




CA | GROUP

CA River-Therm® Brochure





At CA Group we truly understand that buildings are an asset.

Our focus on quality, design and innovation successfully delivers schemes which offer high performance and present future-proofed, low-risk solutions to the demands of our clients and the aspirations of our architectural community.

CA River-Therm® secret-fix roofing and cladding system, using CA RT-500 profile, is ideally suited for low pitch roofs and large radius curved roofs, backed by the CA Complete Assurance Guarantee.



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Complete Assurance Guarantee

CA Building Products (CABP) supply all components utilised within the complete envelope system, providing our clients with a robust, single source Complete Assurance Guarantee that is supported through rigorous testing and independently verified accreditation and certification.

Designed and manufactured in accordance with the latest regulatory, quality, and environmental standards, CA systems deliver proven performance, from each individual component, through to the complete cladding assembly. The CA Complete Assurance Guarantee encompasses industry leading technical support, offering specification and design advice, contractor installation training, quality inspections and after-care service for the entirety of the system guaranteed period, with options of 25, 30 or 40 years.

Features

- Unique single-source full-system guarantee for up to 40 years
- Independent testing as a complete system, fully traceable and verified
- Guarantee covers all components designed and tested to CA specification
- Contractor technical support, including thermal, wind and snow load calculations
- Installation training and support on site including inspections throughout installation, post completion and for the guaranteed life of the building
- PV ready for easy installation of renewable energy solutions

Benefits

- Peace of mind at every stage, during installation and throughout the guaranteed life of the asset
- Quality is improved leading to retained asset value and repeat business
- Single source guarantee removes concerns about third-party exclusion clauses
- Independent accreditation and full system testing reduces insurance risk
- Future proof design and non-combustible insulation help minimise impact of change of tenant, insurance requirements or legislation amendments



Confidex® Guarantee from Tata Steel

CA River-Therm® building envelope systems are supplied with external profiles manufactured from Colorcoat HPS200 Ultra® pre-finished steel. These materials come complete with the Tata Steel Confidex® Guarantee, offered directly to the building owner and provide cover for up to 40 years (subject to location).

Both the CA Complete Assurance Guarantee and the Confidex® Guarantee are fully transferable on change of building ownership and ensures no reduction in guarantee period when used in conjunction with framed, roof mounted Photovoltaic (PV) systems.



Confidex® Guarantee (Years)

		Colorcoat HPS200 Ultra® colours	
		Signature Colour	Classic & Matt
Inland 	Roof	40	30
	Wall	40	40
Coastal 	Roof	30	25
	Wall	30	30

CA River-Therm® Roof

CA River-Therm® building envelope system is a proven, reliable, non-combustible site assembled roof and wall cladding system. For roof applications it is suitable for very low roof pitch (2.5° design pitch, 1.0° actual pitch) or large radii roof configurations.

When fully fixed the system is walkable and provides a tested Non-Fragile assembly, with U values as low as 0.11W/m²K, air permeability tested to less than 1.0 m³/hr.m² and up to a 40 year CA Complete Assurance guarantee, subject to specification choice.

The RT-500 outer profile is manufactured and installed in a single length sheet, from ridge to eaves or eaves to eaves, without endlaps. The system's design and installation allows for the insulation to be installed continuously, minimising cold bridging. The sealed liner panel achieves a vapour resistivity significantly greater than that of a separate VCL (vapour control layer) eliminating the requirement for either a separate VCL or breather membrane for roof constructions up to humidity class 4.

CA River-Therm® offers developers, specifiers, contractors and architects a cost-effective low-pitch or large radius roof solution, with a high degree of reliability and weathertightness, enabling the building

designer to choose a system that caters to their needs. CA River-Therm® is also available for wall applications.

It is also possible for CA River-Therm® to utilise aluminium material for the outer profile, although this option does not carry the same guarantees.

CA River-Therm® internal liner is available as either Colorcoat® PE15 standard bright white finish or as Colorcoat® High Reflect which has been proven to maximise natural daylighting, improve daylight factor, reducing requirements for artificial lighting which can reduce operational costs and CO₂ emissions.

CA River-Therm® complete system includes:

- Non-Fragile and walkable liner
- MatriX bar and bracket
- Euroclass 'A1' Therma-quilt insulation
- All fixings, sealants and fillers
- Non-Fragile Therma-light rooflights
- Non-Fragile and walkable outer sheet
- All flashings, gutters and associated ancillaries
- BS EN 13501-5 B_{ROOF} (t4)
- Independently assessed EPDs
- LPS1181-1 Grade 'EXT-B' as standard
- Independent Agrément certification



Performance

Loss Prevention Certification Board

Accredited to BRE LPCB LPS1181-1, refer to certificate No.443a: Grade 'EXT-B'.

Non-Fragility

Tested in accordance with ACR[M]001:2019 "Redbook". Once fully fixed and sealed: River-Therm® roof system is 'Class B' Non-Fragile CA 32 1000RL 0.7mm roof liner is 'Class B' Non-Fragile. Refer to TIP-401 – System Non-Fragility Tolerances.

Independent Agrément Certification

Kiwa BDA Agrément No. BAE-17-064-S-A-UK.



Table 1 - Guarantee Requirements

System Guarantee	RT-500 Material Specification	Convex Min. Self Curve Radius (Sheet Only)	Convex Min. Mechanically Smooth Curve Radius	RT-Block
Up to 40 Years	0.55 mm thick HPS200 Ultra coated steel	30 metres	5 metres	Black Polyamide
N/A*	0.8mm thick nominal stucco embossed aluminium	30 metres	5 metres	White Poliossimetilene
N/A*	0.8mm thick nominal mill finish aluminium	30 metres	5 metres	Black Polyamide
Up to 25 Years	0.8mm thick nominal PVDF coated aluminium	30 metres	5 metres	Black Polyamide

***Only project specific performance statements are available for this type of material/finish**

Table 2 - Roof U-values & depths

Bracket Ref	Therma-quilt	U-Value (W/m²K)	System Depth (mm)
MX180	TQ200	0.23	238
MX200	TQ220	0.21	258
MX220	TQ240	0.19	278
MX240	TQ260	0.18	298
MX260	TQ280	0.16	318
MX280	TQ300	0.15	338
MX300	2x TQ160	0.14	358
MX320	TQ160 & TQ180	0.13	378
MX360	TQ180 & TQ200	0.12	418
MX380	2 x TQ200	0.11	438

**U-values calculated on 0.55mm thick steel external profile,
with average purlin spacings of 1500mm at MatriX bracket spacings of 1167mm**

Manufacture

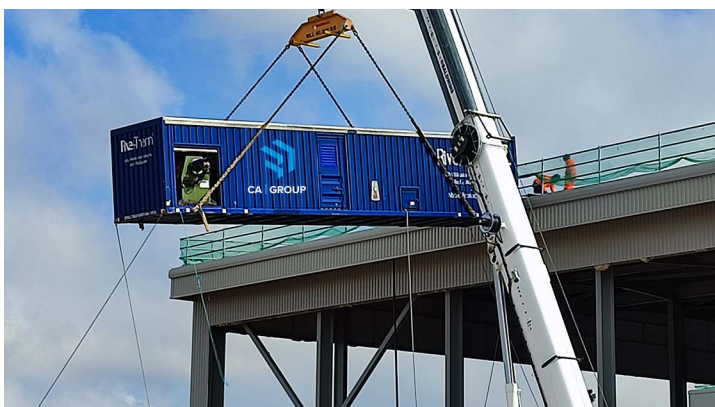
On-Site Manufacture

CA River-Therm® RT-500 external profile is available manufactured at the factory and transported, with maximum lengths 14.5m before additional transport charges apply.

Alternatively RT-500 can be manufactured on site with almost no practical limit on sheet length.

On-site manufacture can take place on the ground, with sheet packs then crane-lifted to the roof.

Alternatively RT-500 can be rolled on-site at eaves, with the profile manufactured directly onto the roof. This enables very long sheet lengths to be manufactured and is a highly efficient means of achieving safe delivery of the roofing product to the roof ready for installation.



Project Lima
178m long RT-500 roof sheet

Installation

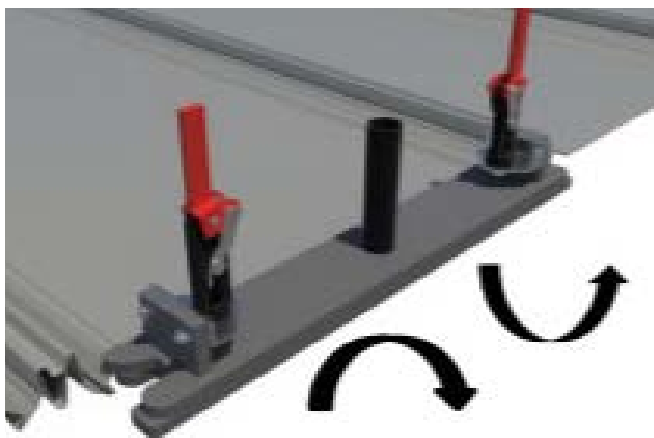
RT-500 Installation

CA River-Therm® RT-500 external profile is installed by simple direct pressure into the RT-block.

To ensure the RT-500 sheet aligns with the liners one metre module, RT-block set out is crucial, especially when the project includes rooflights. It is recommended to use a setting out tool for installing the blocks

Sheet Termination Detail

If the roof pitch at eaves or valley locations is less than 6°, the RT-500 sheets should be turned down using the Turn Up / Turn Down tool to prevent water ponding. For ridge locations with a roof pitch of less than 6°, the sheets should be turned up to help prevent water from entering the system. Care must be taken to avoid crushing the drainage channels.



Ensure that the drainage channel is correctly located in the RT-block.



Carefully locate RT-500 sheets drainage channel into the RT-block.



Carefully push until the sheet locks into block.



Apply vertical pressure at the location shown.



Secure the RT-block to the MatriX bar with 2no SC38 fixings.



Stand on top of profile lap ensuring the sheet is fully engaged. The RT-Lockblock should then be installed on either side of the apex, at the first bar position and secured using 2no RC50 fixings, ensuring they pass through all materials and into the MatriX bar. Additional RT-Lockblocks may be required subject to sheet length.

Rooflights

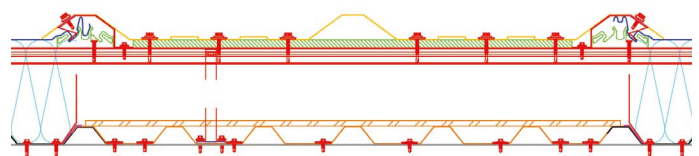
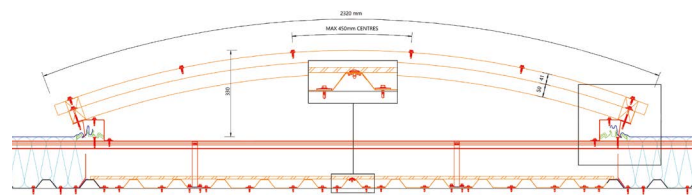
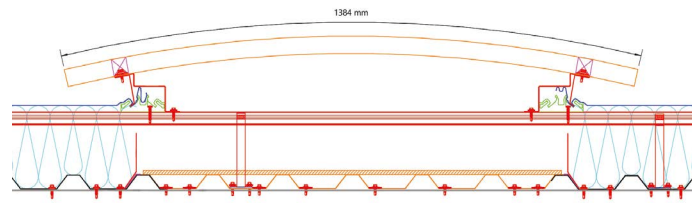
CA River-Therm® Therma-light

A variety pf rooflight options are available for CA River-Therm®, the most common generally being a barrel-vault site assembled Therma-light rooflight, available in 1m or 2m wide modules. This solution is ideally suited for low-pitch and curved roof applications.

In-plane rooflights are also available, with careful consideration of the design pitch of the roof.

Specific figures for Light transmission (VLT), Solar Gain (G-value) and Solar Shading Coefficients (SC) are available, please refer to CA Technical Department.

U-Value (W/m ² K) Horizontal Plane	U-Value (W/m ² K) Vertical Plane	Intermediate Core Code	Thickness (mm)
1.50	1.30	TC10-MX-32	10
1.10	1.00	TC20-MX-32	20
1.00	0.90	TC30-MX-32	30



For drawing section downloads please refer to www.cagroup.co.uk Resource Hub



Rooftop Solar PV

CA River-Therm® is PV-ready, able to accept rooftop solar PV installations via a non-penetrative mounting bracket or clip.

Additionally, CA River-Therm® is walkable and therefore suitable for maintenance access without the need for additional walkways or special insulation measures.

Care should always be used when walking on CA RT-500 external profile as the secret-fix nature of the roof means purlin lines are not evident.

Walking directly on any metal roofing systems requires care not to damage the external coating or profile, and appropriate height safety precautions must always be taken. Never step on, or attempt to cross over, a rooflight.

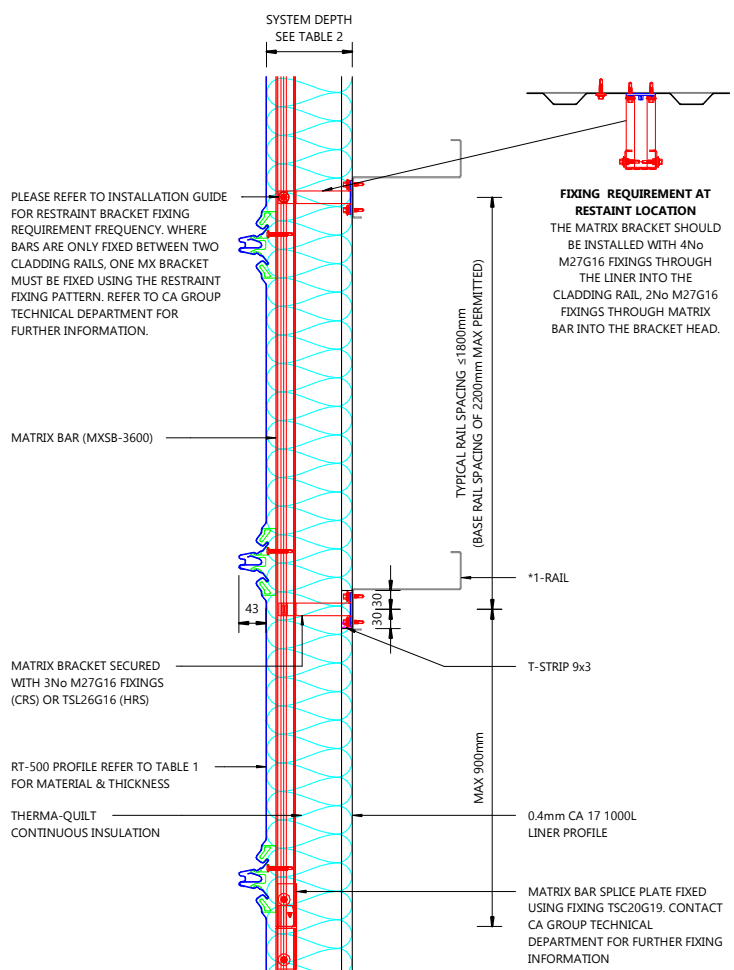
For further information and guidance on walkable roof systems please refer to Technical Information Paper TIP-106.



CA River-Therm® Wall Cladding

CA River-Therm® using RT-500 profile is also suitable for wall cladding, with the profile laid vertically or horizontally.

CA River-Therm® wall cladding system is certified by Agrément and by LPCB LPS1181 Grade 'EXT-B'.



Fire & Acoustics

Fire System Certification

CA River-Therm® roof and wall systems have been assessed in accordance with LPCB test LPS 1181-1 and achieve Grade 'EXT-B' certification.

Internal Liner

Internal pre-finished steel liner profiles manufactured from minimum 0.4mm Colorcoat® PE15 meet the requirements of European Commission Decision 2010/737/EU and are therefore classified as Euroclass 'A1' in accordance with BS EN 13501-1. Colorcoat® High Reflect liner is also classified as Euroclass 'A1' in accordance with BS EN 13501-1.

Therma-quilt Insulation (Non-Combustible)

CA Therma-quilt glass mineral wool insulation utilised in our standard CA River-Therm® roof and wall systems achieves a reaction to fire Euroclass 'A1' in accordance with BS EN 13501-1.

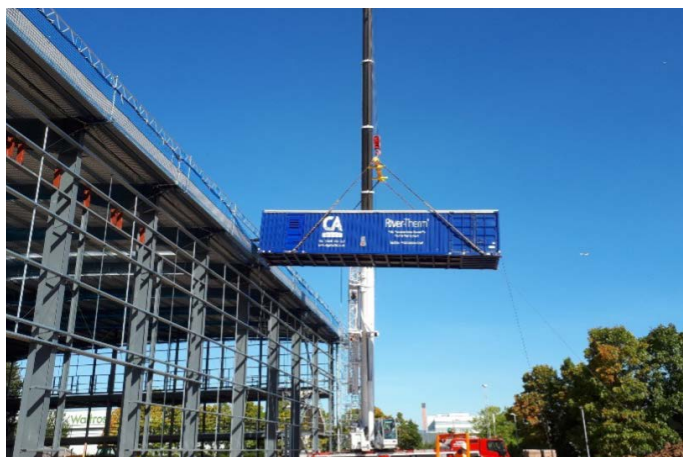
External Pre-finished Steel Profile

Colorcoat HPS200 Ultra® pre-finished steel achieves a fire classification 'C-s2, d0' in accordance with BS EN 13501-1.

Colorcoat HPS200 Ultra® achieves B_{ROOF}(t4) classification in accordance with BS EN 13501-5 for roof applications.

Acoustics

Built-up metal roof and wall systems typically outperform other roofing and cladding systems for acoustic sound reduction, as well as offering the opportunity to introduce additional acoustic absorption solutions.



The use of perforated liner, acoustic membrane and denser insulation enables the provision of solutions to meet client specific requirements, addressing reverberation, external sound reduction and rain noise.

- CA River-Therm® roof system achieves a minimum Weighted Sound Reduction (Rw) of 47dB (based on RT-500 0.55mm HPS200 Ultra®, MX180, TQ200mm, 32L 0.7mm liner, performance data for other system depths available on request)

Bespoke solutions to meet client specific requirements can be provided. Please contact CA Technical Department for more information.

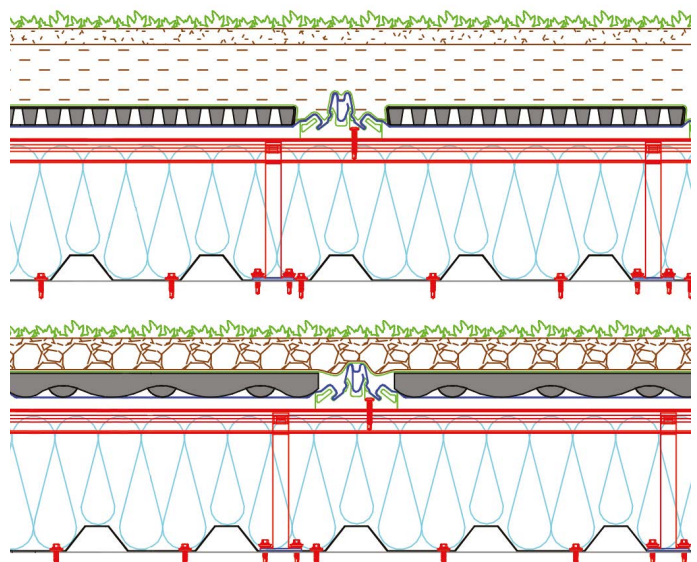
Air Tightness

CA Twin-Therm® building envelope system repeatedly deliver buildings with a performance between 1.0 – 2.0m³/hr.m² and project examples as low as 0.33m³/hr.m².



Green Roof options

CA River-Therm® is available for green roof applications. Please contact CA Technical Department for more information.



For drawing section downloads please refer to www.cagroup.co.uk Resource Hub

Environment & Sustainability

Environmental Product Declarations - EPD

CA building envelope systems are covered by independently assessed, third party verified Environmental Product Declarations (EPD's), calculated in accordance with ISO 14025 and EN 15804. As part of each EPD, a full environmental impact assessment is calculated for the complete cladding assembly across multiple environmental metrics, of which the embodied carbon content (Global Warming Potential) of the system is included. The specification of cladding systems that are fully independently assessed and third party verified to determine their embodied carbon is an essential step towards recognising the environmental impact of construction products and executing strategies to achieve emission reduction targets in line with regulatory Net-Zero commitments.

CA recognise that the embodied carbon content of any cladding system will vary depending upon changes that are made to the system e.g. increased insulation thickness for enhanced U-values, or changes to internal liner or external wall profiles. As such, CA provide the corresponding embodied carbon values for the precise River-Therm® roof and wall systems specified, based on the exact systems that are installed on each individual project, rather than generic information which may not fully reflect the cladding systems supplied. This level of detail provides building designers with increased accuracy in their carbon assessments whilst also supporting any BREEAM accreditation that may be a stipulation of a project.

Tata Steel Confidex Sustain®

Confidex Sustain® was launched in 2007 as the world's first certified CarbonNeutral® building envelope Guarantee, in accordance with The CarbonNeutral Protocol. The CarbonNeutral Protocol provides a fully transparent and best-practice framework for carbon neutral claims. CA were instrumental in supplying the first building envelope project under the Confidex® Sustain Guarantee and since then, we have delivered over 7.2 million square metres of Carbon Neutral floor space, offsetting over 160,000 tonnes of carbon dioxide. Over the duration of the scheme, high quality projects have been supported and verified to leading international standards; Gold Standard (GS), Verified Carbon Standard (VCS), and UN Clean Development Mechanism (UN CDM), which have been approved by

the International Carbon Reduction Offsets Alliance (ICROA). To demonstrate the environmental impacts of the River-Therm® building envelope system CA offer independently assessed, third party verified product specific Environmental Product Declarations (EPDs) that comply to EN 15804 and ISO 14025.



Sustainability

CA take environmental measures extremely seriously and regard sustainability as an essential business practice. As a manufacturer of building envelope systems, we recognise the impact that our manufacturing operations have on the global environment, and also the significant contribution our products play in the energy efficiency of the buildings constructed for and operated by our clients and developers. Driven through technical excellence, CA are committed to developing industry leading products and systems that are increasingly resistant to atmospheric conditions, offer improved durability and life expectancy, contain lower embodied carbon and contribute to reduced building energy emissions and operational costs.

With approximately 40% of global energy related carbon emissions attributable to the construction and operation of buildings, it is vital that industry responds both swiftly and tangibly to the climate emergency, addressing both upfront (embodied) carbon as well as in-use (operational) carbon. At the heart of CA's sustainability ethos lies our focused collaboration with our supply chain partners, customers and clients, developing robust processes and frameworks to measure & monitor performance, committing to meaningful targets and driving continuous improvement. Our adoption of the DMAIC technique (Define, Measure, Analyse, Improve, Control) is a driving force in our process improvements, creating meaningful change.

Supported through independent accreditation all River-Therm® building envelope systems are covered by Environmental Product Declarations, with the carbon emissions from our manufacturing operations third party audited and accredited through Planet Mark certification. Combined, this data forms the foundation for our strategic sustainability roadmap and our commitment towards Net Zero.

Benefits

Speed and Practicality of Installation

The liner panel of built-up systems for both the roof and walls can be installed quickly, mainly due to its light weight and simplicity, Non-Fragile liner, making the building watertight and air-tight and achieving the necessary vapour control. Internal works can commence sooner, such as being able to pour the concrete slab earlier, reducing the overall building programme.

Suitable for low pitches and large radii curved roofs

CA River-Therm® has no endlaps, meaning the roof covering makes for enhanced protection against the risk of water ingress. With no endlaps and a secret-fix design, there are reduced opportunities for any water ingress. The robust roof system is suitable for high wind-load regions, and is frequently used for building types where the risk of water ingress through the roof needs to be eliminated, such as Data Centres and EV Battery Manufacturing. Available in steel or aluminium CA River-Therm® offers peace of mind.



Optimised Designs

CA has been supplying steel envelope buildings for over 40 years, and has honed its solutions to provide systems that not only perform extremely well but also save time and money in construction, and reduce maintenance costs in-use. Simple solutions can reduce build costs for steelwork, drainage and assist in future-proofing the building for change of use.

CA River-Therm® system is simple to install and has few heavy individual components, eliminating risks of manual handling, both on the ground and at height. CA liner panels (in all gauges 0.4mm and above) are classed as Non-Fragile (in accordance with ACR[M]001 'Test for Non-Fragility of Profiled Sheeted Roofing Assemblies'). The insulation is installed below the spacer, avoiding the need to cut and tuck, reducing the risk of any gaps in the insulation.

CA Complete Assurance Guarantee

The greatest benefits of CA building envelope systems are our guarantee and our reputation for providing genuine, meaningful and high quality solutions. The level of technical support, training and inspection throughout construction and the entire guarantee period is testament to our commitment to quality, integrity and peace of mind.



Technical Support & Aftercare

The CA Complete Assurance Guarantee lies at the heart of each and every project and this commitment is delivered by an industry leading team of Technical and Field Service Engineers.

Continually developing, testing and enhancing the range of building envelope systems and products available, CA Technical Department are on hand to ensure that the entire design and construction teams, from Developer, through to Architect, Main Contractor and Cladding Contractor, are fully supported throughout every stage of the procurement and build process.

- Design and specification support
- Project specific detailing
- Thermal, psi-value and F-factor calculations
- System specific detail drawings, Technical Information Papers and Installation Guides
- BIM & Revit support
- Wind and snow load calculations in line with the latest regulations and Eurocodes
- Gravity drainage calculations
- Regular on site installation inspections
- Training for all installers and designers
- Acoustic advice

- Independent system certification: Agrément; LPCB; Secured By Design; Planet Mark
- Quality, environmental and health & Safety: ISO 9001, ISO 14001 ISO 45001

Training

CA Field Services are on hand to provide contractor training and installation guidance, supported by routine site visits during the construction phase, as well as guarantee inspections upon project completion. These processes and services provide the Cladding Contractor with the knowledge and confidence to install CA building envelope systems to the highest possible standard, whilst providing the Client with the reassurance that their asset is covered by a robust cladding system guarantee.

Accreditation



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