



Twin-Therm®
20
YEARS

Foreword

Since the Twin-Therm® system was introduced to the construction market in 1997, CA Group has been committed to setting the gold standard for Non-Fragility, structural, thermal and acoustic performance, providing complete assurance by design.

Throughout the past 20 years, the system has been at the forefront of innovation, evolving and adapting to embrace regulatory change with advanced technical development; changing the face of modern building design.

Safety and sustainability are no longer just nice to have, they now sit at the heart of every development and are backed by meaningful guarantees that stand the test of time.



Neville Colegrove, Group Founder and Trustee.





Peterlee 1997 the first Twin-Therm® project (photographed 2017)

1997 Twin-Therm® and FireWall launched

Twin-Therm® is launched by CA Group with the aim of offering a market-leading solution for the built-up roof and wall cladding industry.

Key innovations:

- Cranked ridge liner, to direct moisture away from the inside of the building.
- T-foil Plus, to help mitigate the effects of condensation.
- Sequential sheet packaging, to facilitate on-site installation.
- Rooflights, to maximise daylight.
- T-block 50 and T-bar 36 used for a quilt depth of 86mm.
- T-quilt, the first non-hygroscopic insulation.
- A patented innovation, coring the T-quilt to insulate the T-block. This provided a mechanical connection, without metal to metal contact, eliminating thermal bridging. Patent granted in 1999 (GB 2 306 981 A).

FireWall launched - 1997

- The complete Twin-Therm® system is tested as a FireWall, providing 240 minutes of structural integrity and 15 minutes of insulation integrity.



Bathroom Brands Offices and Depot, Dartford 2014



BMW Distribution Centre Extension, Pineham 2016

1998-1999

25-year guarantee, Non-Fragility, Agrément certificate and self-curved roof

25-year guarantee launched - 1998

- A client drive for greater system assurances leads to the introduction of the 25-year guarantee.

Non-Fragility - 1998

- Extensive testing proves the Non-Fragility of the system representing a major milestone on the path to inclusion in the ACR[M]001 (red book) for roof safety, launched in 2001.

Agrément Certification for Twin-Therm® - 1998

- Testing for U-values and loadings continues. Agrément Certification secured, further demonstrating the benefits of the system to the end user.

First Twin-Therm® self-curved roof installed - 1999

- CA Group continues to innovate. The Twin-Therm® self-curved roof is introduced, removing ridge details.

1999–2002

Acoustic testing and FireWall enhancements

Twin-Therm® acoustics tested - 1999

- Acoustics are a key area of focus and testing to optimise performance is ongoing. Industry leading sound reductions of 42dB, for standard roofs, and 39dB, for standard walls, are achieved.

FireWall enhanced - 2000

- Testing and developments allow enhanced fire performance to 30 minutes of insulation integrity and 240 minutes of structural integrity, certified by LPCB to achieve LPS 1181 EXT-A30 rating.

LPCB LPS 1181 - 2002

- Twin-Therm® is the first twin-skin system to achieve LPCB LPS 1181 certification. This is followed by EXT-B certification for standard Twin-Therm® roof and wall systems and both factors serve to reassure local authorities and insurers that Twin-Therm® is a robust and non-combustible solution.



Amazon Distribution Centre, Bardon 2016



Amazon Distribution Centre, Dunstable 2015

2002–2004 T-block 100, T-bar 60 and new profiles

T-block 100 and T-bar 60 launched - 2002

- The Building Regulation (Part L) introduces the requirement for increased U-values, this drives a need for deeper insulation. CA Group introduces T-block 100 and T-bar 60 to allow a greater overall insulation depth of 160mm and a corresponding U-value of 0.25W/m²K. A total of four system depths are now available 86, 110, 136 and 160mm.

CA LT 17 1000S - 2002

- The liner panel is updated for a re-engineered side lap configuration, allowing a better air seal and improved aesthetics. The new symmetrical profile facilitates installation from either direction.

T-quilt 1030mm wide introduced - 2003

- A narrower version of T-quilt is introduced, reducing waste and cost. For deeper constructions, T-quilt is manufactured pre-slit, halving its thickness to ensure the T-block fully cores the insulation.

CA 45 1000W and CA Arc 50 930 launched - 2003

- The profile range is enhanced with the addition of two new options, providing architects with greater flexibility in design.

2005–2006 SolarWall® and T-foil Plus 50mm

Twin-Therm® SolarWall® launched - 2005

- With an increasing focus on sustainable development, CA Group introduces SolarWall®, a Transpired Solar Collector installed to the exterior of a standard Twin-Therm® wall. SolarWall® saves fuel costs in buildings by harnessing the sun's energy to heat fresh, outdoor air.

T-foil Plus 50mm introduced - 2005

- To provide greater tolerances during installation, T-foil Plus 50mm is introduced resulting in improved air tightness.



Sainbury's Distribution Centre, Pineham 2007



Marks and Spencer EMDC, Castle Donington 2011



Greatmoor Energy from Waste (EfW) Plant, Aylesbury 2015



Blackburn Trading Estate, Heathrow 2013

2007–2008 Sustainability

Environment Product Declarations (EPD) for Twin-Therm® - 2007

- In order to meet client requirements for environmental care and sustainability, EPDs are introduced, publishing the analysis of the carbon used, taking a cradle to cradle view on product life cycle.

Confidex Sustain® - 2007

- Twin-Therm® has the ability to offset carbon and ensure a carbon neutral project. Twin-Therm® is chosen as the first 'Planet Positive'[†] project for Sainsbury's at Pineham, featuring SolarWall® and photovoltaic solar panels.

[†]'Planet Positive' requires that businesses measure their carbon footprint, make commitments to substantially reduce it, and invest in carbon projects to cover the calculated footprint by a minimum of 110%.

Confidex Sustain® is a registered trademark of Tata Steel UK Limited.

2008–2009

40-year guarantee and FireWall enhancements

40-year system guarantee launched - 2008

- Continual innovation and improvement of components (including mastics and GRP) result in the launch of Twin-Therm® 30 and 40-year guarantees.

CE Mark - 2008

- All Twin-Therm® profiles achieve the CE Mark, in line with BS EN 14782.

FireWall enhanced - 2009

- FireWall is enhanced both structurally and aesthetically, reducing the number of components on-site and eliminating steps in the elevation from standard Twin-Therm® wall to FireWall, allowing for easier installation.





Prodrive Technology Centre, Banbury 2015

2010–2012 Matrix and FireWall FW15 and FW30

Matrix Spacer system launched - 2010

- Changes in Building Regulations see a greater emphasis placed on increased U-values. Matrix replaces the T-block and T-bar spacer system, offering greater structural rigidity at deeper constructions, where enhanced thermal performance is required.

FireWall FW15 and FW30 launched - 2011

- The new Matrix system triggers the need for an updated FireWall. An insulating fire break is added to the bottom of the bracket. Both 15 minutes and 30 minutes of insulation integrity are achieved, with 240 minutes of structural integrity.

Improvements to Twin-Therm® wall - 2012

- A new diamond-shaped fixing pattern is introduced for horizontally laid external wall profiles.
- Investment is made in a new production line for CA Arc 50 930.

2012–2015 Quantum, Griffon and Chronus

Twin-Therm® Quantum launched - 2012

- The Twin-Therm® Quantum roof is fully curved along the entire length and can result in a lower haunch to apex height, providing more useable space inside the building. The design of Quantum allows greater radii, up to 105m, than the previous Twin-Therm® self-curved roof.

Twin-Therm® Griffon launched - 2012

- Twin-Therm® Griffon, utilises a curved to straight pitch design, allowing a lower apex height and potentially a larger span. Twin-Therm® Griffon can reduce internal gutters and maintenance while increasing interior space.

Twin-Therm® Chronus launched - 2012

- The increased demand for chill (1-8°C) stores sees the launch of Twin-Therm® Chronus, which is a technically engineered roof and wall system for internal climate control.

CA 300MR launched - 2015

- Further investment sees the launch of CA 300MR profile this proves a popular choice for architects who are looking for alternative design options with improved air tightness.



Heathrow Logistics Park, Feltham 2016



Great Bear Logistics Distribution Centre, Markham Vale 2016

2016 Continued evolution

MatriX bracket launched - 2016

- The continued commitment to improvement sees the manufacture of the new, patent pending, MatriX bracket, featuring multi-directional twist lock engagement to the MatriX bar. A more structurally robust design allows for improved stability at greater system depths. Bringing the supply in-house permits future developments of the product as well as improvements in quality and supply chain integrity.

T-strip 10x8V introduced - 2016

- T-strip 10x8V, is specifically engineered to replace T-strip 6x5mm, and results in improved sealing at end laps on Twin-Therm® Quantum and Twin-Therm® Griffon self-curved roofs.

FireWall FW60 and FW120 achieved - 2016

- A unique fire-resistant base provides a firewall with up to 120 minutes of insulation integrity. A solution allowing the system to be erected within 1 metre of the boundary wall. FW120 and FW60 can also be used to compartmentalise buildings.

Acoustic testing update - 2016

- Acoustics testing delivers updated weighted sound reduction (R_w) of 46dB for standard Twin-Therm® roof and 40dB for standard Twin-Therm® wall.

Therma-light CF40 - 2016

- To enhance the natural daylight offering of the Twin-Therm® system, Therma-light CF40 is launched. This architectural polycarbonate panel glazing system provides quality natural light, thermal insulation and UV protection in addition to impact resistance and structural strength. The panels are modular and connect with a simple click and fix interlock for efficient on-site installation.

2017 Today

After 20 years of market leading innovation and more than 20 million square metres installed, Twin-Therm® roof and wall cladding systems continue to evolve:

U-values:

- 0.14W/m²K for standard roofs and walls, 1.30W/m²K for in-plane rooflights, 0.99W/m²K for Therma-light CF40.

System depths:

- Up to 500mm, to enhance the standard U-values for roofs.

Air permeability:

- Consistently below 1.00m³/hr/m² @ 50Pa with lowest rating achieved to date 0.52m³/hr/m² @ 50Pa.

Fire rating:

- Standard Twin-Therm® achieving LPCB LPS 1181 'EXT-B'. Twin-Therm® FireWall provides 240 minutes of structural integrity and up to 120 minutes of insulation integrity (LPS 1181 'EXT-A120').

Non-Fragility:

- Inclusion in ACR[M]001 (red book) for roof safety.

BIM (Building Information Modelling):

- Twin-Therm® roof and wall cladding systems are BIM ready.

Acoustics:

- Standard Twin-Therm® Roof 46dB sound reduction. Standard Twin-Therm® Wall and FireWall 40dB.

Prime Rainscreen:

- Twin-Therm® wall system providing backing wall for Prime Rainscreen.

Guarantees:

- 25 to 40 years.

Independent Certifications:

- Full system Agrément
- Fire performance: LPS 1181 & 1208
- Non-combustible insulation to BS EN 13501
- CE Marked products



Boden Distribution Centre, Optimus Point Leicester 2017

The Future

Twin-Therm® is at the forefront of industrial envelope design. It has been the market leading system since its introduction in 1997. Throughout the years it has continued to evolve, always meeting the needs of clients, developers, tenants and architects, opening up new opportunities whilst constantly delivering fit, form and function.

The systems' technical core, unequivocal guarantees, delivery paired with the accompanying field support, sets it apart from the competition, adding long-term value to the building owners' portfolio.

These attributes, along with CA Group's commitment to the continual development of the system, give it the ability to satisfy and drive building trends forward, both today and into the future.

We will continue to innovate as the market evolves, ensuring that CA Group and Twin-Therm® exceed the expectations of our clients, whatever their requirements.



Des Webster, Group Managing Director.





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