

# Carlisle Construction Materials GmbH

## Product sustainability fact sheet

### Product information for the building certification scheme LEED v4® (Leadership in Energy and Environmental Design)

The intention of this document is to support project teams pursuing LEED v4 certification by providing an overview of how your products contribute to LEED v4 credits. Basis of this information is Leed v4 credit library (2014 -07)<sup>1</sup>

## RESITRIX® CL and RESITRIX® MB

### General Information

Company name:	Carlisle Construction Materials GmbH
Address:	Schellerdamm 16, 21079 Hamburg
Contact person:	Herr Bürdek / Herr Sochor
Phone:	+49 (0)40 788933-228
Email:	info@ccm-europe.com
Homepage:	<a href="http://www.resitrix.com">www.resitrix.com</a>
Date:	18.11.2014

### Product information

#### Product description

RESITRIX® CL and RESITRIX® MB are hot-air weldable, glass-reinforced roofing and waterproofing membranes based on synthetic EPDM rubber. The underside has a polymer-modified bitumen coating, whereby RESITRIX® CL has a fine sand finish and RESITRIX® MB has a polyethylene (PE) separating film.

#### Application

RESITRIX® CL is suitable for all types of installation (except loose installation for green roofs). This roofing membrane can be applied using polyurethane adhesive. It can also be glued directly to expanded polystyrene (EPS).

RESITRIX® MB can be installed: loose laid with mechanical fixings and loose laid with ballast (except for green roofs).

#### Technical data

Name	Value	Unit
Foldability at low temperature EN 495-5 - EN 1109	No tears at -30	°C
Tensile strength to EN 12311-2 Set point: longitudinal $\geq 250$ / traverse $\geq 200$	361 / 333	N/50 mm
Elongation at break to EN 12311-2 Set point: longitudinal $\geq 300$ / traverse $\geq 300$	600 / 600	%
Dimensional stability to EN 1107-2 Set point: longitudinal / traverse $\leq 0,5$	+0,1 / +0,2	%
Ozone resistance EN 1844 Set point: Grade 0	Grade 0	-
UV-radiation /EN 1297/ Set point: no tears	passed	-
Shear resistance EN 12317-2 Set point: $\geq 200$	700	N/50 mm
Peel resistance EN 12316-2 Set point: $\geq 80$	170	N/50 mm
Water vapour diffusion resistance value $\mu$ EN 1931 (Verf. B)	$\geq 58000$	-
RESITRIX MB FM Standard Class 1 / ROOF COVERS	fulfilled	-
Reaction to fire EN 13501, Part 1 Set point: Class E	Class E	-
Reaction to fire to DIN 4102-7 - ENV 1187 external fire exposure to roofs	Resistant to flying sparks and radiated heat B roof	-

<sup>1</sup> <http://www.usgbc.org/credits> (8/2014)

# Carlisle Construction Materials GmbH

## Product sustainability fact sheet

	t1 and t2	
Hail resistance, rigid and flexible underlay EN 13583	35 / 50	m/s
Resistance to impact EN 12691 (versions A + B)	2000	mm
Maximum tensile force EN12311-2/Set point: ≥500	700	N/50 mm
Watertightness EN 1928	6 bar /72 h	fulfilled
Tear resistance EN 12310-2	40	N
Bitumen compatibility EN 1548	passed	-
Artificial ageing	> 5000 h	fulfilled

### Product declarations

#### Environmental product declaration

Number

[EPD-CCM-20120287-IBD1-DE](#)

Program operator

Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany

Author of the LCA

PE INTERNATIONAL AG, Leinfelden-Echterdingen, Germany

## Sustainable Sites (SS)

#### Summary

Sustainable sites credits encourage strategies that minimize the impact on ecosystems and water resources.

#### Heat island reduction

##### *Intent of this credit:*

To minimize effects on microclimates and human and wildlife habitats by reducing heat islands.

Product information for RESITRIX® MB and RESITRIX® CL within this credit:

Item	Value	Unit
solar reflectance index (SRI) value (roofing materials)	near 0 (black)	-
solar reflectance (SR) value (shading device for nonroof applications, or paving material) - according to DIN EN 410	0,03	-

## Materials and Resources (MR)

#### Summary

Materials and Resources credits encourage using sustainable building materials and reducing waste. Indoor environmental quality credits promote better indoor air quality and access to daylight and views.

### Building product disclosure and optimization - environmental product declarations

##### *Intent of this credit*

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products from manufacturers who have verified improved environmental life-cycle impacts.

Product names: RESITRIX® CL and RESITRIX® MB

# Carlisle Construction Materials GmbH

## Product sustainability fact sheet

Product information for RESITRIX® MB and RESITRIX® CL within this credit:

Item	Value
Critically reviewed LCA acc. to ISO 14044?	yes
Reviewer	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany
Download link of the document/study	<a href="http://construction-environment.com/download/C13ca1a0bX147fc8f9060X59db/EPD_CCM_20120287_IBD1_EN.pdf">http://construction-environment.com/download/C13ca1a0bX147fc8f9060X59db/EPD_CCM_20120287_IBD1_EN.pdf</a>
Industry-wide (generic) EPD (Type III, including external verification)?	no
Product specific EPD (Type III, including external verification)?	yes
EPD program operator	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany; <a href="http://www.construction-environment.com">www.construction-environment.com</a>
EPD program operator country	Germany
EPD number	<a href="#">EPD_CCM_20120287_IBD1_DE</a>

### Results of the LCA – ENVIRONMENTAL IMPACTS:

Declared unit: 1 m<sup>2</sup> RESITRIX® CL or RESITRIX® MB

Declared life cycle stages (standard DIN EN 15978)	PRODUCT STAGE		END OF LIFE STAGE		BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
	A1-A3	C2	C4	D	
GWP [kg CO <sub>2</sub> -eq.]	5.36E+0	8.13E-3	8.61E+0	-4.55E+0	
ODP [kg CFC11-eq.]	1.0E-9	1.7E-13	4.08E-11	-1.38E-9	
AP [kg SO <sub>2</sub> -eq.]	1.32E-2	3.68E-5	2.5E-3	-6.3E-3	
EP [kg PO <sub>4</sub> 3-- eq.]	1.26E-3	8.9E-6	1.75E-4	-7.07E-4	
POCP [kg Ethene-eq.]	2.08E-3	-1.26E-5	1.58E-4	-5.78E-4	
ADPE [kg Sb eq.]	3.51E-5	3.75E-10	3.75E-7	-4.7E-7	
ADPF [MJ]	1.83E+2	1.11E-1	1.92E+0	-5.99E+1	

Caption: GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources

### Results of the LCA – RESOURCE USE:

Declared unit: 1 m<sup>2</sup> RESITRIX® CL or RESITRIX® MB

Declared life cycle stages (standard DIN EN 15978)	PRODUCT STAGE		END OF LIFE STAGE		BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
	A1-A3	C2	C4	D	
<b>PE total [MJ]</b>	1.96E+02	1.18E-01	2.40E+00	-7.60E+01	
PERE [MJ]	7.73E+0	-	-	-	
PERM [MJ]	0.0E+0	-	-	-	
<b>PERT [MJ]</b>	7.73E+0	6.6E-3	2.01E-1	-6.61E+0	
PENRE [MJ]	8.31E+1	-	-	-	
PENRM [MJ]	1.05E+2	-	-	-	
<b>PENRT [MJ]</b>	1.88E+2	1.11E-1	2.2E+0	-6.94E+1	
SM [kg]	0	0	0	-	
RSF [MJ]	0	0	0	-	
NRSF [MJ]	0	0	0	-	
FW [m <sup>3</sup> ]	2.11E-2	6.36E-6	1.94E-2	-1.03E-2	

Product names: RESITRIX® CL and RESITRIX® MB

# Carlisle Construction Materials GmbH

## Product sustainability fact sheet

Caption

PE total = Total use of primary energy resources (=PERT+PENRT); 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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

### Results of the LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

Declared unit: 1 m<sup>2</sup> RESITRIX® CL or RESITRIX® MB

Declared life cycle stages (standard DIN EN 15978)	PRODUCT STAGE	END OF LIFE STAGE		BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARYS
	A1-A3	C2	C4	D
HWD [kg]	2.34E-2	0.0E+0	1.51E-4	0.0E+0
NHWD [kg]	4.84E-2	2.2E-5	2.39E-1	-2.6E-2
RWD [kg]	2.16E-3	1.6E-7	1.15E-4	-3.95E-3
CRU [kg]	0	0	0	-
MFR [kg]	0	0	0	-
MER [kg]	0	0	0	-
EEE [MJ]	0.0E+0	0.0E+0	1.39E+1	-
EET [MJ]	0.0E+0	0.0E+0	3.34E+1	-

Caption

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier; EEE = Exported energy, electric energy, EET = Exported energy, thermal energy

### Building product disclosure and optimization – sourcing of raw materials

#### Intent of this credit

To encourage the use of products and materials for which life cycle information is available and that have environmentally, economically, and socially preferable life cycle impacts. To reward project teams for selecting products verified to have been extracted or sourced in a responsible manner.

Product information for RESITRIX® MB and RESITRIX® CL within this credit:

Option 1. raw material source and extraction reporting	Description / Unit
Third-party verified corporate sustainability report (CSR)?	
Link to download the report	
Option 2. leadership extraction practices	Description / Unit
Participation in an extended producer responsibility program?	no
Bio-based products meet the Sustainable Agriculture Network's Sustainable Agriculture Standard?	not applicable
Wood products certified by the Forest Stewardship Council or USGBC-approved equivalent?	not applicable
Postconsumer recycled content	0 %
Preconsumer recycled content	0 %

# Carlisle Construction Materials GmbH

## Product sustainability fact sheet

### Building product disclosure and optimization – material ingredients

#### *Intent of this credit*

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable life-cycle impacts. To reward project teams for selecting products for which the chemical ingredients in the product are inventoried using an accepted methodology and for selecting products verified to minimize the use and generation of harmful substances. To reward raw material manufacturers who produce products verified to have improved life-cycle impacts.

Product information for RESITRIX® MB and RESITRIX® CL within this credit:

Type of reporting/Item	Value/Comment
Health Product Declaration	no
Green Screen	no
REACH compliancy	<p>New raw materials, auxiliaries and consumables are subject to an approval process in which they are examined for hazardous features and REACH compatibility, and the working conditions are specified.</p> <p>Materials introduced are continuously compared with statutory requirements and substituted where possible. Accordingly, all SVHC substances and/or candidates as per REACH have been replaced in the mixture recipes or in production.</p> <p>(Source: <a href="#">EPD CCM 20120287 IBD1 DE</a>)</p>

#### Disclaimer

The content of, and results shown in this report are based on data and information submitted by the client. Therefore, PE International AG makes no representation or warranty, express or implied, in regard of the correctness or completeness of the content of this document or the results shown.