



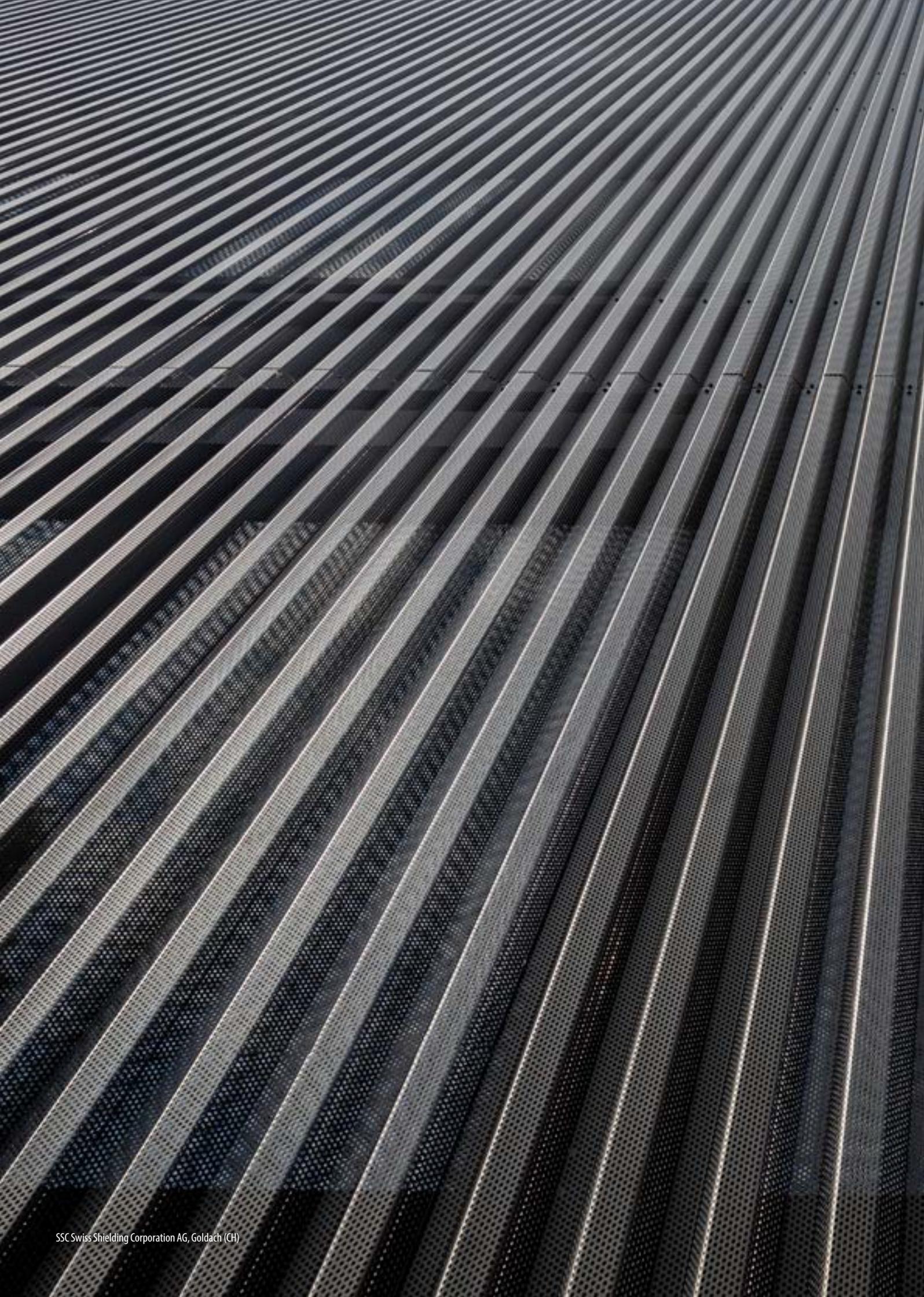
A Tata Steel Enterprise

# MONTANATHERM<sup>®</sup> CARRIER

Sandwich panels with an individual outer shell



SWISS MADE<sup>+</sup>



# MONTANATHERM® CARRIER

MONTANATHERM® sandwich elements for walls and roofs have been established on the market for decades. They are characterised by outstanding properties in terms of building physics and are used wherever fast construction progress, cost-effectiveness and high insulation values are demanded.

The already well-known properties such as excellent values for air-tightness and thermal transmittance as well as fire resistance class EI30 are supplemented by a further option in the form of the MONTANATHERM® Carrier. Current market requirements such as creativity, fast construction progress and inexpensive construction costs are met to the full by this element. Through the possibility of attached exterior claddings, the individual ideas of planners and architects can be implemented without having to do without the well-known and proven benefits of the classic MONTANATHERM® sandwich elements.

The MONTANATHERM® Carrier elements thus make a method of construction possible by combining the well-known strengths of the MONTANATHERM® wall elements with the advantages of a rear-ventilated façade.

## SYSTEM COMPONENTS



### MONTANATHERM® CARRIER MTW V ML

- Available in the insulation thicknesses 120, 140, 160 and 180 mm.
- Available in various colours with the different coatings.

### ALUMINIUM CARRIER EXTRUDED PROFILE

- Pre-perforated with round holes and slots on a 100 mm grid.

### SFS SCREW

- Type SFS intec SLG/2-5-S-6.5 x 20 stainless steel self-drilling screw. European Technical Approval ETA-10/0198.

### INDIVIDUAL OUTER SHELL

- A large number of design possibilities are feasible in a choice of various materials, e.g. photovoltaic, MONTAFORM® Design, expanded metal, etc.

## IMPORTANT NOTES

### GUARANTEE

The entire Carrier structure requires a substantiated static verification, which also serves as the basis for a possible system guarantee. To this end please provide us with all data for the structure and the acting loads in the greatest possible detail. The installation instructions listed in this document must be observed for a system warranty.

## SERVICE-ELEMENTS



[DETAILED BROCHURE](#)



[CONSTRUCTION RECOMMENDATION](#)



[STATIC TABLES](#)



[TENDERING TEXTES \(CH\)](#)



[CAD](#)



[SUSTAINABILITY](#)

## PLANNING

- In order to meet the high requirements for the load-bearing capacity, an optimised foam core layer is used in the MONTANATHERM® Carrier elements. For this reason, it is mandatory to indicate when ordering that the elements will be used as a substructure.
- Montana Building Systems Ltd. will be glad to support you in the planning phase with building-related calculations. To this end it is necessary to provide all information on the static system and the acting loads (including forces due to wind pressure and wind suction) as well as the outer cladding to be attached. On this basis the relevant implementation details are determined, such as the maximum span of the Carrier profiles, the distance between the Carrier rails and the necessary number of fasteners.
- For an alternative coarse pre-dimensioning of the Carrier profiles, it is recommended to reduce the span of the standard MONTANATHERM® elements by approx. 10 to 20 %.
- The MONTANATHERM® façade elements MTW V ML 140 to 180 have successfully passed the fire resistance tests for EI30, which also remain valid when used as a support system with the Carrier structure.
- In case of implementation in accordance with the specifications from the building-related calculation and compliance with the assembly regulations at the same time, application can be made for a system guarantee to be issued.



Sandwich vertical, profile horizontal



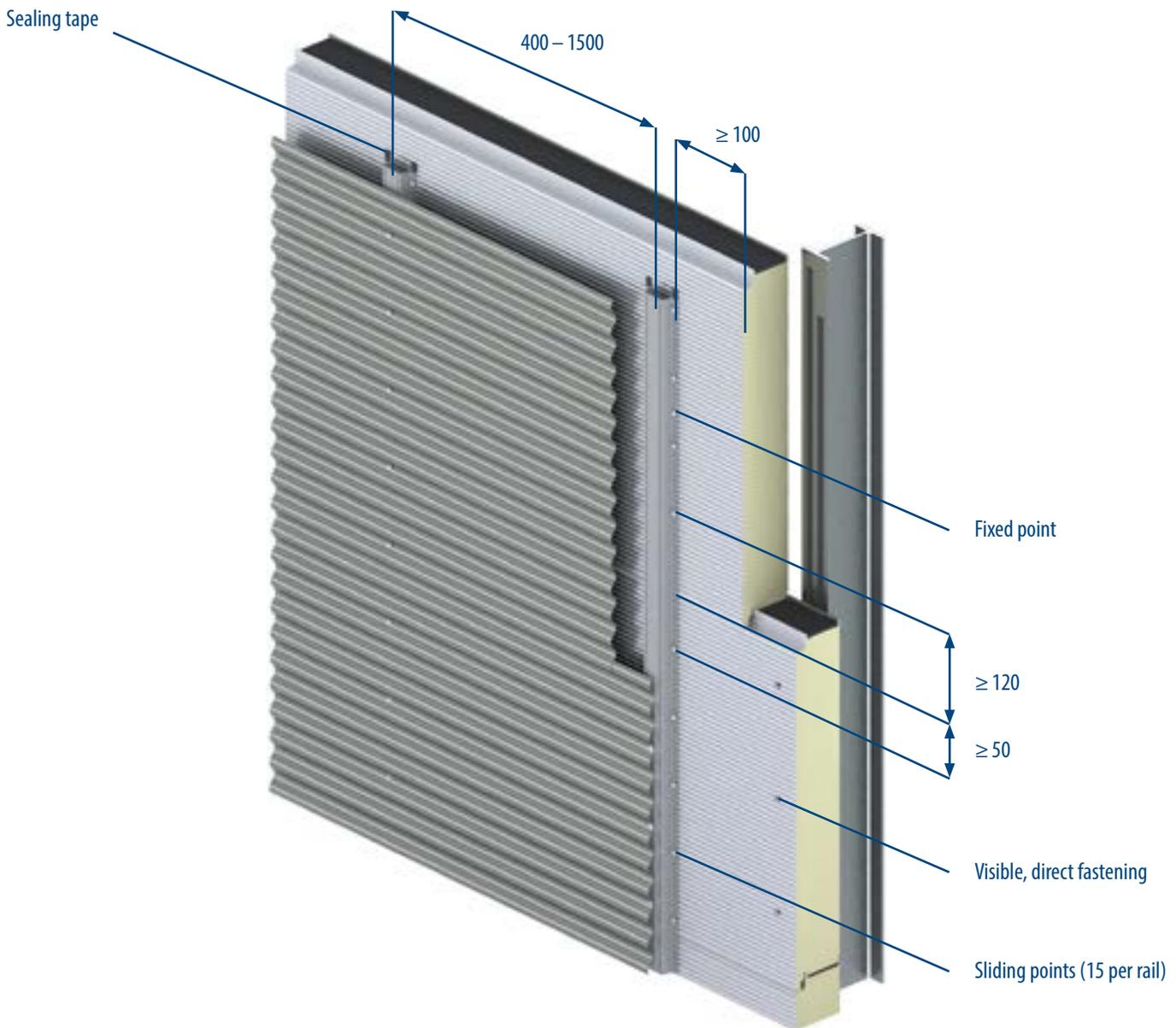
Sandwich horizontal, profile vertical



Sandwich vertical, profile vertical

CCVP, Giornico (CH)





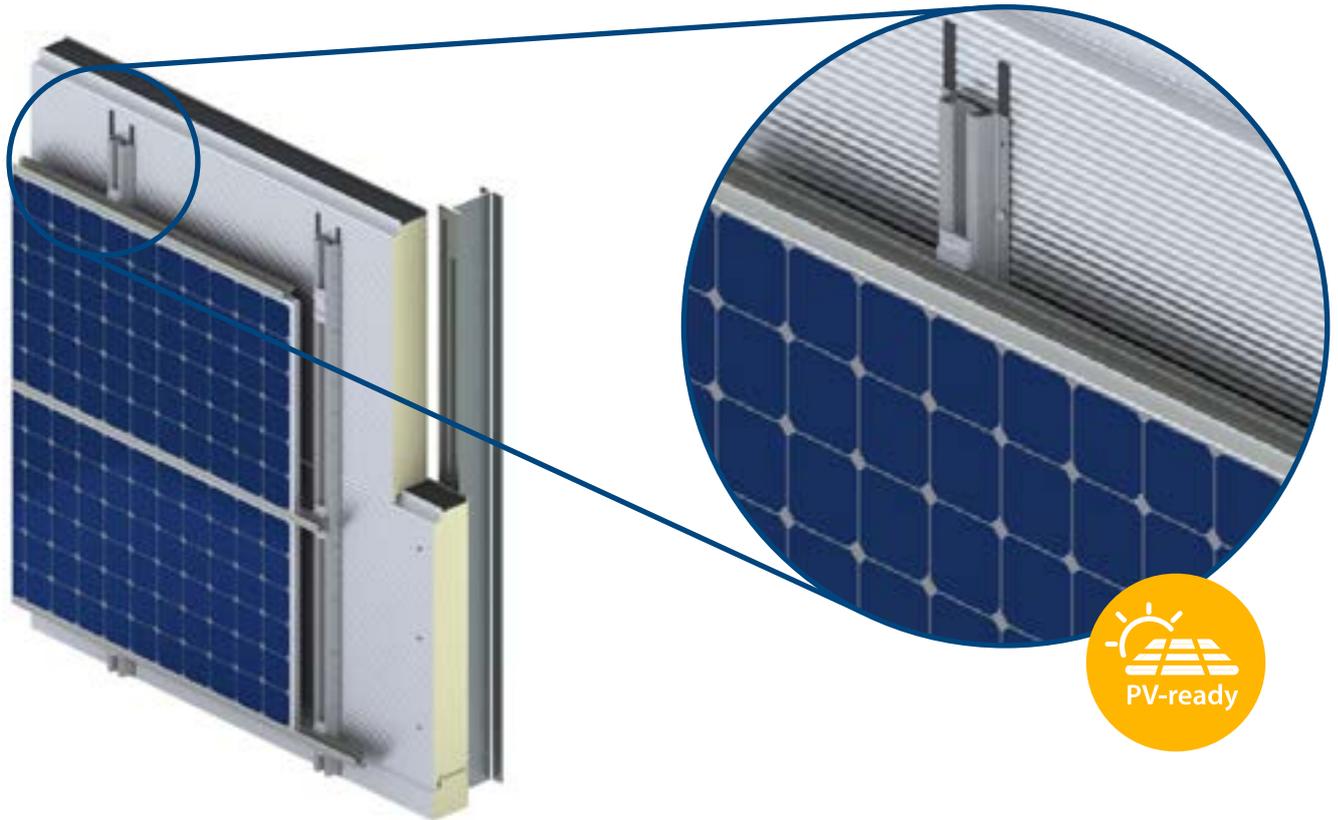
### RECOMMENDATION FOR CONSTRUCTION

1. The MONTANATHERM® Carrier elements are fastened directly and visibly to the substructure. Approx. 2-3 screws are required for a width of 1,000 mm.
2. Care must be taken to ensure that the application of external loads to the Carrier sandwich element and the fastening of the Carrier profiles are free from constraining forces. There must not be any constraining stresses, for example due to thermal length changes. This is achieved by utilising the round holes and slots in the Carrier profile and bolting it according to the principle of sliding and fixed points.
3. The vertical load from the dead weight of the attached wall cladding is applied to the Carrier element at the fixed point. The horizontal loads from the wind stresses are transmitted by the sliding points.
4. The minimum distances and edge distances shown in the drawing above must be observed.
5. The guiding dimension for the distance between the Carrier profiles is between 400 and 1500 mm, depending on the static requirements.
6. Arrangement of the means of fastening:
  - Formation of the fixed point: to do this one screw pair is to be located in a round hole in each carrier profile (each profile has in principle only one fixed point). The fixed point should be in the upper third of the load dissipating sandwich element and approximately in the middle of the extruded profile.
  - Formation of the sliding points: all other 15 statically necessary screw pairs must be placed centrally in the slotted hole.
7. The carrier rail must be fitted with seals even if the outer cladding is not perforated. The seals also serve as corrosion protection between the profile and the outer shell of the carrier panel. This prevents the coating from being scratched by thermal effects and vibrations.

## MONTANATHERM® SANDWICH ELEMENTS: PHOTOVOLTAICS IN THE FACADE

The trend is clear: photovoltaics on roofs and façades is on the rise. This type of energy generation is crucial for a sustainable and environmentally friendly energy supply with low CO<sub>2</sub> consumption. However, PV systems also place higher demands on the stability and robustness of building envelopes. A robust and reliable system of components is required.

The specially developed K2 carrier rail is the ideal solution for installing PV modules on the MONTANATHERM® sandwich wall elements MTW ML 120 to 180.



With this rail, the photovoltaic modules can be securely, permanently and reliably fastened to the sandwich elements without impairing the function, serviceability and service life of the MONTANATHERM® elements. The "PV-ready" label also guarantees users that all guaranteed warranty services in accordance with SIA remain intact even after the integration of photovoltaic elements.

We recommend the high-quality COLORCOAT® Prisma coating system for coating the "PV-ready" certified sandwich elements. This protects the façade against corrosion, which can be caused by the aggressive conditions under and behind PV systems, and thus guarantees its service life and functionality. Our unique "Extended Confidex® guarantee for use with PV frame modules" ensures that the service life of the sandwich elements matches the yield period of the PV modules, even under heavy corrosive stress.

If you would like to find out more about our recommended solution, please do not hesitate to contact us. We will be happy to advise you personally.



# [www.montana-ag.ch](http://www.montana-ag.ch)

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