0106_Muralex

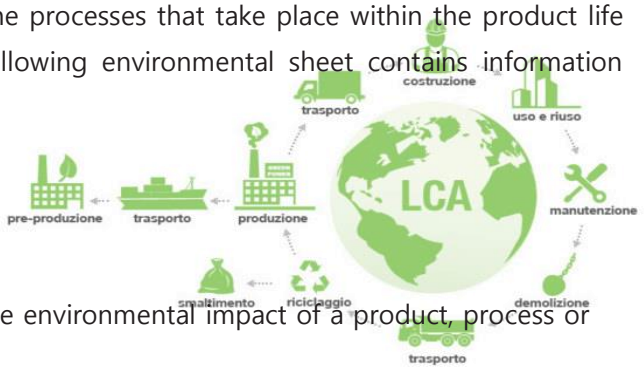
Extra washable, premium quality acrylic water-based paint, for interior and exterior use.

IN THE FORMULATION OF THIS PRODUCT NO FORMALDEHYDE AND DONORS OF FORMALDEHYDE ARE INTENTIONALLY ADDED

"The future depends on what we do in the present" -Gandhi-

At Colorificio MP we believe this is not only a quote, but an awareness that leads us in every action we take. The care for the Human-Being and the Environment has been our top priority from the start, at it has lead us to a constant research of innovative and sustainable solutions to improve the living comfort. Among the firsts to focus on the manufacturing of water-based paints, today we manufacture a wide range of eco-friendly paints and plasters, air-purifying systems, low-VOC products. Customer care, respect for the Environment and high quality 100% Made in Italy have always been our cornerstones and driver for innovation.

With this in mind, Colorificio MP has completed a LCA (Life Cycle Assesment) study to verify, evaluate and improve the environmental impact of our products. Through this study we were able to determine new sustainability goals and gain greater awareness regarding the processes that take place within the product life cycle and identify possible areas for improvement. The following environmental sheet contains information about LCA and LEED.



Life Cycle Assessment (LCA)

LCA (Life Cycle Assessment) is a study aimed to analysing the environmental impact of a product, process or service during all the stages of its life cycle.

Through the LCA analysed according to UNI ISO 14040-44 (ISO 2006; ISO 2018) standard it is possible to quantify the potential environmental impact associated with a product or service.

The method is standardized and involves the use of indicators for the analysis of cause-effect relationships between the inventory of direct and indirect inputs and outputs of material and energy associated with the system, taking in consideration their impact on human health and on the Environment..

The analysis takes place in four phases:

1. Goal and Scope

The main purpose of the LCA study is to identify the environmental performance of MURALEX and take, where possible, improvement actions.
The analysis takes into account direct and indirect inputs and outputs of material and energy for 1 kg of product (functional unit), consumption rate of MURALEX is 0.11kg/m2.
The system boundaries comply with the requirements of an EPD "from cradle to gate with options" and include the extraction of raw materials (upstream A1), transport to the production site (upstream A2), the manufacturing processes of the product at the MP Colorificio plant (core process A3), and the distribution to customers (downstream A4), which is optional.

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2. LCI - Life Cycle Inventory

The required data to perform this analysis where gathered by the company for the inputs and outputs of material and energy from the manufacturing site and from the suppliers for all information concerning the life cycle of the raw material purchased.

When primary data were not available, the inventory was completed with bibliographic searches, not only in scientific journals, but also on the documentation produced for EPD certified products and the use of the Ecoinvent 3 database (Wernet et al ., 2016) to support LCA analysis.

Where this was not possible, some approximations were necessary, supported by the technical data sheets to identify a product similar in chemical composition and technical properties to that used in the production process and available in the literature.

3. LCIA - Life cycle Impact Assessment

Per la stima degli impatti ambientali associati ai prodotti vernicianti si è adottato il metodo EPD (2013), consigliato dallo Swedish Environmental Managament Council (SEMC) per la realizzazione di dichiarazioni ambientali di prodotto.

Le categorie di impatto ambientale considerate includono il potenziale di riscaldamento climatico (*global warming potential*), di ossidazione fotochimica (*photochemical oxidation*), di consumo di risorse abiotiche elementari (*abiotic depletion*), di acidificazione (*acidification*) e di eutrofizzazione (*eutrophication*).

L'analisi LCA è stata condotta mediante l'utilizzo del software SimaPro.

		Unit	A1	A2	A3	A4	Total
IMPACT CATEGORIES	Global Warming Potential	kg CO_2 eq	1,39	0,03	0,02	0,15	1,58
	Photochemical oxidation	mg C_2H_4 eq	931,26	5,60	5,61	25,54	968,01
	Abiotic depletion	mg Sb eq	2743,13	0,05	0,36	0,81	2744,35
	Acidification	g SO_2 eq	8,86	0,20	-0,10	0,51	9,46
	Eutrophication	g PO_4 eq	3,15	0,04	-0,02	0,12	3,29

Table 1 – LCA results

4. Life Cycle Interpretation

Overall, the most significant contribution in all impact categories is the module associated with the extraction of raw materials (A1).

The A3 module associated with the manufacturing of products at the Colorificio MP production site, benefits from the consumption of electricity generated by green sources and the surplus produced by acidification.

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LEED e GBC

LEED (Leadership in Energy and Environmental Design) is a voluntary certification programm developed by U.S. Green Building Council (USGBC). Its main goal is to promote the development of high performance sustainable buildings, through the use of a credit system. LEED promotes a sustainability-oriented approach, awarding building performance under valuable aspects such as, materials and sources used, the reduction of CO2 emissions, the improvement of indoor air quality, energy and water savings, design and site selection.

GBC protocols were instead developed taking inspiration from the respective LEED rating systems, but they take into consideration the Italian and European construction and regulatory reality.

Muralex contributes with the following credits to LEED rating system :

LEED BD+C V4.1	GBC HOME	COMPLIANCE	POINTS
MR CREDIT - *Building Life-Cycle Impact Reduction*		LCA study	1-6 points
MR CREDIT - *Building product disclorure and optimization – environmental product declarations*	MR CREDIT 4 – *Products environmental optimization*	LCA study	1-2 points
MR CREDIT - *Building product disclorure and optimization – material ingredients*		• **Material ingredients report** → List of chemical substances • **Ingredients optimization** → No dangerous substances	1-2 points
MR CREDIT - *PBT source redution – Lead, Cadmium,and Copper*		Cadmium and Lead free	2 points
MR CREDIT - *Construction and demolition waste management*	MR CREDIT 2 – *Construction and demolition waste management*	The MP products are delivered on site through the use of recyclable or reusable materials, such as PP recyclable PP packaging and reusable wooden pallets.	1-2 points
EQ CREDIT - *Low emitting materials*	QI CREDIT 3 – *Low emitting materials*	• **Emissions** → N.A. • **Content** → N.A.	1-3 points
	MR CREDIT 5 – *Materials extracted, processed and produced at a limited distance*	Credit compliance depends on the location of the project site	1-2 points

Table 2 – Potential LEED and GBC HOME credits.

*Colorificio MP cannot guarantee that the above-mentioned credits will be obtained for all projects that are applying for LEED and GBC HOME certification. For each specific project it will be responsibility of the project manager and/or head engineer to evaluate and verify if the products is eligible for credits.

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