

TRIMO



Reliability starts with
fire-safety, airtightness,
and fast delivery.

DATA CENTRE

www.trimo-group.com

HANDBOOK

Insulated panels for next-generation data centres

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Letter from the CEO

“Building the infrastructure behind AI and cloud expansion requires partners who deliver speed and certainty. Trimo’s fire-safe, sustainable and energy-efficient envelope systems help you achieve both, without compromising on aesthetics. Backed by experience from more than 250 data centre projects delivered worldwide, we bring reliability and technical excellence to every project.”

Nay Tawile

Chief Executive Officer Insulated Panels



TRIMO INSULATED PANELS

TRIMO INSULATED PANELS

Equinix data centre, London, UK

ID_TID4HB001EN

AI is raising the bar for data centre design

Driven by the exponential growth of AI and cloud workloads, the demand for advanced data centres continues to rise.

To remain competitive, next-generation facilities must offer adaptability, scalability and the ability to evolve alongside tenant and technology requirements.

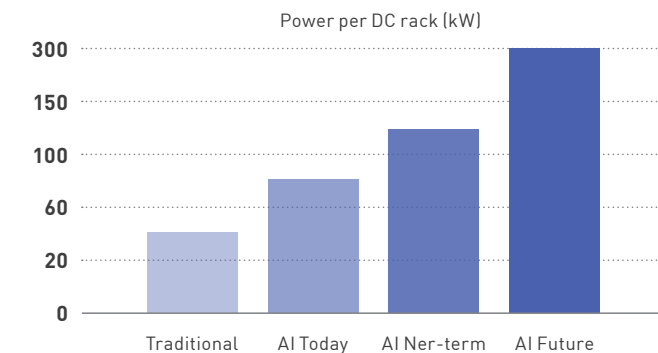
A1 WHAT IS HAPPENING

Data centre requirements are evolving at an unprecedented pace. The main drivers behind these changes include:

- Artificial Intelligence (AI), which is significantly increasing the demand for data processing capacity and advanced computational models.
- High-Performance Computing (HPC), where higher server loads result in substantially increased heat density compared to traditional IT environments.

A2 WHAT YOU NEED TO KNOW

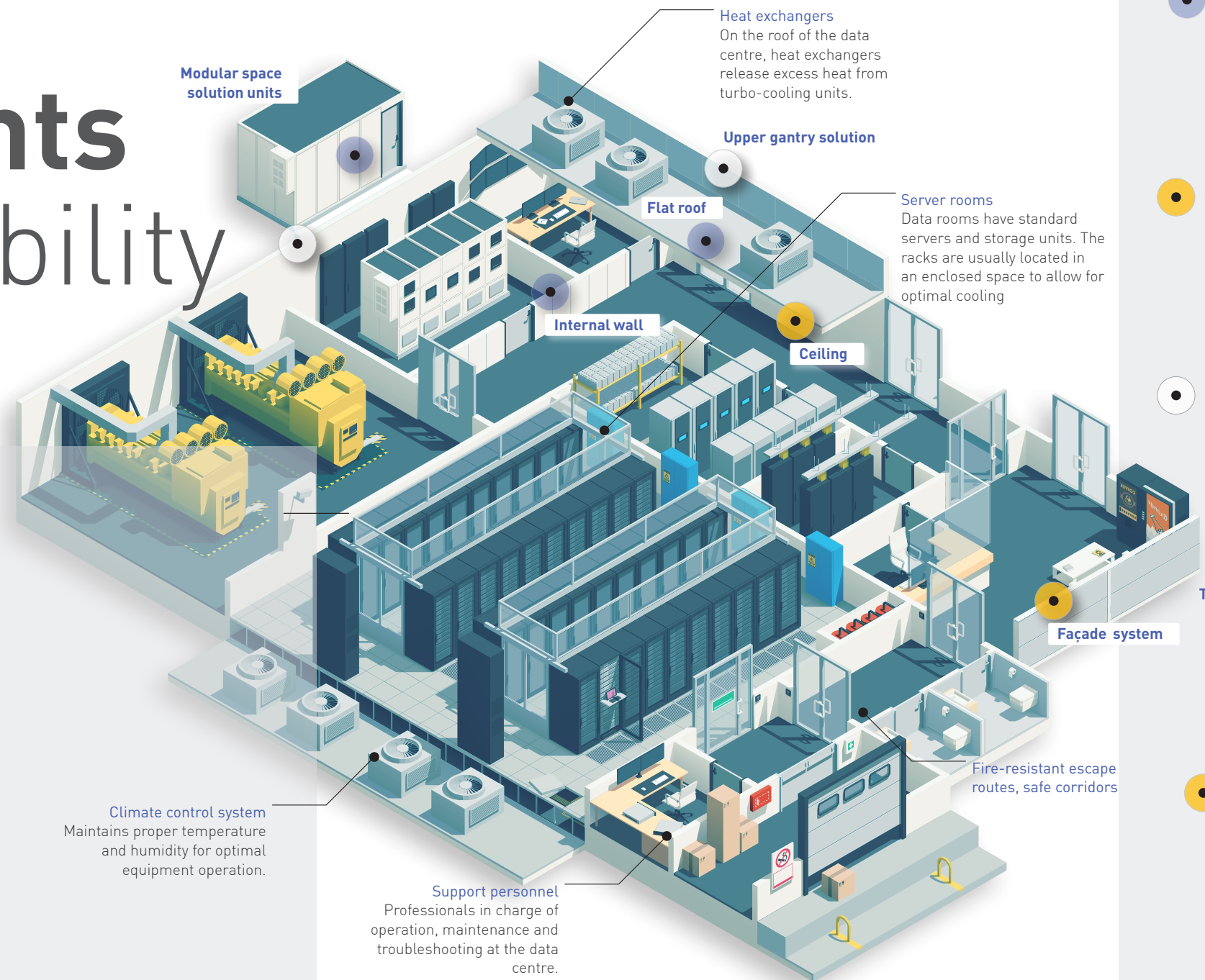
According to the International Energy Agency (IEA), data centres currently consume approximately 415 terawatt-hours (TWh) of electricity per year, representing around 1.5% of global electricity consumption. By 2030, the global data centre electricity demand is expected to almost double, reaching approximately 945 TWh, primarily driven by AI workloads and increasing processing power requirements. The overall data centre energy consumption is projected to grow by around 15% per year, more than four times faster than other sectors.



McKinsey analyses indicate that the demand for data centre capacity suitable for AI workloads is expected to grow rapidly through 2030. Advanced AI workloads are projected to account for approximately 70% of the total data centre capacity by the end of the decade.

DC requirements delivering reliability & uptime

To meet the increasing demands for speed and scalability, data centre developers are turning to modular building concepts. Trimo's envelope systems support this shift with prefabricated, all-in-one solutions that ensure quality and predictable on-site assembly. This enables efficient, safe and uninterrupted data centre operations. The approach helps reduce construction schedules and improve build quality.



Trimo's comprehensive building envelope solution covering the critical zones of a data centre

- **External façade systems** forming the primary building envelope,
- **Internal wall systems** for clean, controlled environments,
- **Flat roof systems** engineered for fire safety, structural load capacity and rapid installation,
- **Rooftop HVAC and service enclosures**,
- **Safe corridor walls and fire-resistant escape routes**,
- **Additional customised façade**, service gantries and roof applications.

Read our document:

"Product portfolio"



Trimoterm FTV panel



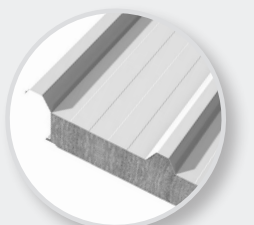
Trimoterm FTV HL panel



Qbiss One facade system



Trimoterm SNV roof panel



Trimo green wall



Trimo backing wall



B1 TRENDS FOR DATA CENTRES

Today's data centre is no longer "just an expanded server room", but a complex infrastructure facility. In this context, the building envelope – including the façade, roof, internal walls, plenums and ceilings – plays a critical and measurable role in **operational reliability, energy efficiency and overall safety**.

B1.1 BUILDING ENVELOPE IN A DATA CENTRE

- Data-centre builders increasingly adopt low-embodied-carbon materials to reduce lifecycle emissions.
- The industry is rapidly moving toward modular, robust wall and roof assemblies for faster deployment, more predictable performance and reduced on-site labour.
- Envelopes now integrate: enhanced thermal insulation, improved vapour barriers, envelope-integrated cooling pathways.
- A data centre needs to ensure the continuous and reliable operation of critical IT infrastructure. The building envelope should be designed to support an uptime target of 99.99% to 99.999%.

B1.2 MODULARITY

In data centres, modularity does not only refer to container-based solutions, but to the standardised and repeatable construction of the entire building envelope. The market requires facilities that are:

- quickly built,
- standardised,
- easy to repeat,
- ready for phased growth.

Fire safety

With increasing power density and higher thermal loads, fire safety has become a critical design and construction criterion in data centres. The industry is therefore prioritising non-combustible, fire-resistant materials for walls, roofing systems, safe corridors and equipment rooms. These requirements are primarily driven by:

- the concentration of electrical equipment,
- high operating temperatures and associated ignition risks.

Energy efficiency and European regulation

Energy efficiency is a key design driver for modern data centres, strongly influenced by European regulation.

The Energy Performance of Buildings Directive (EPBD) requires all new non-residential buildings in the European Union to meet the Zero-Emission Building (ZEB) standard by 2030, meaning very high energy performance with no on-site fossil-fuel carbon emissions.

Modular and prefabricated building materials

Speed has become a critical competitive advantage in data-centre development, driving the widespread adoption of modular construction and prefabricated building materials. Modular systems, pre-assembled elements and plug-and-play components are increasingly deployed to meet accelerated data centre project timelines, while reducing on-site labour requirements and construction complexity.

Robustness, loads and roof stability

Extreme rack densities, now reaching 100–200 kW per rack are driving the need for stronger structural frames, floors, and roof systems. This affects materials at every stage: heavier electrical backbones, stronger load-bearing wall systems and reinforced roof assemblies to handle increased HVAC and cooling equipment loads.

Why Trimo insulated panels?

Trimo insulated panels provide a high-performance building envelope for data centres, combining thermal efficiency, proven fire resistance and certified system reliability. They install quickly and cleanly, supporting fast project delivery and consistent quality. The system enables the safe integration of technical openings, offers flexible design options and improves sustainability through durable, recyclable materials with low operational energy demand.



Why are panels ideal for data centres?

01



Proven fire performance

02



Multiple design variations

03



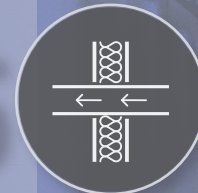
Scalability, modularity & quick installation

04



Sustainability & thermal performance

05



Safe integration of VE/MEP openings

06



Certified products

FACT

Long-term stability

Stone-wool insulation is dimensionally stable and does not exhibit ageing of thermal performance over the building's service life. Tests on insulation from buildings 20 to 55 years old showed that it retained its original thermal resistance.

www.rockwool.com

C1.1 UNIQUE BENEFITS FOR EFFICIENCY

All-in-one envelope solution

Self-supporting mineral wool insulated panels provide a reliable, all-in-one envelope solution. Their closed, airtight construction helps maintain stable thermal zoning between cold and hot areas, reducing the risk of condensation and ensuring predictable cooling performance.

Faster on-site installation

Factory-assembled panels significantly shorten the construction time compared to traditional multi-layer façades. Panels help developers meet compressed DC delivery cycles and accelerate time-to-revenue.

	Traditional	Panelised
Framing time	Weeks	50%+ faster
Wall installation	Several weeks	A few days
Full structural envelope	Weeks-months	Days

Reduced air leakage & internal environmental control

The continuous mineral wool core and joint geometry minimise air leakage and prevent the ingress of moisture-laden air. This is critical for equipment reliability.

Lower material waste

Because panels are delivered as complete prefabricated elements, on-site cutting and waste are minimal. Fewer components reduce packaging waste and simplify logistics.

Lower operational costs over the building lifecycle

High thermal performance and excellent airtightness reduce heating and cooling demands throughout the use phase. By minimising thermal bridging and air infiltration, the panels support long-term operational efficiency and cost stability.

Aesthetic control

With advanced surface-design solutions such as ArtMe embossed façades, the panels combine high technical performance with architectural flexibility. DC developers can now meet urban-integration or corporate-identity requirements without compromising envelope performance.



reddot design award
winner 2010

ArtMe individuality beyond function

CLIENT-FACED INDIVIDUALITY

ArtMe brings design freedom to high-performance insulated panels, enabling architects to create distinctive façade expressions while retaining full fire safety, airtightness and thermal stability. Through precisely controlled 3D-forming technology, ArtMe adds depth, shadows and unique patterns to the panel surface, allowing data-centre buildings to achieve stronger visual integration within urban environments or reflect specific architectural intent.

Architectural freedom for urban coherence

Modern data centres often face strict urban-planning requirements and a growing demand for better visual integration into the built environment. ArtMe allows architects to maintain the efficiency and modularity of insulated panels while tailoring the façade appearance to local architectural context or specific aesthetic expectations.

Read our document:

"ARTME
unique facade
design flyer"



Business Incubator Biograd na Moru, Biograd na Moru, Croatia

C2 WHY STONE WOOL IN PANELS?

Data-centre envelopes often require non-combustible materials and reliable fire compartmentation. Stone wool is classified as Euroclass A1 and does not contribute to fire spread, supporting EI-rated separation where required. At the same time, it offers a practical balance of insulation performance and recyclability for envelope design.

C2.1 THE BENEFITS OF MINERAL WOOL



Excellent fire resistance

Suitable for façade applications where strict fire-safety regulations apply.



Excellent thermal insulation

The fibrous structure provides strong thermal performance, supporting lower heating/cooling demand and improved building energy efficiency.



Outstanding acoustic insulation

Absorbs sound waves, reducing outdoor noise entering the building and limiting sound transmission between adjacent rooms or façade sections.



Dimensional stability

Does not shrink or degrade over time, helping maintain consistent insulation performance throughout the building's service life.



Sustainability

Can contain recycled content and deliver long-term energy savings, contributing to a lower building carbon footprint.

FACT

Stone wool

Stone wool is classified Euroclass A1 according to EN13501-1 and is non-combustible; the typical melting point is above 1000 °C.

1

Fire safety!

Fire safety is based on the controlled behaviour of materials and building elements in the event of fire. According to EN 13501-1, materials are classified by their reaction to fire when ignited.

Stone wool is classified as Euroclass A1 and is non-combustible, meaning that it does not contribute to fire spread.

**Fire compartments protect facilities.
Fire-resistant panels make them possible.**

2

Airtightness and protection against moisture

An airtight envelope reduces uncontrolled airflow and enables the more efficient management of thermal regimes. Standard EN 12114 describes the methodology for measuring the airtightness of building components, which is critical in data centres for:

**Control of airflow and temperature,
Prevention of condensation,
Safe operation**

3,4

Thermal insulation and stability over time

A combination of high airtightness and effective thermal insulation ensures stable thermal performance throughout the building's service life. With U-values as low as 0.15 W/m²K, heat losses and gains are limited, reducing energy demand for heating and cooling. Lower energy consumption during the use phase contributes to reduced carbon emissions and supports long-term operational efficiency.

Acoustics

Rooftop plant can introduce airborne noise into the building. Stone wool core panels typically achieve ~30–35 dB Rw airborne sound insulation, supporting noise control for roof-mounted equipment and external environmental noise around a data centre.

5 TRIMO

Sustainability and embodied carbon

Although embodied-carbon data is not consolidated in a single public source, IEA analysis indicates that data-centre electricity demand and associated emissions are rising rapidly. This is one reason why investors and construction professionals increasingly use LCA (Life Cycle Assessment) to quantify impacts, including the effect of building-material selection.

De-risk your investment

Data centres represent a rapidly growing investment area, where build speed and predictable performance are significant for returns. Insulated wall panels support this by combining high thermal efficiency (lower operating demand) with fast, prefabricated construction, improving time-to-revenue.

On the risk side, proven fire-safety performance and the availability of FM approved systems support insurer expectations and can help reduce insurance risk and premiums, strengthening long-term asset reliability.

D1 INFRASTRUCTURE REQUIREMENTS

Infrastructure requirements are critical for data centre operation. The physical structure must support the thermal, mechanical and compliance requirements of modern IT loads:

- **High thermal loads:** AI and HPC equipment generate far more heat per square metre than traditional server systems, so cooling needs to be efficient and reliable. McKinsey & Company
- **Cooling architecture:** As air cooling is not sufficient for all loads, hybrid approaches are used, combining air and liquids (e.g., liquid cooling).
- **Energy efficiency and carbon footprint:** Regulation and investors increasingly require low-carbon and transparent construction solutions, such as using LCA to meet ESG expectations.

D1.1 SECURITY

Risk assessments are used to identify vulnerabilities related to physical security, burglary, environmental hazards and cybersecurity.

D1.2 SAFETY

Continuous operation makes safety non-negotiable in data centres. Fire-protection standards, certified products and protective measures for people and equipment are key inputs for safe operation.

D1.3 BUILD SPEED

Time to market is a strategic KPI for data centres, driven by short AI delivery cycles and rapid leasing demand.

- AI companies operate in cycles of 3–6 months.
- Delays can translate into multi-million business losses.
- Hyperscale customers lease capacity as soon as it is available.

45-50%

Reduce overall on-site time

Prefabricated panels can be quickly installed on-site, significantly reducing the construction time. Traditional methods typically involve more on-site work, which can be time-consuming and subject to delays due to weather or other factors.

“nomefy.com”

🔥 Fire safety! strong fire-safe solutions

D2 A STRONG FIRE-SAFE ENVELOPE

Data centres contain a high concentration of electrical installations, battery systems, diesel generators and ventilation shafts. These elements increase fire risk, so the building envelope (façade, internal walls, roof and ceiling spaces) must be designed to slow fire spread, enable evacuation, and protect valuable IT equipment.

Why is this important?

- A small fire in a UPS room or battery-systems space (BESS) can lead to the outage of the entire data centre.
- Data-centre facilities typically have zero tolerance for downtime.
- International guidance (e.g., FM Global) is commonly referenced for critical facilities.

Trimo panels enable high fire resistance. In some designs, this can reach EI 240 minutes with slim profiles (due to the stable structure and non-combustible core).

Read our
document:

“Trimoterm
FTV Book”



Airtightness and moisture protection

D3 AIR- & WATERTIGHT FAÇADE

For data centres, airtight and watertight joints are not just a building detail, they support moisture control and the stable management of cold and warm airflow. Standard EN 14509 sets requirements for panel systems and describes the conditions and test methods under which well-sealed, well-profiled joints can deliver high airtightness and watertightness.

A sealing process using precisely profiled joints and seals supports façade resistance to humidity and wind.

Why is this important?

- Energy savings through reduced heat loss,
- Cleanliness and living comfort: (indoor climate and air quality, manufacturing processes security, materials preservation),
- Fulfilment of special requirements (e.g. over or low pressure),
- Improving sustainable criteria for achieving environmental certificates.

FACT

Certified envelope

The Qbiss One facade element passed the tough FM 4880 and 4881 hurricane test.

The system is tested to CWCT for air and water-tightness. Water permeability is classified as Class A (1200 Pa) by UKAS-accredited laboratories.

Minimising embodied carbon

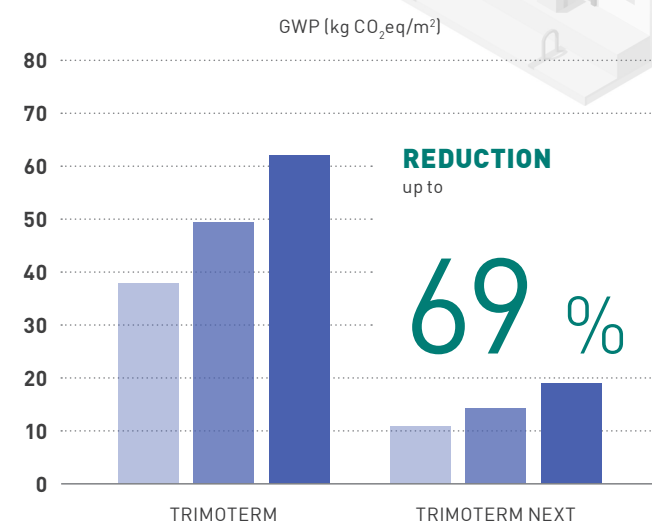
D4 ENVIRONMENTALLY FRIENDLY

Trimo is firmly committed to achieving net-zero greenhouse gas emissions by 2050. Emissions are measured in accordance with the GHG protocol, focusing on Scope 1 (direct emissions), Scope 2 (purchased electricity) and Scope 3 (supply chain and downstream activities).

In data centre design, embodied carbon is becoming increasingly important in achieving low carbon footprint throughout building's whole life cycle. Qbiss One NEXT and Trimoterm NEXT are an excellent possibility to efficiently achieve this goal.

Qbiss One NEXT and Trimoterm NEXT are concrete evidence of its environmental approach. Both achieve an up to **69 percent lower carbon footprint compared** to the standard panels while maintaining the same performance expected of its façade and roofs.

- Mineral wool core type: Power T, Thickness: 60 mm
- Mineral wool core type: Power T, Thickness: 150 mm
- Mineral wool core type: Power T, Thickness: 240 mm



LCA & ESG

D5 LIFE-CYCLE ASSESSMENT

Product life-cycle assessment (LCA) evaluates the environmental effects throughout the product's lifecycle, from raw material extraction to disposal.

For the complete product portfolio (Trimoterm, Qbiss One and Qbiss Screen), Life-Cycle Assessments (LCAs) have been prepared and third-party verified Environmental Product Declarations (EPDs) have been issued.

Information for designers:

- Insulated panels can be easily included in a building LCA model.
- Consideration of the full life cycle of the building (LCA), including embodied carbon is mandatory.
- EPDs improve the building's sustainability rating according to, e.g. BREEAM, LEED or DGNB.

C6 ESG

ESG (Environmental, Social, Governance) is a framework for assessing projects. Stone wool panels support a stronger ESG profile by enabling high energy efficiency (low U-values and good airtightness), incorporating recyclable materials such as steel and mineral wool, and providing EPD documentation that ensures transparent LCA calculations.

FACT

EPD credits

Because both steel and stone wool are highly recyclable materials, stone wool panels often have a very favourable credits due to recycling, reducing the net carbon footprint of the DC envelope.



www.trimo-group.com

FM Global guidelines

D7 GUIDELINES FOR DC

FM Global (one of the world’s largest insurers for industrial facilities) treats data centres as critical facilities, therefore:

- FM Global Data Sheet 5-32 recommends non-combustible construction materials for the envelope,
- FM 4880/4881 describes fire-safe wall and roof systems,
- FM 1-31 defines requirements for panel roofs (wind, fastening, loads)

Information for designers:

- Stone wool core panels more easily meet FM requirements,
- systems are more suitable for high-risk facilities,
- fire safety itself increases the insurability of the facility.

FM Global is one of the most frequently referenced sets of guidelines. All Trimo panels are FM-approved, including the FM 4881 hurricane test for the Qbiss One façade element.

Read our Trimoterm document:

“Trimoterm technical specifications”



Added security

D8 CERTIFICATES

Trimo’s professional certifications demonstrate industry expertise and commitment to excellence. Trimo façade systems have been tested and approved as the best in class. See the list of certificates for Trimo products in the table below.

D9 WARRANTIES

Thanks to extensive testing and experience, Trimo products can be used for projects with a design life of up to 50 years. Trimo’s standard product warranties are 10 years (starting from the date of last shipment), and paint coating warranties extend up to 30 years, in accordance with the applicable terms and conditions.

Products	Certificate list
Trimoterm FTV	LPCB, CE, FM APPROVED, SBSC CERTIFIED PRODUCT, Deutsches Institut für Bautechnik DIBt, DTA DOCUMENT TECHNIQUE D'APPLICATION
Trimoterm FTV HL	LPCB, CE, FM APPROVED, SBSC CERTIFIED PRODUCT, Deutsches Institut für Bautechnik DIBt, DTA DOCUMENT TECHNIQUE D'APPLICATION
Trimoterm SNV	LPCB, CE, FM APPROVED, SBSC CERTIFIED PRODUCT, Deutsches Institut für Bautechnik DIBt
Qbiss One	LPCB, CE, FM APPROVED, CENTRE FOR WINDOWS AND CLADDING TECHNOLOGY, BES 6001, EPD VERIFIED, RC3 burglary resistance

www.trimo-group.com

A solution for each DC zone

Stone wool core panels are non-combustible and can achieve EI values that are useful for façade protection in key data centre scenarios. Under EN 14509, these panels are designed with two metal sheets and a continuous core.

A sealing approach using precisely profiled joint elements and gaskets supports high airtightness and watertightness and helps the façade resist high humidity and wind exposure. EN 14509 also describes the conditions and test methods for these properties.

Internal walls

(fire-safe, fast installation)

External walls

(fire-safe, airtight & watertight)

Roofs

(fire-safe, load-bearing roof system)

Ceilings

(fire-safe modular ceiling system)

Backing wall

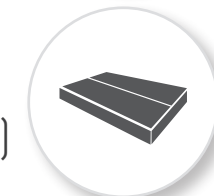
(cladding-ready backing wall)

Green wall

(green façade integration)

Modular DC units

(flexible & efficient modular units)



Internal wall

E1 STRONG & FIRE-SAFE

- Fire resistance up to EI 240 minutes (integrity and insulation),
- Structural spanning performance,
- Tested penetration solutions (service penetrations),
- Strong sound insulation

Hidden-fixing option:

Trimoterm FTV HL is a panel with hidden fixing that enables a clean façade appearance. Panels can be installed vertically or horizontally.

Panel thickness	Typical EI classification	Use
100 mm	EI 60	Separation of smaller service rooms,
150 mm	EI 120	Compartmentation of key DC zones, UPS
172 mm	EI 180	High fire-resistance rooms
200 mm and more	EI 240	BESS, transformers, generators

Tab. 1.1: Fire-resistance level tested to EN 14509.

Read our Trimoterm document:

“Trimoterm technical specifications”

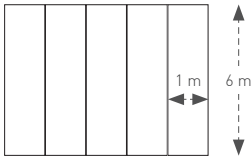


For detailed guidance and performance data, please download the individual product document or contact Trimo’s technical support directly.

TRIMO INSULATED PANELS



FRONT VIEW



Courtesy of Trimo d.o.o.

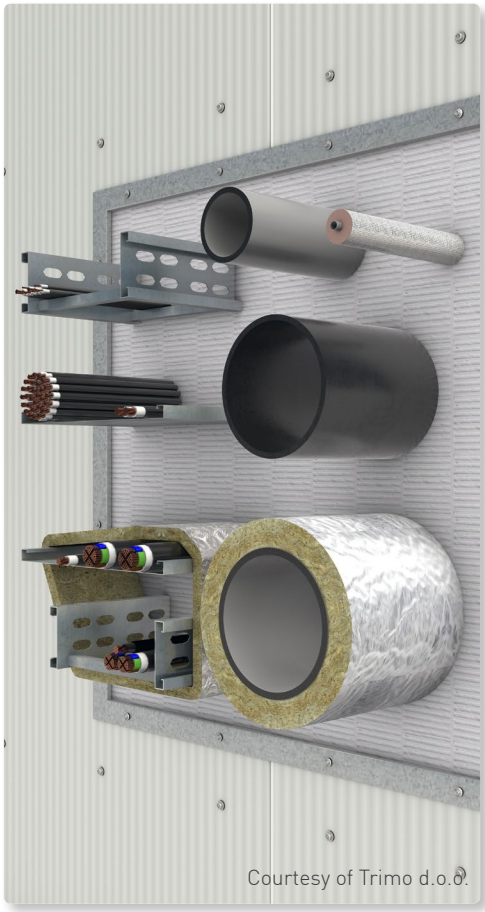


TRIMO INSULATED PANELS

Penetrations & fire-stopping

Trimo has tested service-penetration solutions for internal fire-rated wall panels in cooperation with specialist fire-stopping partners. Fire resistance testing (integrity and insulation) was carried out to EN 1363-1 and EN 1366-3 (penetration seals) standards..

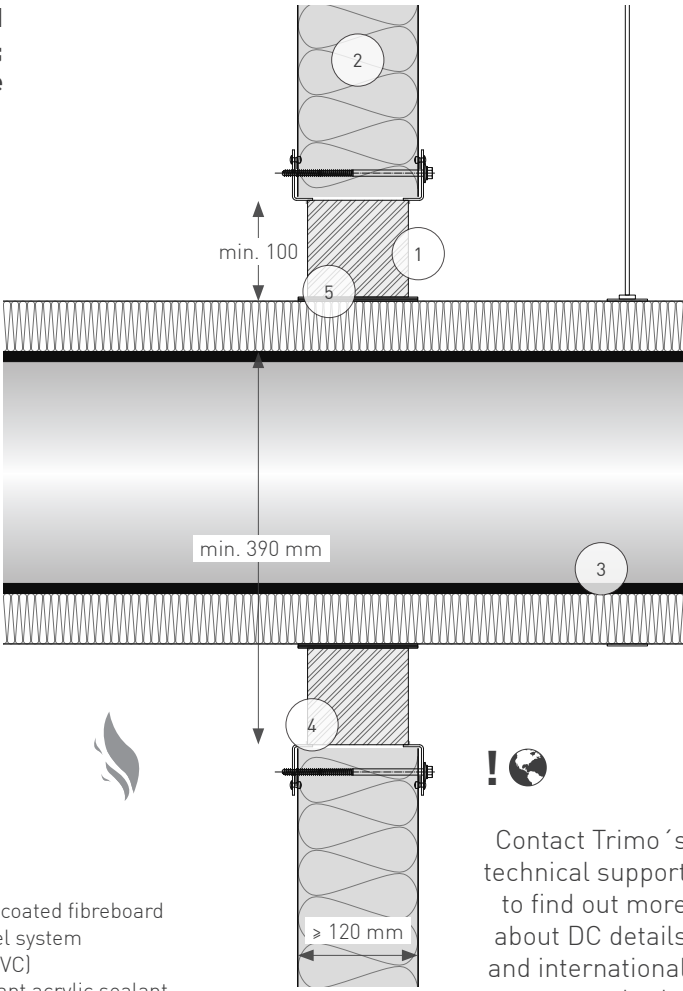
Penetration systems must be selected, designed and installed in compliance with the applicable legislation; the fire performance of the penetration is under the installer’s responsibility.



Courtesy of Trimo d.o.o.

Fire-resistance test

In data centres, even a single poorly sealed penetration can collapse a fire compartment. Tested penetration assemblies ensure the safe separation of UPS rooms, battery spaces and critical IT areas.



- 1. 2 x 50 mm coated fibreboard
- 2. Trimo panel system
- 3. Pipe (PP, PVC)
- 4. Fire-resistant acrylic sealant
- 5. Intumescent pipe wrap layers

Contact Trimo’s technical support to find out more about DC details and international standards.

External wall

E2 FIRE-SAFE & TIGHT

- Low U-values (U-values as low as 0.15 W/m²K),
- Fire resistance and reaction to fire (up to EI 120),
- Integration of ventilation elements (VE) and MEP openings,
- Air- and watertight solution (tested to CWCT standards),
- Architectural finish, self-supporting elements

Qbiss One is a world-class prefabricated architectural façade system that offers a true alternative to conventional built-up façades, with rounded corners, clean lines and a wide range of design options.

Data centre application	Product	Notes
Architectural façade	Qbiss One	Premium architectural metal façade; extreme flatness; ideal for corporate identity.
Architectural façade	Qbiss One + Artme	Embossment for patterns, textures, branding without affecting system performance.
Architectural façade	Qbiss One + Digital print	High resolution graphic façades for identity, wayfinding or branding; durable coatings.
External non-architectural wall	Trimoterm FTV	Standard DC envelope; EI 60–240; high durability; rapid installation.

Tab. 1.2

Read our document:

“Qbiss One book”

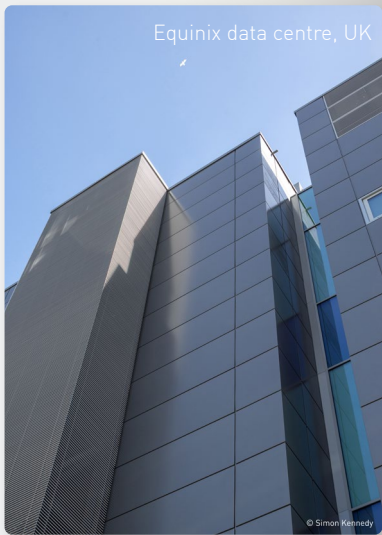
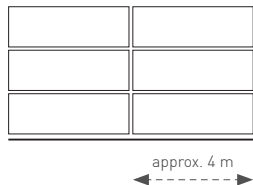


For detailed guidance and performance data, please download the individual product document or contact Trimo’s technical support directly.

TRIMO INSULATED PANELS



FRONT VIEW

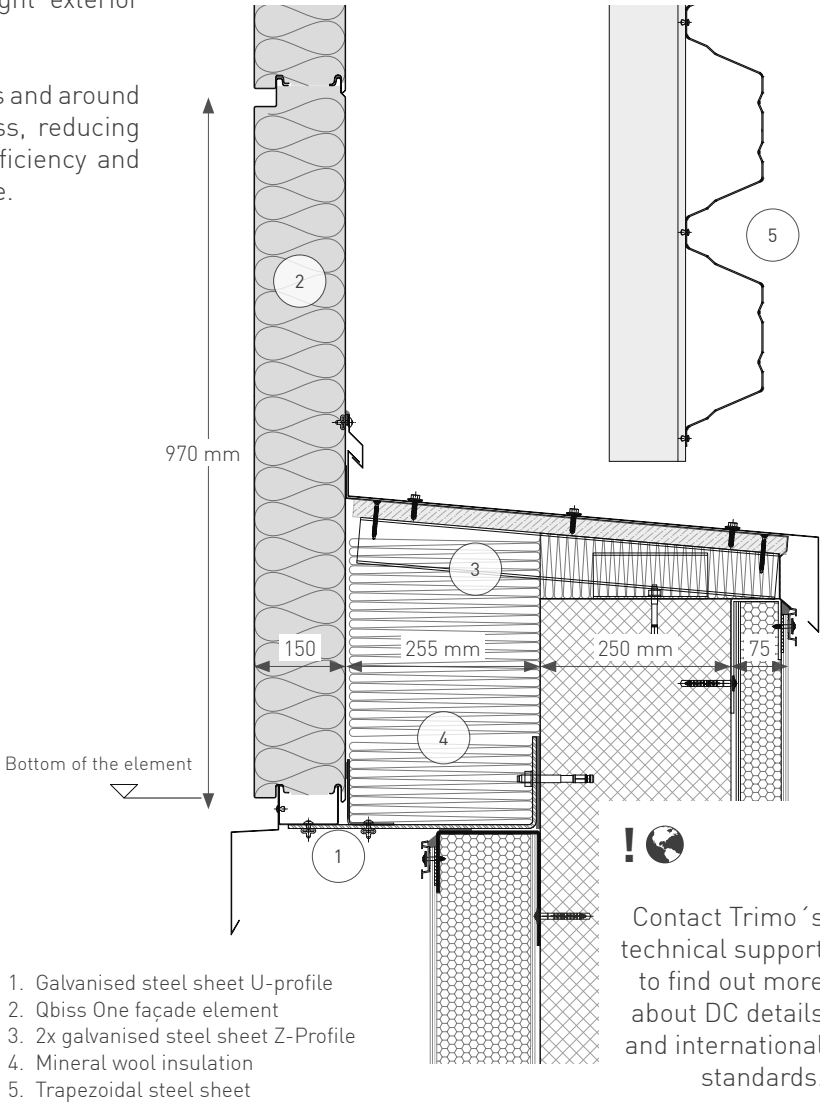
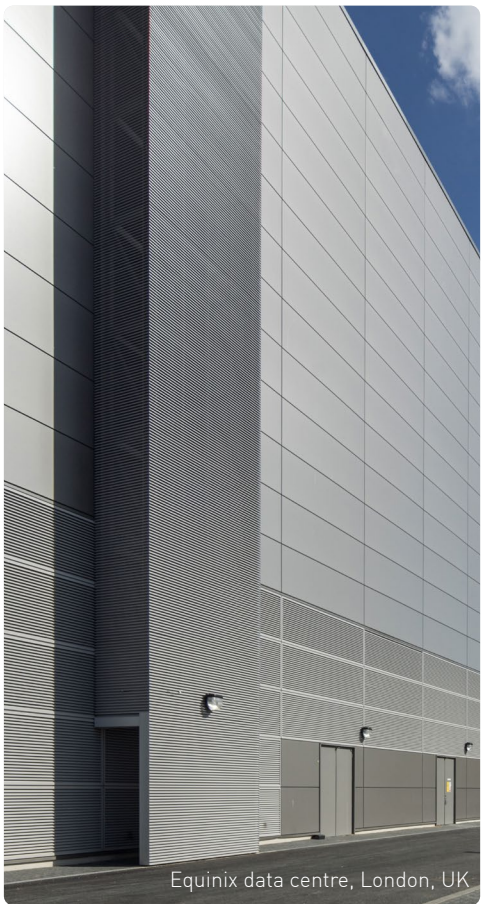


TRIMO INSULATED PANELS

External wall details

Qbiss One (including integrated windows) is tested to the CWCT standards for wind loads, airtightness and watertightness, with system water permeability classified as Class A (1200 Pa), supporting a watertight exterior façade line.

On the interior side, continuous sealing at joints and around openings supports a high level of airtightness, reducing uncontrolled air leakage improving energy efficiency and helping to maintain a controlled indoor climate.



Roofs

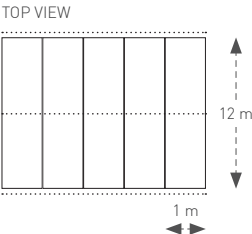
E3 STRONG & LOAD-BEARING

- High thermal performance (depending on panel thickness),
 - Fire performance and reaction to fire, (A2-s1, d0; non-combustible mineral wool core A1)
 - Load-bearing insulated base
- spans and fixings verified by project-specific static calculation (single-span or multi-span)

The Trimoterm FTV flat roof provides a load-bearing insulated base, while watertightness is achieved by additional layers (e.g., geotextile + waterproof membrane) applied on site according to the roof design.

Data centre application	Product	Notes
Flat roof (data halls, technical roofs, walkable areas)	Trimoterm FTV	Fire safe, durable, supports walkability for maintenance; excellent thermal performance.
Inclined roof	Trimoterm SNV (inclined configuration)	Suited for pitched designs; standard detailing available.

Tab. 1.3



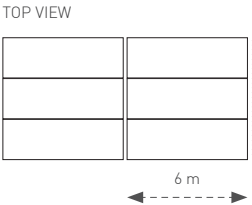
For detailed guidance and performance data, please download the individual product document or contact Trimo’s technical support directly.

TRIMO INSULATED PANELS

Ceilings

E4 FIRE-SAFE & MODULAR

- Fire-resistant ceiling, assemblies support passive fire protection (firefighter’s room)
- Modular ceiling systems, can be designed as self-supporting or suspended ceiling solutions
- Acoustic performance, Trimoterm panels provide effective sound insulation, while perforated acoustic variants are used to provide sound absorption.
- Access for maintenance, ceiling panels can be designed for occasional access; regular walking routes should be avoided.



Courtesy of Trimo d.o.o.

For detailed guidance and performance data, please download the individual product document or contact Trimo’s technical support directly.



🌿 Backing wall

E5 CLADDING-READY WALL

Carrier wall for final cladding,

enables a wide range of final façade finishes

Load capacity for additional cladding,

up to 60 kg/m² for final cladding

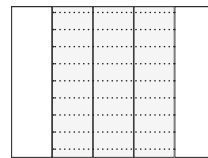
Airtightness & watertightness,

continuous sealing materials support air- and watertightness at key interfaces (structure–panel and panel–Omega rail)

Fire safety

reaction to fire classification A2-s1, d0 is stated for the backing-wall insulated façade system configuration.

FRONT VIEW



While functionality is the priority, data centres are increasingly being designed with aesthetics in mind, particularly in urban settings.

Backing wall enables an external finishing layer so the façade appearance can be tailored to the project and urban requirements, while maintaining airtightness, watertightness and fire safety. Additional cladding is fixed via Omega rails.



Coolsingel, Rotterdam, NL

For detailed guidance and performance data, please download the individual product document or contact Trimo's technical support directly.

🌿 Green wall

E6 GREEN FAÇADE INTEGRATION

Green façades using trellis or tension-cable systems are a simple and economical way to add vegetation to a building envelope and integrate greenery with insulated façade panels.

Information for designers:

Self-climbing plants (e.g., ivy) are not suitable for direct attachment to panels, therefore cable/trellis or modular systems are recommended.

All brackets and façade penetrations must be detailed to prevent water ingress, and the loads from cables/nets and other greening elements must be transferred into the supporting structure; proper waterproofing and drainage are essential.

Explore other green façade options:

Read our document:

“Green and PV façades application”



For detailed guidance and performance data, please download the individual product document or contact Trimo's technical support directly.

Modular DC units

Trimo MSS

E7 FLEXIBLE & HIGH PERFORMANCE MODULAR SOLUTIONS

- Highly fire resistant materials,**
ensure the maximum protection of critical IT infrastructure.
- Engineered for high load bearing capacity,**
to support heavy equipment and dense IT configurations.
- Flexible in dimensions and materials,**
Units can be customised in size, layout, and structural composition to match the project requirements.
- Flexible transport options,**
for fully assembled instant deployment or flat packed.
- Quick installation and time to operation,**
for rapid on-site setup, enabling fast commissioning.
- Easy to transport and relocate,**
Self-contained modular units ensure smooth and efficient relocation whenever needed.

Trimo modular data centre units deliver a powerful combination of structural strength, fire safety, and full adaptability, making them an ideal choice for demanding IT environments.

Solution overview:

Trimo modular DC units are portable, robust, and self-contained modular systems designed to safely house high performance data centre equipment. With their combination of fire protection, high load-bearing capacity, and flexible configuration, they offer an efficient and durable solution for both temporary and permanent IT infrastructure deployments.

For detailed guidance and performance data, please download the individual product document or contact Trimo’s technical support directly.

TRIMO SANDWICH PANELS



Courtesy of Trimo MSS

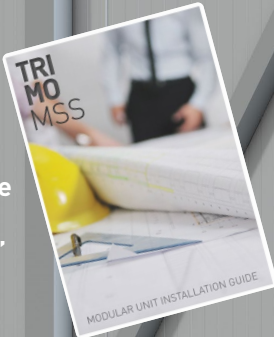
TRIMO INSULATED PANELS

Courtesy of Trimo d.o.o.

DC unit details

Read our document:

“Modular Space Solutions Technical data”



Tools for designers

Trimo BIM & CAD libraries (Archicad and Revit) and 2D/3D product models help integrate Trimoterm solutions into your project and streamline design and specification. Complemented by downloadable CAD details (PDF/DWG) and ordering templates (cutting lists), they support faster coordination from design to production and installation.

Digital tools enable integrated design, cross-discipline coordination, carbon footprint analysis, scalable expansion planning and efficient facility management throughout the building lifecycle.

F1 BIM, DIGITAL TWIN

BIM (Building Information Modelling) supports the precise 3D design, coordination and analysis of building systems and components. Trimo provides BIM libraries and tools to support efficient information management and fast building envelope design in all project phases.

BIM libraries include:

- ARCHICAD library and Revit families,
- Model of façades, walls, roofs and curtain walls,
- Schedules and project data to export.

In data centres, a digital twin enables:

- monitoring energy consumption,
- optimising cooling,
- monitoring thermal bridges and condensation points,
- managing maintenance cycles,
- simulating future expansions.

F2 CAD DETAILS

Trimo extensive library of CAD details helps resolve typical interfaces and system connections for façade, wall and roof applications. Each detail is available in both .PDF and .DWG formats and can be downloaded from Trimo's CAD tool download page.



Trimoterm FTV system design details

F2.1 Why digital tools are important for DC

- Coordination between MEP and architecture,
- BIM models reduce clashes and execution errors,
- Time-critical delivery (faster operational readiness),
- Digital models support verifiable calculations, such as U-values, LCA/EPD inputs, and fire compartment planning,
- Cooling and energy optimisation (AI/HPC environments),
- Phase-by-phase expansion planning (scalability)



Design solutions & technical excellence

F3 PROJECT SUPPORT

From the initial idea to the final implementation, Trimo's expert team supports you at every phase of your project, from planning and architectural design to construction and handover.

Trimo provides comprehensive project consulting, innovative design solutions, and technical excellence in the following areas:

- Shop-drawings design,
- Structural calculations,
- Material selection and sampling,
- Tender and specification service,
- On-site instructions,
- Video, samples & mock-ups,
- Face-to-face meetings

Information for designers:

- Early project engagement with Trimo's technical support is advisable.
- Explore Trimo's extensive documentation library and digital tools.
- Use digital tools that support cutting-list preparation.
- Evaluate aesthetics and technical performance together with Trimo for optimal design outcomes.



Contact Trimo's technical support to find out more about DC details and international standards.

How to read EPD

F4 ENVIRONMENTAL PRODUCT DECLARATIONS

An environmental product declaration, or EPD, is a document that transparently reports the environmental impact of a product or material, based on a product life-cycle assessment (LCA).

What EPD includes?

In accordance with EN 15804+A2, Trimo's EPDs cover:

- **A1-A3 Product stage**
Raw material extraction and processing, transport to manufacturing, and manufacturing.
- **A4-A5 Construction process stage**
Transport to the site and installation.
- **C1-C4 End-of-life stage**
Deconstruction, transport, waste processing, and disposal.
- **D Benefits and loads beyond the system boundary**
Potential benefits from reuse, recovery and recycling.

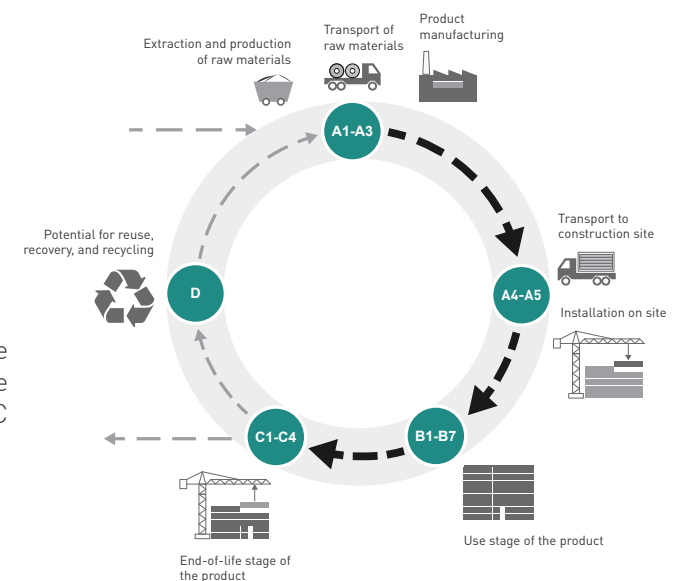
Because both steel and stone wool are highly recyclable materials, stone wool panels often have a very favourable D-factor, reducing the net carbon footprint of the DC envelope.



[Link to EPD Hub library](#)

Measurable choices

Environmental Product Declarations (EPDs) form the baseline for quantified and standardised environmental transparency in modern building design. Trimo's EPDs are third-party verified and follow the standard EN 15804+A2, ensuring compatibility with different certification systems (LEED, BREEAM and DGNB), LCA modelling tools, and national carbon regulations.





FAB matrix & product selection

Product	APPLICATION					
	Flat roof	Pitched roof	Ventilated facade	Internal wall	Ceiling	Fire penetrations
Qbiss One				☐ ₁₎	☐	☐
Qbiss Screen MW			☐	☐ ₁₎	☐ ₁₎	☐
Qbiss Screen H			☐ ₁₎	☐ ₁₎	☐ ₁₎	
Qbiss Screen H+			☐ ₁₎	☐ ₁₎		
Trimoterm FTV	☐			☐	☐	☐
Trimoterm FTV HL				☐ ₁₎		☐
Trimoterm SNV		☐				☐

Product	FUNCTION					
	Acoustic	Backing wall	Anti-blast	Fire resistance	ArtMe	Digital print
Qbiss One	☐ ₂₎			☐	☐	☐ ₁₎
Qbiss Screen MW				☐	☐	☐ ₁₎
Qbiss Screen H						
Qbiss Screen H+						
Trimoterm FTV	☐ ₁₎	☐	☐ ₁₎	☐	☐	☐ ₁₎
Trimoterm FTV HL	☐ ₁₎			☐	☐	☐ ₁₎
Trimoterm SNV	☐ ₂₎			☐		

- ☐ Approved
- ☐₁₎ Approved, available upon request
- ☐₂₎ Approved for steel sheet side B, available upon request

Panel thickness (mm)	TYPICAL FIRE RESISTANCE AND THERMAL TRANSMITTANCE FOR DC APPLICATION						
	80 mm	100 mm	120 mm	150 mm	172 mm	200 mm	220–240 mm
Typical EI classification	EI 30–60	EI 60–90	EI 90–120	EI 120–180	EI 180	EI 180–240	EI 240
Typical U-value	~0.34–0.28 W/m²K	~0.28–0.24 W/m²K	~0.24–0.20 W/m²K	~0.20–0.17 W/m²K	~0.17–0.15 W/m²K	~0.15–0.13 W/m²K	~0.13–0.12 W/m²K
ZEB/EU EPBD note	Low for ZEB façade possible internally	Borderline for some less demanding façade areas	Adequate U-value for most DC façades in temperate zone	Suitable for ZEB requirements in most EU climates	Excellent for ZEB optimal in cold climates	Meets the strictest EPBD targets	Maximum energy efficiency
Typical DC applications	Less demanding internal walls service rooms	Internal partitions, corridors, less critical rooms	External façades, data hall partitions, UPS rooms	Primary DC façade, high-demand technical rooms	High fire-resistance walls (UPS, genset), BESS	BESS compartments, transformers, highest fire safety	Highest fire protection and ZEB façades

U-values are based on typical declared stone wool $\lambda \approx 0.034\text{--}0.040\text{ W/mK}$ (EN 13162) + panel EPDs.
EI depends on joint configuration, panel width, direction of fire exposure, load-bearing capacity and test conditions under EN 13501-2.

	PANELS FAB ANALYSIS		
	Features	Advantages	Benefits
	Total wall solution	Tailor-made elements, corner elements, curved elements, trapezoidal elements	Save time & money by choosing only one supplier, controlled maintenance
	Self-supporting	Suitable for large spans, elements up to 14 m long	Reduced need for additional structural support, lowering project costs
	Prefabricated, factory-controlled production	Consistent quality, precise dimensions, ready-to-install product, permanent quality	Lower labor costs and construction time, reduced quality risk and latent defect risk
	Mineral wool insulation	High fire and thermal resistance, energy efficiency	Ultimate fire safety, reduced insurance premiums, energy regulation compliance
	Lightweight	Easier handling and faster installation compared to traditional building materials, reduced structural demand	Lower labor costs, quicker project timelines, reduced lifting equipment requirements
	Water- and airtightness	Low air change rates, watertight, and aesthetically clean joints	Better building performance, reduced air leakage
	Tailor-made solutions	Design experts, technical support, in-house knowledge, 50+ years of experiences	Optimal client-based cost solution, aesthetic and creativity
	CAD & BIM libraries	Up-to-date, online availability, typical interfaces and system connections resolved	Smooth collaboration, reduced errors and conflicts, better cost control and predictability, project visualizations
	Burglary resistance	Class RC3 burglary resistance	Safety of personnel and equipment, guaranteed uptime
	Flexible warranties	Robust, durable, high-quality coatings	Easy & low-cost maintenance, 10-30 years warranty against corrosion, accepted compliance history
	98% recyclable sustainable materials	Environmentally friendly materials	Helps clients meet sustainability targets and green building certifications
	Extreme thermal values	Excellent thermal resistance and energy efficiency	Reduced HVAC costs, easier compliance with energy regulations
	Moisture resistant	Prevents condensation and protects internal spaces	Healthier indoor environments and no damage to expensive machinery or equipment
	Acoustic performance	Noise reduction for demanding environments	Quieter interior spaces, office, and other compartments
	Fire performance	Tested external wall and service-penetration solutions for internal fire-rated wall panels	DC uptime, fire compartmentation, easier approval from fire authorities, fire risk management
	Range of thicknesses and finishes	Flexible design options for thermal, structural, and aesthetic requirements	Client-based, customisable solutions for architects, designers, and end-users

Data centre references worldwide



Did you know?

Since its establishment in 1961, Trimo has completed projects in more than 120 countries worldwide.

["www.trimo-group.com"](http://www.trimo-group.com)



Courtesy of Trimo d.o.o.

TRIMO INSULATED PANELS



DC digital print panel, Courtesy of Trimo d.o.o.

TRIMO INSULATED PANELS



Borger Gremo building, Ljubljana, Slovenia



Equinix data centre, London, UK

Klingspor headquarter, Germany



ETRA, Ljubljana, Slovenia

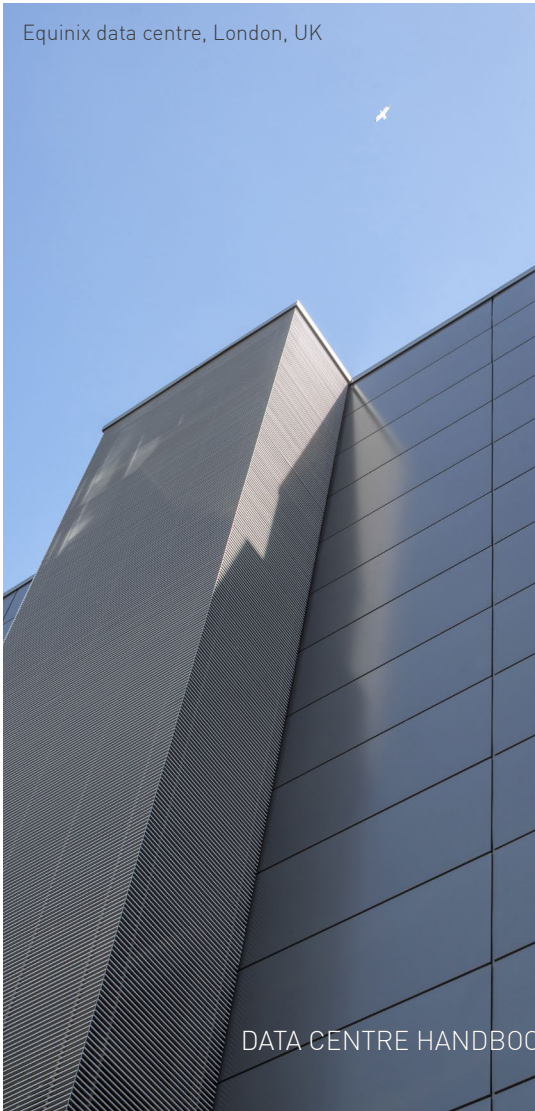


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Hranipex, Komorovice, Czech Republic



Equinix data centre, London, UK



Helpful links

This chapter contains all the relevant technical documents for additional information on Trimoterm panels. These documents include structural design data, technical specifications, guidelines and other resources that are essential for a comprehensive understanding of the subject. For further information about the panels, visit:



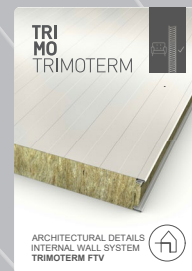
www.trimo-group.com/en/downloads/technical-documents



**Insulated
façade system -
Trimoterm FTV**



**Insulated
façade system -
Trimoterm FTV HL**



**Fire-resistant
internal wall
system -
Trimoterm FTV**



**Backing wall -
insulated
façade system -
Trimoterm FTV**



**Insulated façade
system - Qbiss One**



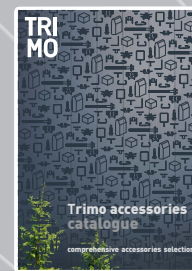
**Trimoterm FTV
flat roof
instructions**



**Trimoterm
technical
specifications**



**Trimoterm
structural design
data**



**Trimoterm accessories
catalogue**



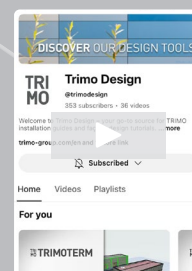
**Packaging,
transport and
storage for Trimoterm
products**



**Trimoterm FTV
book**



**Qbiss One
book**



**Trimoterm
YouTube channel**

How can we help?

Data centres remain one of the strongest showcases of Trimo's technical expertise and delivery performance. With a long-time partnership and a worldwide presence, Trimo supports global clients such as Google and Microsoft, as well as hyperscale programmes like Stargate UAE. This track record proves Trimo's ability to meet demanding specifications, coordinate large teams and ensure reliable, high-quality execution.

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