ENVIRONMENTAL PRODUCT DECLARATION

according to ISO 14025

Owner of the Declaration	Eczacıbaşı Building Products Co.
Programme holder	Institut Bauen und Umwelt (IBU)
Publisher	Institut Bauen und Umwelt (IBU)
Declaration number	EPD-ECZ-2012111-E
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Fine Fireclay Ceramic Sanitaryware

Eczacıbaşı Building Products Co.

Institut Bauen
und Umwelt e.V.

www.bau-umwelt.com

VitrA

1 General information

Eczacıbaşı Building Products Co.	Fine Fireclay Ceramic Sanitaryware
Programme holder IBU - Institut Bauen und Umwelt e.V. Rheinufer 108 D-53639 Königswinter	**Owner of the Declaration** Eczacıbaşı Building Products Co. Buyukdere Cad. Ali Kaya sok.,No.7 Levent,İstanbul, Turkey
Declaration number EPD-ECZ-2012111-E	**Declared product / Declared unit** Fine Fireclay Ceramic Sanitaryware / 1 t
This Declaration is based on the Product Category Rules: Requirements on the EPD for Sanitary Ceramics, 11-2011 (PCR tested and approved by the independent expert committee (SVA))	**Scope:** Within this study a life cycle analysis according to ISO 14040/44 is performed for fine fireclay ceramic sanitary ware products manufactured by Eczacıbaşı Building Products Co. at the production plant located in Bozüyük. The life cycle analysis is based on the data declared by Eczacıbaşı Building Products Co. The EPD for fine fireclay ceramic sanitaryware products is an average EPD which represents the life cycle analysis of the fine fireclay product group. This analysis relies on transparent, plausible and documented basis data. All the model assumptions which influence the results are declared. The life cycle analysis is representative for the products introduced in the declaration for the given system boundaries. The life cycle analysis covers the manufacturing of the products from cradle to gate.
Date of issue 17.02.2012	
Valid until 16.02.2017	
Prof. Dr.-Ing. Horst J. Bossenmayer (President of the Institute Construction and Environment)	**Verification** The CEN standard FprEN 15804 serves as the core PCR. Verification of the EPD by an independent third party as per ISO 14025 ☐ internally ☒ externally
Prof. Dr.-Ing. Hans-Wolf Reinhardt (Chairman of the SVA)	Dr. Frank Werner (Independent tester appointed by the SVA)

2 Product

2.1 Product description

Ceramic sanitaryware products are composed of inorganic materials as clay, kaolinite, quartz and feldspar in definite ratios. A fluid slip is generated from this mixture then casted to moulds, fired at 1200-1250 0C to obtain a glazed and hard surface. Ceramic sanitaryware is a common term for washbasins, cisterns, bidets, shower trays, squatting pans, urinals utilized in bathrooms, kitchens and toilets in glazed formation with a white or colored outer surface. The main raw materials included in fine fireclay ceramic sanitaryware are clay, kaolinite, quartz, feldspar and chamotte. In addition, the maxiumum water absorption ratio is 12%.

2.2 Application

Washbasins: Washbasin is a plumbing fixture used to wash hands in lavatories or bathrooms and it sends used water to drain-pipes through a trap. WC pans: WC pan is a plumbing fixture used to relieve oneself in lavatories and bathrooms by sitting.

Cisterns: Cistern is a fixture that reserves and holds a desired amount of water with a filling mechanism and flushes it in order to clean toilet bowls or pans with a flushing mechanism.

Squat pans: Squat pan is a plumbing fixture used to relieve oneself by squatting.

Shower trays: Shower tray is a ceramic fixture used in bathrooms to take a shower standing up.

Bidets: Bidet is a plumbing fixture used in lavatories and bathrooms to clean certain parts of the body by sitting on it.

Urinals: Urinal is a ceramic fixture used generally in men's rooms and occasionally in bathrooms to urinate standing up.

Accessories: Accessories are supplementary components used in bathrooms and kitchens, which are made of ceramics or various other materials and are generally built-in or screwed into walls.

2.3 Technical Data

Harkord cracking, crazing, resistance to strike, resistance to chemicals and staining agents, surface hardness, resistance to temperature changes tests are performed on fine fireclay ceramic sanitary ware products, before these products are delivered. The procedure regarding these analyses is defined in relevant standards and all these analyses are performed in compliance with these procedures described in the standards. The standards followed for performing these analyses are declared in Chapter 2.4. As for the results of these tests there are no preset numerical values within the scope of the relevant standards, the results are reported either as pass or as fail.

All fine fireclay ceramic sanitaryware products in the delivery status pass all of these tests.

Water absorption:

Fine Fireclay: 8,5% - 9,5% (reference value: no valid standard)

2.4 Placing on the market / Application rules

Sanitaryware ceramic products comply with many standards of different countries:

- EN 13310:2003-09, Kitchen sinks - Functional requirements and test methods *)
- EN 997:2008-03 (E), WC pans and WC suites with integral trap *)
- EN 14528:2007-07, Bidets - Functional requirements and test methods (4 kN static load stability) *)
- EN 14527:2010-12, Shower trays for domestic purposes *)
- EN 14688:2006 - Sanitary appliances - Wash basins - Functional requirements and test methods *)
- EN 13407:2006-12, Wall-hung urinals - Functional requirements and test methods *)
- AS 1172.2:1999 Australian Standard Water closet (WC) pans of 6/3 L capacity or proven equivalent Part 2: Cistern
- TS EN 31:2000-11, Pedestal Wash basins – Connecting dimensions
- TS EN 32:2000-11, Wash basins - Wall hung washbasins – Connecting dimensions
- TS EN 33:2005-12, Pedestal W.C. pans with close-coupled flushing cistern – Connecting dimensions
- TS EN 34:1998-05, Wall hung W.C. pans with close coupled cistern – Connecting dimensions
- TS EN 35:2005-12, Pedestal bidets over rim supply only – Connecting dimensions
- TS EN 36:2000-03, Wall hung bidets over rim supply only – Connecting dimensions
- TS EN 37:2000-03, Pedestal W.C. pans with independent water supply – Connecting dimensions
- TS EN 38:1998-05, Wall hung W.C. pans with independent water supply – Connecting dimensions
- TS EN 80:2005-11, Wall hung urinals – Connecting dimensions
- TS EN 13310:2005-03, Kitchen sinks – Functional requirements and test methods
- TS 799:1987-01, Squatting W.C. bowls (ceramic and cast iron)
- TS 823:1996-03, W.C. flushing cisterns including supply and discharge systems
- TS 9671 EN 251:2005-11, Shower trays – Connecting dimensions

*) harmonized European standard

2.5 Delivery status

The dimensions of the fine fireclay ceramic sanitaryware products in the delivery status are presented in the below table (Table 1).

Table 1. Dimensions of Fine Fireclay Ceramic Sanitaryware Products

	Fine Fireclay Ceramic Sanitaryware Products		
Product Groups	**Width (mm)**	**Length (mm)**	**Height (mm)**
Separator	350-385	85-105	595-905
Pedestal	145-150	170-230	720-750
Semi pedestal	300-310	170-220	310-370
Wall-hung bidet	360-525	480-540	185-420
Bidet	525	480	470
Shower tray	700-1200	700-800	65-75
Shelf	505-605	150	75
Sink	530-1010	450-530	200-230
Washbasin	410-420	410-485	160
Counter basin	420-590	420-600	145-175
Semi recessed wb	400-565	450-485	185-190
Urinal	570	890	360
Cistern	385-1005	135-410	130-430
Counter with hole	600-1205	460	90

2.6 Base materials / Ancillary materials

Fine Fireclay (FFC) Main raw materials:

- Clay 25-35 M %
- Kaolin 15-25 M %
- Feldspar 0-5 M %
- Quartz 10-20 M %
- Chamotte 20-35 M%
- FFC scraps 5-10 M %

Auxiliary substances/additives:

- Rheological additives for glazes and slips.
- Plaster for moulds
- Araldite and resin materials for moulds
- Pigments for coloured glazes.

2.7 Manufacture

The manufacturing process of ceramic sanitaryware is presented in Figure 1.

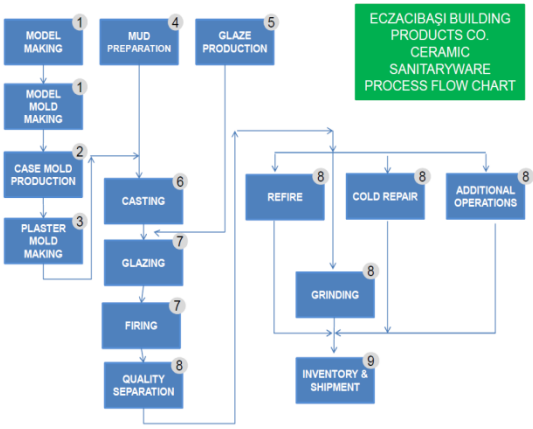

Figure 1. Manufacturing process of ceramic sanitaryware products

Ceramic sanitaryware production process starts with product drawings that are prepared by the design department. Then, three dimensional models and mold models are prepared. After the necessary model modifications and model mold repairs, the mold is delivered to the mold preparation department where a duplication mold is prepared. The next stage is mud preparation. In the mud preparation, raw materials such as clay soil, kaolin, feldspar and quartz are used. The molding mud obtained is then adjusted for proper homogeneity and filled into the waiting pool after being screened. The mold absorbs the water in the mud through the pores contained by the plaster material that has been converted into a casting form. By the absorption of mud water the part reaches sufficient hardness and is taken out of the mold. After molding comes the glaze preparation. Raw materials as well as various auxiliary materials, colarant oxides, and special dyes are used in the preparation of the glaze material. By-products that have been dried are checked and then undergo the painting process where glaze is sprayed onto the products from multiple spray guns. After glazing, products pass on to the kiln-drying process. The process is carried out in tunnel kilns. Kiln wagons loaded with semi-finished products to be dried are fed into the kiln in proper time intervals. Glazed semi-products are fired at kilns in temperatures up to 1210-1225^{o}C. The glaze melts at this temperature, vitrifies, and surrounds the whole product surface to give it a hard porcelain look. After this torrid process, the kiln wagon is taken to the quality separation section and checked against the quality separation standards.

Ceramic Sanitaryware products comply with many standards of different countries including those of LGA, TÜV of Germany, IAPMO of USA, KIWA of Holland, SII of Israel, SAI of Australia, CSTB of France and CSA of Canada.

Eczacıbaşı Building Products is the **first Turkish** organization in its industry, which has achieved, in addition to product standards, the ISO 9001 Quality Management System, the ISO 14001 Environmental Management System, the EN 50001 Energy Management System and the OHSAS 18001 Occupational Health and Safety Management System certifications.

With its successful Total Quality Management practices, Eczacıbaşı Building Products is the winner of the **TÜSİAD** (Turkish Industry and Business Association) **- KalDer** (Turkish Society for Quality) National Quality Awards**,** a finalist of the **EFQM** (European Foundation for Quality Management) Quality Award and the winner of Success Award.

2.8 Environment and health during manufacturing

Occupational health and safety

Health and safety of the employees, safety of working condition, assessment, controlling, decreasing to acceptable level of the existing-potential risks, continuous improvement and conformity to legislation studies are conducted according to TSE OHSAS (Occupational Health and Safety Management Systems) 18001.

Environmental protection

Eczacıbaşı Building Products' environmental policy is based on the principle "Being aware of our responsibilities towards the environment and society, our aim is to bequeath a viable and clean environment to future generations".

Adopting a green approach both to the production process and to products, protecting the environment and reducing the consumption of resources such as raw materials, energy and water are vital components of all processes.

Eczacıbaşı Building Products re-uses residual glaze and mud in production, recovers the waste heat of the kilns and uses it for hot water needs of the facility. The company treats domestic and biological wastewater and re-uses 50% of the treated water in production, and has built a pallet repair station and begun repairing old pallets by re-using them in packaging.

Eczacıbaşı Building Products also began using CeramiCure® acrylic solutions and laser technology to repair minor glaze defects in ceramic sanitary ware in place of re-glazing and re-firing them at high temperatures. In 2010, it is estimated that this new technology reduced the need for re-firing by 20 percent, enabling the company to achieve natural gas savings of 9,900 MWh in the years ahead while maintaining high standards of quality.

Activities being conducted include: Reducing noise levels in the processes from 90 dbA to 75 dbA through sound insulation, making the dust collection system a closed-cycle combining the forklift battery charging points in a single location and establishing a "battery charging station", eliminating back injury risks in the Quality Separation areas by employing a conveyor system an establishing a ventilation system to reduce ambient temperature.

Protection of environment, decreasing and legal withdrawal of wastes, effective usage of natural resources, decreasing of environmental risks is of primary importance. Activities relating to recycling of wastes and effective usage of resources, casting of environmental effects before plant and process design are conducted according to ISO 14001 Environmental Management System.

Continuous improvement works for effective usage of energy, energy effectiveness projects, assessment of present – potential opportunities, development and application of energy policy and reduction of greenhouse gas emissions done according to EN 50001 Energy Management System.

The technology investments of energy for conscious usage and recycling to nature, responsibility of pre-

serving natural resources started from production phase for all processes and recycling systems were developed to decrease wastes to minimum.

2.9 Product processing / Installation

Products such as floor standing WC pans, floor standing bidets and shower trays are installed to concrete floors via drills, screws, screwdrivers and silicone for isolation of water . Products such as washbasins, pedestals, trap covers, wall hung WC pans and wall hung bidets are installed on brick walls via drills,screws, screwdrivers and silicone for water isolation. In the case of a lighter type of wall such as a gypsum plate wall, a steel construction behind the gypsum plate wall is needed for correct installation. Other auxiliary materials that are used depending on the product are rulers, water gauges,hacksaws, two-edged keys, drill bit sets, slottered and phillips screwdrivers and allen wrenches.

2.10 Packaging

For the packaging of ceramic products, corrugated cardboard (PAP 20), low-intensity polyethylene (LDPE 04) and wood (pallets) are utilized. All packaging materials are recyclable and re-used for packaging. For example, pallets repaired in the wood repair station are re-used and waste cardboard is cut off in the paper cutting machine and re-used as packaging material.

2.11 Condition of use

Glazed, solidified ceramic sanitaryware products are solid and chemically stable materials due to being fired at high temperatures.

2.12 Environment and health during use

During the use stage, ceramic sanitaryware products do not emit any pollutants or substances which are harmful to environment and health.

2.13 Reference service life

In the scope of this study the reference service life is not declared, since this EPD covers a variety of different products belonging to the fine fireclay ceramic sanitaryware product group.

Unless there is a fracture or a glaze crack, product can be used for more than 50 years without losing its hygenic and functional properties.

2.14 Extraordinary effects

Fire

Ceramic sanitaryware are solid products that are classified as non flammable (A1 class) according to DIN 4102.

Water

Ceramic sanitaryware are insoluble products that do not react with water, do not dissolve or leak, and do not carry the risk of spill over.

Mechanical destruction

In case of mechanical damage, products may need to be replaced because of eventual sharp cutting edges.

2.15 Re-use phase

Ceramic sanitaryware products are not collected for the purposes of re-use or recycle.

2.16 Disposal

According to the European Waste Catalogue and The Waste Code List of the Turkish Ministry of Environment and Urban Planning, ceramic sanitaryware waste belongs to the group of „construction and demolition wastes – tiles and ceramics" (code: 17 01 03.

Material Safety Data Sheets are not required for Vitrified Ceramic Sanitaryware.

2.17 Further information

Additional information about Eczacibasi Building Products' design, production and management philosophy Bluelife® can be found at:

http:\\www.vitrabluelife.com.tr

3 LCA: Calculation rules

3.1 Declared unit

The declared unit is 1 t of fine fireclay ceramic sanitaryware product. The average mass of one piece of the declared product is indicated in the Table 2 below.

Table 2. Average mass of the products

Product Groups	Average Mass (kg)/piece
Separator	11,3
Pedestal	8,0
Wall-hung bidet	14,3
Shower tray	36,2
Shelf	5,0
Sink	36,7
Washbasin	18,7
Urinal	20,4
Cistern	13,9
Counter with hole	20,8

3.2 System boundary

Type of EPD: cradle to gate

The system boundary includes the production of fine fireclay ceramic sanitaryware products from extraction of raw material to the production of finished packaged product at the factory gate (cradle to gate).

In this study, the product stage information modules A1, A2, and A3 are considered. These modules include production of raw material extraction and processing (A1), processing of secondary material input (A1), transport of the raw materials to the manufacturer (A2), manufacturing of the product (A3) and the packaging materials (A3).

3.3 Estimates and assumptions

All estimations and assumptions regarding the cut off criteria and the allocation are declared within the related parts of this section 3 "LCA: Calculation rules". There are no other additional estimations and/or assumptions in the scope of this study.

3.4 Cut-off criteria

Criteria for the exclusion of inputs and outputs (cut-off rules) in the LCA and information modules and any additional information are intended to support an efficient calculation procedure.

All inputs and outputs to a (unit) process are included in the calculation, for which data were available. The applied cut – off criteria is 1 % of renewable and non-renewable primary energy usage and 1 % of the total mass input of that unit process in case of insufficient input data or data gaps for a unit process.

The total of neglected input flows per module, e.g. per module A, B, C or D is a maximum of 5 % of energy usage and mass.

3.5 Background data

Background processes are taken from the publicly available professional GaBi 4.4 databases as far as available (GaBi DOC 2010). Country and region specific data on energy sources including electricity and region specific data on raw materials such as limestone and clay were taken from GaBi databases.

3.6 Data quality

The process data and the used background data (GaBi DOC 2010) are consistent. In addition, the origin of the data is documented. Additional information is gathered regarding the age of the data. The input and output data of the whole process plant was strongly emphasized. The supplied data (processes) were provided by Eczacıbaşı Building Products Co. and checked for plausibility. Therefore, the data quality can be described as good.
The age of the data employed in this study is due to 2010.

3.7 Period under review

The period under review is defined as one year. The monthly data is collected by the producer and is averaged to obtain the yearly data. As explained here, the average data for the year 2010 is utilized within this study.

3.8 Allocation

In this study, allocation was avoided wherever possible as required in FprEN 15804.

Many different products are produced at the production plant of Eczacıbaşı Building Products Co. located in Bozüyük, but as all products undergo the same manufacturing process and as they are very similar in terms of material composition, all the manufactured products are classified as two product groups: Vitreous china and fine fireclay. Each of these product groups are modeled separately, which means that in each model there is only one single product group. As a result of this situation, co – product allocation becomes unnecessary as there are no co – products existing.

3.9 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to FprEN 15804 and the building context, respectively the product-specific characteristics of performance, are taken into account.

4 LCA: Scenarios and additional technical information

The modules A4, A5, B1, B2, B3, B4, B5, reference service life, B6, B7 and C1 – C4 are not considered and declared in this study.

5 LCA: Results

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)																
PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
Raw material supply	Transport	Manufacturing	Transport	Construction-installation process	Use	Maintenance	Repair	Replacement[1)]	Refurbishment[1)]	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 t Fine Fireclay Ceramic Sanitaryware		
		Manufacturing
Parameter	**Unit**	**A1 - A3**
Global warming potential	[kg CO_2-eq.]	1874
Depletion potential of the stratospheric ozone layer	[kg CFC11-eq.]	7.45E-05
Acidification potential of land and water	[kg SO_2-eq.]	18.86
Eutrophication potential	[kg PO_4^{3-}- eq.]	0.73
Formation potential of tropospheric ozone photochemical oxidants	[kg Ethen eq.]	0.70
Abiotic depletion potential for non fossil resources	[kg Sb eq.]	9.64E-03
Abiotic depletion potential for fossil resources	[MJ]	24198
RESULTS OF THE LCA - RESOURCE USE: 1 t Fine Fireclay Ceramic Sanitaryware Products		
		Manufacturing
Parameter	**Unit**	**A1 - A3**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	[MJ]	4188
Use of renewable primary energy resources used as raw materials	[MJ]	0
Total use of renewable primary energy resources	[MJ]	4188
Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials	[MJ]	29806
Use of non renewable primary energy resources used as raw materials	[MJ]	0
Total use of non renewable primary energy resources	[MJ]	29806
Use of secondary material	[kg]	0
Use of renewable secondary fuels	[MJ]	0
Use of non renewable secondary fuels	[MJ]	0
Use of net fresh water	[m³]	22.2
RESULTS OF THE LCA – OUTPUT FLOWS AND WASTE CATEGORIES: 1 t Fine Fireclay Ceramic Sanitaryware		
		Manufacturing
Parameter	**Unit**	**A1 - A3**
Hazardous waste disposed	[kg]	5.21
Non hazardous waste disposed	[kg]	3330
Radioactive waste disposed	[kg]	0.57
Components for re-use	[kg]	
Materials for recycling	[kg]	
Materials for energy recovery	[kg]	
Exported energy per energy carrier [Type]	[MJ]	
Exported energy per energy carrier [Type]	[MJ]	

6 LCA: Interpretation

The non renewable energy resource use is very high compared to the renewable energy resource use. This situation arises due to the use of natural gas and electricity as energy source. Natural gas as a fossil fuel constitutes the major non renewable energy source. Electricity also contributes to the non renewable resource usage because of the distribution of energy resources employed in generation of the power grid mix.

A certain amount of fine fireclay scrap is recycled to the production and is defined as an internal recycling material, therefore it is not included in (Chapter 5) “use of secondary material”, since this term only covers the secondary materials, which are substances that are recovered from a previous use or wastes from a product system and are used as an input into another product system.

The energy sources used in the production plant are natural gas and electricity. There are no other additional energy resources used in the production plant. Since in upstream processes no secondary fuels are used, there is no input regarding renewable and non - renewable secondary fuels.

The net fresh water use for fine fireclay ceramic sanitaryware products is 19.3m^3 per 1 t of product. Nearly the half of this water use arises due to pre-processes of the power grid mix. The other contributors of this parameter are water utilized during manufacturing and the water usage for the pre – processes of the raw materials.

Although radioactive compounds are not used in the manufacturing process itself, a small amount of radioactive waste appears on the balance table. This small amount arises due to the power grid mix and pre – processes of raw materials used in main manufacturing and packaging processes.

All the impact categories except for ADPE and ODP are dominated either by natural gas utilization or the power grid for fine fireclay products.

The environmental impact of the ADPE parameter is mainly generated because of the raw materials used during the main production process, the moulding process and the packaging process such as zinc oxide, gypsum and glue. Through the examination of the ODP parameter it can be observed that the impact generated in this category is sourced mainly by polyurethane employed in the moulding process.

7 Requisite evidence

7.1 Eluate analysis

Pb-Cd tests are conducted on ceramic plates (sinks) according to ISO 6486-2: 2000. The obtained test results demonstrated that none of the samples included Pb and Cd which states that the test results for all samples were below the limit values set for Pb and Cd within the scope of ISO 6486-2: 2000. The test is performed by Şişecam Analytical Support Services Department – Glass Research Center on 08.12.2010. The testing institution is accredited by Türkak (Turkish Accreditation Institute). According to ISO 6486-2: 2000 all samples have to be below the set limits as presented below in Table 3:

Table 3. Limits for Pb and Cd

Container type	Unit	Pb limit	Cd limit
Flat	mg/dm^2	0.8	0.07
Small bowl	mg/l	2	0.5
Large bowl	mg/l	1	0.25

8 References

Institut Bauen und Umwelt 2011

Institut Bauen und Umwelt e.V., Königswinter (pub.): Generation of Environmental Product Declarations (EPDs); General principles for the EPD range of Institut Bauen und Umwelt e.V. (IBU), 2011-06

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PCR 2011, Part A

Institut Bauen und Umwelt e.V., Königswinter (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Background Report. July 2011

www.bau-umwelt.de

PCR 2011, Part B

Institut Bauen und Umwelt e.V., Königswinter (pub.): Product Category Rules for Construction Products from the range of Environmental Product Declarations of Institut Bauen und Umwelt (IBU), Part B: Requirements on the EPD for Sanitary Ceramics. November 2011

www.bau-umwelt.de

ISO 14025

DIN EN ISO 14025:2009-11: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

FprEN 15804

FprEN 15804:2011-04: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products

DIN EN 50001

DIN EN 50001: 2011-12, Energy management systems. Requirements with guidance for use

ISO 9001

ISO 9001:2008, Quality management systems – Requirements

ISO 14001

ISO 14001:2004, Environmental management systems – Requirements with guidance for use

ISO 6486-2

ISO 6486-2:2000 Ceramic ware, glass-ceramic ware and glass dinnerware in contact with food -- Release of lead and cadmium -- Part 2: Permissible limits

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