

UNEQUIPPED RAIL CABINETS

Product Environmental Profile

Environmental Product Declaration



HSR1-160 - 6963.220



Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"

ORGANIZATION		CONTACT INFORMATION			
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ABB Purpose & Embedding Sustainability

ABB is committed to continually promoting and embedding sustainability across its operations and value chain, aspiring to become a role model for others to follow.

With its ABB Purpose, ABB is focusing on reducing harmful emissions, preserving natural resources and championing ethical and humane behavior.

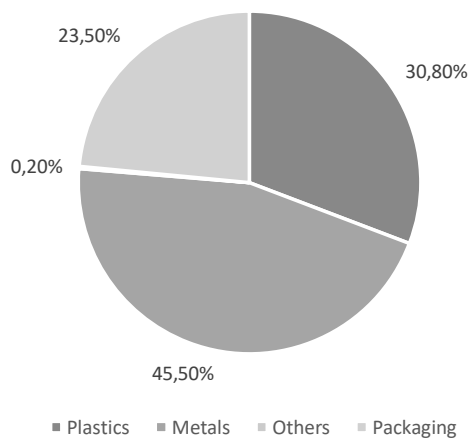


General Information

Reference product	6963.220 HSR1-160
Description of the product	Unequipped rail cabinet with a maximum permissible power of 110400 W
Functional unit	1. Protect persons during 20 years against direct contact with live parts and allow grouping monitoring, control and protection devices in a cabinet having the following dimensions 220 mm x 220 mm x 56 mm, while protecting against the penetration of solid objects and liquids (IP20). 2. Connect during 20 years 3 clamping units between 2 or more wires with a rated voltage of 230/400VAC and a voltage drop of 0,0075V
Other products covered	6963.210 HSR1-63

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Constituent materials



Total weight of Reference product in kg including packaging 1,589199167

Plastics as % of weight		Metals as % of weight		Others as % of weight	
Name and CAS number	Weight-%	Name and CAS number	Weight-%	Name and CAS number	Weight-%
Plastics as % of weight	30,80	Others as % of weight	45,50	Others as % of weight	0,20
-	-	-	-	Packaging as % of weight	23,50



Additional Environmental Information

Manufacturing	Manufactured at Ede factory in the Netherlands, ISO 14001 certified. In the manufacturing process is considered the raw material including the packaging, its transport to the manufacturing site, the manufacturing process and the transport to ABB in Ede. The information is given by the company
Distribution	Packaging consists of a cardboard box, a pallet and LDPE. The transport distance per unequipped Hafonorm cabinet is 150 kilometres, which is based on the default transport distance for the distribution stage from the National Environmental Database (Nationale Milieu Database, hereafter referred to as NMD) Dutch standard Environmental Performance Assessment Method for Construction Works, calculation method to determine environmental performance of construction works throughout their service life, based on EN 15804 (hereafter referred to as NMD Assessment method).
Installation	For the installation of the product, no special installation procedure is required and little to no energy is required to install the cabinets.
Use	The product does not require special maintenance operations. The use stage includes energy dissipation which means energy becomes unavailable due to generation of heat in the system.
End of life	No special end-of-life treatment is required. The waste treatment and disposal scenarios of the materials are based on default waste treatment and disposal scenarios from the Dutch standard NMD Assessment method.
Benefits and loads beyond the system boundaries	Benefits and loads beyond the system boundaries are included

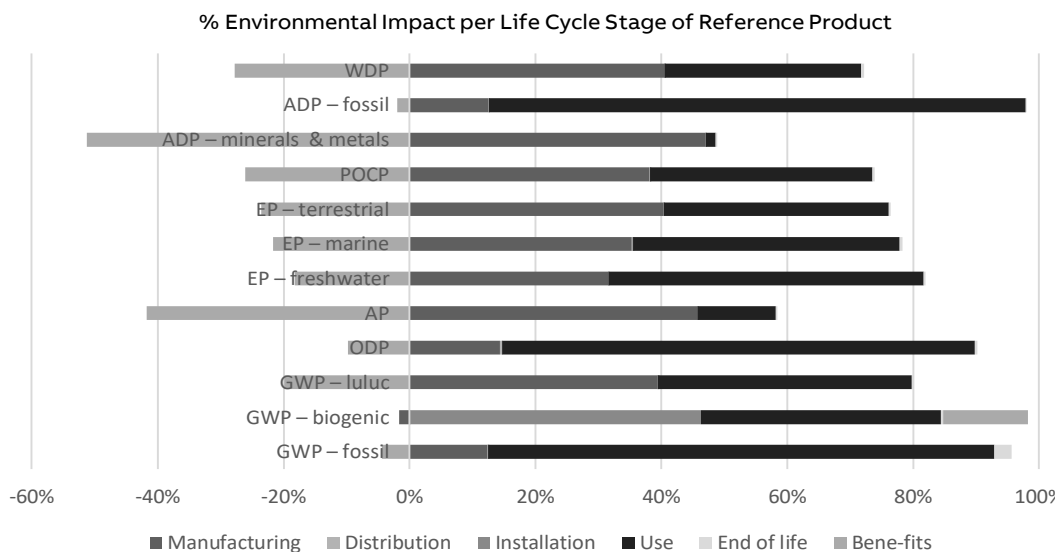


Environmental impacts

Reference lifetime	20 years
Product category	Electrical, Electronic and HVAC-R Products with specific rules for Electrical switchgear and control gear Solutions (unequipped cabinets and terminal blocks)
Installation elements	Four screws
Use scenario	Load factor: 30% of In and Use rate: 90% of the RLT
Geographical representativeness	Good quality
Technological representativeness	Excellent quality
Software and database used	LCA calculations made with Simapro 9.3, with the EN 15804:2019+A2 characterization factors (IPCC AR5) and Ecoinvent version 3.8n database
Energy model used	
Manufacturing	Electricity, low voltage [NL] electricity production, photovoltaic, 3kWp slanted-roof installation, multi-Si, panel, mounted Cut-off, U and Electricity, low voltage [NL] market for Cut-off, U
Installation	Non-applicable
Use	Electricity, low voltage [NL] market for Cut-off, U
End of life	Non-applicable

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Common base of mandatory indicators



Environmental impact indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
GWP-total	kg CO ₂ eq.	4,05E+01	5,09E+00	2,17E-02	3,59E-03	6,18E+01	7,19E-02	-1,49E+01
GWP-fossil	kg CO ₂ eq.	3,94E+01	5,10E+00	2,16E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00
GWP-biogenic	kg CO ₂ eq.	1,13E+00	-2,31E-02	2,20E-05	3,59E-03	6,18E+01	7,19E-02	-1,49E+01
GWP-luluc	kg CO ₂ eq.	2,43E-02	1,20E-02	7,78E-06	1,54E-01	4,74E+02	1,03E+00	-1,08E+01
GWP-fossil = Global Warming Potential fossil fuels GWP-biogenic = Global Warming Potential biogenic GWP-luluc = Global Warming Potential land use and land use change								
OPD	kg CFC-11 eq.	1,88E-06	3,00E-07	5,17E-09	2,04E-09	1,57E-06	7,33E-09	-2,04E-07
OPD = Depletion potential of the stratospheric ozone layer								
AP	H ⁺ eq.	3,44E-01	2,70E-01	9,03E-05	5,86E-05	1,57E-06	7,33E-09	-2,46E-01
AP = Acidification potential, Accumulated Exceedance								
EP-freshwater	kg P eq.	3,11E-03	1,20E-03	1,48E-07	1,26E-07	1,91E-03	2,36E-06	-6,95E-04
EP-marine	kg N eq.	2,95E-02	1,33E-02	2,73E-05	2,07E-05	1,59E-02	1,71E-04	-8,18E-03
EP-terrestrial	mol N eq.	4,00E-01	2,11E-01	3,01E-04	2,21E-04	1,87E-01	1,82E-03	-1,23E-01
EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment EP-terrestrial = Eutrophication potential, Accumulated Exceedance								
POCP	kg NMVOC eq.	1,03E-01	5,33E-02	9,69E-05	7,02E-05	4,94E-02	4,73E-04	-3,65E-02
POCP = Formation potential of tropo-spheric ozone								
ADP-minerals & metals	kg Sb eq.	6,47E-03	6,25E-03	4,96E-08	5,28E-08	2,18E-04	6,94E-07	-6,82E-03
ADP-fossil	MJ	5,07E+02	6,46E+01	3,37E-01	1,45E-01	4,41E+02	9,65E-01	-1,02E+01
ADP-minerals & metals = Abiotic depletion potential for non-fossil resources ADP-fossil = Abiotic depletion for fossil resources potential								
WDP	m ³ e depr.	8,31E+00	4,66E+00	1,16E-03	1,06E-03	3,59E+00	5,93E-02	-3,19E+00
WDP = Water Deprivation potential								

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Common base of mandatory indicators

Inventory flows indicator – Resource use indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
PERE	MJ	7,48E+01	1,29E+01	4,29E-03	3,59E-03	6,18E+01	7,19E-02	-1,49E+01
PERM	MJ	1,22E+00	1,22E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	7,61E+01	1,41E+01	4,29E-03	3,59E-03	6,18E+01	7,19E-02	-1,49E+01
PENRE	MJ	5,43E+02	6,73E+01	3,58E-01	1,54E-01	4,74E+02	1,03E+00	-1,08E+01
PENRM	MJ	1,63E+00	1,63E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	5,45E+02	6,90E+01	3,58E-01	1,54E-01	4,74E+02	1,03E+00	-1,08E+01

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials
 PERM = Use of renewable primary energy resources used as raw materials
 PERT = Total Use of renewable primary energy resources
 PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials
 PENRM = Use of non-renewable primary energy resources used as raw materials
 PENRT = Total Use of non-renewable primary energy re-sources)

Inventory flows indicator – Indicators describing the use of secondary materials, water, and energy re-sources

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
SM	kg	5,81E-01	5,81E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m ³	3,69E-01	1,12E-01	3,71E-05	3,92E-05	2,54E-01	1,85E-03	-7,26E-02

SM = Use of secondary material
 RSF = Use of renewable secondary fuels
 NRSF = Use of non-renewable secondary fuels
 FW = Use of net fresh water

Inventory flows indicator – Waste category indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
Hazardous waste disposed	kg	7,35E-04	2,35E-04	8,16E-07	3,83E-07	4,97E-04	1,66E-06	-7,31E-05
Non- hazardous waste disposed	kg	3,11E+00	1,56E+00	3,15E-02	9,01E-03	1,43E+00	8,45E-02	-1,12E+00
Radioactive waste disposed	kg	1,13E-03	2,05E-04	2,28E-06	9,36E-07	9,15E-04	3,56E-06	-1,17E-04

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Common base of mandatory indicators

Inventory flows indicator – Output flow indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
Components for re-use	kg	2,50E-01	0,00E+00	0,00E+00	2,50E-01	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	8,01E-01	0,00E+00	0,00E+00	9,88E-02	0,00E+00	7,02E-01	0,00E+00
Materials for energy recovery	kg	4,66E-01	0,00E+00	0,00E+00	2,57E-02	0,00E+00	4,40E-01	0,00E+00
Exported energy	MJ	7,74E+00	0,00E+00	0,00E+00	2,06E-01	0,00E+00	7,53E+00	0,00E+00

Inventory flow indicator – other indicators

Indicator	Unit	Total
Biogenic carbon content of the product	kg of C	1,31E-03
Biogenic carbon content of the associated packaging	kg of C	1,72E-01

Optional indicators

Environmental indicators

Indicator	Unit	Total	Manu- facturing	Distri- bution	Instal- lation	Use	End of life	Bene- fits
Total use of primary energy during the life cycle	MJ	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Emissions of fine particles	inci- dence of dis-eases	9,85E-07	7,04E-07	2,54E-09	1,23E-09	2,72E-07	4,96E-09	-3,97E-07
Ionizing radiation, human health	kBq U235 eq.	1,14E+00	2,46E-01	1,46E-03	6,32E-04	8,86E-01	3,47E-03	-1,54E-01
Ecotoxicity (fresh water)	CTUe	2,50E+03	2,09E+03	2,63E-01	2,00E-01	3,99E+02	3,47E+00	-1,46E+03
Human toxicity, carcinogenic effects	CTUh	6,01E-08	5,06E-08	7,28E-12	9,57E-12	9,36E-09	1,42E-10	-4,70E-08
Human toxicity, non-carcinogenic effects	CTUh	3,73E-06	3,46E-06	2,88E-10	2,25E-10	2,66E-07	5,08E-09	-3,81E-06
Impact related to land use/soil quality	kg	1,59E+02	9,14E+01	3,86E-01	1,08E-01	6,64E+01	5,38E-01	-1,13E+02

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For other products than the Reference product covered by this PEP, the environmental impacts for each phase of the lifecycle are obtained by multiplying the values of the Reference product by the following coefficients:

* if the coefficient is "1", the impacts of the phase of the life cycle are assimilated to the Reference product, meaning that the impacts are unchanged in comparison to the Reference product

Product name	Manufacturing	Distribution	Installation	Use	End of life	Benefits
6963.210 HSR1-63						
Climate change - total	7,13E-01	9,94E-01	1,00E+00	5,24E+00	1,00E+00	2,07E-02
Climate change - fossil fuels	7,15E-01	9,94E-01	1,00E+00	5,24E+00	1,00E+00	1,23E-01
Climate change - biogenics	1,23E+00	9,94E-01	1,00E+00	5,24E+00	1,44E+00	1,04E+00
Climate change - land use and land use transformation	6,51E-01	9,94E-01	1,00E+00	5,24E+00	9,88E-01	3,76E-01
Ozone depletion	6,92E-01	9,94E-01	1,00E+00	5,24E+00	9,96E-01	5,63E-01
Acidification	4,21E-01	9,94E-01	1,00E+00	5,24E+00	9,95E-01	3,54E-01
Freshwater eutrophication	4,21E-01	9,94E-01	1,00E+00	5,24E+00	9,88E-01	3,56E-01
Marine eutrophication	4,92E-01	9,94E-01	1,00E+00	5,24E+00	9,98E-01	3,10E-01
Terrestrial eutrophication	6,13E-01	9,94E-01	1,00E+00	5,24E+00	9,98E-01	3,46E-01
Photochemical ozone formation	4,89E-01	9,94E-01	1,00E+00	5,24E+00	9,98E-01	3,40E-01
Resource depletion - metals and minerals	3,63E-01	9,94E-01	1,00E+00	5,24E+00	9,88E-01	3,58E-01
Resource depletion - fossils	6,93E-01	9,94E-01	1,00E+00	5,24E+00	9,92E-01	-9,80E-01
Water requirement	5,18E-01	9,94E-01	1,00E+00	5,24E+00	9,99E-01	1,48E-01

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Verifier accreditation number:	VH42	Supplemented by:	PSR-0005-ed2-EN-2016 03 29
Date of issue:	September 2022	Information and reference documents:	www.pep-ecopassport.org
Validity period:	5 years	Independent verification of the declaration and data, in compliance with ISO 14025: 2010	
Internal <input type="radio"/>		External <input checked="" type="radio"/>	
The PCR review was conducted by a panel of experts chaired by Philippe Osset (SOLINNEN)			
PEP are compliant with XP C08-100-1: 2016 The elements of the present PEP cannot be compared with elements from another program			
Document in compliance with ISO 14025: 2010 "Environmental labels and declarations. Type III environmental declarations"			



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Environmental Impact Indicator Glossary

Impact indicators

Indicator	Description	Unit
Global warming potential (GWP) - total	Indicator of potential global warming caused by emissions to air contributing to the greenhouse effect. The total global warming potential (GWP-total) is the sum of three sub-categories of climate change. GWP-total = GWP-fossil + GWP-biogenic + GWP- land use and land use change	kg CO ₂ eq.
Ozone depletion (OD)	Emissions to air that contribute to the destruction of the stratospheric ozone layer	kg CFC-11 eq.
Acidification of soil and water (A)	Acidification of soils and water caused by the release of certain gases to the atmosphere, such as nitrogen oxides and sulphur oxides	H+ eq.
Eutrophication (E)	Indicator of the contribution to eutrophication of water by the enrichment of the aquatic ecosystem with nutritional elements, e.g. industrial or domestic effluents, agriculture, etc. This indicator is divided to three: freshwater, marine and terrestrial.	kg P eq., kg N eq., mole N eq.
Photochemical ozone creation (POCP)	Indicator of emissions of gases that affect the creation of photochemical ozone in the lower atmosphere (smog) because of the rays of the sun.	kg NMVOC eq.
Depletion of abiotic resources – elements (ADPe)	Indicator of the depletion of natural non-fossil resources	kg Sb eq.
Depletion of abiotic resources – fossil fuels (ADPf)	The use of non-renewable fossil resources in an unsustainable way (e.g. from material to waste)	MJ (lower heating value)
Water Deprivation potential (WDP)	Deprivation-weighted water consumption. Assesses the potential of water deprivation, to either humans or ecosystems, building on the assumption that the less water remaining available per area, the more likely another user will be deprived.	m ³ e depr.

Resource use indicators

Indicator	Description	Unit
Total use of primary energy	Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials) + Total use of renewable primary energy re-sources (primary energy and primary energy resources used as raw materials)	MJ (lower heating value)

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