

# MeandRo-V

Fine-mesh expanded metal with  
copper pipe meanders



A visible,  
**high cooling capacity**  
**climate system**



# Inteco

COMFORT WITHOUT COMPROMISE

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# MeandRo-V

A visible, **high cooling capacity**  
**climate system**

## MeandRo-V's strengths

- **Visibly more effective**  
(thanks to a strengthened convection transfer compared to traditional climate ceilings).
- **Vision**  
(The MeandRo element is visible)
- **Free suspension**  
(The MeandRo element can be used as a panel or be hidden behind a more aesthetic, open structure layer)

## Climate ceiling operation

The system is based on a ceiling (metal) fitted with climatic elements used to circulate water (meanders). Water (either hot or cold) flows through these elements referred to as radiant panels turning the entire ceiling into a sort of distribution system.

In practice, this means that the hot air from the room rises to the ceiling where the climate system cools it. The room temperature therefore remains pleasantly stable. In winter, the circulation of hot water makes it possible to heat a room.

The energy exchanges are mainly by radiation. This technique provides excellent comfort because, contrary to cooling or heating from injected pulsed air (air conditioners and fan coil units), a climate ceiling is completely silent and does not generate any humidity. With climate ceilings, the required plenum height is very small because the system runs using small ducts that are only used for ventilation.



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## The unique MeandRo-V system characteristics

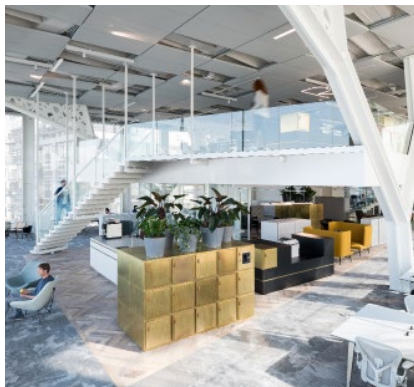
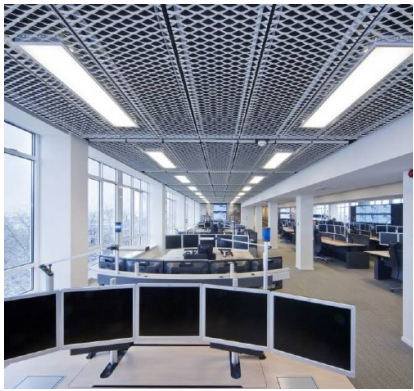
The patented MeandRo-V climate ceiling is a clever combination of technology and design. The system guarantees high cooling and heating capacity with an adjustable design.

### Visibly more effective

When cold water flows through the tubes (or meanders), the MeandRo-V element cools the ambient air. As cold air is heavier than the ambient air, it enters the room through the open expanded metal structure. The hot air is extracted over the MeandRo-V element. Besides radiant distribution, this air flow makes it possible to have extremely powerful convection distribution. The extra convection transfer depends on the MeandRo-V climate ceiling finish (aluminium or steel) and on the air circulation through the MeandRo-V element. The criterion especially depends on the decision on whether to add an acoustic pack or not, and on how it is installed.

### Vision - A visible climate ceiling

The MeandRo-V climate ceiling is ideal for living rooms in which cold is an issue. It can also be installed as islands to keep the existing ceiling visible. The expanded metal with tubes (or meanders) is used as a visible element, which gives the MeandRo-V climate ceiling a high-tech look. Moreover, the expanded metal's transparency varies depending on the angle of vision. Indeed, this material has an "open" and a "closed" side that can be adapted to every case. MeandRo-V offers great design and installation freedom as well as a choice of colours.



### Free suspension - The architect's drawings are the starting point

Considering the system's high cooling capacity, it can also be hidden over a more aesthetic layer. Such a layer can be adapted to the architect's vision as long as it has an open structure. The patented and officially tested PareauLux climate ceiling is a perfect example of such an option. Inteco has developed this product with Hunter Douglas. The PareauLux climate systems are based on the MeandRo-V system under which an aesthetic layer composed of felt, wood, steel or aluminium slats is applied. Another option is to install the MeandRo-V climate system as an island between the existing girders. The system's high efficiency guarantees the best cooling, even when installed as islands.

In other words: MeandRo-V is a versatile design climate ceiling.



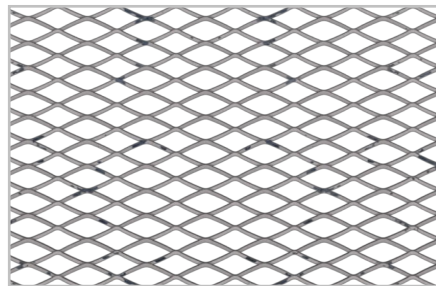


## Panel composition

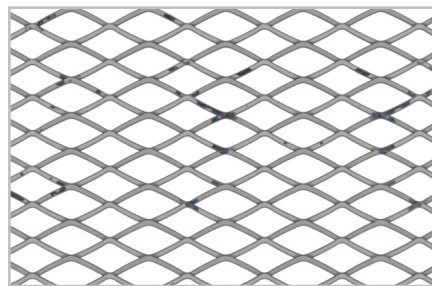
The patented MeandRo climate element is made using expanded metal. The system is made of a fine-mesh expanded metal ceiling panel onto which copper tubes, also referred to as meanders, are soldered.



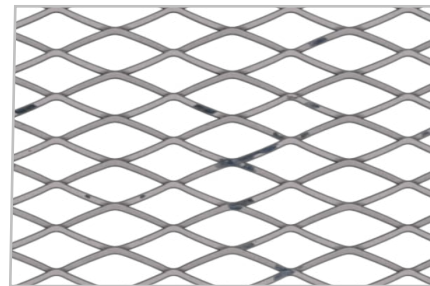
## Finish types



R12,75 x 6



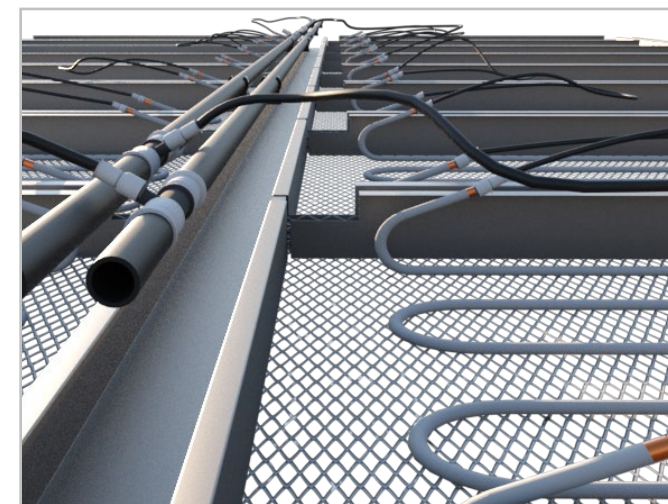
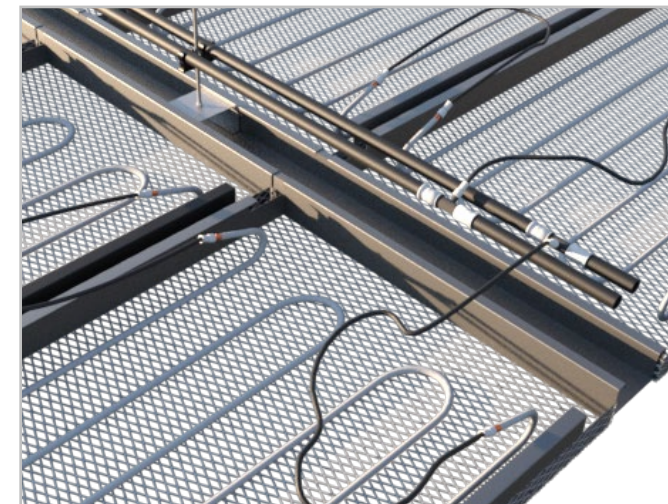
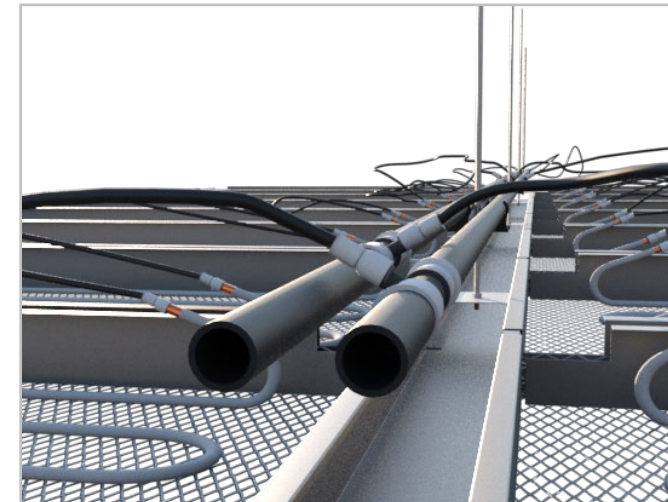
R16 x 8



R28 x 10

The expanded metal panels are available in the three standard formats above, either in aluminium or steel. If you wish, test reports for these standard formats are available on request. There are also other formats which have not been tested yet.

## Distribution pipes



Inteco installs distribution pipes above the climate ceiling allowing the serial connections required for the climate panels. The distribution pipes are fixed above the climate ceiling using special supports that end at the edge of the control zone. Jointly with Inteco, the installer can mount a fitting for the damper. For a MeandRo-V ceiling, Inteco can connect a 20 to 25 m<sup>2</sup> control zone to a single distribution network (depending on the selected water circulation network) composed of an input pipe and an output pipe.

### Additional information on distribution pipes:

Secondary distribution pipes starting at the facade up to above 100 mm from the passage zone in order to connect the active panels, to be determined depending on the number of required ceiling modules. If there is an odd number of modules, additional distribution pipes must be installed. The distribution pipes are fixed on supports over the construction.

### Material (mm):

Multi-layer plastic with an aluminium insert - 100 % oxygen tight (DIN 4726) PE-Xc/AL/PE-Xc ø 20 x 2 e/o ø 16 x 2.0 mm.

### Stub pipes:

Suitable for John Guest fittings.

### Finish:

Smooth finish.

### Fastening:

Plastic support over the Bandraster systems.

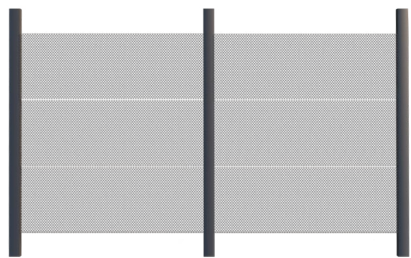
### Insulation:

None.



Constructions

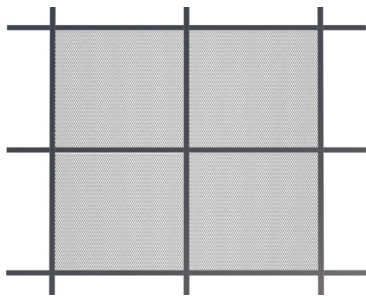
- Expanded metal is infinitely adaptable, for example:
- In C-frame ceilings;
  - In free suspension full expanded metal islands;
  - For panels or profiles;
  - For invisible installations over a slat ceiling or another open structure visible ceiling;
  - In a standard T beam system. This versatility means that a mineral ceiling can quickly be converted into a climate ceiling that provides a very high cooling capacity.



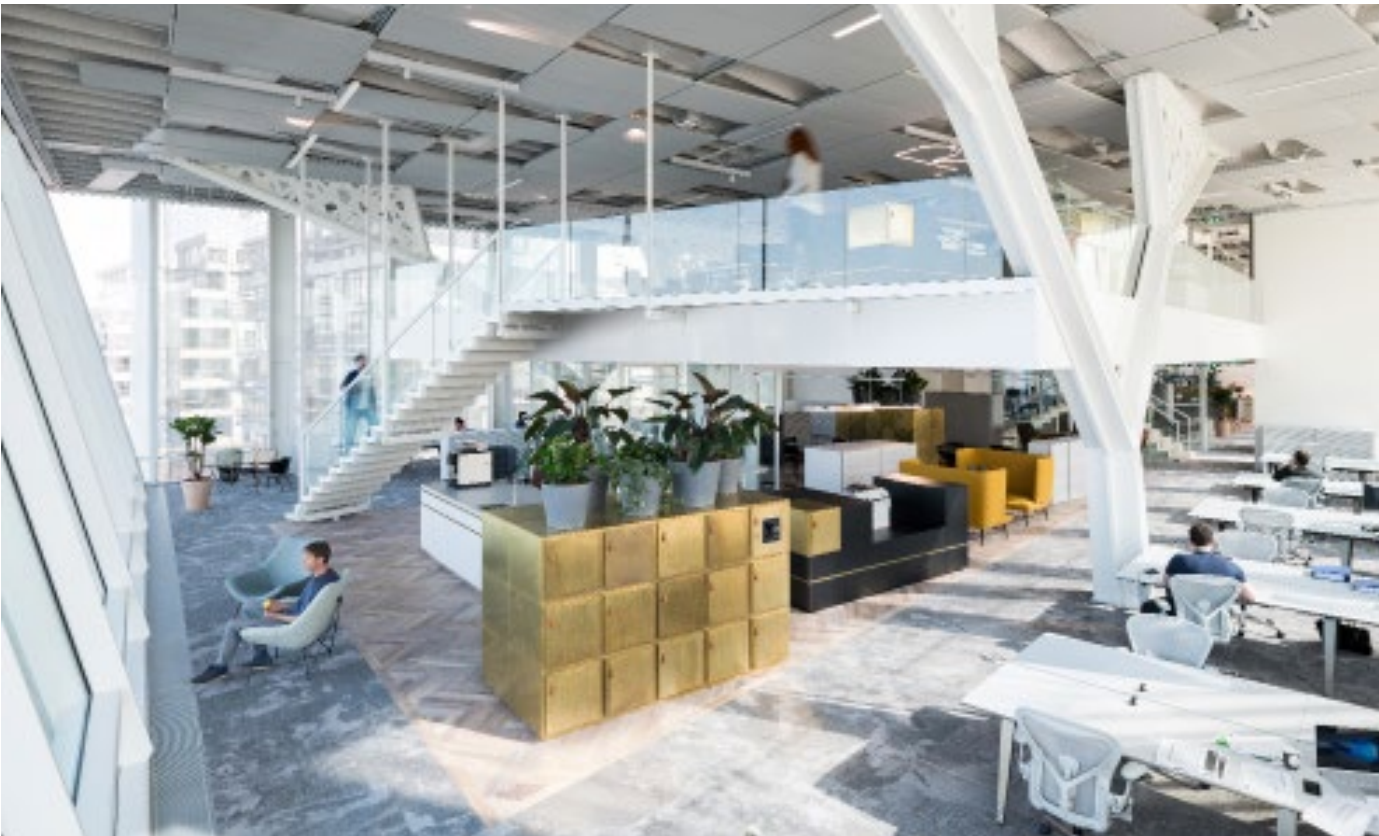
**Linear grid**  
Flexible separation panel layout.



**Concealed-grid**  
Hidden load-bearing construction layout.



**T-Grid**  
Simple installation suitable for small spaces. Possibility of adding standard built-in elements.



Colours and appearance

The expanded metal's transparency varies depending on the angle of vision. Indeed, this material has an “open” and a “closed” side that can be adapted to every case.



Furthermore, the ceiling panels are available in all standard RAL colours. Usually, white and grey such as RAL 9010, RAL 9006 and RAL 9016 are “standard” colours.

Capacities

KOELEN		Type R12.75	Type R16x8	Type R28x10
	Reduction factor	Cooling capacity in W/m²	Cooling capacity in W/m²	Cooling capacity in W/m²
Free height (min. 300 mm)		155,0 *	153 *	103 *
Upper insulation with opening	0,83	128,7	127,0	85,5
Upper insulation	0,54	83,7	82,6	55,6
Insulation insert	0,46	71,3	70,4	47,4
VERWARMEN		Type R12.75	Type R16x8	Type R28x10
	Reduction factor	Heating capacity in W/m²	Heating capacity in W/m²	Heating capacity in W/m²
Free height (min. 300 mm)		98,0 *	96 *	82 *
Upper insulation with opening	0,71	69,6	68,2	58,2
Upper insulation	0,54	52,9	51,9	44,3
Insulation insert	0,55	53,9	52,8	45,1

\* These values have been the subject of official tests carried out by HLK in Stuttgart.



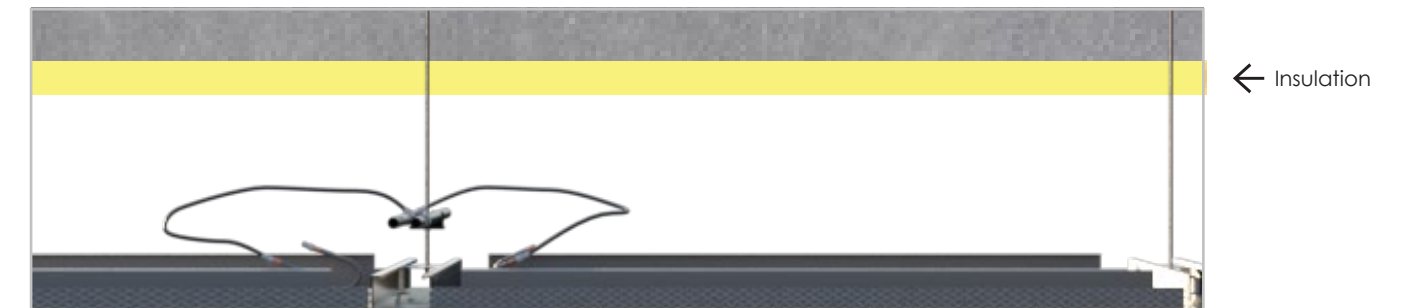
Inteco means quality, which is why the reliability of our data is extremely important to us. We have therefore built a test area compliant with official test office standards in our factory so that we can measure the performances of our systems as soon as they have been developed. We are thus able to subject our products to preliminary testing before they are tested officially. We also use the test space to demonstrate how our systems operate to our clients. The MeandRo-V system has been tested by HLK in Stuttgart. The test reports are featured below.



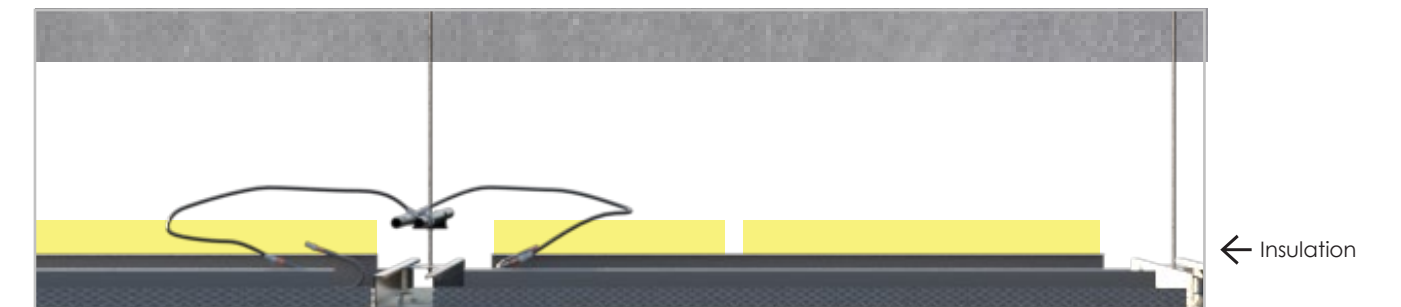
The test reports below are for the R12.75 type.

The MeandRo-V climate ceiling also has various room acoustic optimisation possibilities. This optimisation may involve installing acoustic materials on the concrete, but also adding black polyester wool fixed using anchors. For the wool models, either on or in the panel, there is a choice of polyester wool or bagged rockwool. These materials offer different finishes and acoustic characteristics that mainly depend on the material thickness and compression (density).

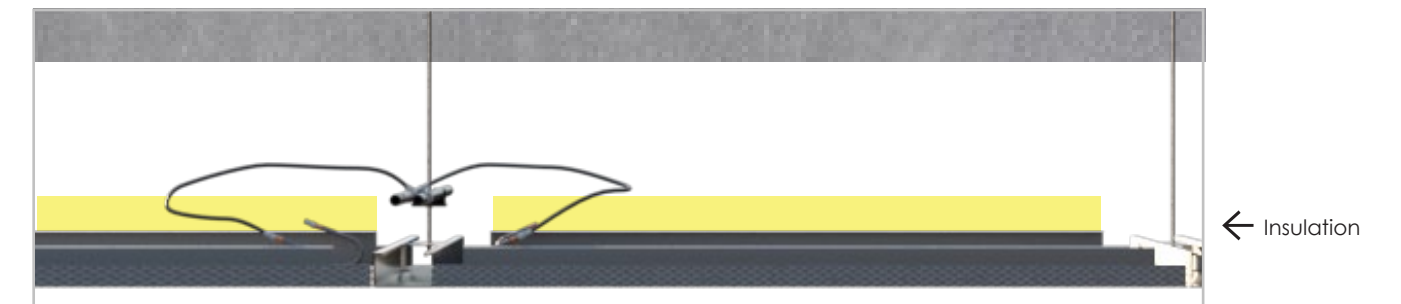
Option 1: Free height (min. 300 mm)



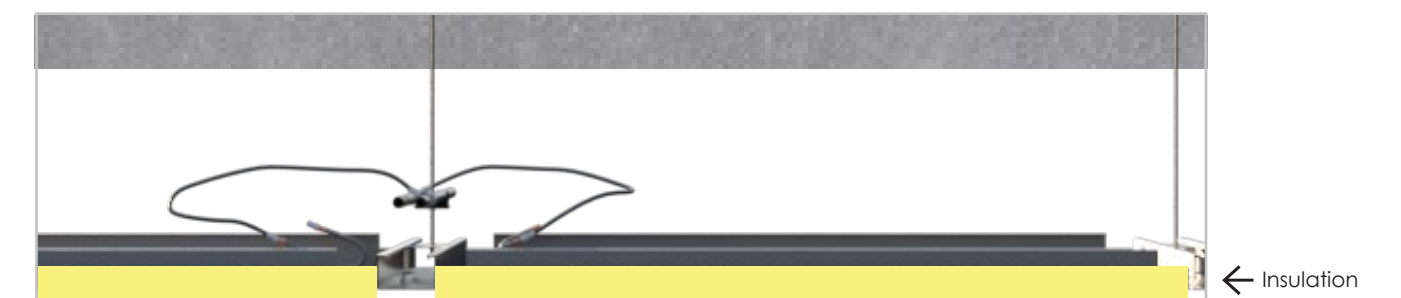
Option 2: Upper insulation with opening



### Option 3: Upper insulation



Option 4: Insulation insert



## Climate ceiling durability

Climate ceilings are low energy consumers. The water temperatures required for cooling and heating are perfectly suited to energy production systems such as heat pumps and other similar energy sources. Moreover, they have a positive impact on cooling and heating system performance in general. This is materialised by a significant energy cost reduction compared to conventional cooling and heating methods. The system therefore has a financial interest, but it is also environmentally friendly. Climate ceilings are in line with the inclusion of durability in society, and in particular in the work process. Employee health and satisfaction are absolute priorities since they are an essential asset for all businesses. The fight for the right staff, to attract and keep millenials requires a different type of accommodation and process.

## Inteco climate system durability

The materials used in Inteco climate systems are of high quality, guaranteeing a long service life. As a result, Inteco ceilings are fully in line with building life cycles. Furthermore, we take into account life after use, namely the circular economy, when designing our products and selecting materials. Our own R&D department's main concern is to maximise component value retention. To achieve that objective, we constantly look at technical innovations such as the use of natural materials or the improvement of product recyclability. The Inteco production process is ISO 14001 and ISO 9001 certified.



## About Inteco - our expertise

"Comfort without Compromise" has been Inteco's motto for over 25 years. We provide a full comfort experience without the slightest compromise. We use climate ceilings and induction units and work based on the following expertise:

- **Personalisation**

Inteco's objective is not only to deliver a climate ceiling, but also to guarantee the complete integration of the ceiling with the building. With that in mind, we make sure every personalised project takes into account the other relevant sectors, such as ventilation,

- **Durability**

In our own R&D department, our main concern is to maximise component value retention. We constantly look at technical innovations such as the use of natural materials or the improvement of product recyclability.

- **Innovation**

Our passion for technology has been pushing us to innovate for over 25 years. Thanks to our several patented products, we are climate ceiling and induction unit experts. The innovations are compliant with all the standards and directives applicable to the market, because Inteco guarantees quality and reliability.

- **Refurbishment**

Our expertise allows us to find effective solutions that respect or even reinforce a building's authentic characteristics. The ceiling dimensions and those of all its components are fully aligned with the building design.

- **Design**

Inteco relies on experts who have extensive experience of metal ceilings. They can therefore work with you on creative solutions to install the product, for the materials, the technology and the design. We also have our own production plant, an R&D department and a test area.







COMFORT WITHOUT COMPROMISE



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