


## Environmental Product Declaration (ISO DIS 21 930)

### DURIPANEL

#### General Information

Name and address of the manufacturer:	Eternit AG Plant: Neubeckum Dyckerhoffstr. 95 – 105 59269 Beckum Germany
Description of the product:	The product studied is a cement-bonded wood board. Duripanel can be used for a variety of general purpose applications, including infill panels, fascia panels and bargeboards. The dimensions of one unit are: 2,4 m x 1,2 m x 0,01 m Weight per unit: 36 kg/unit
Functional Unit and Reference flow:	To cover 100 m <sup>2</sup> of wall during the reference service life (60 years). Number of units needed to cover 100 m <sup>2</sup> of wall: 35 Reference flow: 1260 kg No loss is reported during the fixing.
Product identification by name and code:	Duripanel
Visual representation of the product:	
Ancillary Materials:	Stainless steel screws are fixed using stainless steel screws (2.7 kg per 100 m <sup>2</sup> )
Packaging:	To transport 1 800 kg of Duripanel: 1 wood pallet (32 kg)
Replacement and Maintenance:	No replacement or maintenance.
PCR identification:	The PCR is currently being written under the supervision of the EFFCM.
Date of issue:	27/07/06
Stages considered:	All the life cycle phases are included: - Production, transport, construction, use and maintenance, demolition and recycling.

Representativity of the declaration:

This declaration is representative of one product produced in one plant.

PCR review was conducted by:

To be completed

Independent verification of the declaration and data, according to ISO 14025

 Internal External

Third party verifier:

## Environmental aspects

### Resource use and environmental impacts

All flows are related to the functional unit: to cover 100 m<sup>2</sup> of wall with Duripanel. This corresponds to 1260 kg of product.

			Total	1 Production	2 construction	3 Use/ Operation	4 Use/ Maintenance	5 End of life
<b>Material Resources</b>			Unit					
Non renewable material resources	Limestone	kg	1 279	1 278	0.759	0	0	0.00138
	Gravel	kg	50.7	50.7	0.00634	0	0	0.00191
	Clay	kg	43.1	43.1	0.000574	0	0	0.000229
	Iron	kg	3.70	2.29	1.41	0	0	0.000536
Renewable material resources	Wood (dry)	kg	242	197	44.8	0	0	0.000592
	Other	kg						
Secondary Materials used		kg	20.2	17.6	2.59	0	0	0.00184
Inputs not traced back		kg	0.192	0.184	0.00629	0	0	0.00177
Water Consumption		Litres	7 773	7 688	75.7	0	0	9.80

### Energy Resources

Non renewable energy		MJ	11 678	11 048	533	0	0	96.7
Fossil Energy	Coal	kg	95.2	91.4	3.75	0	0	0.112
	Lignite	kg	261	261	0.378	0	0	0.101
	Natural Gas	kg	24.0	22.6	1.22	0	0	0.0990
	Oil	kg	80.7	69.9	8.68	0	0	2.04
	Uranium	MJ	535	531	3.32	0	0	0.979
Nuclear Energy	Uranium	kg	0.00412	0.00408	2.55 E-05	0	0	7.53 E-06
Renewable Energy		MJ	11 051	10 781	269	0	0	0.702
Recovered Energy (secondary fuels)			1 193	1 193	0	0	0	0

			Total	1 Production	2 construction	3 Use/ Operation	4 Use/ Maintenance	5 End of life
<b>Impacts</b>								
Climate Change	TOTAL	kg eq. CO2	1 166	1 113	46.3	0	0	7.34
	Air – Carbon dioxide	kg eq. CO2	1 130	1 080	44.4	0	0	6.96
	Air – Other	kg eq. CO2	35.8	33.5	1.88	0	0	0.386
Destruction of the Ozone layer	TOTAL	g eq. CFC-11	0.184	0.161	0.0178	0	0	0.00498
	Air – Halon 1301	g eq. CFC-11	0.169	0.146	0.0178	0	0	0.00498
	Air – Other	g eq. CFC-11	0.0151	0.0151	0	0	0	0
Acidification	TOTAL	g eq. SO2	3 174	2 689	436	0	0	49.6
	Air – Nitrogen Oxide (Nox)	g eq. SO2	1 162	949	172	0	0	40.6
	Air – Sulphur Oxide (Sox)	g eq. SO2	1 996	1 724	263	0	0	8.97
	Air – Other	g eq. SO2	16.3	16.2	0.00982	0	0	0.000740
Eutrophication	TOTAL	g eq. PO4	322	265	46.1	0	0	10.7
	Air – Nitrogen Oxide (Nox)	g eq. PO4	302	247	44.7	0	0	10.6
	Water – COD	g eq. PO4	8.61	8.45	0.153	0	0	0.00661
	Air – Water – Soil – Other	g eq. PO4	11.2	9.83	1.26	0	0	0.107
Formation of photochemical oxidants	TOTAL	g eq. Ethylene	468	430	29.4	0	0	8.67
	Air – Carbon Monoxide	g eq. Ethylene	161	157	3.02	0	0	0.769
	Air – Ethylene	g eq. Ethylene	42.1	41.8	0.223	0	0	0.0863
	Air – Non methanoic hydrocarbons (unspecified)	g eq. Ethylene	158	125	25.0	0	0	7.49
	Air – Non methanoic organic compounds (unspecified)	g eq. Ethylene	68.8	68.8	0	0	0	0
	Air – Volatile Organic Compounds	g eq. Ethylene	0.0574	0.0574	0	0	0	0
	Air – Other	g eq. Ethylene	38.6	37.1	1.14	0	0	0.321
Depletion of fossil energy resources	TOTAL	kg eq. Sb	5.28	4.98	0.259	0	0	0.0458
	Coal	kg eq. Sb	1.28	1.22	0.0503	0	0	0.00151
	Lignite	kg eq. Sb	1.75	1.75	0.00254	0	0	0.000681

			<b>Total</b>	<b>1 Production</b>	<b>2 construction</b>	<b>3 Use/ Operation</b>	<b>4 Use/ Maintenance</b>	<b>5 End of life</b>
	Natural Gas	kg eq. Sb	0.631	0.596	0.0322	0	0	0.00261
	Oil	kg eq. Sb	1.62	1.41	0.174	0	0	0.0410
	Uranium	kg eq. Sb	1.18 E-05	1.17 E-05	7.31 E-08	0	0	2.16 E-08

Depletion of mineral resources	TOTAL	kg eq. Sb	0.00305	9.16 E-05	0.00296	0	0	2.23 E-09
	Chromium	kg eq. Sb	0.000396	1.01 E-06	0.000395	0	0	2.38 E-11
	Molybdenum	kg eq. Sb	0.00255	2.69 E-05	0.00252	0	0	0
	Other	kg eq. Sb	0.000105	6.37 E-05	4.08 E-05	0	0	2.21 E-09

### Waste to disposal

		<b>Total</b>	<b>1 Production</b>	<b>2 construction</b>	<b>3 Use/ Operation</b>	<b>4 Use/ Maintenance</b>	<b>5 End of life</b>
Waste mineral inert	kg	53.5	53.4	0.101	0	0	0.0401
Waste non dangerous	kg	10.3	4.64	5.68	0	0	0.0278
Waste dangerous	kg	9.21	9.18	0.0267	0	0	0.0101
Mining waste	kg	1 358	1 323	34.8	0	0	0.0522

### Emissions to water and to indoor air

There are no emissions to water or to indoor air during the life in use phase of this product since it is used as an outside wall panel.

**Additional environmental information**

Impacts and potential impacts on biodiversity:	Not applicable
Toxicity related to human health and/or the environment:	Not applicable
Environmental Management System:	The Neubeckum plant is certified ISO 14001
Participation to recovery and recycling programs for the product end of life:	Not applicable
Instructions and limits for efficient use:	To be completed
Hazard and risk assessment on human health and the environment:	Not applicable
Information on absence or level of presence of a material/ substance in the product that is considered of environmental significance	Not applicable
Preferred waste management option for used products:	To be completed
Potential for incidents that have impacts on the environment:	Not applicable

**Scenarios and Technical information**

Reference service life of the product with reference in-use conditions according to ISO/DIS 15 686-8:	60 years
Production stage:	The production stage includes the Duripanel manufacturing process as well as the production of 99.99% of the inputs.
Transportation stage (included in the construction stage)	The average transport distance for the Duripanel is 397 km by road.
Construction stage:	2.7 kg of stainless steel screws are needed for the fixing of 100 m <sup>2</sup> of Duripanel. No electric tool is needed..
Use/ Operation stage:	Not applicable
Use/ Maintenance stage:	Not applicable
End of life:	The product is assumed to be transported and crushed to produce new material
Information on energy and water-saving etc. and other improvements like acoustical improvements:	Not applicable
Energy content of the building product for energy recovery in the end of life:	Not applicable
Content of recycled material:	1.6% from cement production