ENVIRONMENTAL PRODUCT DECLARATION

Self declaration 2020

COMPANY PRESENTATION AND PRODUCT LIFE CYCLE DESCRIPTION		
The data contained in this Environmental Product Declaration is related to the manufacturing of unglazed porcelain tiles by TopCer – Indústria de Cerâmica, S.A.		APPLICATION AREA
Topcer – Indústria de Cerâmica, S.A. was founded in 1991 and is specialised in the manufacture and trading of pressed unglazed porcelain tiles. Topcer is ISO 9001 Quality certified since 2009 and also Environmental certified, according to ISO 14001 since 2012.		COMPANY PRESENTATION
COMPANY	TopCer – Indústria de Cerâmica, S.A.	GENERAL DATA
FACTORY	Rua do Monte Grande, 10 Zona Industrial de Oiã 3770-068 – Oiã Portugal	
TELEPHONE FAX E-MAIL	+351 234 722 395 +351 234 722 397 av@topcer.com	
EXPORT OFFICE	Largo da Estação n.º 8, 2º Fte 2750-340 Cascais Portugal	
TELEPHONE FAX E-MAIL CONTACT PERSON	+35121 4844788 +35121 4841091 lx@topcer.com Mr. Carlos Rodrigues Miguel	

Topcer is a company specialized in the production of a wide range of unglazed porcelain tiles in small sizes, mainly characterized by low water absorption, high breaking strength and resistance to frost and deep abrasion:

- Modular sizes with a 4mm joint: 7.5x15, 15x15, 10x10, 10x30 and 30x30;
- 30 colours;
- Different anti-slip surface textures and shapes;
- Trim pieces;
- Victorian Designs & Contemporaneo Compositions, back mesh mounted on modular sheets.

OUR PRODUCT

According to ISO 13006 / EN 14411 – Annex G – Group BIa

PRODUCT STANDARD

CE 08

EN 14411
Dry pressed porcelain tiles of group BIa
For internal or external wall and floorings

Essential characteristics	Performance	Test method
Reaction to fire	Class A1 / $A1_{FL}$	Decision 96/603/CE
Breaking strength Modulus of rupture	> 1300 N R > 35 N/mm^2	EN ISO 10545-4
Thermal shock resistance	Passed	EN ISO 10545-9
Bond strength / adhesion	a) With cementitious adhesives: 2.0 N/mm^2 b) With dispersion adhesives: 1.6 N/mm^2 c) With reaction resin adhesives: > 2.8 N/mm^2	EN 1348
Slipperiness	http://www.topcer.com/technical__data_sheet.htm http://www.topcer.com/independent_tests.htm	
Durability Freeze/thaw resistance	Passed	EN ISO 10545-12
Release of dangerous substances: • Lead • Cadmium	NPD NPD	EN ISO 10545-15

NPD=No performance determined.

PRODUCT'S CHARACTERISTICS (CE)

The dry-pressed unglazed porcelain tiles are made in accordance to ISO 13006 / EN 14411, annex G, of the group BIa.

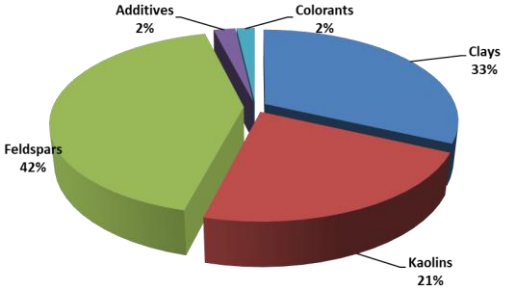
Tiles can be used either for interiors or outdoors floors and walls.

These materials can be used in floors and walls applications with highly demanding technical characteristics like swimming pools, saunas, changing rooms and in all sort of heavy traffic areas, such as hospitals, schools, hotels, private houses, restaurants, pubs, shopping malls, supermarkets, industrial areas, industrial kitchens as well as railway, metro, petrol stations, etc.

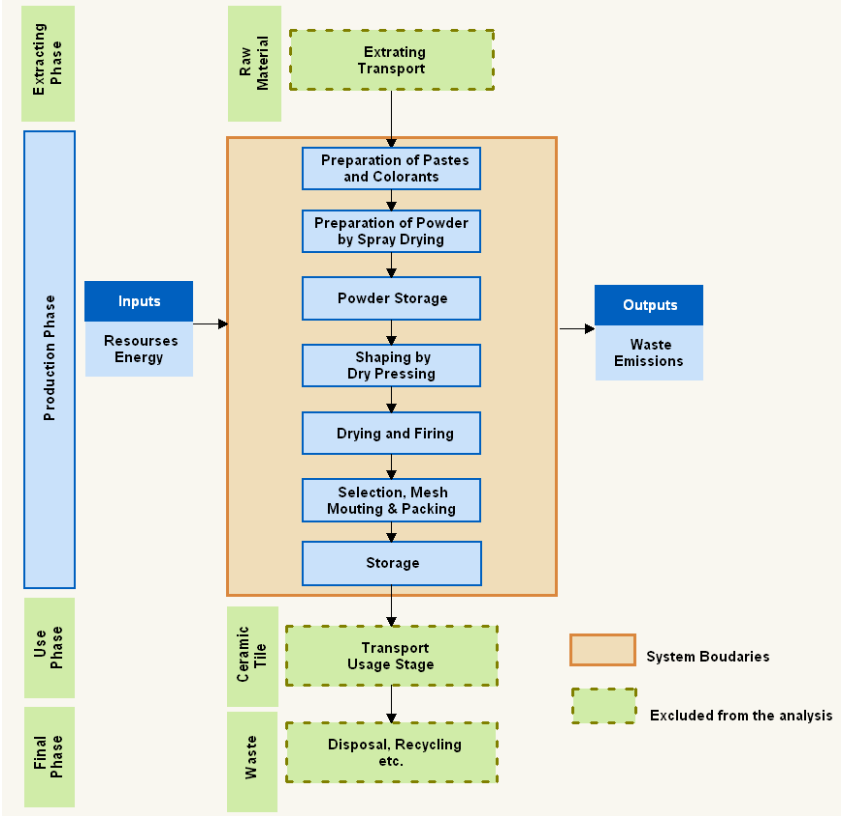
TopCer also has a special line of *"Victorian Designs and Borders"* and *"Contemporaneo Series"* supplied in modular sheets, back sheet mounted. These lines are mainly used in palaces, museums, hotels, restaurants, pubs, private houses, old flooring restorations, etc.

USAGE

PRODUCT PROCESS DESCRIPTION

Topcer production process has the following stages: preparation of pastes and colorants, powder preparation by spray drying, powder storage, shaping and drying, firing, selection, mesh mounting and packing.	STAGES OF PRODUCTION PROCESS
The main raw materials used in the manufacturing process are: clays, feldspars, kaolin's, colorants and additives.  	MAIN RAW MATERIALS

LIFE CYCLE ASSESSMENT

The environmental performance assessment is based on the manufacturing of 1 m^2 of the produced material.	DECLARATION UNIT
In our production life cycle, the system boundaries are: material preparation (paste and colorants), powder preparation by spray drying, powder storage, shaping by dry pressing, drying and firing, selection, mesh mounting & packing, and storage.	SYSTEM BOUNDARIES
 	SCHEME OF SYSTEM BOUNDARIES

WATER

The water used for tile production comes from a licensed catchment well. Regarding the water waste resulting from production, it is forwarded to a water treatment system, and directed to an internal water circuit, and reused for washing.

ATMOSPHERE

The fuel used in the combustion sources is natural gas. All the emissions resulting from the combustion and from the dust suction are monitored.
To handle the emissions, Topcer has a spray dryer equipped with a bag filter system and all emissions from the combustion on the kilns are routed to a modular system suitable for capture of gaseous inorganic fluorine compounds.
The concentration of pollutants emitted by these sources, respect the emission values established by law.

WASTE

All the waste produced by Topcer is forwarded to an authorized trader, giving preference, wherever possible, to recovery operations.
The waste with greater impact is either the ceramic waste before the thermal process or the ceramic waste after the thermal process. Due to the characteristics of the production process, it is not viable to incorporate such waste in the production process. Thus, Topcer has decided to redirect them to the waste operator that will be introduced in the productive process of structural ceramics.

ENVIRONMENT IN THE PRODUCTION

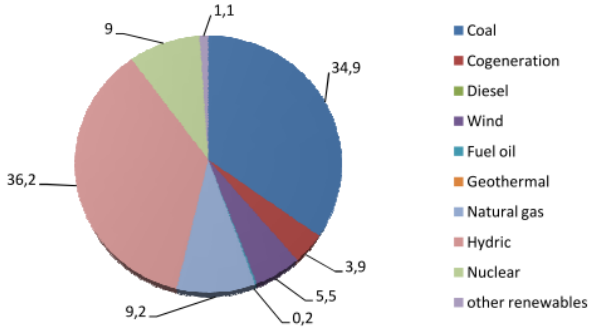
ENVIRONMENTAL NOISE

Topcer complies with the environmental noise parameters established by the legislation.

ENERGY

Topcer is an energy intensive consumer where the main source of energy used is natural gas. We carry out control of the energy consumption (natural gas, electricity and diesel), privileging the rational use of energy and the adoption of the best available techniques.
Energy used by renewable sources is 42.8% according to our supplier of energy.

Coal	34,9
Cogeneration	3,9
Diesel	0
Wind	5,5
Fuel oil	0,2
Geothermal	0
Natural gas	9,2
Hydric	36,2
Nuclear	9
other renewables	1,1
Renewables Total=	**42,8 %**



The methodology used to calculate the environmental performance was the life cycle assessment, according to ISO 14040 and ISO 14044. The characterization factors were used according to CLM (Leiden University).

METHODOLOGY

This Environmental Product Declaration refers only to the production stage, excluding the extraction and transport of raw materials as well as the stages of transport for clients, application and use, and end of life cycle.

EXCLUSIONS

The values below refer the inputs for the years 2013 to 2019, needed for the production of 1m^2 of tiles.

	Input	Unit	Average
Raw material	Clay	kg	7,20E+02
	Kaolin	kg	4,85E+02
	Feldspar	kg	9,35E+02
	Dyes	kg	3,93E+01
	Additives	kg	3,57E-01
	Talc	kg	9,85E-02
Energy	Electricity	kW	5,19E+00
	Natural gas	GJ	2,95E+00
	Diesel	GJ	3,53E-02
Water	Water	m3	1,58E-02
Packing materials	Pallets	kg	3,10E-01
	Plastic	kg	5,58E+00
	cardboard	kg	4,14E-01

INPUT DATA

The values below refer the Outputs for the years 2013 to 2019, needed for the production of 1m^2 of tiles.

	Outputs	Unit	Average
Emissions to air	PTS	kg	9,00E-03
	CO	kg	4,69E-03
	NOx	kg	3,45E-03
	VOCs	kg	9,28E-04
	F	kg	1,14E-03
	Cl	kg	3,56E-04
	Cd	kg	3,62E-06
	Ni	kg	5,38E-06
	Pb	kg	2,53E-05
	Cr	kg	2,50E-05
	Cu	kg	2,06E-04
	Zn	kg	3,95E-04
	HF	kg	1,20E-03
	HCl	kg	3,66E-04
Emissions to water	TSS	kg	Closed circuit
	COD	kg	Closed circuit
	BOD	kg	Closed circuit
Waste	Ceramic	kg	4,01E-01
	WWTP sludge, raw and powder	kg	2,61E+00
	Scrap	kg	4,02E-03
	Oils	kg	1,03E-03
	Paper and cardboard	kg	1,55E-02
	Plastic	kg	8,47E-03
	Contaminated packing	kg	1,56E-04
	Fluorescent lamps	kg	3,67E-05
	Absorbents contaminated	kg	9,88E-04

OUTPUT DATA

The table below refers to the potential environmental impact due to the production of 1 m^2 of porcelain tile, excluding the extraction and transport of raw materials stage as well as the transport of the end product to client, application and end of life cycle of the product.

	Unit	Value
Global warming potential	kg CO_2eq	6,51
Acidification potential	kg SO_2eq	7,59E-03
Photochemical ozone creation potential	kg C_2H_4 eq	1,27E-04
Eutrification potential	kg PO_4^{3-} eq	4,48E-04
Ozone depletion potential	kg CFC-11 eq	2,09E-07

POTENTIAL ENVIRONMENTAL IMPACT DURING MANUFACTURE

FINAL STATEMENTS

The Environmental Product Declaration presented is a self-declaration of the results of Topcer production process. It is important to refer that the study is only based in Topcer production process, excluding any other companies.

The data presented are a result from an analysis of the environmental performance indicators tracked within the NP EN ISO 14001 certification.

Environmental issues are a continuous concern of Topcer management that has an active role in all process phases.

FINAL STATEMENTS