

ENVIRONMENTAL DECLARATION ISO 14025 and ISO 21930



Hot finished structural hollow sections of steel (HFSHS)

EPD
Foundation for Environmental
Declarations in Industry

Bjørn Green



NEPD no.: 065
Issued, date: 01.04.2007
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Independent verification of conformity

We confirm that this environmental declaration has been carried out according to ISO 14044, ISO 14025 and ISO 21930, and Product category rules (PCR) of Steel as construction materials. The documentation has been carried out with the EcoDec-tool.

The declaration has been prepared by:

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Oslo : 01.04.2007

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Industrial body

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Background information

Scope (Information modules)
Year of study

Cradle to gate
2006

Declared unit

kg steel

Product description

Hot finished structural hollow sections (HFSHS): Circular, square and rectangular sections are used in building frame structures, made of hot-rolled steel by European manufacturers. Dimensions: Square HS: 40x3 - 400x20. Rectangular HS: 50x30x3,2 - 500x300x20 and Circular HS: 21,3x2 - 711x60.

The requirements of the EN 10210 standard are applied. The standard steel grade is S355. Density of steel: 7,850 kg/m³.

Product specification

	Part %	Quantity (kg/FU)
Steel	100,0 %	1,00
SUM	100,0 %	1,00

Environmental Indicators

Global warming	0,9	kg CO2 equiv.
Energy use	14,3	MJ
Recycled materials	96	%
Indoor air classification (Classification according to CR 1752:1999)	Not relevant	

The Norwegian Steel Association is the sole owner of this document and takes liability and responsibility for the EPD of the steel products. No other is authorised to use the environmental performance of the steel products without an agreement from the Norwegian Steel Association.

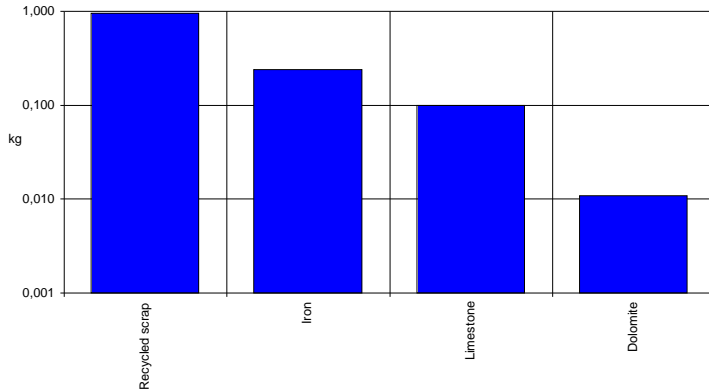
Use of resources

Material resources

		Type	Unit	Raw materials	Manufacturing			Transport	Total
R = Recycled materials									
* = Feedstock									
Non-renewable materials									
Recycled scrap	R	kg	9,6E-01						9,6E-01
Iron		kg	2,4E-01						2,4E-01
Limestone		kg	9,9E-02						9,9E-02
Dolomite		kg	1,1E-02						1,1E-02

All figures refer to declared unit

Material resources total



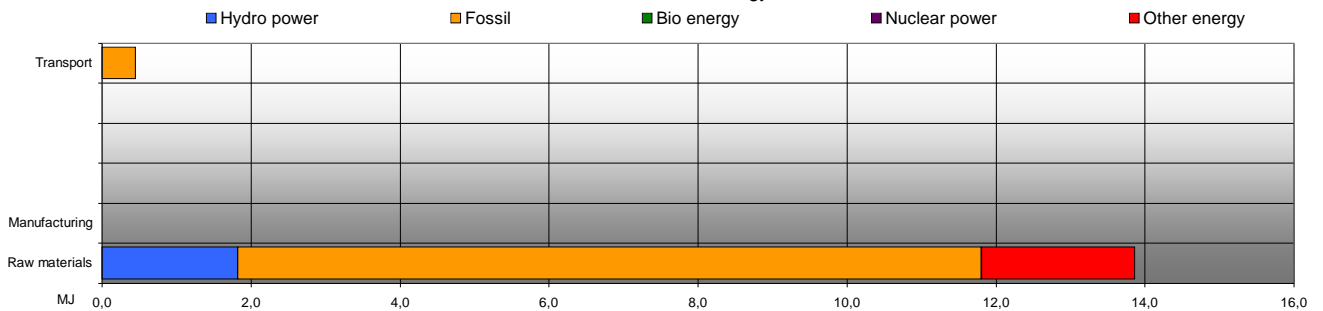
Renewable materials 0 %, Non-renewable materials 100 %, Recycled materials 96 %

The product does not contain tropical wood. No chemicals from the Norwegian observation list are used.

Energy resources

	Unit	Raw materials	Manufacturing			Transport	Total
Renewable energy							
Hydro power	MJ	1,8E+00					1,8E+00
Non-renewable energy							
Oil	MJ	1,5E+00				4,6E-01	2,0E+00
Gas	MJ	3,4E+00					3,4E+00
Coal	MJ	5,1E+00					5,1E+00
Other energy	MJ	2,1E+00					2,1E+00
Total							1,4E+01

Energy use



Water

Potable water 2,3E-03 m³

Land

Land used 0,00 m²

Emissions and environmental impacts

Environmental impacts

All figures refer to declared unit

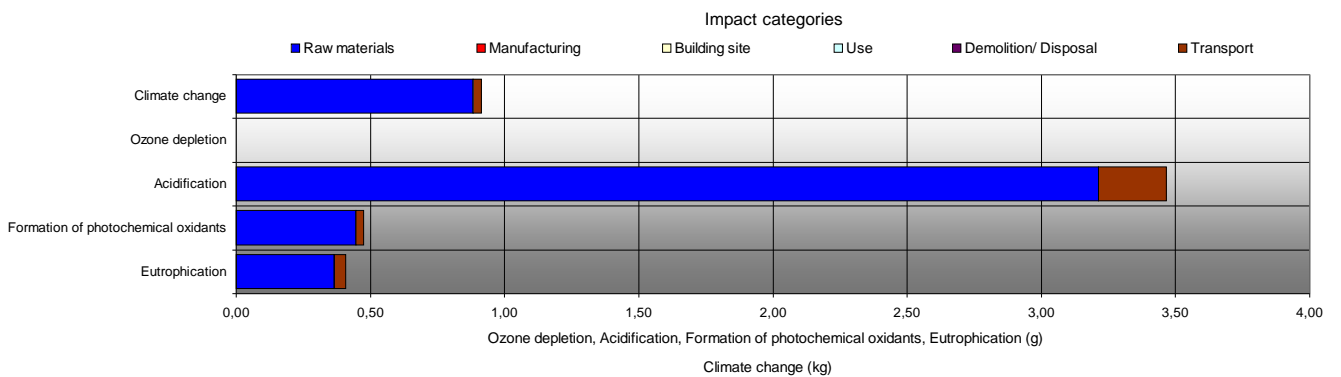
	Unit	Raw materials	Manufacturing				Transport	Total
Climate change	kg CO ₂ - equiv.	8,8E-01					3,39E-02	9,15E-01
Ozone depletion	kg ODP - equiv.							
Acidification	kg SO ₂ - equiv.	3,2E-03					2,55E-04	3,47E-03
Formation of photochemical oxidants	kg POCP- equiv.	4,5E-04					3,06E-05	4,77E-04
Eutrophication	kg PO ₄ - equiv.	3,7E-04					4,50E-05	4,11E-04

Emissions to air

	Unit	Raw materials	Manufacturing				Transport	Total
CO ₂	g	8,2E+02					3,3E+01	8,6E+02
CO	g	9,5E+00					1,5E-01	9,6E+00
SO ₂	g	1,8E+00					1,3E-02	1,8E+00
NO _x	g	1,6E+00					3,5E-01	1,9E+00
NM VOC	g	1,3E-01					3,9E-02	1,7E-01
Particles	g	6,2E-01					2,6E-02	6,5E-01
CH ₄	g	7,9E-01					1,6E-03	7,9E-01
N ₂ O	g	3,8E-02					3,9E-04	3,8E-02
NH ₃	g	1,9E-01						1,9E-01
Pb	g	2,2E-03					1,2E-06	2,2E-03
Hg	g	1,2E-04						1,2E-04
HCl	g	3,8E-02						3,8E-02
Benzene	g						7,8E-04	7,8E-04
H ₂ S	g	2,1E-02						2,1E-02
Zn	g	1,4E-02						1,4E-02
Cr	g	3,4E-04						3,4E-04
Cd	g	6,4E-05						6,4E-05
Dioxins	g	3,5E-10						3,5E-10

Emissions to water

Substance/fibre	g	4,3E-02						4,3E-02
COD	g	3,7E-02						3,7E-02
Phosphorus P	g	3,0E-03						3,0E-03
Nitrogen N	g	2,0E-01						2,0E-01
Fe	g	1,4E-01						1,4E-01
Pb	g	1,3E-04						1,3E-04
Ni	g	3,2E-05						3,2E-05



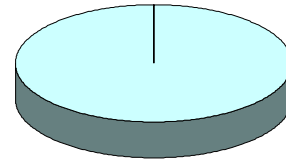
Emissions to indoor environment are not relevant for this product

Waste treatment

All figures refer to declared unit

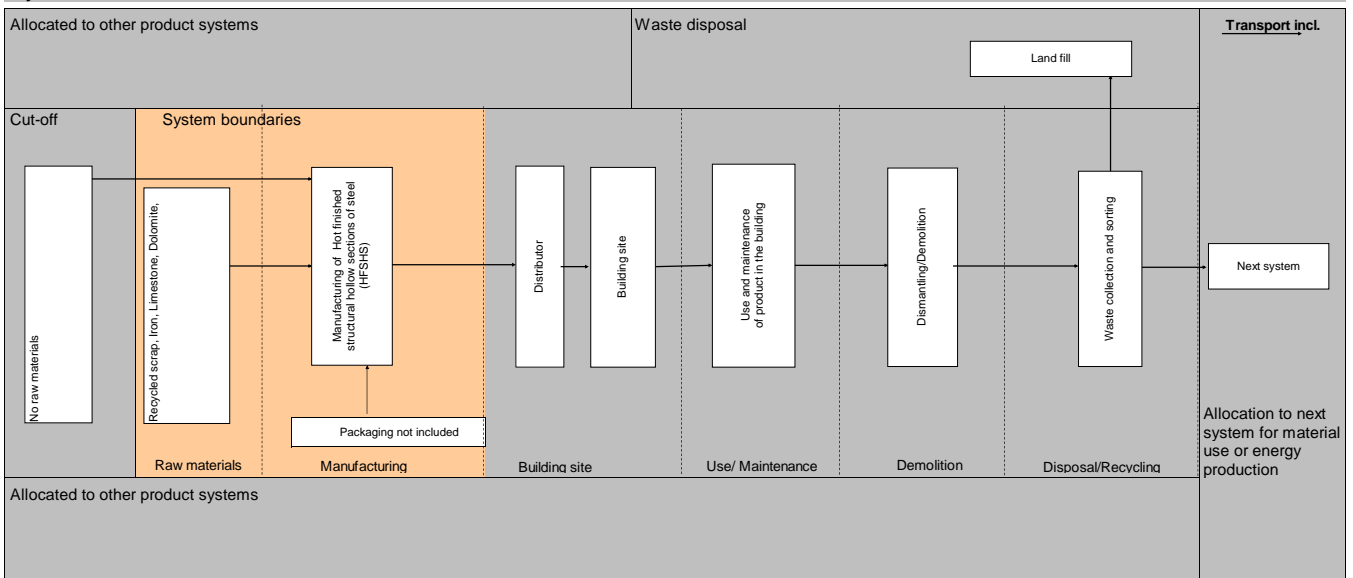
	Unit	Raw materials	Manufacturing				Total
Reuse/ recycling	kg						
Energy production	kg						
Waste to land fill	kg	1,8E-01					1,8E-01
Hazardous waste	kg						

Waste treatment



■ Reuse/ recycling
■ Energy production
■ Waste to land fill
■ Hazardous waste

System boundaries



Uncertainty	±	10 %
Scope of data (average)		100 %
Materials with product specific data		0 %
Cut-off		0,00 %

References: Sintef Byggforsk Report 20958

This EPD is not fit to be used for comparison (Cradle to gate).