UNIMARC FINITURA CERATA

COLOURED TRANSPARENT WOOD VARNISH

series 312

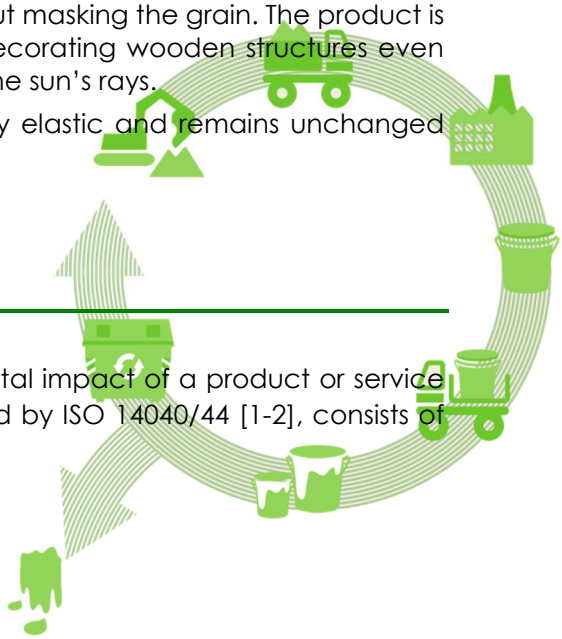
Colorificio San Marco SpA gives priority to environmental protection and safety in the workplace. For this reason Colorificio San Marco constantly seeks to improve the quality of its products and their production cycles in order to reduce the overall impact on the environment and ensure quality and safety for customers.

This environmental data sheet shows the environmental information of UNIMARC FINITURA CERATA: LCA, LEED and other information.

UNIMARC FINITURA CERATA is a water dilutable product that protects and decorates wood, providing a satin finish. It is based on acrylic copolymer and components able to filter ultraviolet rays, tansparent

pigments and micro-cristalline waxes that colour the wood without masking the grain. The product is water repellent and it is particularly suited to protecting and decorating wooden structures even where they are especially exposed to atmospheric agents and the sun's rays.

The film produced by the application of the paint is particularly elastic and remains unchanged despite the natural structural variations of the wood.



LIFE CYCLE ASSESSMENT

Life Cycle Assessment (LCA) is a tool to quantify the environmental impact of a product or service throughout its entire life cycle. The LCA methodology, as defined by ISO 14040/44 [1-2], consists of four phases:

- goal and scope definition
- inventory analysis
- impact assessment
- interpretation

Goal and scope

The **goal** of this LCA [3] is to provide transparency about the environmental performance of UNIMARC FINITURA CERATA, to create improvement options and support environmental communication. The functional unit is 1 kg of paint including packaging, with a spreading rate of 0,183 kg/sqm (average). The **system boundaries** include raw materials, their transportation, processing, packaging, distribution, use and packaging disposal. During the use phase the paint is hand-applied and the associated emissions are insignificant.

Inventory analysis

Primary data are used to the most significant processes, like the paint recipe, packaging and factory consumptions and emissions. Data refer to 2012 and are collected at the Colorificio San Marco's factory located in Marcon (VE). Secondary data originate from the ecoinvent v3 database [4]. The LCA calculations are performed with the LCA software SimaPro 8.0.3 [5].

Impact assessment

Life cycle impact assessment has been done with the method **PCR product group: UN CPC 3511**

2014:5 on paint [6], as indicated in the EPD programme of the International EPD Consortium. This method consists of different environmental indicators including the Carbon Footprint, human toxicity, ecotoxicity, air emissions, water consumption and waste. Table 1 shows the LCA results.

Life cycle assessment verification

The LCA calculation system of Colorificio San Marco is verified by a third party in conformity with UNI EN ISO 11044:2006 and UNI EN ISO11040:2006 [7]

Table1: LCA results.

		Unit	Total	Upstream	Core	Downstream
Impact categories	Global Warming (100 yr)	kg CO2 eq	2,668	2,257	0,233	0,176
	Ozone layer depletion (ODPr)	mg CFC-11 eq	0,518	0,486	0,018	0,013
	Photochemical oxidation	g C2H4 eq	1,041	1,003	0,034	0,002
	Acidification	g SO2 eq	13,27	11,73	0,94	0,59
	Eutrophication	g PO4--- eq	3,565	3,19	0,235	0,139
	Human toxicity, non-cancer	CTUh * 10-9	0,993	0,967	0,017	0,007
	Human toxicity, cancer	CTUh * 10-9	0,317	0,335	0,005	-0,023
	Ecotoxicity	CTUe * 10-3	348	359	1,569	-12,94
Waste	Hazardous waste	kg	0,014	0,008	0,000	0,005
	Non hazardous waste	kg	0,279	0,148	0,03	0,1
Air Emissions	VOC	g	0,23	0,211	0,015	0,002
	NMVOC	g	2,22	1,842	0,219	0,158
	SO2	g	8,176	7,693	0,362	0,119
	CO2 (fossil)	kg	2,397	2,006	0,219	0,17
	Methane (fossil)	g	9,448	8,885	0,398	0,164
	methane (biogenic)	g	0,098	0,096	0,003	-0,002
	NOx	g	6,371	4,486	0,997	0,887
Other	Material subjected to recycling	g	104	0,097	6,583	97,76
	Blue virtual water	kg	15,25	13,68	1,25	0,3

Interpretation

The LCA results indicate that the largest contributions come from upstream processes (i.e. raw materials). The Carbon Footprint of UNIMARC FINITURA CERATA is 2.668 kg CO_2 eq.

The negative values are caused by the pallet reuse.

LEED

LEED means Leadership in Energy and Environmental Design. It is a voluntary program that provides third-party verification of green buildings. It provides building owners and operators a tool to understand their building's environmental performance and to create healthy indoor spaces.

In order to obtain LEED certification, projects must satisfy prerequisites and earn points (there is a threshold). The number of points the project earns determines its level of LEED certification.

LEED is a certification system that deals with the environmental performance of buildings based on overall characteristics of the project. Although LEED does not certify products and services of individual companies, products and services do play a role and can help projects with credit achievement.

The table below shows UNIMARC FINITURA CERATA potential contribution to the different **LEED credits** of the LEED 2009 and LEED v4 (Leadership in Energy and Environmental Design) [8]. Table 2 shows the possible contribution of the paint to potential credits, if used properly.

Table 2: Potential LEED credits.

LEED 2009 Credits	Description	Possible points
MR credit 5	Regional Materials	1-2 points
IEQ credit 3.2	Construction Indoor air quality management plan	1 point
IEQ credit 4.2	Low-Emitting Materials Paints and Coatings	1 point
LEED V4 Credits	**Description**	**Possible points**
MR credit	Building Life-Cycle Impact Reduction	1-5 points

More information are available on request

Colorificio San Marco does not guarantee that credits will be obtained by projects pursuing LEED certification. The designer or engineer will need to evaluate and verify if the project complies with the LEED requirements.

OTHER INFORMATION

«TIT_OIEDS» «RIF_BBL_IVEDS»

«TXT_CAR_IVEDS»

ECODESIGN INDEX

Counter of ecodesign activities affecting the coating, accomplished by the company.

N°	Activity item	Date
1	first issue	aug 2014

References

[1] ISO 14040, 2006: Environmental management, Life cycle assessment, Principles and framework. CEN, EN ISO 14040:2006 (www.iso.org).

[2] ISO 14044, 2006: Environmental management, Life cycle assessment, Requirements and guidelines. CEN, EN ISO 14044:2006 (www.iso.org).

[3] Colorificio San Marco, LCA project,"Environmental Data Sheet" 2014.

[4] Ecoinvent, 2013: Database ecoinvent v3. Swiss Centre for Life Cycle Assessment, (www.ecoinvent.ch).

[5] PRé, 2014: LCA software SimaPro 8.0.3. PRé Consultants, the Netherlands (www.pre-sustainability.com).

[6] PCR 2014:5. Paints and varnishes and related products. Product Category Rules (PCR) for preparing an environmental product declaration (EPD) for paints and varnishes and related products, the Swedish Environmental Management Council (www.environdec.com).

[7] Verify n. 37585 30 april 2014 – CSQA Certificazioni Srl – Thiene (VI) Italy

[8] USGBC, LEED 2009 and LEED v4: Rating System for New Construction and Major Renovations (new.usgbc.org/leed)

«RIF_BBL_IVEDS» «BBL_OIEDS»