

LEED® COMPLIANCE DOCUMENT



We Lead you
to Sustainability and
Energy efficiency

Although Qualitynet believes that the products examined can contribute to a LEED® certification, it is recalled that, globally, only GBCI (Green Business Certification Inc) can assign the scores and issue a LEED certificate. Recalling that the LEED rating system certifies the building and not the materials, Qualitynet does not guarantee the achievement of the building's final score.

Dott.ssa. Iris Visentin LEED AP BD&C

Index

COMPANY	4
Vision	5
Mission	5
Values	5
Certification	6
Corporate Social Responsibility	6
ESG Organization	6
Certifications	7
Trocellen Method	7
THERMAL INSULATION	9
BUILDING	13
OTHER	14
CHARACTERISTICS OF SUSTAINABILITY AND SALUBRITY	14
LEED® RATING SYSTEM	16
TROCELLEN AND LEED® V4 CREDITS	19
Energy and atmosphere area	22
EA p2 Minimum Energy Performance	23
EA c2 Optimize Energy Performance	23
EAc5 Renewable Energy Production	25
Materials and Resources Area	26
MRC2 Building Product Disclosure And Optimization – Environmental	27
MRC3 Building Product Disclosure And Optimization - Sourcing Of Raw Materials	32
MRC4 Building Product Disclosure And Optimization – Material Ingredient	33
MRC5 Construction And Demolition Waste Management	34
Indoor Air Quality Area	35
EQp3 Minimum Acoustic Performance	36
EQc9 Acoustic Performance	36
EQc1 Enhanced Indoor Air Quality Strategies	38
EQc2 Low-Emitting Materials	39
SUMMARY	41

TROCELLEN

ENVIRONMENT AND SUSTAINABILITY

COMPANY

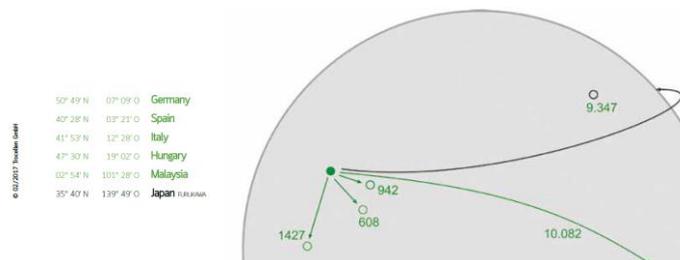
Trocellen is a manufacturer of cross-linked PO foams. Together with our Japanese owner, Furukawa Electric Co. Ltd., we are heading for global success. With more than 600 employees at seven sites and many cooperating companies, various partner universities, institutes and designers we offer solutions for a wide variety of industries and applications. Via our diverse business units, we meet industry-specific requirements and continuously develop innovative products for all kinds of needs. We produce finished goods, semi-finished products and raw materials for the consumer market and for our partners in various industries such as automotive, construction and insulation, leisure and professional sport, adhesive tapes, footwear and packaging

Through the great variety of our products we provide people with a warm and quiet home and working environment. We make travel comfortably and safe. We help

them enjoy their leisure activities and protect their health at the same time. We make fashion secure and security stylish. We develop solutions and realize a great variety of professional projects in cooperation with our partners.



Trocellen was founded as a new company and brand of Dynamit Nobel and HT Troplast. The name and the products quickly built up a strong reputation and Trocellen soon became a successful brand of the company. With headquarters in Troisdorf, Germany, the evolving and transforming company has since opened or acquired various production plants in Germany, Italy, Spain, Hungary and Malaysia.



Vision

WE ALLOW PEOPLE TO FIND WELLNESS - WE ACCOMPANY THEM TOWARDS A BETTER FUTURE

Trocellen plans a safe and comfortable future through innovation in these sectors:

- Home and work
- Advanced mobility
- Health, Sport and Wellness

Our products make people's lives lighter by allowing them to focus on what they love to do most continuously, worry-free and with peace of mind.

Mission

TODAY OFTEN WE ARE FACED WITH DIFFICULTIES THAT REQUIRE SPEED SOLUTION AND TROCELLEN IN THIS IS READY TO HELP PEOPLE BY CREATING RELIABLE SOLUTIONS

Advanced solutions for industry and consumption, improve life in a tangible way and ensure a lighter future. As an industry leader, we build trust, respect business relationships and contribute to global sustainability efforts, at every specific moment. For us there is no diversity and we recognize the individual value of people and with them we want to build lasting success.

Values

INNOVATION

We never stop trying to improve even our best solutions.

TALENT

We hire the best talent and continually develop our talent pool to stay the best.

DIVERSITY'

Feeling comfortable in different markets and industries comes from a diverse knowledge base as well as from well-organized activities: we are as diverse as the needs and requirements of our partners.

RESPONSABILITY

We always keep our partners' interests in mind and consider the environmental and social impacts of our actions under any circumstances.

PARTNERSHIP

Thought and collective work are closely linked to the success of a company, which is why we aim to build long-term partnerships.

Certification

In order to provide stable, high-performance products and services, Trocellen pays special attention to quality assurance. We are focused on monitoring and improving all our products, management and customer services. We are dedicated to continuous development in all areas that can influence the performance of our products and services, and positively influence cooperation with our partners and customer satisfaction. All our activities are customer focused. In order to meet their expectations, we conduct surveys concerning customer satisfaction, encouraging both the employee and the client to open and honest communication.

Corporate Social Responsibility

Trocellen believes that the market position, advanced technology and vast production and business activities require to be more responsible and to make a greater contribution to the development, sustainability and security of the business, the environment and society. Below you can find the link to consult detailed information about the guidelines and social responsibility activities of our company, including the Corporate Social Responsibility:

<https://trocellen.com/sustainability/strategy-and-governance/compliance/>

ESG Organization

Being a sustainable, responsible and reliable organization, to support our ambition, the Trocellen Group has set up an ESG governance structure at group level. The Sustainability Advisory and Decision-Making Committee is comprised of the highest levels of management to ensure ESG considerations are part of all strategic decisions and provides support to all divisions to implement ESG considerations in all day-to-day operations.

Responsibility for a sustainable future is universal, but to achieve this we need individual commitments and systematically executed own actions. At Trocellen we believe we have an important role to play in this sector, so after careful evaluation and planning, we have laid the foundations for our corporate sustainability strategy. We have identified goals that we cannot give up under any circumstances, as well as activities where we can have the greatest positive impact on the future.

Based on our materiality assessment, the Trocellen Group has defined 10 focus areas for organizing ESG programs and related actions:

Environment and Climate: We are committed to protecting our planet by working for a circular economy and for mitigation and adaptation to climate change

Society & Employees: We create a safe and attractive workplace and contribute to our local companies

Governance & Management: We manage our risks with responsible and comprehensive governance

The Trocellen Group aims to contribute to sustainable development in many ways. Considering our corporate activities, we take into consideration the 5 SDGs, in which Trocellen has a direct impact:



- 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- 12. Ensure sustainable consumption and production patterns
- 13. Take urgent measures to combat climate change and its impacts
- 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

For more information see the link:

<https://trocellen.com/it/sostenibilita/strategia-e-governance/>

Certifications

Trocellen has obtained and maintains the following certifications:

- ISCC PLUS certificate - International Sustainability and Carbon Certification
- ISO 45001 - Occupational Health and Safety Management Systems
- ISO 9001
- ISO 50001 - ISO 50001: 2018 IIP and ISO 50001: 2018 IQNET
- ISO 14001 - ISO 14001: 2015 IIP and ISO 14001 IQNET

For more information see the link.

<https://trocellen.com/materials-technologies/quality-assurance/>

Trocellen Method

Trocellen is much more than just a manufacturer of foams and raw materials. True, foams and related technologies are our business, but our business also focuses on deep industry expertise, extensive business experience and established partnerships, through design and development capabilities, through effective processes and learning and growth skills

The TROCELLEN METHOD is Trocellen's unique approach to integrate the entire value creation process, from material design to advanced products and solutions, creating value for the industry, for our partners and for end users.

What distinguishes our foam-based solutions within the markets where we operate?

- Optimal processes that arise from needs and end with products and solutions ready for use or application,
- Wide knowledge of foams, ability to shape the final solution also through the study of molecules,
- Wide range in terms of skills and competences for development, production and know-how conversion,
- In-depth knowledge and valuable information on different sectors,
- Reliability and trust: our partners, with whom we have solid and lasting relationships, know they can count on us,
- Long-term beneficial partnerships based on thought and cooperation to achieve solutions of excellence,
- Professional services,
- Real solutions for the needs of our partners and the industry.

For more information see the following link:

<https://trocellen.com/it/tutto-su-trocellen/il-metodo-trocellen/>

APPLICATIONS AND PRODUCTS

THERMAL INSULATION

TROCELLEN CLASS

TROCELLEN CLASS ADHESIVE Chemically cross-linked, closed cell polyethylene foam. Euroclass B-s2,d0 – BL-s1,d0 for thickness 3-12 mm.

TROCELLEN CLASS ALU ADHESIVE Chemically cross-linked, closed cell polyethylene foam, laminated with aluminum sheet. Euroclass B-s2,d0 – BL-s1,d0 for thickness 3-14 mm; Euroclass C-s2,d0 – BL-s1,d0; thickness range: 15-24 mm.

TROCELLEN CLASS ALU.S ADHESIVE Chemically cross-linked, closed cell polyethylene foam, laminated with aluminum sheet. With improved performance. Euroclass B-s2,d0 – BL-s1,d0; thickness range: 3-16 mm Weather resistant and can also be used outdoors.

TROCELLEN CLASS G-PRO Chemically cross-linked polyethylene foam in gray color, with closed cells, with low thermal conductivity (0.0379 W / mK at 10 C °) and high fire resistance performance. Covered with expandable graphite-based coating. • Euroclass B-s1, d0 - BL-s1, d0 for thicknesses 3-40 mm

TROCELLEN DUCT

TROCELLEN DUCT CL1 - naked

TROCELLEN DUCT CL0-2 ALU – type N, laminated with smooth or embossed low thickness aluminum

TROCELLEN DUCT CL1 ALU – type CL1, laminated with smooth or embossed low thickness aluminum

TROCELLEN DUCT AL CL1 – type CL1, laminated with metallic, embossed, scratch-resistant PE film

TROCELLEN DUCT AL CL1 REF – type CL1, laminated with a metallic polyester film

TROCELLEN DUCT CL1 ALU-NET – type CL1, laminated with low thickness, screened aluminum. Has been classified “Class 0 surface” according to English law BS 476-Part 6/7, in the thickness 13 mm.

TROCELLEN SLEEVES

TROCELLEN N - Chemically crosslinked polyethylene foam, without flame retardants

TROCELLEN P - Chemically cross-linked foam, laminated with scratch resistant embossed polyethylene film.

TROCELLEN AL - Chemically cross-linked foam, laminated with scratch-resistant embossed metal film.

TROCELLEN AL/CL1 - Chemically cross-linked foam with fire retardant additives, certified Class 1, laminated with scratch-resistant embossed metallic film.

TROCELLEN CLASS AL (marked CE) - Troc ellen Class represents the range of products with the CE mark and Euroclass classification, in accordance with the EN 14313 standard. Chemically cross-linked closed cell foam sleeves, colour light green, laminated with scratch-resistant embossed metallic film.. Also available TROCELLEN CLASS P, with scratch-resistant and embossed PE film.

TROCELLEN ISOCOMPACT

TROCELLEN ISOCOMPACT - AL/CL1 - CL1/ALU-NET

Chemically cross-linked, closed-cell, insulating material, light grey. Multi-layered product, thickness 10 to 15 mm, certified in Class 1 according to UNI 8457/UNI 9174 and finished outside with an embossed, scratch-resistant, metalized film, or with reinforced aluminium layer.

TROCELLEN CLASS AL ISOCOMPACT (marked CE)

Cross linked polyethylene closed cell, high thickness insulating foam for piping, light green, multi-layer, externally finished with a metalized embossed antiscratch film.

TROCELLEN HIGH-TEMP

Product range composed of a closed-cell, chemically cross-linked polyethylene foam, finished outside with an embossed scratch-resistant film and coupled with polyester non-woven. The product is available in sleeves, thicknesses 13 and 20 mm, and in rolls thicknesses 15 and 20 mm. It is certified class 1 according to UNI 8457 and UNI 9174.

TROCELLEN ROLLS

TROCELLEN N - Dark gray color, does not contain flame retardants. Over 7 mm thick, it complies with the flame speed specification lower than 100 mm / min required by US standards - FMVSS 302 and German - DIN 75200.

TROCELLEN NP N type, laminated with scratch resistant embossed metallic polyethylene film

TROCELLEN AL - N type, laminated with scratch resistant embossed black polyethylene film

TROCELLEN AL REF - N type, laminated with a metallic polyester film

TROCELLEN CL1 Light grey in colour, produced with flame retardant additives to make it conform to the standards for the category, for example TROCELLEN CL1 Italy, M1 France, etc.)

TROCELLEN AL/CL1 - CL1 type, with embossed, scratch resistant metallic PE film

TROCELLEN AL/CL1 REF - CL1 type, with embossed, scratch resistant metallic PET film

TROCELLEN CL1 ALU - CL1 type, with low thickness smooth or embossed aluminium

TROCELLEN CLASS OEM (not CE marked) - Euroclass B-s2, d0 for thicknesses 3-12 mm; adhesive, according to law EN 13501-1, light green

ACCESSORIES

GASKETS IN: TROCELLEN, EPDM,

TAPES IN AL / C1, AL / CL1 HR and aluminum,

BANDS in TROCELLEN CLASS

GLUE MATIBLOCK

AIRSILENT

Airsilent Polyurethane foam, based on polyester, flexible, open cells, used for sound absorption

FLAT AIRSILENT

Types available:

- K: polyester-based polyurethane foam, anthracite colour
- KP: as K type bonded on one side with black embossed polyolefin film
- AL: as K type bonded on one side with metallic embossed polyolefin film
- K-ALU: as K type bonded on one side with aluminium

The black or metallic film covering is applied for protection, making the protect resistant to dust and humidity and prolonging its life span.

EGG-BOX SHAPED AIRSILENT

Same characteristics as K type

Thickness:

20 mm - 10 mm flat part and 10 mm egg-box shaped

30 mm - 15 mm flat part and 15 mm egg-box shaped

40 mm - 20 mm flat part and 20 mm egg-box shaped

50 mm - 25 mm flat part and 25 mm egg-box shaped

AIRSILENT TECH

Textile polyester fibres (80-90% regenerated), thermo-welded without resins and glue, density 40 kg/m³, color white or green.

APLOMB

Multilayer product, with one or more sheets of lead, laminated with flexible, damping and sound-absorbing materials. See the AIRILENT 2017 ITA sheet for the different compositions, eg:

APLOMB 11

- Composition:
 - layer of polyethylene foam (anti-vibration) laminated with embossed black film, 3 mm thick
 - 0.35 mm thick lead foil, weight 4 kg / m²
 - layer of open cell polyurethane foam (sound absorbing), 12 mm thick

APLOMB 22

- Composition:
 - layer of polyethylene foam (anti-vibration) laminated with embossed black film, 3 mm thick
 - 0.35 mm thick lead foil, weight 4 kg / m²
 - layer of polyethylene foam (anti-vibration) laminated with embossed black film, 3 mm thick

APLOMB AL/CL1

- Composition:
 - layer of polyethylene foam (antivibration) coupled with embossed metallic film, Class 1, thickness 3 mm
 - 0.35 mm thick lead foil, weight 4 kg / m²

- layer of polyethylene foam (anti-vibration) Class 1, thickness 6 mm

APLOMB 1

• Composition:

- 10 mm thick open cell polyurethane foam layer
- 0.35 mm thick lead foil, weight 4 kg / m²
- 10 mm thick open cell polyurethane foam layer

ISOLMASS

ISOLMASS 11

A three-layer composite product for airborne sound insulation of waste water pipes in plastic and partitions in general. Composed of a heavy polyolefin layer with mineral fillers, laminated on one side with **TROCELLEN** cross-linked PE foam with a thickness of 3 mm, and on the other side with open cell PU with a thickness of 12 mm. Net weight: 4,4 kg/m²

ISOLMASS 22

A three-layer composite product for impact and airborne sound insulation of floors and walls. Composed of a heavy polyolefin layer with mineral fillers, laminated on both sides with **TROCELLEN** cross-linked PE foam with a thickness of 3 mm. Net weight: 4,2 kg/m²

ISOLMASS 1 TECH

A three-layer composite product for airborne sound insulation partitions in general. Composed of a heavy polyolefin layer with mineral fillers, laminated on both sides with polyester fiber (PET) with a thickness of 10 and 20 mm. Net weight: 5,2 kg/m²

ISOLMASS 4 TECH

A two-layer composite product for airborne sound insulation partitions in general. Composed of a heavy polyolefin layer with mineral fillers, laminated on one side with polyester fiber (PET) with a thickness of 20 mm. Net weight: 4,8 kg/m²

ISOLMASS 4

A single layer product, used as vibration damping for airborne sound insulation of partitions. Composed only of heavy polyolefin layer with mineral fillers, thickness 2 mm. Net weight: 4 kg/m²

ISOLMASS FR

A single layer product, used as vibration damping for airborne sound insulation of partitions. For applications where it is required high performance of fire reaction (Euroclass). Composed of self-extinguish heavy polyolefin layer with mineral fillers, thickness 2 ÷ 5 mm.

Net weight: 4-10 kg/m²

ISOLMASS 3 TECH FR

A two-layer composite product for airborne sound insulation of waste water pipes. Composed of a heavy polyolefin layer with mineral fillers, laminated on one side with polyester fiber (PET) with a thickness of 12 mm. Net weight: 3,3 kg/m²

BUILDING

TROSIL

TROSIL 4 mm

Chemically cross-linked, closed cell polyethylene foam, CFC free. Type TROSIL, thickness 4 mm, density 30 kg / m³; Certified impact sound insulation $\Delta L_w = 28$ Db; Apparent dynamic stiffness $s^*t = s' = 73$ MN/m³.

TROSIL 5 mm

Chemically cross-linked, closed cell polyethylene foam, CFC free. Type TROSIL, thickness 5 mm, density 30 kg / m³; Certified impact sound insulation $\Delta L_w = 28$ dB; Apparent dynamic stiffness $s^*t = s' = 52$ MN/m³.

TROSIL 10 mm

Chemically cross-linked, closed cell polyethylene foam, CFC free. Type TROSIL, thickness 10 mm (also available in the version with battens), density 30 kg / m³; Certified impact sound insulation $\Delta L_w = 36$ dB; Apparent dynamic stiffness $s^*t = s' = 19$ MN/m³

TROSIL TECH

TROSIL TECH 10 mm

Chemically cross-linked, closed cell polyethylene foam, CFC free. Type TROSIL TECH, density 30 kg / m³, coupled with non-woven fabric in; polyester fiber, batten, total thickness 10 mm. Certified impact sound insulation $\Delta L_w = 33$ dB. Apparent dynamic stiffness $s^*t = 9$ MN/m³

ACCESSORIES

JOIN BAND

Adhesive strips of resilient material for joining insulating sheets from underfloor. Composed of TROCELLEN TROSIL, beige color, without CFC.

N BAND

Adhesive strips of resilient material for the perimeter insulation of the flooring. Used to decouple the floor of the wall, they are glued to the undersized cloth thus creating the ideal "tank" for casting the screed. They are produced using chemically cross-linked polyethylene foam, adhesive, anthracite color, without CFC.

P BAND

Like Trocellen N Band with 50 mm pre-incision to facilitate "L" laying and with the addition of reinforced TNT to avoid breakage.

TROCELLEN D-TAPE

Tape composed of Trocellen polyolefin foam, thickness 3 mm, density 30 kg / mc. To be applied as a decoupling for metal profiles in dry wall systems.

OTHER

TR-EECeLL

Trocen bio-based polyethylene foam, suitable for acoustic and thermal insulation. The polyethylene resin comes from sugar cane processing waste, demonstrating the eco-friendly nature of the product.

DISTRICT HEATING PILLOW

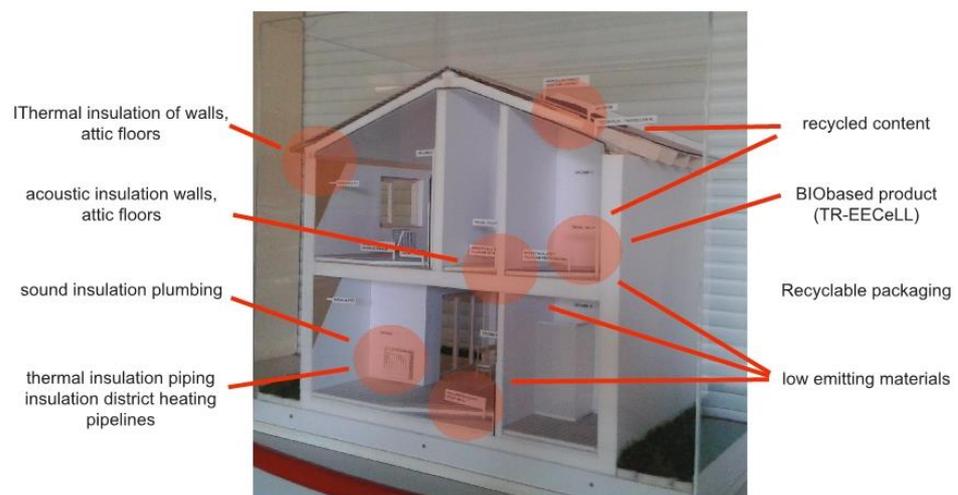
Polyethylene foam with excellent physical and mechanical properties, used to prevent mechanical damage to pre-insulated district heating pipes.

MILLEFORMA COTTON

It is an acoustic coating for bonding walls and ceilings, to improve the aesthetics and comfort of living and working spaces. It is made of natural material, based on cotton waste mixed with particular high quality clays and colored with natural earths. It is available in 9 standard shapes in different formats, available in 28 colors that can be joined together to create figures with very different aesthetic effects. The production techniques and treatments to which the MILLEFORMA COTTON products are subjected also confer resistance to fire and water, keeping intact the excellent sensory and aesthetic qualities of the finished product.

CHARACTERISTICS OF SUSTAINABILITY AND SALUBRITY

The TROCELLEN products described contribute to the sustainability of a building through specific characteristics that distinguish them and are summarized in the following diagram.



LEED® RATING SYSTEM

Source: USGBC, GBC ITALIA

LEED® - Leadership in Energy and Environmental Design - is a building certification system that is created on a voluntary basis and is applied in over 140 countries worldwide. The LEED standard was born in America by U.S. Green Building Council (USGBC), a non-profit association founded in 1993, which currently has more than 20,000 members and whose aim is to promote and develop a global approach to sustainability, recognizing virtuous performance in key areas of health human and environmental.

The LEED® standards, developed by USGBC indicate the requirements to build environmentally sustainable buildings, both from the energy point of view and from the point of view of the consumption of all the environmental resources involved in the realization process.

LEED® is a voluntary and consensus-based system for the design, construction and management of sustainable buildings and high-performance territorial areas that is increasingly developing internationally; it can be used on any type of building and promotes an integrated design system for the entire building.

LEED is green building

LEED, or Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world. Available for virtually all building, community and home project types, LEED provides a framework to create healthy, highly efficient and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement.

 2.2 million + square feet is LEED certified every day with more than 92,000 projects using LEED.	 Flexible LEED works for all building types anywhere. LEED is in over 165 countries and territories.	 Sustainable LEED buildings save energy, water, resources, generate less waste and support human health.	 Value LEED buildings attract tenants, cost less to operate and boost employee productivity and retention.
---	--	--	--

www.usgbc.org

The certification is an independent third party verification of the performance of an entire building (or part of it) and / or urban areas. The internationally recognized LEED® certification states that a building is environmentally friendly and that it is a healthy place to live and work.

Working on the whole process, from the design to the actual construction, LEED® requires a holistic approach, otherwise the objectives will not be achieved. Only with a wide effort of integrated planning and coordination is it possible to create a harmonious building in all the areas mentioned above.

The competitive advantages for those who adopt LEED® standards, be they professionals or companies, are identifiable above all in the great final quality of the building (building), in the considerable saving of management costs that these buildings allow to obtain if compared with traditional buildings in the certification by a third party.

The LEED® certification, in fact, provides the market with a shared approach, on which to base the choices and a measurable standard for each aspect treated.

The LEED® rating system is structured in a set of protocols (manual) depending on the type of building to be certified. We will therefore have a protocol that certifies new buildings and major renovations

(LEED Nuove Costruzioni, LEED NC, LEED BUILDING DESIGN AND CONSTRUCTION LEED BD + C), a protocol for school buildings (LEED FOR SCHOOLS), a protocol that certifies retail and the interiors of a building (LEED COMMERCIAL INTERIOR and LEED RETAIL), a protocol that certifies existing buildings (LEED EXISTING BUILDING OPERATIONS AND MAINTENANCE, LEED EBOM), a protocol that certifies sets of buildings, eg neighborhoods (LEED FOR NEIGHBORHOOD), and so on.

The setting of all these protocols is the same, in the sense that they are all organized in the same areas or chapters, which are:

- Localization and Transport (LT)
- Sustainable sites (SS)
- Water management (WE)
- Energy and Atmosphere (EA)
- Materials and resources (MR)
- Indoor air quality (EQ)

For the sake of completeness there are two other areas / chapters, which deal with aspects that are more related to the certification process:

Regionality: more credit is given (points) to credits in certain geographical areas due to the strong relationship between the territorial context and the credit requirements;

Design innovation: aspects that are not considered in the specific protocol are valued but are present in the other protocols, or a higher score is given for exemplary performance in some protocol credits. Everything is regulated precisely by the text of the manuals.

All these areas / chapters contain the prerequisites and credits. The prerequisites are mandatory and do not give points, while the credits can be chosen or not by the design team but they are the ones that give the score, which must be achieved to obtain the certification level defined as a certification objective.

The prerequisites and credits concern all aspects of a building, from the installations, to the details of the design, to the permeability of the land, to the consumption of drinking water, to the relationship of the site with the servants near the building or to the availability of public transport. Some of these also concern materials, in the sense that the materials have characteristics that help the building comply with certain requirements defined in the prerequisites and protocols. What was done in this document, in the first instance, was to identify the possible credits that could concern the TROCELLEN products considered in the project, on the other to verify their characteristics and documentation in line with the requirements in the requirements. The credits to which the products can contribute are explained in the following paragraphs.

The LEED® rating system certifies the building, does not certify the individual products or building components, but the latter can help meet the requirements of the protocol and consequently obtain the relative scores for the building.

This also implies that the product CANNOT have a score, the score is always and only of the building, but it can help the building get the score.

As already mentioned, in the following paragraphs we will illustrate the excellence of TROCELLEN in relation to LEED® credits. As described earlier in the text, all the protocols are structured in the same areas, and for the most part the credits are the same or similar. In the present work, the LEED BD + C V4 protocol was taken as reference for clarity and to avoid unnecessary repetitions (and which could cause confusion), inserting all the credits of this protocol that could concern the products taken into consideration by this document.



www.usgbc.org

TROCELLEN AND LEED® V4 CREDITS

In the following check lists we highlight the credits to which TROCELLEN products can contribute:

LEED for New Construction and Major Renovations (v4)									
POSSIBLE: 1									
Credit	Integrative process 1								
LOCATION & TRANSPORTATION POSSIBLE: 16									
Credit	LEED for Neighborhood Development location 16								
Credit	Sensitive land protection 1								
Credit	High priority site 2								
Credit	Surrounding density and diverse uses 5								
Credit	Access to quality transit 5								
Credit	Bicycle facilities 1								
Credit	Reduced parking footprint 1								
Credit	Green vehicles 1								
SUSTAINABLE SITES POSSIBLE: 10									
Prereq	Construction activity pollution prevention REQUIRED								
Credit	Site assessment 1								
Credit	Site development - protect or restore habitat 2								
Credit	Open space 1								
Credit	Rainwater management 3								
Credit	Heat island reduction 2								
Credit	Light pollution reduction 1								
WATER EFFICIENCY POSSIBLE: 11									
Prereq	Outdoor water use reduction REQUIRED								
Prereq	Indoor water use reduction REQUIRED								
Prereq	Building-level water metering REQUIRED								
Credit	Outdoor water use reduction 2								
Credit	Indoor water use reduction 6								
Credit	Cooling tower water use 2								
Credit	Water metering 1								
ENERGY & ATMOSPHERE POSSIBLE: 33									
Prereq	Fundamental commissioning and verification REQUIRED								
Prereq	Minimum energy performance REQUIRED								
Prereq	Building-level energy metering REQUIRED								
Prereq	Fundamental refrigerant management REQUIRED								
Credit	Enhanced commissioning 6								
Credit	Optimize energy performance 18								
Credit	Advanced energy metering 1								
Credit	Demand response 2								
Credit	Renewable energy production 3								
Credit	Enhanced refrigerant management 1								
Credit	Green power and carbon offsets 2								
MATERIAL & RESOURCES POSSIBLE: 13									
Prereq	Storage and collection of recyclables REQUIRED								
Prereq	Construction and demolition waste management planning REQUIRED								
Credit	Building life-cycle impact reduction 5								
Credit	Building product disclosure and optimization - environmental product declarations 2								
Credit	Building product disclosure and optimization - sourcing of raw materials 2								
Credit	Building product disclosure and optimization - material ingredients 2								
Credit	Construction and demolition waste management 2								
INDOOR ENVIRONMENTAL QUALITY POSSIBLE: 16									
Prereq	Minimum IAQ performance REQUIRED								
Prereq	Environmental tobacco smoke control REQUIRED								
Credit	Enhanced IAQ strategies 2								
Credit	Low-emitting materials 3								
Credit	Construction IAQ management plan 1								
Credit	IAQ assessment 2								
Credit	Thermal comfort 1								
Credit	Interior lighting 2								
Credit	Daylight 3								
Credit	Quality views 1								
Credit	Acoustic performance 1								
INNOVATION POSSIBLE: 6									
Credit	Innovation 5								
Credit	LEED Accredited Professional 1								
REGIONAL PRIORITY POSSIBLE: 4									
Credit	Regional priority 4								
TOTAL 110									
<table border="1"> <thead> <tr> <th>40-49 Points</th> <th>50-59 Points</th> <th>60-79 Points</th> <th>80+ Points</th> </tr> </thead> <tbody> <tr> <td>CERTIFIED</td> <td>SILVER</td> <td>GOLD</td> <td>PLATINUM</td> </tr> </tbody> </table>		40-49 Points	50-59 Points	60-79 Points	80+ Points	CERTIFIED	SILVER	GOLD	PLATINUM
40-49 Points	50-59 Points	60-79 Points	80+ Points						
CERTIFIED	SILVER	GOLD	PLATINUM						

This chapter describes the way in which the TROCELLEN products analyzed in this document can contribute to the selected LEED V4 credits.

This logo, called the Product Badge, graphically represents a summary of the credits to which TROCELLEN products can contribute consistently with what is described in the following paragraphs¹.

 <p>contributes to MRC3,MRC4,MRC5,EQP3 EQC1,EQC2,EQC9 credits (BD+C v4) IT04-QN010301</p>	<p>AIRSILENT PIANO K AIRSILENT PIANO KP AIRSILENT PIANO AL AIRSILENT PIANO K ALU AIRSILENT BUGNATO K</p> <p>APLOMB 11 APLOMB 22 APLOMB AL/CL1 APLOMB 1 APLOMB 1/B</p>	<p>AIRSILENT</p> <p>APLOMB</p>
 <p>contributes to EAP2,EAC2,MRC3,MRC4,MRC5 EQP3,EQC1,EQC2,EQC9 credits (BD+C v4) IT04-QN010302</p>	<p>AIRSILENT TECH</p> <p>TROCELLEN N TROCELLEN VN</p> <p>D-TAPE</p>	<p>AIRSILENT</p> <p>SOTTOPAVIMENTI</p> <p>ACCESSORI</p>
 <p>contributes to EAP2,EAC2,MRC2,MRC3,MRC4 MRC5,EQP3,EQC1,EQC2,EQC9 credits (v4 BD+C) IT04-22091309</p>	<p>TROSIL</p> <p>TROSIL TECH TROSIL TECH MD</p>	<p>SOTTOPAVIMENTI</p>
 <p>contributes to EAP2,EAC2,MRC3,MRC4 MRC5,EQC1,EQC2 credits (BD+C v4) IT04-QN010303</p>	<p>TROCELLEN N TROCELLEN AL TROCELLEN ALU TROCELLEN VN</p> <p>TROCELLEN N TROCELLEN AL TROCELLEN AL/CL1 TROCELLEN CLASS AL TROCELLEN CLASS P TROCELLEN CLASS G-PRO</p> <p>TROCELLEN ROTOLI CL1 TROCELLEN ROTOLI AL/CL1 TROCELLEN ROTOLI CL1/ALU TROCELLEN CLASS OEM ROTOLI</p> <p>TROCELLEN N TROCELLEN AL TROCELLEN ALU TROCELLEN VN</p> <p>BANDS TAPES STRIPS</p>	<p>TROCELLEN</p> <p>GUAINE</p> <p>ROTOI</p> <p>SOTTOTETTO</p> <p>ACCESSORI</p>
 <p>contributes to EAP2,EAC2,MRC2,MRC3 MRC4,MRC5,EQC1,EQC2 credits (v4 BD+C) IT04-22091310</p>	<p>TROCELLEN CLASS ADESIVO TROCELLEN CLASS ALU ADESIVO TROCELLEN CLASS ALU.S ADESIVO</p>	<p>TROCELLEN DUCT</p>
 <p>contributes to EAP2,EAC2,EAC5,MRC3 MRC4,MRC5,EQC1,EQC2 credits (BD+C v4) IT04-QN010304</p>	<p>TROCELLEN HIGH TEMP</p> <p>TROCELLEN ISOCOMPACT, COPPELLE AL/CL1 TROCELLEN ROTOLI AL/CL1, CL1/ALU-NET TROCELLEN ISOCOMPACT, COPPELLE CL1/ALU-NET TROCELLEN CLASS AL ISOCOMPACT</p>	<p>HIGH TEMP</p> <p>ISOCOMPACT</p>

¹ The Product Badge shows the same identification codes as this document ("IT04-QN010301; IT04-QN010302; IT04-QN010303; IT04-QN010304; IT04-QN010305; IT04-QN010306; IT04-QN010307; IT04-QN010308; IT04-22091309; IT04-22091310; IT04-22091311") a unique identification. It should also be noted that the Product Badge is reported for the LEED® System, as it is designed and created to be in line with the references, policies and rules of said System.

	TROCELLEN ISO HANGER TROCELLEN ISO HANGER PIR MILLEFORMA	ISO HANGER ALTRI PRODOTTI
 <p>contributes to EAP2,EAC2,MRC3,MRC4,MRC5 EQP3,EQC1,EQC2,EQC9 credits (BD+C v4) IT04-QN010302</p> <p>www.GreenITop.com</p>		
 <p>contributes to MRC2,MRC3,MRC4 MRC5,EQC1,EQC2 credits (v4 BD+C) IT04-22091311</p> <p>greenITop.com</p>	TR-EECeLL	
 <p>contributes to EAC5,MRC3,MRC4 MRC5,EQC1,EQC2 credits (BD+C v4) IT04-QN010306</p> <p>www.GreenITop.com</p>	DISTRICT HEATING PILLOW	ALTRI PRODOTTI
 <p>contributes to MRC3,MRC4,MRC5 EQP3,EQC1,EQC9 credits (BD+C v4) IT04-19010307</p> <p>www.GreenITop.com</p>	ISOLMASS 1 TECH ISOLMASS 4 TECH ISOLMASS 4 ISOLMASS FR	ISOLMASS
 <p>contributes to MRC3,MRC4,MRC5,EQP3 EQC1,EQC2,EQC9 credits (BD+C v4) IT04-QN010308</p> <p>www.GreenITop.com</p>	ISOLMASS 11 ISOLMASS 22 TROCELLEN N	ISOLMASS ISOSOUND

ENERGY AND ATMOSPHERE AREA

The use of electricity produced from fossil fuels, such as oil, natural gas and coal, negatively affects the environment at every stage of its life cycle, starting from the extraction and transport process followed by refining and distribution activities. To reach the final consumption.

A building designed according to sustainable agriculture criteria addresses energy-related issues in two ways. First of all, reducing the building's energy needs: the lower the energy requirement, the less greenhouse gas is emitted to meet this requirement. Secondly, use forms of energy with less environmental impact, such as sources other than fossil fuels.

The credits of LEED NC V4 to which TROCELLEN products can contribute are:

- EA p2 Minimum Energy Performance
- EAc1 Optimize Energy Performance
- EAc5 Renewable Energy Production

EAp2 Minimum Energy Performance

EAc2 Optimize Energy Performance

Intent: The purpose of this prerequisite and credit is to reach an increasing level of energy performance for buildings and project facilities, superior to the minimum values defined by current legislation and legislation, in order to reduce the economic and environmental impacts associated with excessive consumption of energy.

The prerequisite EAp2 provides the minimum energy performance requirements required for the building.

The EAc1 credit rewards the building's energy efficiency improvements, in particular assigns a score from 1 to 18 based on the building's efficiency percentage compared to the basic building (calculated according to ASHRAE regulations). The percentage is calculated by dynamically modeling the building, which takes into consideration all the components of the building (envelope, plants, etc.) and site conditions (day, night, summer, winter, etc.).

TROCELLEN products are born with high thermal insulation performance. The thermal insulation coefficients of the thermal insulation products considered are shown in the table²:

FAMILY	PRODUCT	Coefficient of thermal conductivity a 10°C – EN 12667 W/mK ; kcal/mh°C
TROCELLEN	TROCELLEN N	0.0359; 0.0309
	TROCELLEN AL	0.0359; 0.0309
	TROCELLEN ALU	0.0359; 0.0309
	TROCELLEN VN	0.0344; 0.0296
TROCELLEN DUCT	TROCELLEN CLASS ADHESIVE	0.0373; 0.0321
	TROCELLEN CLASS ALU ADHESIVE	0.0386; 0.0332
	TROCELLEN CLASS ALUS ADHESIVE	0.0387; 0.0333
	TROCELLEN CLASS G-PRO	0.0379
SLEEVES	TROCELLEN N	0.0359; 0.031
	TROCELLEN AL	0.0359; 0.031
	TROCELLEN AL/CL1	0.0359; 0.031
	TROCELLEN CLASS AL	0.0394; 0.034
HIGH TEMP	TROCELLEN CLASS P	0.038; 0.033
	TROCELLEN HIGH TEMP	0.0359; 0.031
ISOCOMPACT	TROCELLEN ISOLCOMPACT, SLEEVES AL/CL1	0.0400; 0.034 (measure at 40°)
	TROCELLEN A ROLLS AL/CL1, CL1/ALU-NET	
	TROCELLEN ISOLCOMPACT, SLEEVES CL1/ALU-NET	0.0400; 0.034 (measured at 40°)
ROLLS	TROCELLEN CLASS AL ISOCOMPACT	0.038; 0.033
	TROCELLEN ROLLS CL1	0.040; 0.034 (measured at. 40°)
	TROCELLEN ROLLS AL/CL1	0.040; 0.034 (measured at 40°)
FLOORING UNDERLAY	TROCELLEN ROLLS CL1/ALU	0.040; 0.034 (measured at 40°)
	TROCELLEN CLASS OEM ROLLS	0.038; 0.033
	TROCELLEN N	0.0359; 0.0309

² For special requests, consult the Technical Data Sheets or contact the technical office

FAMILY	PRODUCT	Coefficient of thermal conductivity a 10°C – EN 12667 W/mK ; kcal/mh°C
	TROCELLEN VN	0.0344; 0.0296
	TROSIL	0.0359; 0.0317
	TROSIL TECH	0.0359; 0.0317
ROOFING INSULATION	TROCELLEN N	0.0359; 0.031
	TROCELLEN AL	0.0359; 0.0309
	TROCELLEN ALU	0.0359; 0.031
	TROCELLEN VN	0.0344; 0.030
	AIRSILENT TECH	0.037; 0.032
	MILLEFORMA	R = 0.21 (EN 12644:2001)

EAc5 Renewable Energy Production

Intent: To reduce the environmental and economic harms associated with fossil fuel energy by increasing self-supply of renewable energy.

TROCELLEN HIGH TEMP is a specific product to improve the energy performance of solar collectors.

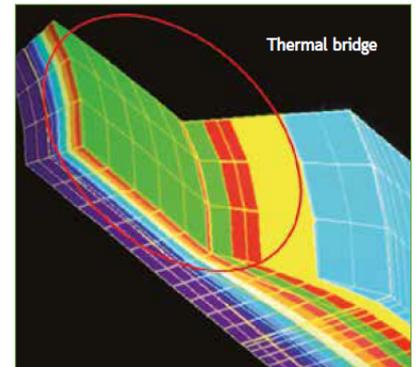
CHARACTERISTICS

TROCELLEN HIGH TEMP is the ideal solution for the thermal insulation of high temperature piping.

Characteristics and advantages:

- Made of long lasting closed cell polyethylene insulation foam
- Operating temperature: 180 °C (peak), 150 °C (standard)
- Thermal conductivity coefficient at 10°C: 0,0359 W/mK
- Constant insulation value for at least 23 years, probably longer*
- Fire safe
- Closed cells, in order to inhibit water absorption
- Clean, non toxic, mould and bacteria resistant, odorless
- Flexible enough to follow tight angles and strong enough to withstand rough handling
- For indoor as well as outdoor applications
- Very economical.

* TROCELLEN tested after 23 years of operation found the same insulating value. Test reports available on request.



Thermal curve simulation of a partially insulated section of piping containing coolant at 7°C, showing temperature trend.

The environmental conditions mean the dew point=-23°C: thermal bridging occurs on the non-insulated surface of the pipe, leading to condensation.

For a complete description of the product, consult the TROCELLEN HIGH TEMP brochure, of which the previous box is an extract.

DISTRICT HEATING PILLOW instead is a specific product designed to optimize district heating performance.

MATERIALS AND RESOURCES AREA

The Materials and Resources area is an area that considers the sustainability of the building based on the materials that were used to build it. Pursuing obtaining LEED® credits in the field of Materials and Resources (MR) can reduce the amount of waste and improve the building's environment through responsible waste management and material selection.

The credits in this section focus on two important issues: the environmental impact of the materials entering the building project and the minimization of disposal. Compared to the first area TROCELLEN has chosen to use materials with the highest possible recycled content and adopt an internal environmental policy that is widespread at all levels through a CSR and particular attention to the chemicals used. Compared to the second area, it can support companies in the management of their waste through the use of recyclable packaging.

In version 4 of the rating system, the Materials and Resources area is the area that undergoes major changes, enhancing good practices of companies and their environmental and social responsibility.

The credits of LEED NC V4 to which TROCELLEN products can contribute are:

- MRc2 – Building product Disclosure and Optimization – Environmental Product Declaration
- MRc3 – Building product Disclosure and Optimization – Sourcing of Raw Material
- MRc3 – Building product Disclosure and Optimization – Material Ingredient
- MRc5 – Construction and Demolition Waste Management

MRC2
**Building Product
Disclosure And
Optimization -
Environmental
Product**

Intent: 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.

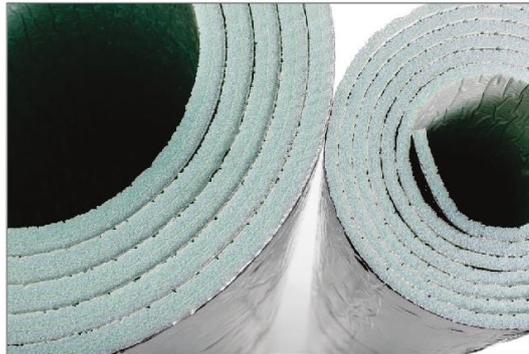
Trocellen ha ottenuto la certificazione EPD per le seguenti famiglie di prodotto:

- Trocellen Class
- Trocellen N
- TR- EECCELL
- TROSIL

Di seguito si riportano le copertine degli EPD con indicazione dei prodotti specifici. Per consultare il documento completo contattare l'ufficio tecnico



ENVIRONMENTAL PRODUCT DECLARATION



Trocellen Class adhesive 3 mm
Trocellen Class adhesive 12 mm
Trocellen Class ALU adhesive 12 mm
Trocellen Class ALU adhesive 20 mm
Trocellen Class ALU.S adhesive 16 mm



From:
Trocellen Italia S.p.A.

Programme: The International EPD® System
Programme operator: EPD International AB

UN CPC 363
Other plastic products

PCR 2019:14: "Construction products" version 1.11
SUB PCR: c-PCR-005 Thermal Insulation products (EN 16783)

Geographical scope: Global
EPD registration number: S-P-04708
Publication date: 03-03-2022
Valid until: 03-03-2027

In accordance with ISO 14025 and EN15804:2012+A2:2019

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

BU-Insulation – Rev. March 2022 www.trocellen.com
TROCELLEN Italia S.p.A. Via della Chimica 21/23 – 20867 Caponago (MB) - Italy Ph. +39. 02.95.96.21 Fax +39. 02.95.96.22.35



ENVIRONMENTAL PRODUCT DECLARATION



Trocellen 3004 N
Trocellen 3005 N
Trocellen 3005 N perforated
Trocellen 15008 N

From:
Trocellen Italia S.p.A.

Programme: The International EPD® System
Programme operator: EPD International AB

UN CPC 363
Other plastic products

PCR 2019:14: "Construction products" version 1.11
SUB PCR: c-PCR-005 Thermal Insulation products (EN 16783)

Geographical scope: Global
EPD registration number: S-P-04713
Publication date: 03-03-2022
Valid until: 03-03-2027

In accordance with ISO 14025 and EN15804:2012+A2:2019

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

BU-Insulation – Rev. March 2022 www.trocellen.com
TROCELLEN Italia S.p.A. Via della Chimica 21/23 – 20867 Caponago (MB) - Italy Ph. +39. 02 95.96.21 – Fax +39. 02 95.96.22.35



ENVIRONMENTAL PRODUCT DECLARATION

TR-EECell

From:
Trocellen Italia S.p.A.



Programme: The International EPD® System
Programme operator: EPD International AB

UN CPC 363
Other plastic products

PCR 2019:14: "Construction products" version 1.11
SUB PCR: c-PCR-005 Thermal Insulation products (EN 16783)

Geographical scope: Global
EPD registration number: S-P-04715
Publication date: 03-03-2022
Valid until: 03-03-2027

In accordance with ISO 14025 and EN15804:2012+A2:2019

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

BU-Insulation – Rev. March 2022 www.trocellen.com
TROCELLEN Italia S.p.A. Via della Chimica 21/23 – 20867 Caponago (MB) - Italy Ph. +39. 02 95.96.21 – Fax +39. 02 95.96.22.35

EPD®



ENVIRONMENTAL PRODUCT DECLARATION

Trosil 10 mm
Trosil Tech

From:
Trocellen Italia S.p.A.



Programme: The International EPD® System
Programme operator: EPD International AB

UN CPC 363
Other plastic products

PCR 2019:14: "Construction products" version 1.11
SUB PCR: c-PCR-005 Thermal Insulation products (EN 16783)

Geographical scope: Global
EPD registration number: S-P-04714
Publication date: 03-03-2022
Valid until: 03-03-2027

In accordance with ISO 14025 and EN15804:2012+A2:2019

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

BU-Insulation – Rev. March 2022 www.trocellen.com
TROCELLEN Italia S.p.A. Via della Chimica 21/23 – 20867 Caponago (MB) - Italy Ph. +39. 02 95.96.21 – Fax +39. 02 95.96.22.35

MRC3**Building Product Disclosure And Optimization - Sourcing Of Raw Materials**

Intent: 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.

TROCELLEN has developed a **CSR - CORPORATE SOCIAL RESPONSIBILITY** and is made public at the following link:

<https://trocellen.com/sustainability/strategy-and-governance/compliance/>

By following the aforementioned policies, where possible, materials with the greatest **RECYCLED CONTENT** are chosen, such as the following:

Product	% Recycled Post consumer
AIRSILENT TECH	85%
ISOLMASS 3 TECH FR	8%
ISOLMASS 3 TECH FR ALUNET	8%
ISOLMASS 1 TECH	20%
ISOLMASS 4 TECH	14%
TROSIL TECH	43%

Furthermore TROCELLEN has developed the following BIOBASED materials:

- The TR-EECeLL product is a BIOBASED PRODUCT, as demonstrated by the test report carried out according to the Biobased Carbon Content ASTM D6866-16 Method B (AMS) standard, which attests a percentage of 98% Biobased Carbon Content (as a fraction of total organic carbon).
- MILLEFORMA COTTON is an acoustic coating for gluing walls and ceilings made of natural material (biobased material), based on cotton waste mixed with particular high quality clays and colored with natural earths.

MRC4
**Building Product
Disclosure And
Optimization –
Material
Ingredient**

Intent: 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

Trocellen pays the utmost attention to the management of the chemicals present in the product and used in the production process, as demonstrated by the corporate certifications developed, including BS OHSAS 18001.

In the finished product there are no dangerous substances which could involve the compilation of a safety data sheet, as shown by the technical data sheets of the products available on the website <https://trocellen.com/> .

MRC5**Construction And
Demolition Waste
Management**

Intent: To reduce construction and demolition waste disposed of in landfills and incineration facilities by recovering, reusing, and recycling materials.

With regard to the product in question, this credit evaluates the waste material and packaging on site during the laying and installation phases, to the extent that these are "diverted" from the landfill and reintroduced into a production cycle. Given that this information must be collected and calculated by the construction company, the role played "upstream" by TROCELLEN, which uses recyclable packaging, is important. The types of packaging used are recyclable. TROCELLEN uses as packaging:

- low density polyethylene film
- for tapes and stickers, paper
- cardboard boxes for ISOLMASS and APLOMB

Product waste is reduced, and in any case it can be disposed of as plastic waste.

INDOOR AIR QUALITY AREA

To ensure the quality of the internal environment, a joint effort is required from the client, the design group, contractors, subcontractors and suppliers. Automatic sensors and individual controls to regulate temperature, humidity and ventilation can be integrated into the building system to provide an optimal indoor environment quality. Other issues regarding indoor air quality addressed by the LEED® system include verification of thermal comfort, availability and quality of natural light with access to outside views. All these issues can enhance the quality of the internal environment and optimize the confined spaces for the occupants of the building.

The credits of LEED NC V4 to which TROCELLEN products can contribute are:

- EQp3 Minimum Acoustic Performance*
- EQc1 Enhanced Indoor Air Quality Strategies
- EQc2 Low Emitting Materials
- EQc9 Acoustic Performance

**Specific for LEED FOR SCHOOLS*

EQp3 Minimum Acoustic Performance

EQc9 Acoustic Performance

Prerequisite intent is: To provide classrooms that facilitate teacher-to-student and student-to-student communication through effective acoustic design.

Credit Intent is: To provide workspaces and classrooms that promote occupants' well-being, productivity, and communications through effective acoustic design.

The prerequisite, defined specifically for schools, considers:

- HVAC background Noise
- Exterior Noise
- Reverberation Time

The credit considers:

- HVAC Background Noise
- Sound Isolation
- Reverberation Time
- Sound Reinforcement and Masking Systems

TROCELLEN can offer an entire line of products dedicated to sound insulation.

PRODUCT FAMILY	PRODUCT	SOUNDPROOFING parameter
AIRSILENT ³	FLAT AIRSILENT K	High sound absorption values α
	FLAT AIRSILENT KP	High sound absorption values α
	FLAT AIRSILENT AL	High sound absorption values α
	FLAT AIRSILENT K-ALU	High sound absorption values α
	EGG-BOX SHAPED AIRSILENT K	High sound absorption values α
	AIRSILENT TECH	High sound absorption values α
APLOMB	APLOMB 11	Wall sound insulation $R_w = 26$ dB Wrapped on the pipes it lowers the sound level of the waste water by 15 dB
	APLOMB 22	Airborne sound insulation $R_w = 24$ dB
	APLOMB AL/CL1	Airborne sound insulation $R_w = 24$ dB
	APLOMB 1	Airborne sound insulation $R_w = 27$ dB
ISOLMASS	ISOLMASS 11	Airborne sound insulation $R_w = 27$ dB
	ISOLMASS 22	Airborne sound insulation $R_w = 26$ dB
	ISOLMASS 1 TECH	Airborne sound insulation $R_w = 25$ dB
	ISOLMASS 4 TECH	Airborne sound insulation $R_w = 27$ dB
	ISOLMASS 4	Airborne sound insulation $R_w = 26$ dB
	ISOLMASS FR	Airborne sound insulation R_w from 26 dB
	ISOLMASS 3 TECH FR	Acoustic insulation of waste water pipes: airborne noise reduction > 10 Db

³ The AIRSILENT range consists of sound-absorbing products, useful for reducing the noise of the systems ("Hvac background noise" and the reverberation time (Reverberation time)). The Alpha Sabine parameter varies according to the frequency and thickness. the values in the table would give an unreadable result. For more information, consult the technical data sheets available or contact the technical department

PRODUCT FAMILY	PRODUCT	SOUNDPROOFING parameter
FLOORING UNDERLAY	TROCELLEN N	Impact noise reduction > 26 dB
	TROCELLEN VN	Impact noise reduction > dB
	TROSIL	Impact noise reduction > 28 dB (4mm, 5 mm) 36 dB (10mm)
	TROSIL TECH	Impact noise reduction >33 dB(10mm)
	MILLEFORMA	Sound absorption $\alpha_w = 0,45$

EQc1

**Enhanced Indoor
Air Quality
Strategies**

Intent: To promote occupants' comfort, well-being, and productivity by improving indoor air quality.

TROCELLEN products in addition to thermal insulation and anti-condensation properties, guarantee to be inert to bacteria and mold, according to the VDI 6022 test.

In support of this declaration, specific tests were performed, available on request.

EQc2 Low Emitting Materials

Intent: To reduce concentrations of chemical contaminants that can damage air quality, human health, productivity, and the environment.

TROCELLEN products can be defined as low-emission products based on the tests performed *.

The screening carried out on material samples considered representative of the entire product range, demonstrates the very low VOC emission of Trocellen products according to the ISO 16000 standard.

Screening: selected the most significant / impacting with respect to emissions

FAMILY	PRODUCT	TEST SAMPLE NAME	CERTIFICATE / TEST	NOTES
AIRSILENT	FLAT AIRSILENT K	OEKO TEX	Oeko-tex	
	FLAT AIRSILENT KP	OEKO TEX	Oeko-tex	
	FLAT AIRSILENT AL	OEKO TEX	Oeko-tex	
	FLAT AIRSILENT K-ALU	OEKO TEX	Oeko-tex	
	EGG-BOX SHAPED AIRSILENT K	OEKO TEX	Oeko-tex	
	AIRSILENT TECH	OEKO TEX	Oeko-tex	
APLOMB	APLOMB 11	Trocellen C-30 N	ISO 16000 + French VOC label	Considering the emissive layer (trocellen N)
	APLOMB 22	Trocellen C-30 N	ISO 16000 + French VOC label	Considering the emissive layer (trocellen N)
	APLOMB AL/CL1	Trocellen C-30 BNW18NF13	ISO 16000	Considering the emissive layer (trocellen CL1)
	APLOMB 1	OEKO TEX	Oeko-tex	Considering the emissive layer (AIRSILENT)
TROCELLEN	TROCELLEN N	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN AL	Isolène 49/50	ISO 16000 + French VOC label	
	TROCELLEN ALU	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN VN	MARTY BASIC	ISO 16000 + French VOC label	
TROCELLEN DUCT	TROCELLEN CLASS ADHESIVE	Trocellen Class Adhesive	ISO 16000	
	TROCELLEN CLASS ALU ADHESIVE	Trocellen Class ALU	ISO 16000	
	TROCELLEN CLASS ALUS ADHESIVE	Trocellen Class ALU	ISO 16000	
SLEEVES	TROCELLEN N	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN AL	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN AL/CL1	Trocellen C-30 BNW18NF13	ISO 16000	
	TROCELLEN CLASS AL	Trocellen Class Adhesive	ISO 16000	
	TROCELLEN CLASS P	Trocellen C-30 BNW18NF13	ISO 16000	
HIGH TEMP	TROCELLEN HIGH TEMP	Trocellen C-30 BNW18NF13	ISO 16000 - Oeko tex	Product composed of Trocellen CL1 + Airlsient TECH
ISOCOMPACT	TROCELLEN ISOCOMPACT, SLEEVES AL/CL1	Trocellen C-30 BNW18NF13	ISO 16000	

FAMILY	PRODUCT	TEST SAMPLE NAME	CERTIFICATE / TEST	NOTES
	TROCELLEN ROLLS AL/CL1, CL1/ALU-NET	Trocellen C-30 BNW18NF13	ISO 16000	
	TROCELLEN ISOCOMPACT, SLEEVES CL1/ALU-NET	Trocellen C-30 BNW18NF13	ISO 16000	
	TROCELLEN CLASS AL ISOCOMPACT	Trocellen Class Adhesive	ISO 16000	
ISOLMASS	ISOLMASS 11	Trocellen C-30 N	ISO 16000 + French VOC label	Considering the emissive layer (trocellen N)
	ISOLMASS 22	Trocellen C-30 N	ISO 16000 + French VOC label	Considering the emissive layer (trocellen N)
ROLLS	TROCELLEN ROLLS CL1	Trocellen C-30 BNW18NF13	ISO 16000	
	TROCELLEN ROLLS AL/CL1	Trocellen C-30 BNW18NF13	ISO 16000	
	TROCELLEN ROLLS CL1/ALU	Trocellen C-30 BNW18NF13	ISO 16000	
	TROCELLEN CLASS OEM ROLLS	Trocellen Class Adhesive	ISO 16000	
	FLOORING UNDERLAY	TROCELLEN N	Trocellen C-30 N	ISO 16000 + French VOC label
	TROCELLEN VN	MARTY BASIC	ISO 16000 + French VOC label	
ROOFING INSULATION	TROSIL	Trosil TECH MD	ISO 16000	Within the perimeter of analysis of the other certificates. Trosil tech with a dedicated test.
	TROSIL TECH	Trosil TECH MD	ISO 16000 + French VOC label	
	TROCELLEN N	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN AL	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN ALU	Trocellen C-30 N	ISO 16000 + French VOC label	
	TROCELLEN VN	Trocellen C-30 N	ISO 16000 + French VOC label	
	OTHER PRODUCT	DISTRICT HEATING PILLOW	Trocellen C-30 N	ISO 16000 + French VOC label
	TR-ECELL	Trocellen C-30 N	ISO 16000 + French VOC label	
	MILLEFORMA		ISO 16000 + French VOC label	
ACCESSORIES	BANDS		ISO 16000	PE foams (class, CL1, Trosil, etc.) cut in shapes and in some cases adhesive: within the analysis perimeter
	TAPES		ISO 16000	
	STRIPS		ISO 16000	
	D-TAPE		ISO 16000	

* The tests can be consulted upon request to the office in charge

SUMMARY

QualityNet believes that the following TROCELLEN products can contribute to achieving the LEED certification score in the credits shown in the following table:

FAMILY	PRODUCT	EA p2 Minimum Energy Performance	EA c2 Optimize Energy Performance	EAc5 Renewable Energy Production	MRe2- Building product Disclosure and Optimization – EPD	MRe3 – Building product Disclosure and Optimization – Sourcing of Raw Material	MRe4 – Building product Disclosure and Optimization – Material Ingredient	MRe5 – Construction and Demolition Waste Management	EQp3 Minimum Acoustic Performance*	EQc1 Enhanced Indoor Air Quality Strategies	EQc2 Low Emitting Materials	EQc9 Acoustic Performance
AIRSILENT	FLAT AIRSILENT K					✓	✓	✓	✓	✓	✓	✓
	FLAT AIRSILENT KP					✓	✓	✓	✓	✓	✓	✓
	FLAT AIRSILENT AL					✓	✓	✓	✓	✓	✓	✓
	FLAT AIRSILENT K-ALU					✓	✓	✓	✓	✓	✓	✓
	EGG-BOXED SHAPED AIRSILENT K					✓	✓	✓	✓	✓	✓	✓
	AIRSILENT TECH	✓	✓			✓	✓	✓	✓	✓	✓	✓
APLOMB	APLOMB 11					✓	✓	✓	✓	✓	✓	✓
	APLOMB 22					✓	✓	✓	✓	✓	✓	✓
	APLOMB AL/CL1					✓	✓	✓	✓	✓	✓	✓
	APLOMB 1					✓	✓	✓	✓	✓	✓	✓
TROCELLEN	TROCELLEN N	✓	✓		✓	✓	✓	✓		✓	✓	
	TROCELLEN AL	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN ALU	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN VN	✓	✓			✓	✓	✓		✓	✓	
TROCELLEN DUCT	TROCELLEN CLASS ADHESIVE	✓	✓		✓	✓	✓	✓		✓	✓	

FAMILY	PRODUCT	EA p2 Minimum Energy Performance	EA c2 Optimize Energy Performance	EAc5 Renewable Energy Production	MRC2- Building product Disclosure and Optimization – EPD	MRC3 – Building product Disclosure and Optimization – Sourcing of Raw Material	MRC4 – Building product Disclosure and Optimization – Material Ingredient	MRC5 – Construction and Demolition Waste Management	EQp3 Minimum Acoustic Performance*	EQc1 Enhanced Indoor Air Quality Strategies	EQc2 Low Emitting Materials	EQc9 Acoustic Performance
	TROCELLEN CLASS ALU ADHESIVE	✓	✓		✓	✓	✓	✓		✓	✓	
	TROCELLEN CLASS ALUS ADHESIVE	✓	✓		✓	✓	✓	✓		✓	✓	
	TROCELLEN CLASS G-PRO	✓	✓			✓	✓	✓		✓	✓	
SLEEVES	TROCELLEN N	✓	✓		✓	✓	✓	✓		✓	✓	
	TROCELLEN AL	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN AL/CL1	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN CLASS AL	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN CLASS P	✓	✓			✓	✓	✓		✓	✓	
HIGH TEMP	TROCELLEN HIGH TEMP	✓	✓	✓		✓	✓	✓		✓	✓	
ISOCOMPACT	TROCELLEN ISOCOMPACT , SLEEVES AL/CL1	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN ROLLS AL/CL1, CL1/ALU-NET	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN ISOCOMPACT , SLEEVES CL1/ALU-NET	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN CLASS AL ISOCOMPACT	✓	✓			✓	✓	✓		✓	✓	
ISOLMASS	ISOLMASS 11					✓	✓	✓	✓	✓	✓	✓
	ISOLMASS 22					✓	✓	✓	✓	✓	✓	✓

FAMILY	PRODUCT	EA p2 Minimum Energy Performance	EA c2 Optimize Energy Performance	EAc5 Renewable Energy Production	MRC2- Building product Disclosure and Optimization – EPD	MRC3 – Building product Disclosure and Optimization – Sourcing of Raw Material	MRC4 – Building product Disclosure and Optimization – Material Ingredient	MRC5 – Construction and Demolition Waste Management	EQp3 Minimum Acoustic Performance*	EQc1 Enhanced Indoor Air Quality Strategies	EQc2 Low Emitting Materials	EQc9 Acoustic Performance
	ISOLMASS 1 TECH					✓	✓	✓	✓	✓		✓
	ISOLMASS 4 TECH					✓	✓	✓	✓	✓		✓
	ISOLMASS 4					✓	✓	✓	✓	✓		✓
ROLLS	TROCELLEN ROLLS CL1	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN ROLLS AL/CL1	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN ROLLS CL1/ALU	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN CLASS OEM ROLLS	✓	✓			✓	✓	✓		✓	✓	
FLOORING UNDERLAY	TROCELLEN N	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	TROCELLEN VN	✓	✓			✓	✓	✓	✓	✓	✓	✓
	TROSIL	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	TROSIL TECH	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
ROOFING INSULATION	TROCELLEN N	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN AL	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN ALU	✓	✓			✓	✓	✓		✓	✓	
	TROCELLEN VN	✓	✓			✓	✓	✓		✓	✓	
ACCESSORIES	BANDS	✓	✓			✓	✓	✓		✓	✓	
	TAPES	✓	✓			✓	✓	✓		✓	✓	

FAMILY	PRODUCT	EA p2 Minimum Energy Performance	EA c2 Optimize Energy Performance	EAc5 Renewable Energy Production	MRC2– Building product Disclosure and Optimization – EPD	MRC3 – Building product Disclosure and Optimization – Sourcing of Raw Material	MRC4 – Building product Disclosure and Optimization – Material Ingredient	MRC5 – Construction and Demolition Waste Management	EQp3 Minimum Acoustic Performance*	EQc1 Enhanced Indoor Air Quality Strategies	EQc2 Low Emitting Materials	EQc9 Acoustic Performance
	STRIPS	✓	✓			✓	✓	✓		✓	✓	
	D-TAPE	✓	✓			✓	✓	✓	✓	✓	✓	✓
OTHER PRODUCTS	DISTRICT HEATING PILLOW			✓		✓	✓	✓		✓	✓	
	TR-EECeLL					✓	✓	✓		✓	✓	
	MILLEFORMA	✓	✓			✓	✓	✓	✓	✓	✓	✓

For more detailed information, contact the technical offices.