

IBC

SOLAR

Have sun!

Webinar IBC Mounting Portfolio

Webinar 26.10.2023 - Agenda

1

IBC TopFix 200

2

IBC AeroFix G3

3

IBC Quality criteria



IBC TopFix 200

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and further
information here.





Online shop:
Find our products
and further
information here.

IBC TopFix 200 System variants

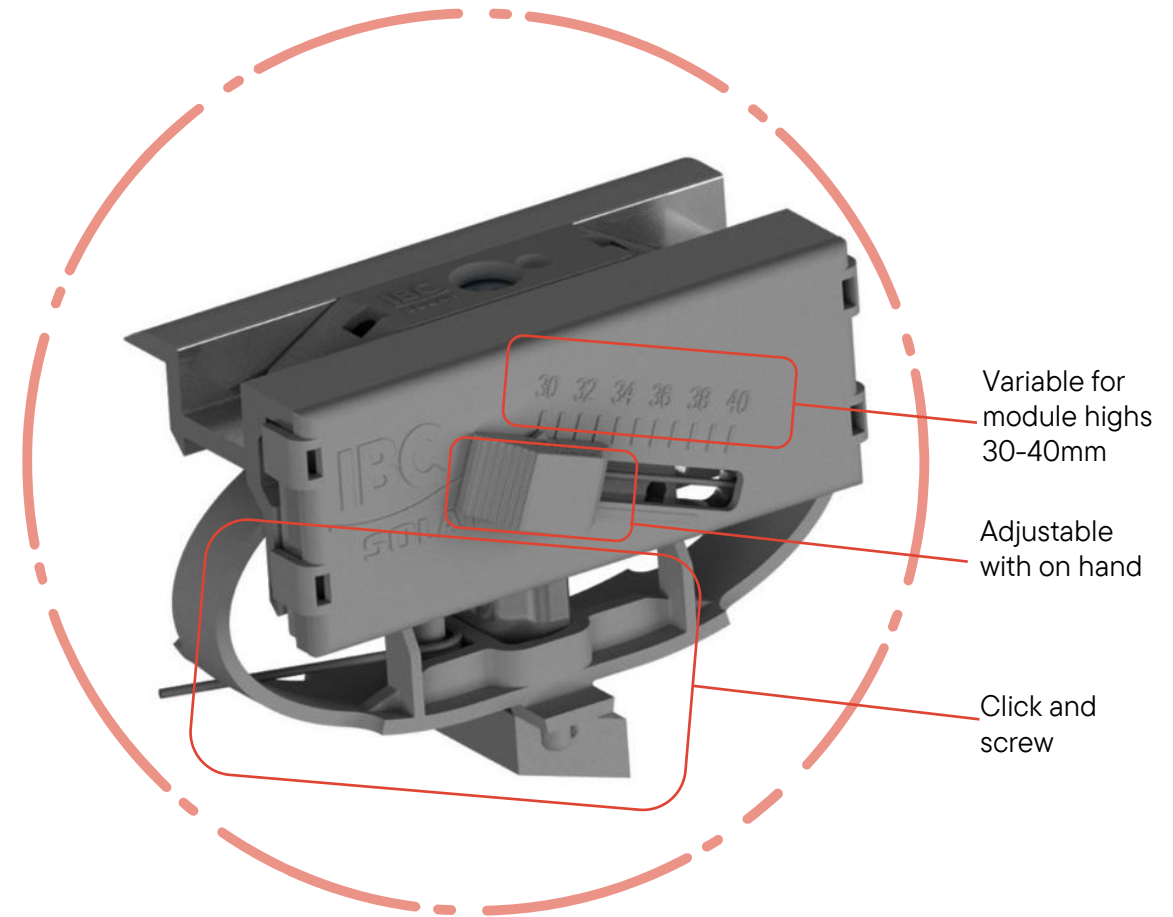
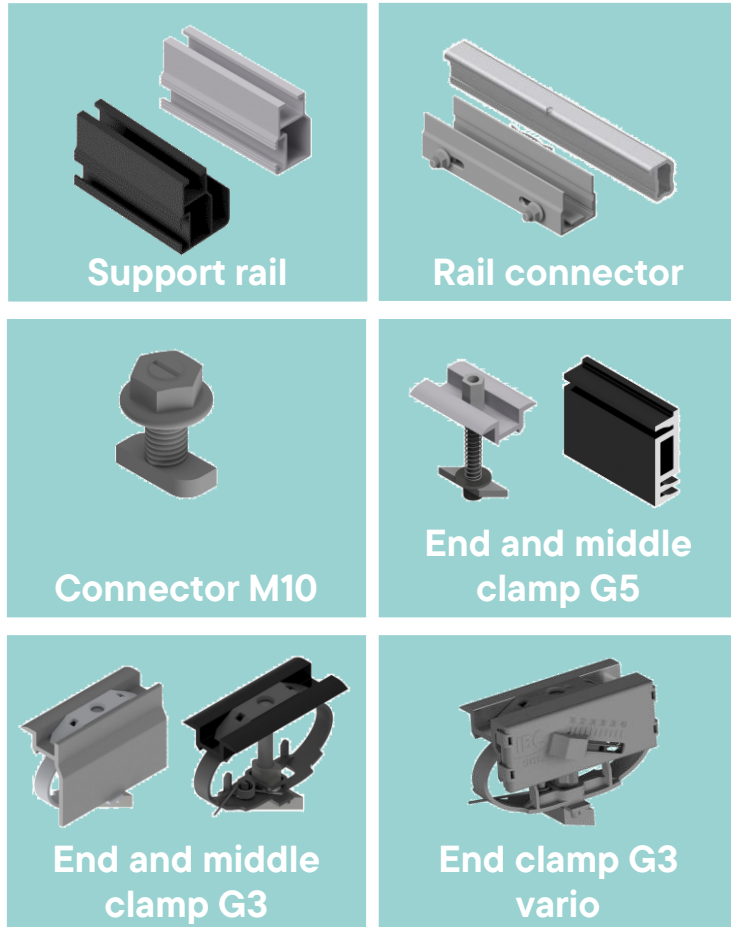
Roof types

The diagram illustrates the IBC TopFix 200 system variants for various roof types. The central image shows a house with solar panels on a gabled roof. Surrounding it are circular callouts for different roof types: Plain Tiles, Slates, Tiles, Bitumen, Sandwich panels, Trapezoid sheet metal, Sheet sesam, Corrugated Eternit, and Kalzip. To the left and right are grids of images showing the specific mounting brackets and components for each roof type.

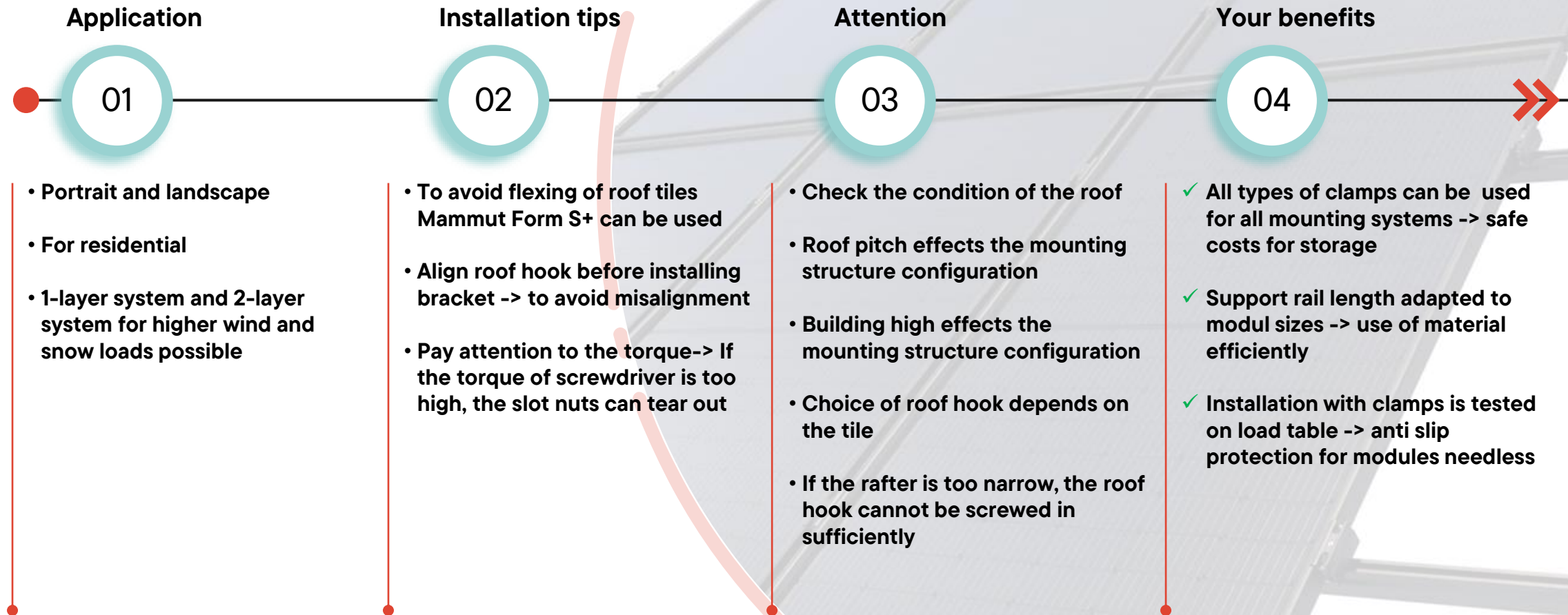
- Plain Tiles
- Slates
- Tiles
- Bitumen
- Sandwich panels
- Trapezoid sheet metal
- Sheet sesam
- Corrugated Eternit
- Kalzip

IBC TopFix 200 Clamping system

Components

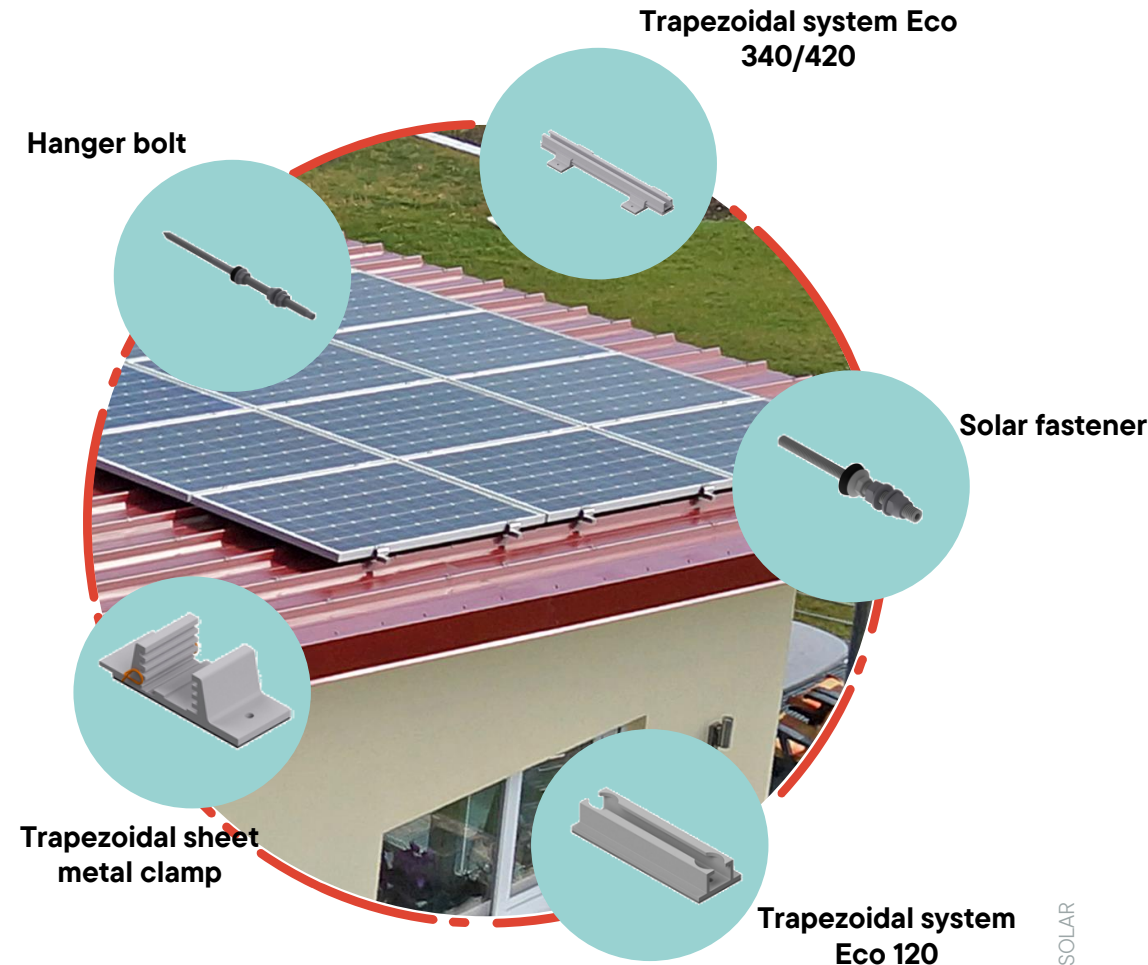
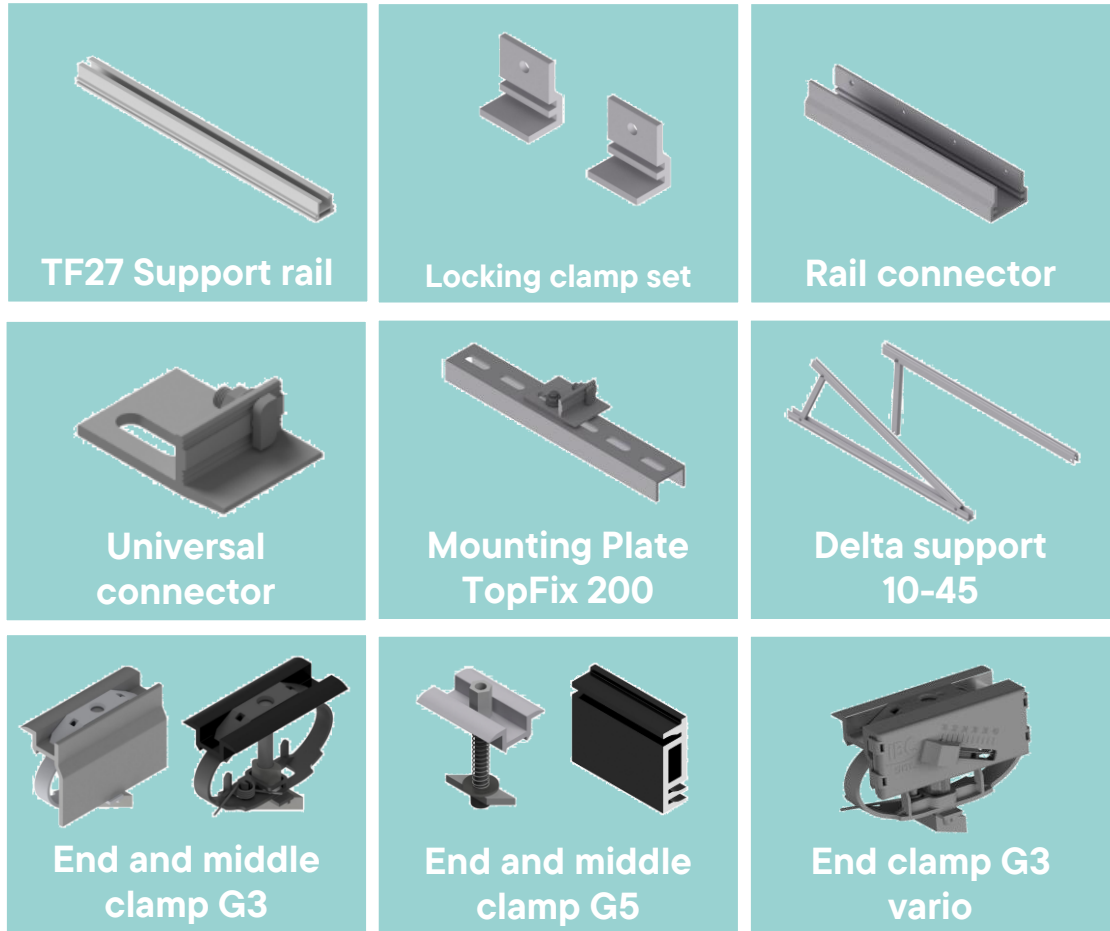


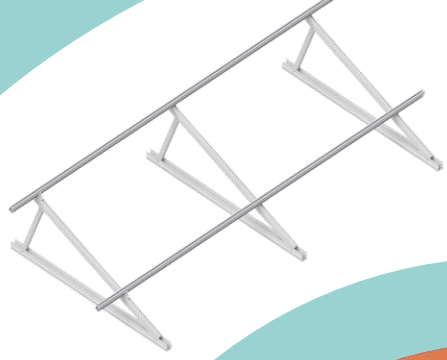
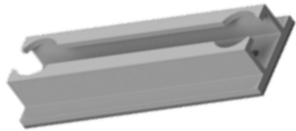
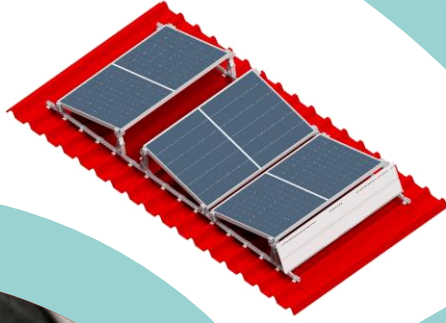
What is important to know?



IBC TopFix 200 Trapezoidal system

Components





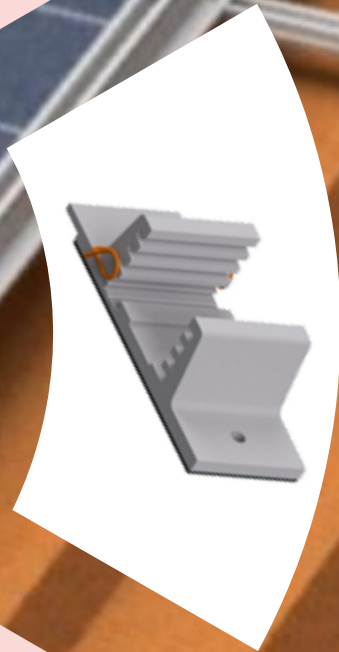
Trapezoidal sheet metal clamp

Trapezoidal sheet metal installation with full-length TF27 support with trapeze shoes.

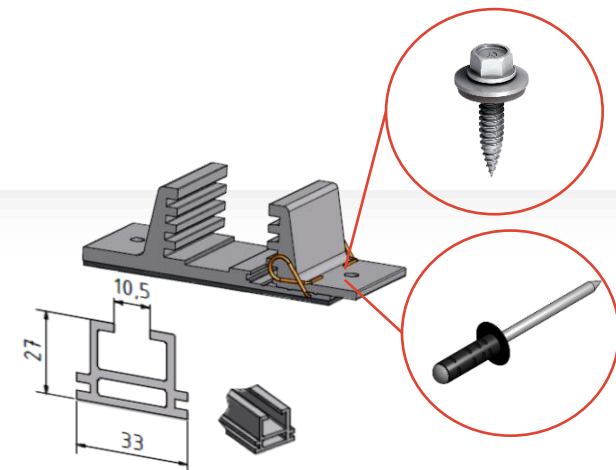
Fastening with self-drilling screw or rivet

Module mounting upright/portrait or 2-layer horizontal/landscape

- + Best static properties
- + Loads are evenly transferred into the roof
- + Equipotential bonding is easier to realize, as only one round wire has to be laid across the rails



01



Trapezoidal System ECO 200

Very short profile

Fastening only with thin self-drilling screw

ECO 340 and 420 can be connected with rivet

Module mounting landscape with ECO 120

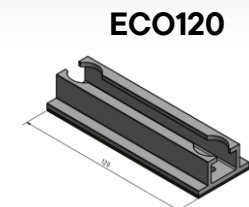
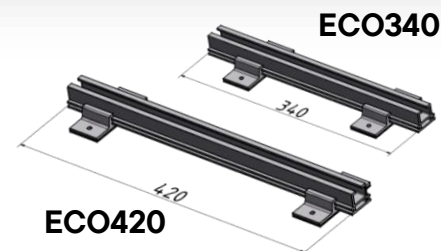
With ECO 340 and 420 portrait

- solution with less material-> low cost solution

⚠ Loads are directed into the roof in high beads only where the clamps are placed. Trapezoidal sheet metal can be overloaded very quickly

⚠ Every part of eco system must be connected for equipotential bonding

02



Fastening with hanger bolt and solar fastener

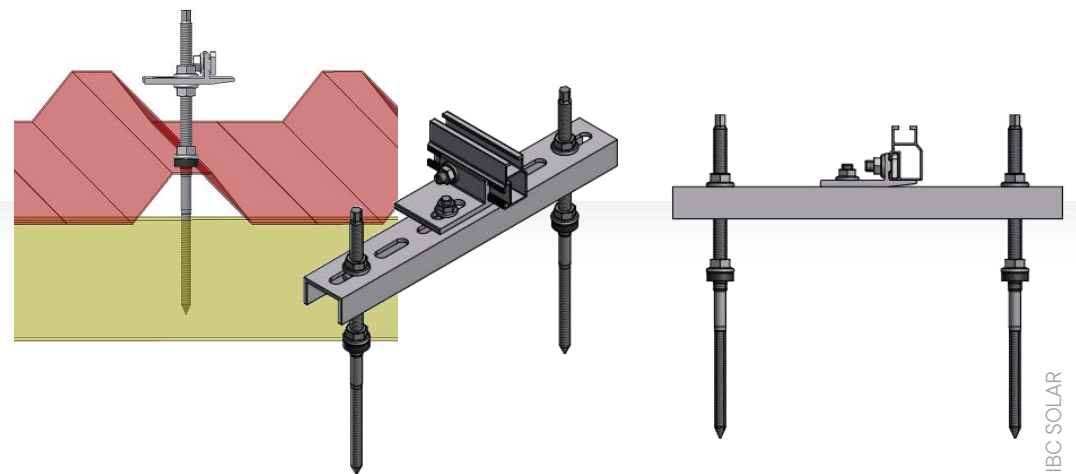
Fastening in the substructure:

Wooden purlins -> hanger bolt

Steel purlins -> solar fasteners

⚠ Check steel quality! If the steel grade of the purlin is too high, the solar fastener cannot be screwed

If the hanger bolts or solar fasteners are overloaded, you can use the Duo mounting plate



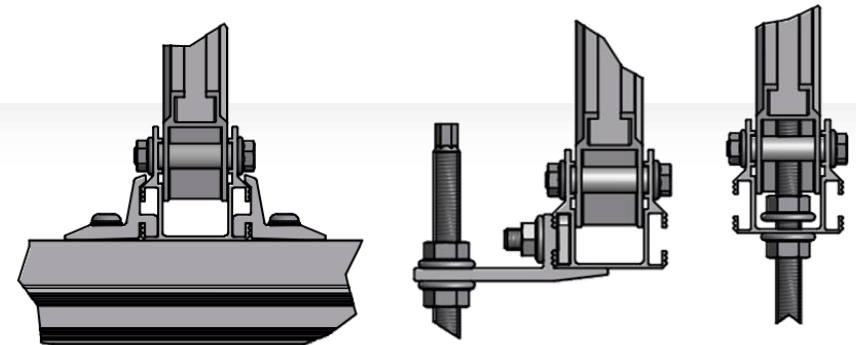
Installation with delta support

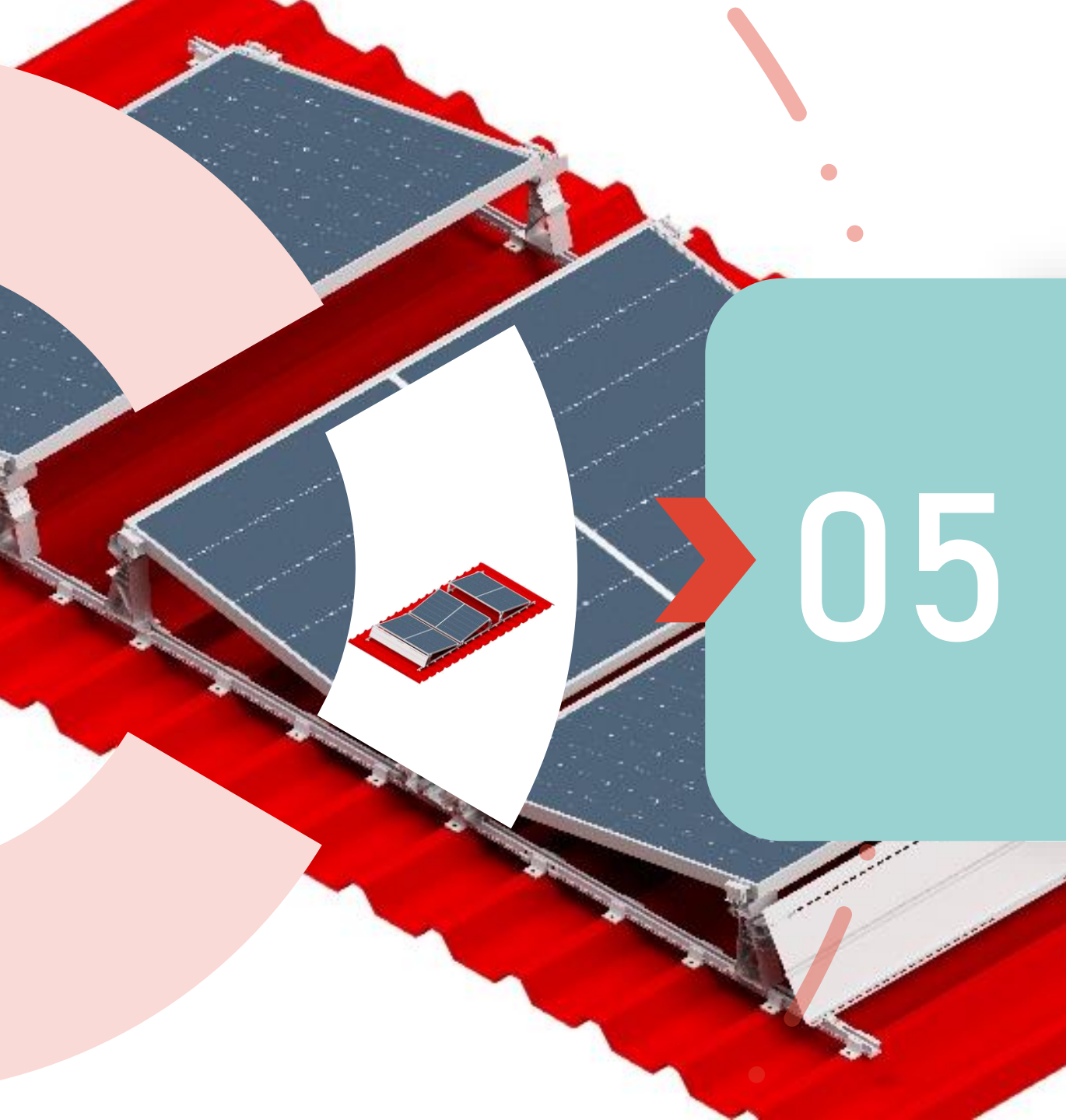
Fastening of the base rails in a cross connection with the TF27 profile and trapezoidal sheet metal clamp

Installation with universal connector or directly to the base rail

⚠ No wind tunnel test!

⚠ Statical calculation not possible with PVM





Installation with trapezoidal elevation

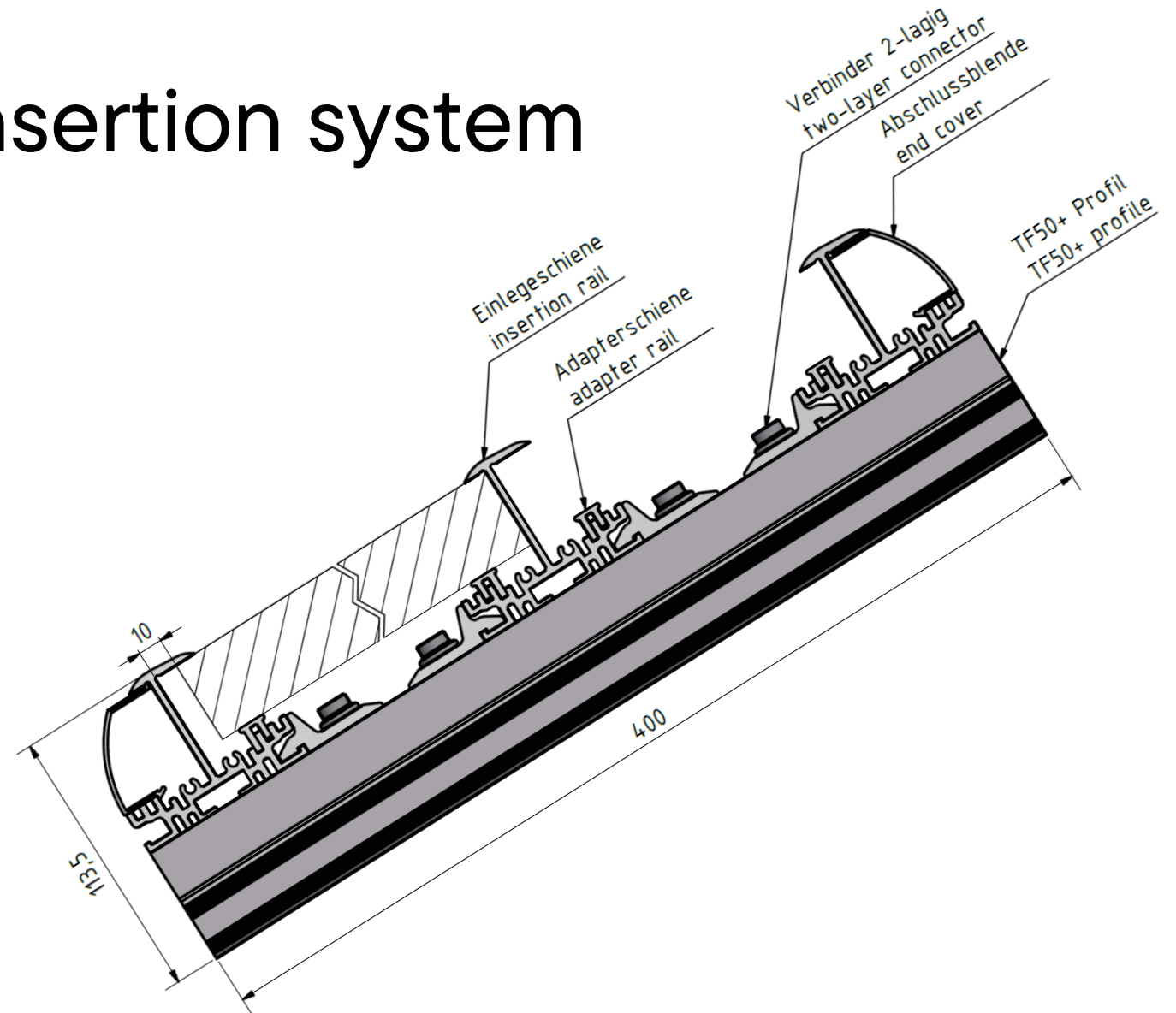
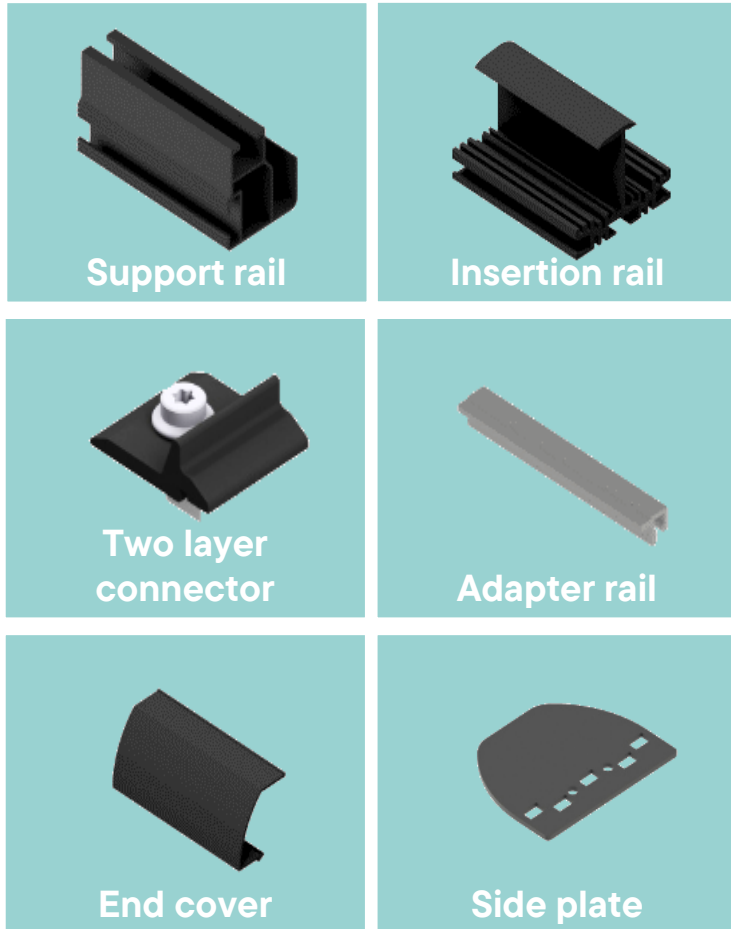
Combination of AeroFix supports and TopFix 200 trapezoidal sheet metal mounting

Different thermal expansion of the trapezoidal and aluminum profile can be compensated by the floating bearing of system

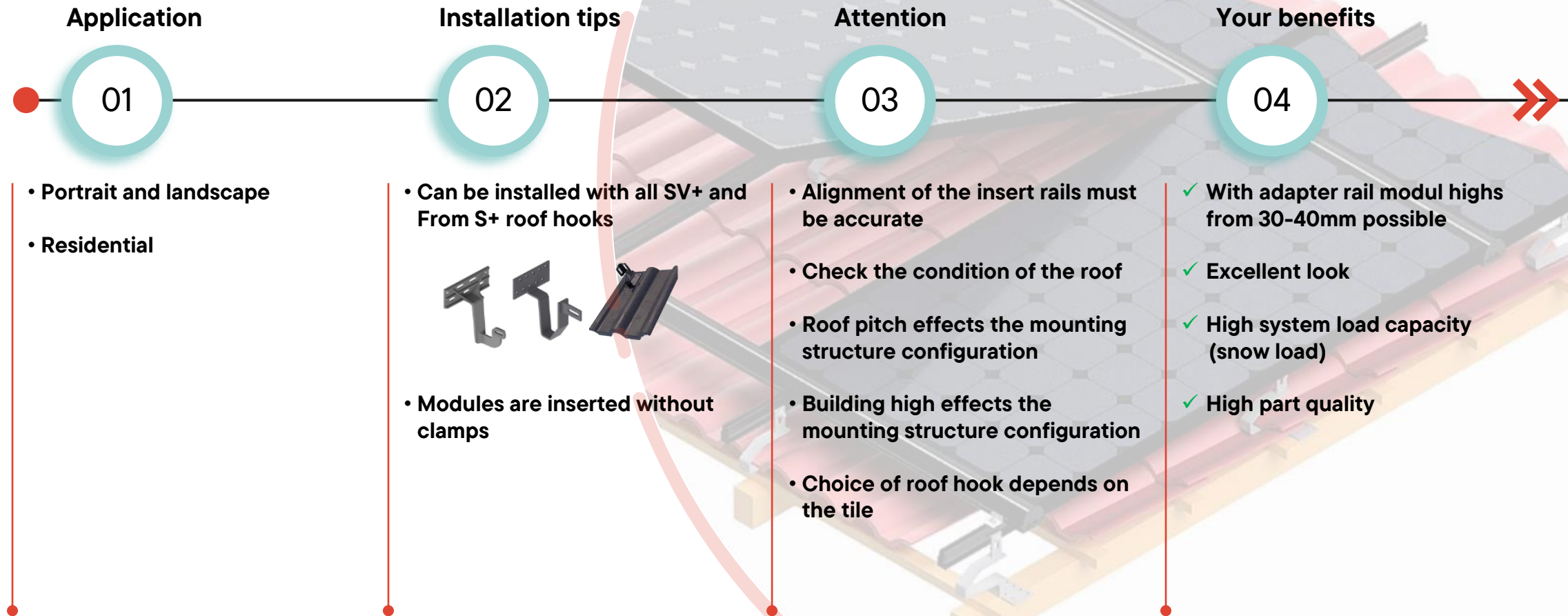
- ⚠ No wind tunnel test!
- ⚠ Statical calculation not possible with PVM

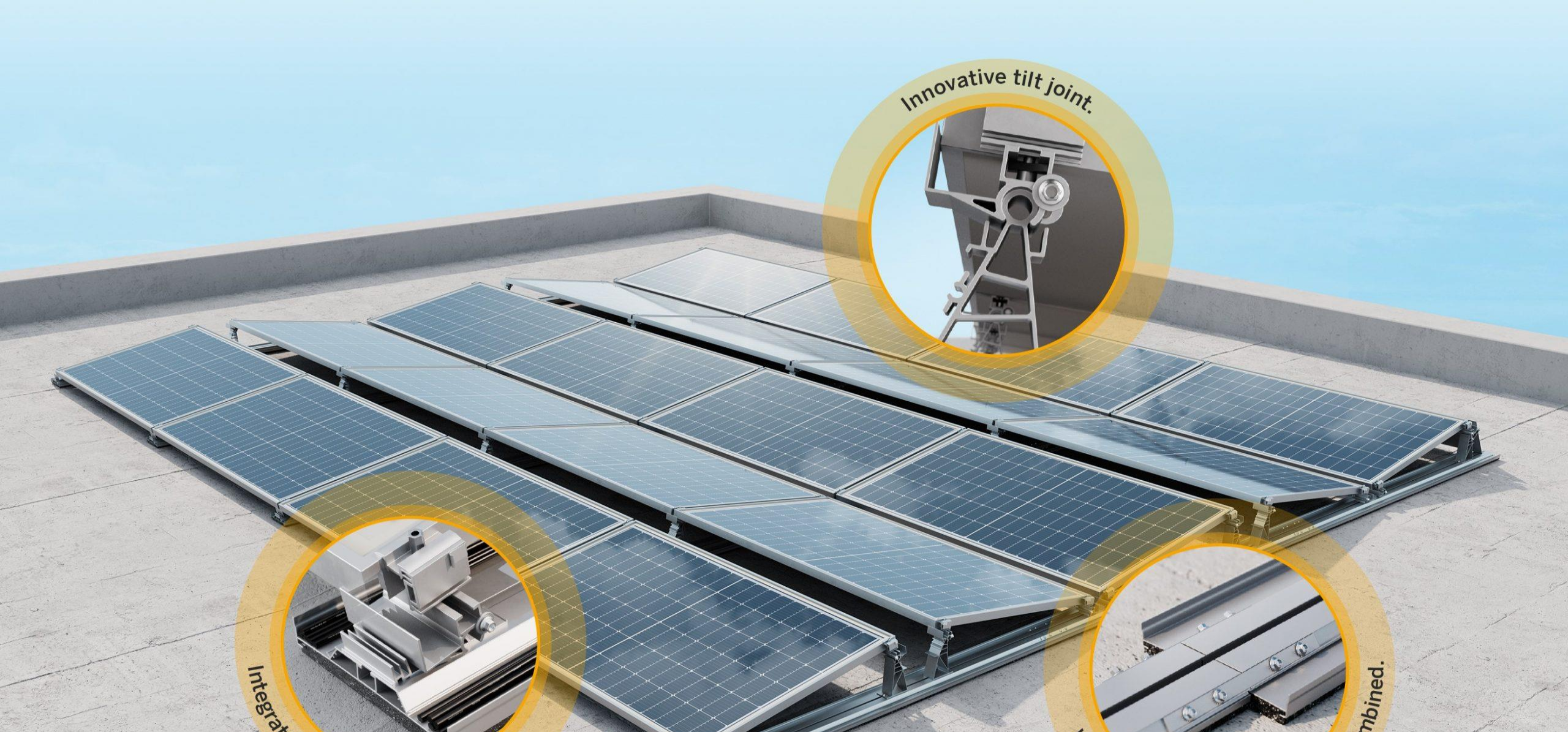
IBC TopFix 200 Insertion system

Components



What is important to know?





Innovative tilt joint.

Integrated

Wide and narrow base rails can be combined.

IBC AeroFix G3

Online shop:
Find our products
and further
information here.



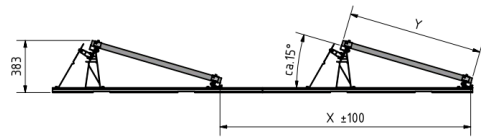


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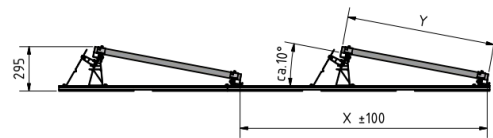
IBC AeroFix G3 System variants

Roof types

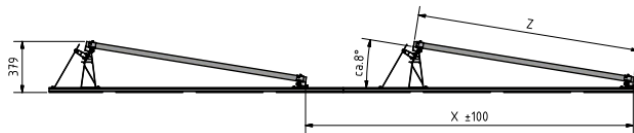
AeroFix G3 15-S



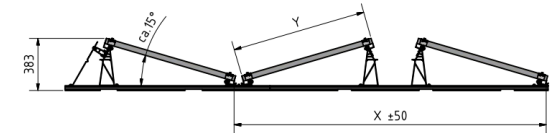
AeroFix G3 10-S



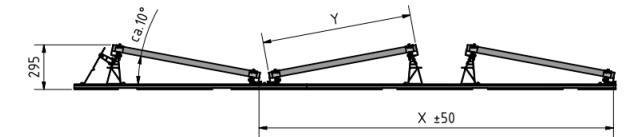
AeroFix G3 8-S



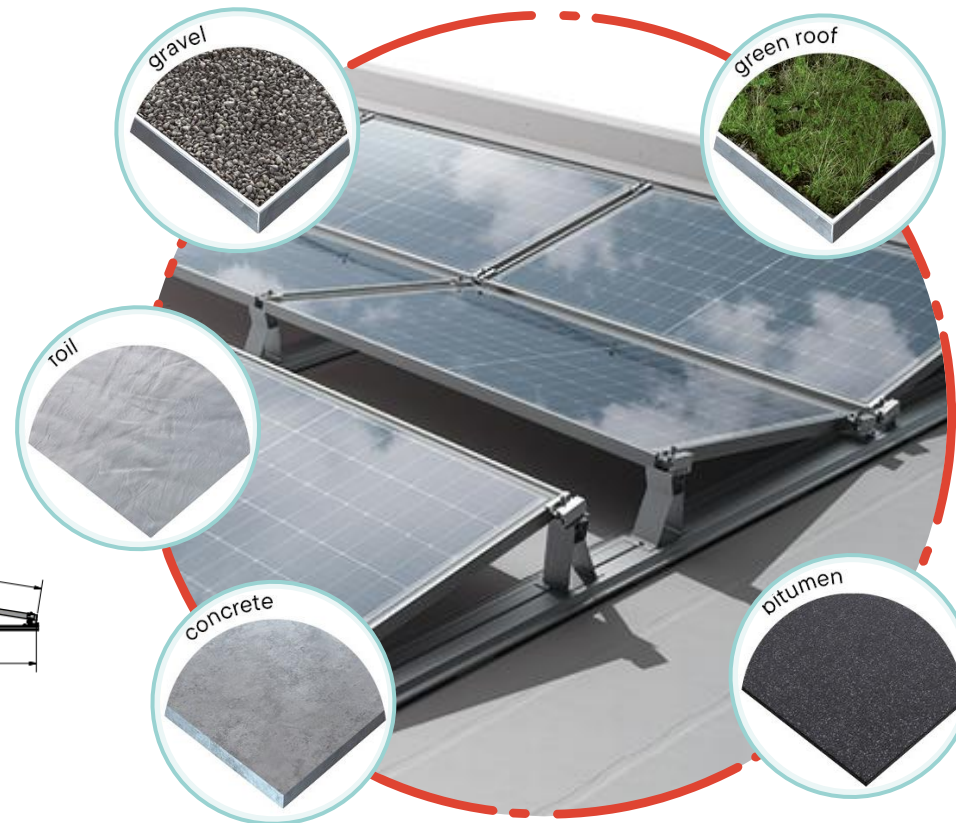
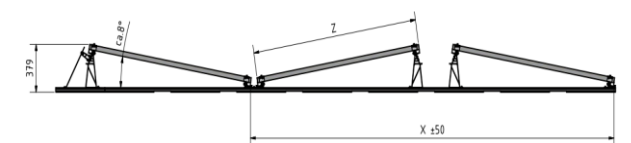
AeroFix G3 15-EW

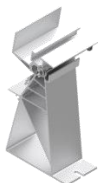


AeroFix G3 10-EW



AeroFix G3 8-EW

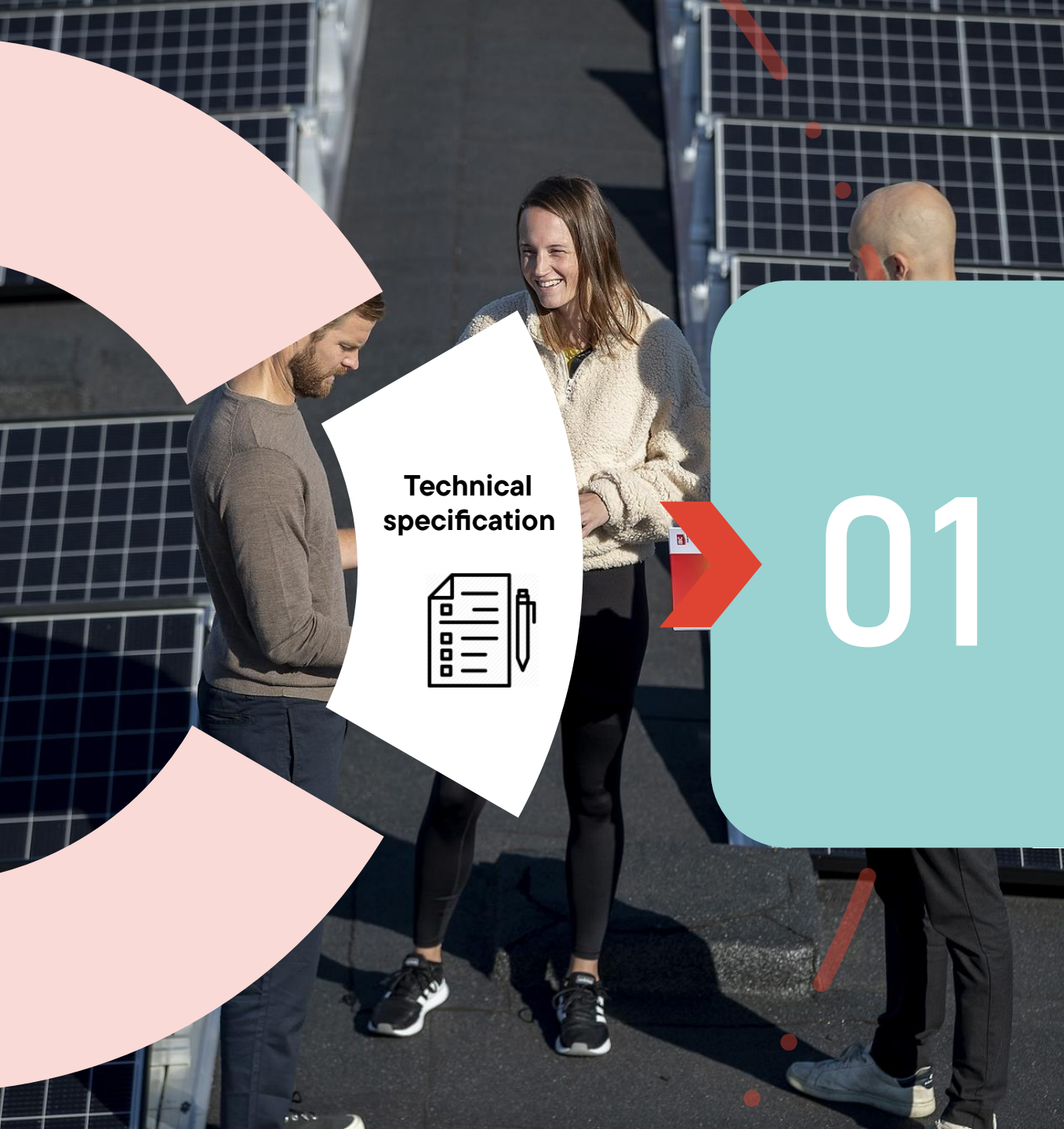




System data



PV MANAGER



Technical
specification



01

IBC AeroFix G3 system data

Roof pitch 0°-10°



Started from 5% or 2.8° secure system against thermal movement

Building height max. 35 m



Taller buildings only after approval of IBC

Minimum field size 2x3 or 3x2 modules

Maximum field size 20x20 m

Module size



Length: 1500 – 2100 mm Width: 980 – 1150 mm

IBC PV Manager

Pay attention to the number of contiguous modules

- The more modules are planned connected to each other, the lower the ballast. From 25 modules and more in combination, the ballast no longer changes significantly.

Place the expansion joint sensibly

- The expansion joint, which separates the individual module fields from each other, should be set as evenly as possible. The more even the module distribution, the lower the ballast

Keep the distance to the edges of the roof.

- If the calculated distance to the roof edge is not maintained, the ballast in this area will increase.

Basically, the following statement can be made regard to ballasting.

- In the case of southern systems, the ballast is higher than in comparable east-west systems
- With 15° systems the ballast is higher than with 10° systems

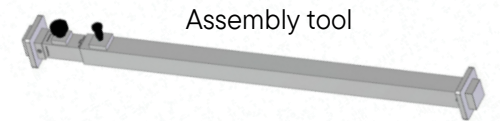
 PV MANAGER

02

IBC AeroFix G3 Supports

Easy installation of the support by screwing it into the groove channel of the base rail

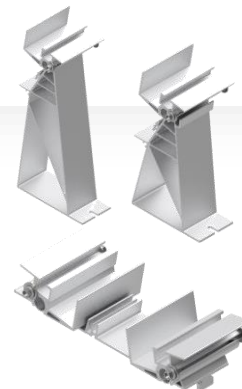
No calculation necessary for mounting points -> With assembly tool, the supports can be installed quickly and easily



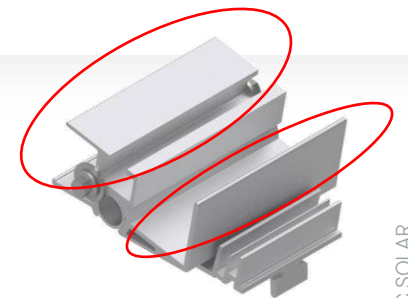
The tilt joint avoids tension after installation for variable module sizes

03

8° Portrait
15° Landscape 10° Landscape



Support with integrated wind plate holder



IBC AeroFix G3 base rail connector

Two types of base rail connector:

- internal -> lightning current carrying capacity



- external



04

IBC AeroFix G3 base rail

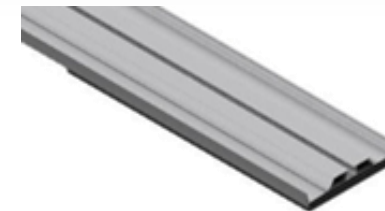
Two types of base rails with width of 180mm and 100mm as eco version. Both types can be combined during installation

Base rail with width of 180mm can be used specially for areas with high load or ballasting to distribute the load

-The wider the base rail, the better the load distribution

Protection mat already preassembled

05



IBC AeroFix Latch G3

Fall protection system (no restraint system)-> freedom of movement -> safety also guaranteed over the edge of the roof

Up to three people can be secured on one system

Product training with certificate by IBC

SOLARCertificate of competence by IBC SOLAR

 Expert examination required for planning

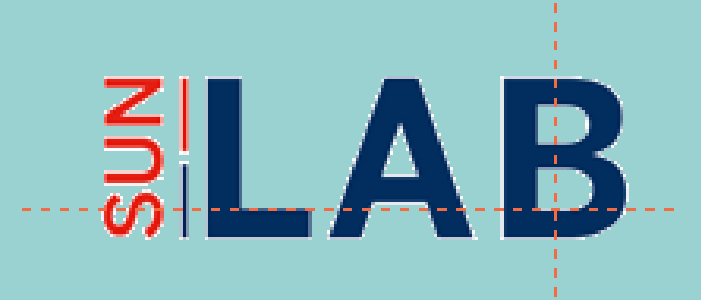




IBC Quality criteria



Why do we test
our products so
rigorously?



WHAT?



PV systems are only as good as the installed components. We want to provide **systems which work perfectly together.**

WHY?



So, the PV systems **run reliably, faultlessly and with maximum output** for more than **20 years.**

HOW?



We ensure this through **internal controls** and **independent certifications and audits.**

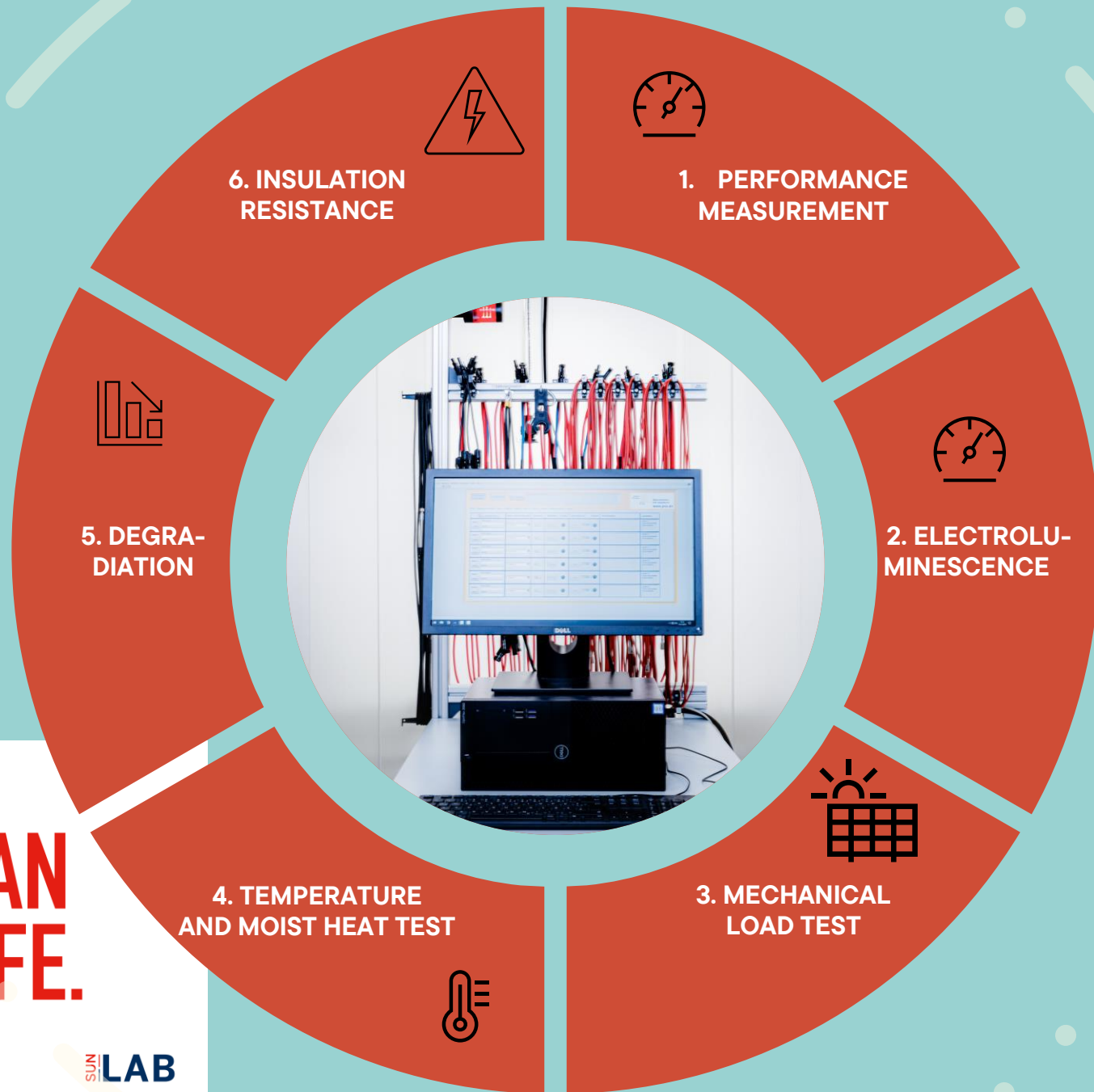


How do we secure our quality promise?



**TOUGHER THAN
EVERYDAY LIFE.**

SUN
LAB





DETERMINING THE HIGHEST PERFORMANCE

The measure of all things

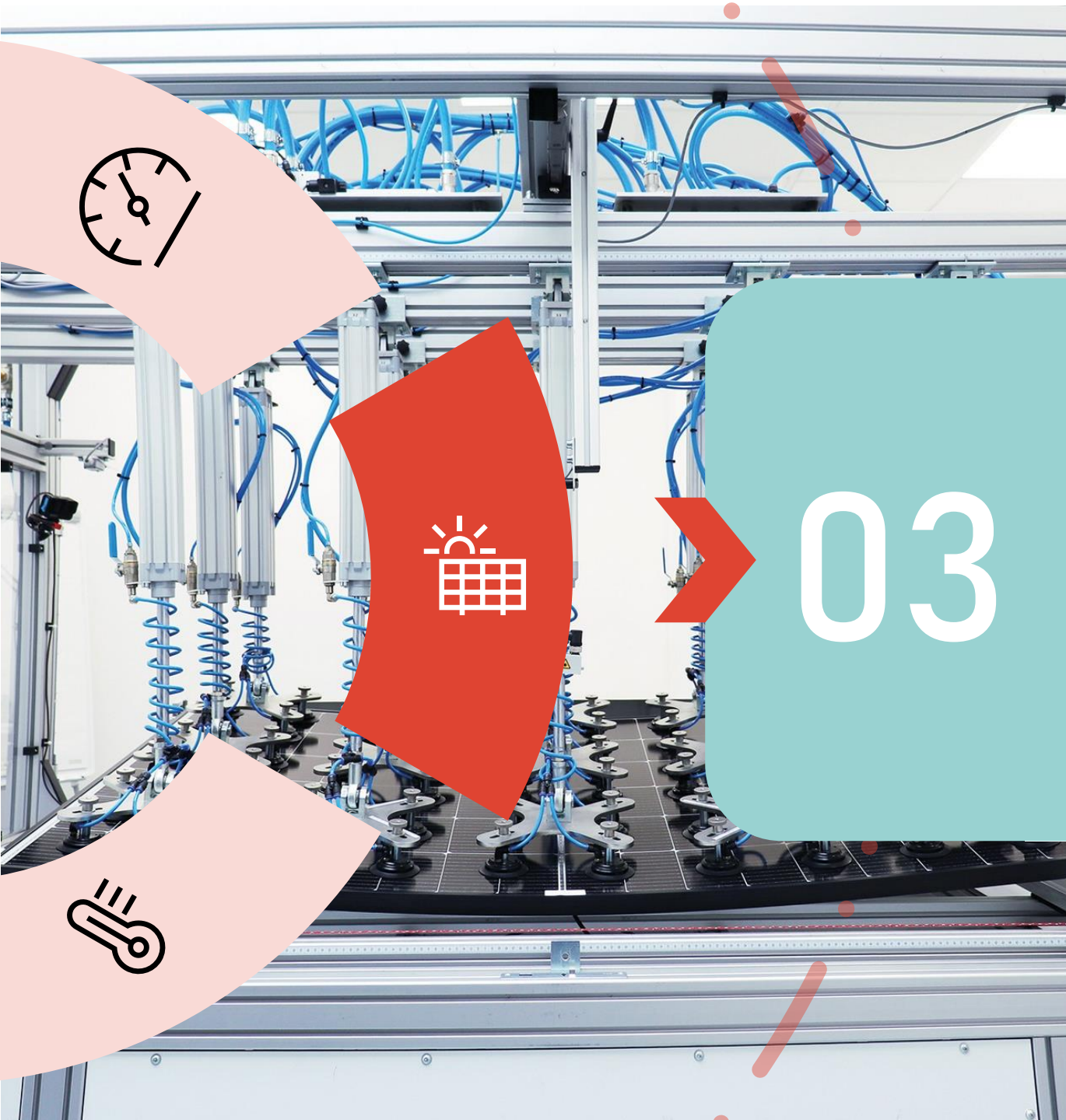
Determining the highest output of the PV modules before and after environmental impact tests.



ELECTROLUMINESCENCE MEASUREMENT OF PV MODULS

In light of the truth

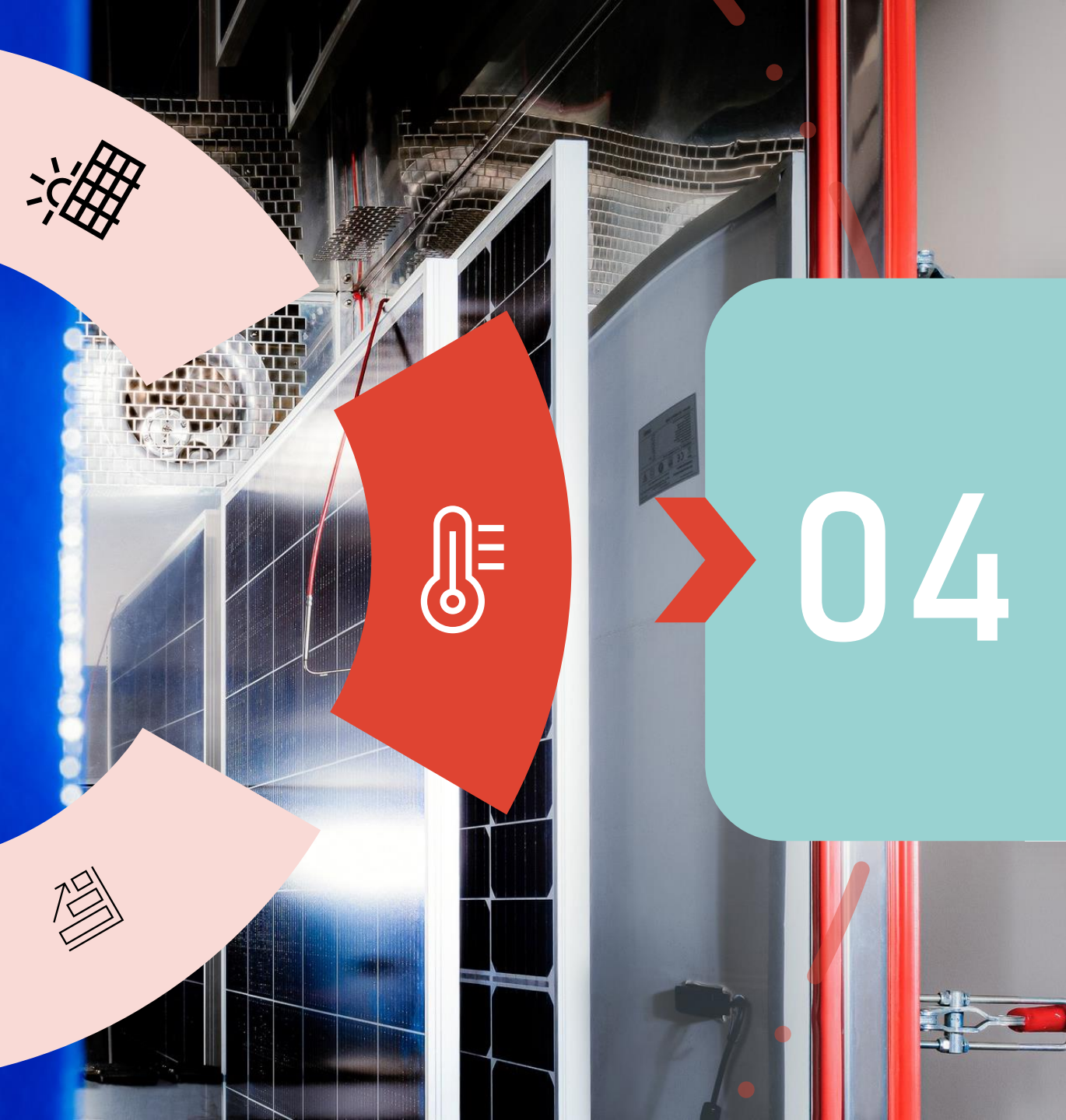
Electroluminescence images of PV modules reliably indicate possible material defects, such as micro cracks



STATIC MECHANICAL LOAD TEST

For bending and breaking

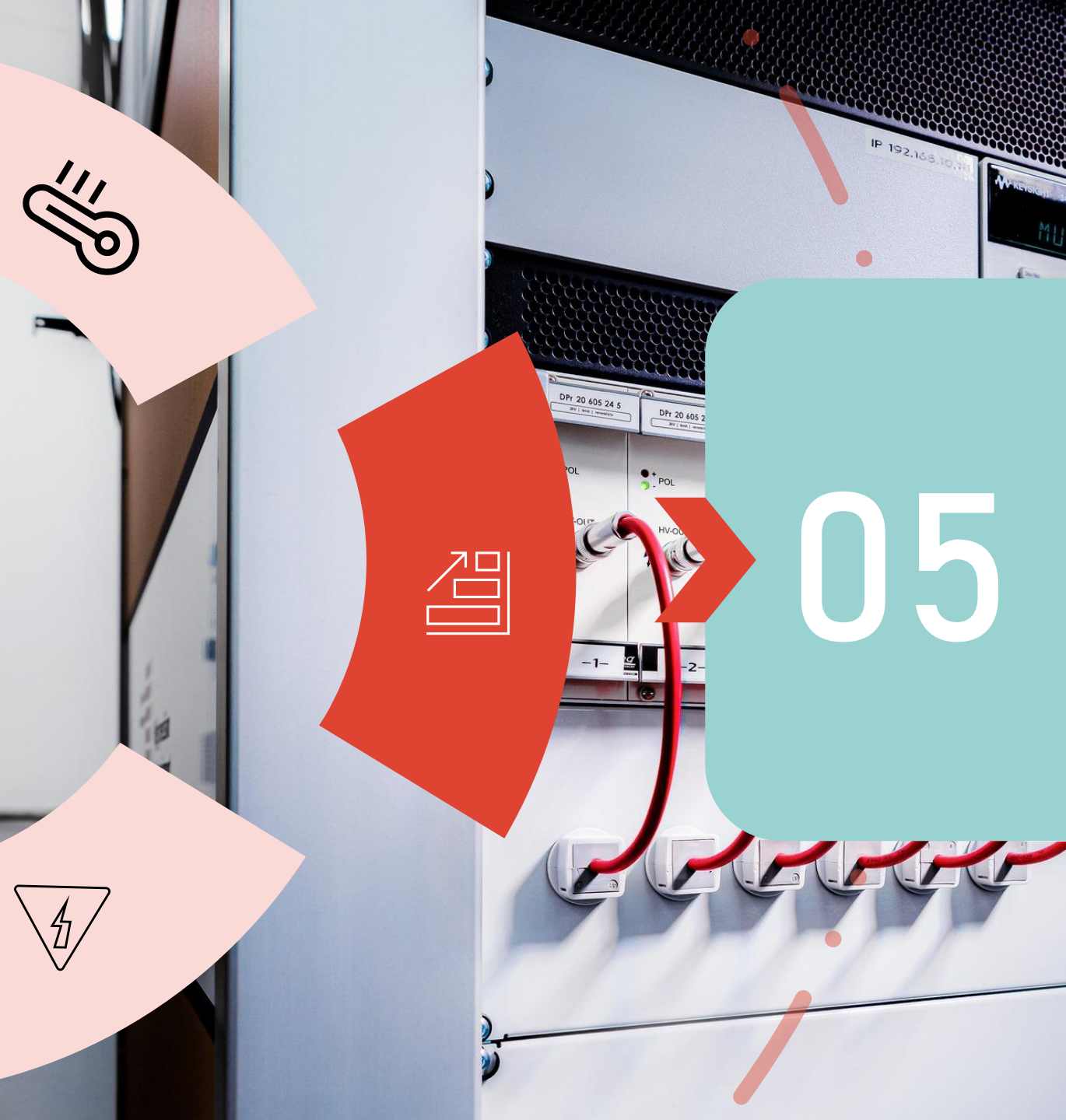
Determining the suitability of the PM module to resist a static minimum loads



TEMPERATURE AND HUMIDITY HEAT TEST

Perfect climate for hard facts

Determining the suitability of PV modules to resist the long-term penetration of humidity



DETECTION OF VOLTAGE-INDUCED DEGRADATION

Just don't let up

Early detection of degradation to prevent output and losses of earnings at an early stage



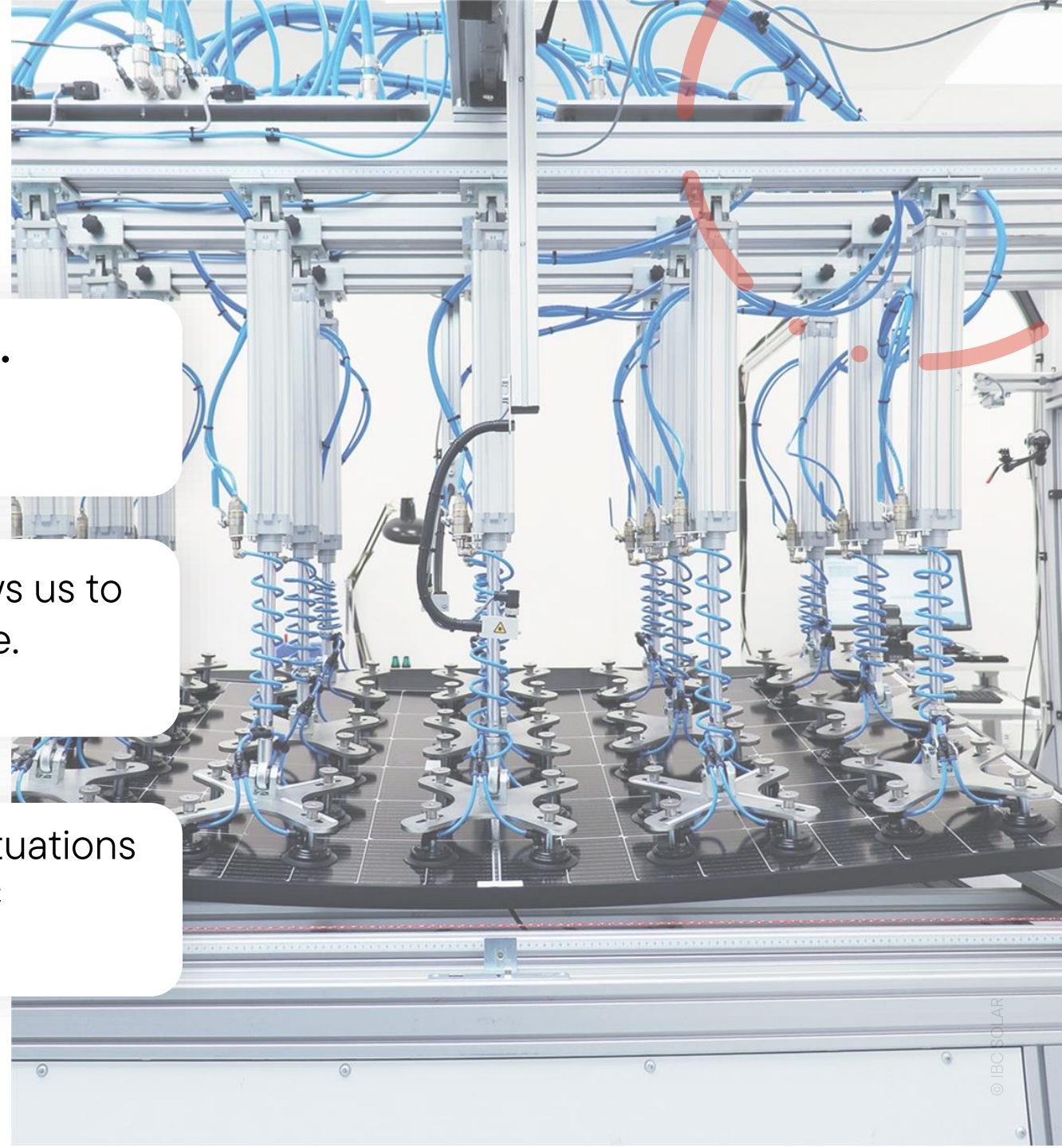
MEASUREMENT OF INSULATION RESISTANCE UNDER WET CONDITIONS

Still watertight?

Rain, humidity or melted snow must not enter active parts of PV module in order to prevent corrosion and safety hazards

What do we do more than others?

- **Tests under real conditions. Setup incl. Mounting identical to roof installation**
Not required by IEC standard.
- **EL Measurement.** EL measurement allows us to guarantee the performance of the module.
Not required by IEC standard.
- **Three tests.** This means we exclude fluctuations or "one hit wonders". According to the IEC standard, **only one test** is required.



Our quality standards are unique!

What we can guarantee!

Performance deviations

Not acceptable for IBC SOLAR

- Inactive cells
- Cell fractures and critical micro cracks which can lead to reduced performance or damage of the module
- $\leq 3\%$ Maximum power loss

IEC permitted up to 5 %

Optical deviations

Not acceptable for IBC SOLAR

- Glass breakage
- Mitre gap on the frame $> 0,5$ mm
- Frame deformation
- Damaged junction boxes
- Failing the isolation tests
- Residual clamping $< 50\%$
- ≤ 69 mm max. deflection/movement

No stress if things go so far

- ✓ No loss of system performance due to permanent wind and snow load on the roof
- ✓ No premature ageing due to environmental influences
- ✓ No material fatigue

Combination Warranty

- ✓ On module and mounting system together
- ✓ 15 years
- ✓ Free of charge
- ✓ German guarantor
- ✓ End customer warranty

The SUNLAB test laboratory

Tried and tested quality

On modules & mounting systems

15 years combination warranty

Do you have any
questions?

Have sun!

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