quantity greater than 1 ton/year per producer or importer.
3. Concentration of the substance in the article greater than 0,1% w/w.

Currently, there is no evidence of the presence of any substance included in the list of substances that are candidates for Authorization in ceramic articles, so the notification obligation is not applicable for these products.

Consequently, there is not, at the moment, the obligation to inform customers or consumers about the safe use of articles that contain any substance from said list in a concentration greater than 0,1% w/w.”

*Referencia: El reglamento REACH en el tejido industrial de la Comunitat Valenciana. Valencia: Conselleria d'indústria, comerç i innovació. Generalitat Valenciana, 2009*

The specific scores of the Rating System New Construction LEED v4.1. are presented below

**Building Product Disclosure and Optimization – Material Ingredients**  
 OPTION 2. Material Ingredient Optimization (International Alternative Compliance Path – REACH Optimization) – Possible 1 point

During the construction of the building Project, MAINZU CERÁMICA tiles generate packaging waste and ceramic waste generated in the cutting of pieces.

**Container and packaging waste**

- Cardboard: 96 g/m<sup>2</sup>. Selective separation is recommended for subsequent recycling into other products with the same or different functionalities, including composting or biomethanization.
- Plastic: 23 g/m<sup>2</sup>. Selective separation is recommended for subsequent recycling into other products with the same or different functionalities, including composting or biomethanization.
- Wood: 242,5 g/m<sup>2</sup>. It is suggested to reuse the pallets as many times as possible, with or without the help of repair operations. When it is not possible to extend the useful life of this product, it is considered waste, recommending its recycling, composting or biomethanization.

**Residues from cuts of ceramic pieces**

The amount estimated for this type of waste depends on the design of the building Project, therefore, it is not possible to make an *a priori* estimate of the waste generated.

The waste generated is inert in nature, that is, it does not undergo significant physical, chemical or biological transformations. They are not soluble, nor combustible, nor do they react physically or chemically in any other way, nor are they biodegradable, nor do they adversely affect other materials with which they come into contact in a way that could lead to environmental contamination or harm human health.

In this sense, it is proposed for example, to value waste as a load material in filling operations, substituting other virgin materials such as gravel, which in this type of operations leads to an optimization of the consumption of natural resources.

The specific scores of the Rating System New Construction LEED v4.1. are presented below :

**Construction and Demolition Waste Management Planning - Required**  
**Construction and Demolition Waste Management – Possible 2 points**  
 OPTION 1. Diversion  
 OPTION 2. Reduction of Total Waste Material



# ANGELA HARRIS DUNMORE COLLECTION

Ceramic tiles, in their manufacturing process, are subjected to a thermal process that exceeds 1000°C. At these temperatures, any organic compound present in the compositions decomposes, resulting in an **inert final product free of volatile organic compounds.**

"Inherently nonemitting sources. Product is an inherently nonemitting source of VOCs (stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood) and has no integral organic-based surface coatings, binders, or sealants."

*Referencia: LEED v.4.1*

The installation of MAINZU CERÁMICA ceramic tiles simplifies the measures and plans to improve the indoor air quality in the building, before and during the occupation of the building.

The pollutants emitted during the placement and use stage of these ceramic tiles are detailed in the following table. It should be said that this information applies to ceramic tiles and not to the possible bonding material selected in the construction process.

Limited contaminant in LEED	Declared information about tiles
Formaldehyde	Does not emit formaldehyde
Particles (PM <sub>10</sub> y PM <sub>2,5</sub> )	During the construction stage, MAINZU recommends the use of water jet tile cutters to avoid the emission of particles. During the use stage, they do not emit any type of particles.
Ozone (O <sub>3</sub> )	Does not emit ozone
Total Volatile Organic Compounds	Does not emit Compounds Organic Volatiles. See the "VOC-free producto" sheet.
Carbon Monoxide (CO)	During construction stage, the use of tools that emit CO is not required. During the use stage, they do not emit CO

For more information, contact through the commercial network or through its website <https://www.mainzu.com/>

The specific scores of the Rating System New Construction LEED v4.1. are presented below :

**Low Emitting materials** – Possible 3 points

**Indoor Air Quality Assessment**

OPTION 2. Air Testing – Possible 2 points

**Performance-based indoor air quality design and assessment**

Tier 3. Demonstrate IAQ Performance – Possible 3 points



# ANGELA HARRIS DUNMORE COLLECTION

MAINZU CERÁMICA has carried out a Life Cycle Analysis and an Environmental Product Declaration verified by an independent third party, registered in the GlobalEPD program, administered by AENOR, and which complies with the ISO 14040-44, ISO 14025 and EN 15804 standards :2012+A1:2013. This Environmental Product Declaration has a scope from cradle to grave, that is, it includes the stages of producto (A1-A3), distribución (A4), placemente (A5), use (B1-B7) and end of life (C1-C4).

The Functional Unit considered is "Cover 1 m<sup>2</sup> of a Surface (lining) of a home for 50 years with tile with thicknesses between 7,2 y 13,3 mm".

	AP [kg SO <sub>2</sub> -Equiv.]	ADP-Element [kg Sb-Equiv.]	ADP-fossil [MJ]	GWP [kg CO <sub>2</sub> -Equiv.]	ODP [kg R11-Equiv.]	EP [kg Phosphate-Equiv.]	POCP [kg Ethene-Equiv.]
<b>A1-A3</b>	1,0E-02	3,3E-05	104,8	8,1	1,5E-08	1,9E-03	9,6E-04
<b>A4</b>	2,3E-04	1,9E-08	3,3	2,4E-01	4,0E-17	4,6E-05	3,0E-05
<b>A5</b>	4,2E-04	3,7E-07	1,3	3,1E-01	4,3E-14	1,1E-04	4,3E-05
<b>B2</b>	1,2E-04	3,1E-08	1,0E-01	1,9E-02	1,1E-08	2,9E-05	3,9E-05
<b>C2</b>	6,1E-05	6,0E-09	1,1	7,8E-02	1,3E-17	1,4E-05	8,9E-06
<b>C3</b>	0	0	0	0	0	0	0
<b>C4</b>	3,4E-04	2,1E-08	7,4E-01	5,7E-02	5,8E-14	4,6E-05	2,7E-05
<b>D</b>	-3,5E-04	-5,0E-08	-2,3	-1,3E-01	-1,5E-09	-5,4E-05	-3,3E-05

**AP:** Acidification Potential  
**ADP-elements:** Abiotic Depletion Potential for non-fossil resources  
**ADP-fossils:** Abiotic Depletion Potential for fossil resources  
**GWP:** Global Warming Potential  
**ODP:** Ozone Layer Depletion Potential  
**EP:** Eutrophication Potential  
**POCP:** Photochemical Ozone Creation Potential

Only declared lifecycle modules are displayed

For more information, contact through the comercial network or through its website <https://www.mainzu.com/>

The specific scores of the Rating System New Construction LEED v4.1. are presented below :

**Building Life-cycle impact reduction**

Option 4: Whole-Building life-cycle assessment - Possible 4 points

**Building Product Disclosure and Optimization – Environmental Product Declaration**

Option 1: Environmental Product Declaration - -Possible 1 point



# ANGELA HARRIS DUNMORE COLLECTION

ENVIRONMENTAL PRODUCT SELF-DECLARATION, according to UNE-EN ISO 14021:2017



**Content in pre-consumer recycled material, including water and mineral raw materials**

**37 %**

1m <sup>2</sup> of ceramic tile (group BIII)	Minimum content
Total water content (kg)	29,4
Total solids content (kg)	12,8
New water content (kg)	14,1
Virgin solid content (kg)	12,3
Pre-consumer recycled water content (kg)	15,2
Pre-consumer recycled solids content (kg)	0,5
<b>MINIMUM PRE-CONSUMER RECYCLING CONTENT(%) [X=A/P-100]</b>	<b>37,3%</b>

The specific scores of the Rating System New Construction LEED v4.1. are presented below :

**Building Product Disclosure and Optimization - Sourcing of Raw Materials** – Possible 2 points

MAINZU has files in which the substances and materials present in ceramic tiles are identified, through the CASRN number, both with regard to the support and the glazing materials, thus allowing an inventory of the raw materials used in the manufacture of ceramic tiles.

To obtain this information, please, contact through the commercial network or through its website <https://www.mainzu.com/>

The specific scores of the Rating System New Construction LEED v4.1. are presented below :

**Building Product Disclosure and Optimization – Material Ingredients**

OPTION 1. Material Ingredient Reporting (Inventory indicating CASRN) – Possible 1 point