

RT-Environmental Declarations

Communicating environmental
information of building products in
Finland

Background for compiling

- Lifecycle planning has become a necessity in construction.
- According to the Essential Requirement (number 3 titled "Hygiene, Health and the Environment" (Construction Product Directive CPD, 1993)), the environmental impact of building products shall be considered in all stages of the life cycle, including the extraction of raw materials, manufacture, construction, use, demolition, final disposal and reuse.
- In Finland, the RT Environmental Declarations fulfil that requirement.

- Environmental Product Declaration (EPD) is the only neutral way to communicate environmental information of building products with a standardised format.
- The Building Information Foundation RTS launched a national EPD-programme in 2004 where environmental performance (environmental impacts) of building products are assessed with a standardised methodology.
- The information gathered in the environmental declarations is required for different calculation programmes and comparisons.

What is Environmental Declaration?

- The aim is to promote the use of products that burden the environment less than other similar products
- It describes the ecological footprint of the product in a standardised way
- The eco-profile includes the life cycle stages from the acquisition of raw materials to the factory gate.
- Those impacts include:
 - Use of natural resources
 - Materials (renewable..)
 - Use of energy
 - Emissions into air and water
- Other environmental aspects
 - Indoor air emissions
 - Service life
 - Service and maintaining
 - Final disposal and recycling

- The eco-profiles and other environmental aspects assessed according to the methodology provide initial data for the assessment of environmental impacts of the buildings.
- The reference in comparisons of alternative building components should be the functional unit of the end product or building.
- The units are not mentioned in the declarations, but they shall be selected for each project.
- The declarations do not directly take a stand on the service life or categorisation of products.

How the Finnish system is organized ?

- It is supported by RTS's website where all relevant information about the system and the application procedure can be found.
- The system is transparent and based on the Finnish Methodology Document (Product Category Rules, PCR), which is public.
- The national methodology follows the basic principles stated in the ISO standard series 14040 and 14020. The method considers also the preliminary results achieved within ISO CD 21930.
- Name of the Finnish PCR Document is ***“Methodology for Compiling Environmental Declarations for Building Products and Assessing Environmental Impacts of Buildings”***

- The Confederation of Finnish Construction Industries RT is responsible for maintaining and updating the PCR Document.
- The Environmental Declarations are granted by RTS.
- RTS is a private, not-for-profit foundation whose task is to foster both good planning and building methods and good property management practices.
- RTS runs continuously 30-50 Principal and Working Committees and Task Groups that support and supervise production of new information and publication activities.
- **The Principal Committee for RT Environmental Declarations is PT 21.**

Principal Committee

PT21 RT Environmental Declarations

- Members of the principal committee 21 represent the highest expertise as well as all parties concerned by the system.
- The members are appointed by RTS in cooperation with Confederation of Finnish Construction Industries RT.
- Its task is to monitor and develop the declarations as well as the system and review of the PCR.
- PT 21 is the body within RTS that grants the RT Environmental Declarations.

How to apply?

- A company sends an application and necessary background information to Principal Committee PT 21.
- In addition to the public document, a background document is formulated for approval of the environmental declaration.
- The background document cannot be public, as it may contain confidential details about the product. All documents are handled confidentially by PT 21.
- The calculations can be performed by the company or a designated expert.
- The calculations can also be done by a reviewer in connection with the review.

- The company is responsible for the information provided. The designated experts are approved in advance by PT 21.
- The consultant/reviewer has to be a specialist in construction engineering and in assessment of environmental impacts (LCA).
- The purpose of the assessment is to confirm that the environmental declarations made according to the methodology are uniform and comparable basic data for the life cycle assessment (LCA) of buildings.
- All verified declarations are published on the Web site of RTS, www.rts.fi.

CONCRETE ROOF TILE

Company Ltd

Company Ltd
Company street 9, FIN-02630 CITY
Tel. (09)2512 345 Fax. (09)2532 654
www.companyname.com

1. PRODUCT SPECIFICATION

Object definition

Environmental declaration applies to all concrete tiles including all colours and shapes.

Product description

Concrete tile is symmetric and bigutteral. It is possible to get tiles for a roof ridge and a hip. Supplement parts are roof ridge tiles of beginning and ending, tiles of gable edge, dividing tiles of roof ridge, etc. Colours are black, clay brick red, cottage red, grey, dark grey, brown and antique red.

Conversion factors

Density	-
Mass per m ²	-
Moisture content	-
Weight/piece	Wage of an average tile is 4,234 kg. (Wage of a packed average tile is 4,318 kg).

Technical properties

Material:	Trough coloured concrete
Covering:	Tile roof paint
Weight/m ² :	43 kg
Min. roof pitch:	1:5 (11°)
Bunch size:	6 piece
Pallet size:	252 pieces
Useful width:	300 mm
Min. brander division:	310 mm
Max. brander division:	370 mm
Width:	330 mm
Length:	420 mm
Consumption:	9,5-11 piece/m ²

RT-Environmental declaration is based on the national methodology following the basic principles stated in the ISO standard series 14040 and 14020. The method considers also the preliminary results achieved within ISO CD 21930. It is developed in cooperation with Confederation of Finnish Construction Industries RT, The Building Information Foundation RTS, VTT Technical Research Centre of Finland and companies of construction business.



RT-Environmental declaration CONCRETE TILE

2. ECO-PROFILE OF THE PRODUCT

The ecoprofile includes the life cycle stages from the acquisition of raw materials to the factory gate
2.1 USE OF RESOURCES

Energy

Use of energy	MJ/kg
Non-renewable energy resource consumption	1,36
Renewable energy resource consumption	0,12
Energy resource consumption in pros.+ transp.	1,48

Energy in transport *	MJ/kg
Energy resource consumption in transports	Not specific.

Energy in processes *	MJ/kg
Electric energy resource consumption	Not specific.
Fossil energy resource consumption	Not specific.
Biotic energy resource consumption	Not specific.
Total energy resource consumption in processes	Not specific.

**Voluntary*

Feedstock energy of raw materials	MJ/kg
Fossil feedstock energy in raw materials	0,07
Biotic energy in raw materials	0,39
Total feedstock energy of raw materials	0,46

Raw materials

Consumption of raw materials ^{1*}	g/kg
Non-renewable natural materials	965
Renewable natural materials	21
Hidden material flows ^{2*}	Not specific.
Total consumption of raw materials	986

¹Water is not included

²Hidden material flows are included but not specified

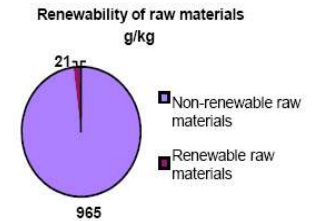
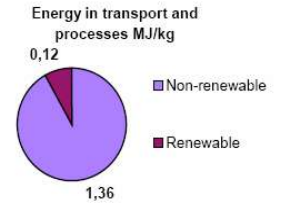
2.2 EMISSIONS

Emissions to air	g/kg
CO ₂	143
CO	0,13
SO ₂	0,12
NO _x	0,50
CH ₄	0,27
NMVOG	0,037
N ₂ O	0,0017
PM ₁₀	0,35
Heavy metals*	0,000052
Dust	0,033
Other particles	Not defined

* Hg, Cd, Pb, As, Cr, Zn, Tl.

Emissions to water	g/kg
COD	0,003
BOD	Not defined
P _{tot}	Not defined
N _{tot}	0,000002
Solids	Not defined

Process waste	g/kg
Waste to dumping area	0,13
Hazardous waste	0,05



3. OTHER ENVIRONMENTAL ASPECTS

CONSTRUCTION

- Product transport	Not defined
- Loss in site	Not defined
- Indoor air emissions	Not defined

RISKS

SERVICE LIFE

See LifePlan-file, Building 90 classification.336.1, Defined in the file

SERVICE AND MAINTENANCE

See LifePlan-file, Defined in the file
Inspection of penetrations and equipments once a year. Remove of snow, leaves and needles when needed. See instructions.

FINAL DISPOSAL

Recycling

It is possible to recycle, reuse, use as a raw material for ground or street building when crushed. Fine material of the shutter shall be used for the production of ground concrete. Wooden pallets are recyclable.

Utilized energy*

Not defined

- Fuel value

*Numbers come from packing materials

Treatment of waste

Not defined

- Location and description

References

- The presentation is based on, and partly identical with the text in the English version of the home page of the RT Environmental Declarations.
- The content of the home page is based on the Methology Document and written by Laura Sariola, Project Engineer at RTS.

More information

www.rts.fi/rted

Thank You!