

Fischer Kondensstop

Fischer Kondensstop – effective and economical

Condensationwater

Regardless of ambient temperature, the air in a room can only absorb a certain amount of water vapour. The higher the temperature, the higher the maximum possible water content of the air.

For example, at 20° C air carries a maximum of 17.3 g/m³ water and at 10° C only 9.4 g/m³.

Air usually contains a smaller quantity of water vapour than the possible maximum. The „relative humidity of the air“ φ (phi) denotes the water content present in the air in %.

Relative humidity is derived from the current volume of water vapour contained in the air W [g/m³] divided by the maximum possible volume of water vapour, the „saturation volume“ W_s [g/m³].

$$\varphi = \frac{W}{W_s} \times 100$$

Therefore, air saturated with water vapour has a relative humidity of 100 %. When moist air is warmed, and providing that the water vapour content in g/m³ remains the same, relative humidity j falls, as the saturation volume W_s rises.

In the opposite way, when moist air cools down, relative humidity therefore increases. If the air in a room is cooled down to such an extent that a relative humidity of 100 % is reached, the air can no longer hold the volume of water in vapour form and the vapour condenses, causing the moisture to be precipitated on solid surfaces as condensation water.

The temperature at which water vapour turns into condensation water is called the temperature of dew point or just the dew point.

The temperature of dew point is derived from the current ambient air temperature and the relative humidity (Table 1).

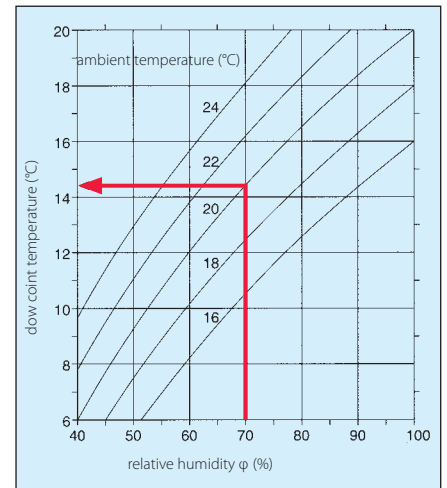


Table 1

Temperature of dew point depending on relative humidity of the air and air temperature.

Example:

Relative humidity of the air of 70 % at 20° C air temperature results in a temperature of dew point of approx. 14.2° C.

This means that if the temperature of the underside of the trapezoidal profile is $\leq 14.2^\circ \text{C}$, condensation water will form on the surface.

Product range:

Type		sheet thickness t (mm)	weight g(kg/m ²)	length of component max. L (m)	reverse side coating (exterior of roof)
FischerTRAPEZ KS 35/207		0,63	6,1	18	
		0,75	7,2		
		0,88	8,5		
		1,00	9,6		
		1,25	12,0		
		1,50	14,4		
FischerTRAPEZ KS 40/183		0,63	6,9	18	200 µm HPS 200/RSL 50 µm Colorcoat Prisma 25 µm PVF2/RSL 25 µm polyester/RSL 55% AlZn AZ 185 (aluzinc) protective film available at extra charge
		0,75	8,2		
		0,88	9,6		
		1,00	10,9		
		1,25	13,6		
		1,50	16,3		
FischerTRAPEZ KS 50/250		0,63	6,3	18	
		0,75	7,5		
		0,88	8,8		
		1,00	10,0		
		1,25	12,4		
		1,50	14,9		

All FischerTRAPEZ profiles are available with condensate stops, please contact us.

Without Fischer Kondensstop

Depending on the air temperature and the humidity of the air prevailing beneath a roof, water vapour condenses to water on the cooler profiled sheets if the temperature falls below the dew point. The water flows along to the purlins or drips off immediately.



With Fischer Kondensstop

Fischer Kondensstop consists of an approx. 1.5 mm thick layer of felt on the inside of the trapezoidal profile which stores the condensed water which occurs from time to time. Generally it prevents detrimental dripping and releases the moisture back into the atmosphere when conditions change again.

Fischer Kondensstop is not suitable for use over damp areas or in places where constant moisturising takes place with no ventilation and drying of the absorbing surface.

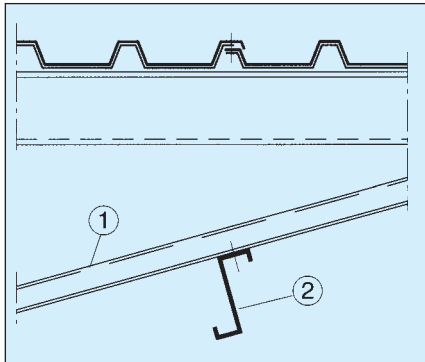
If the maximum possible moisture absorption of 500 - 900 g/m³, depending on roof pitch, is exceeded, dripping could still occur despite Fischer Kondensstop.



Fields of application

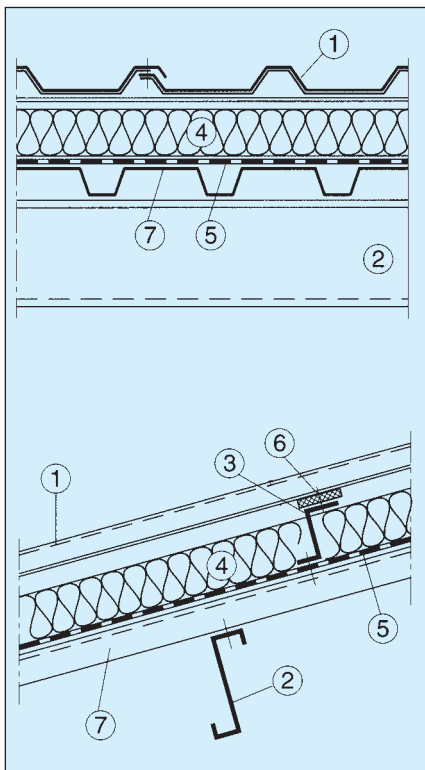
Single-skin weather protection roofs

Prevents dripping into the room.



Multi-skin aerated metal roofs

Prevents dripping into the thermal insulation.



1. Trapezoidal profile with felt coating (longitudinal joint overlap 30 mm felt-free)
2. Purlin
3. Spacer profile
4. Thermal insulation
5. Vapour barrier
6. Thermal separating strip
7. Trapezoidal profile

Material, properties

Fischer Kondensstop is an approx. 1.5 mm thick acrylate bound polyester felt in a colour similar to RAL 7038 agate grey with a rubber based adhesive layer applied to FischerTRAPEZ-profiles.



Water absorption:

between 900 g/m² at 0° roof pitch and > 500 g/m² at 10° roof pitch. Tests performed by the Fraunhofer Institut für Bauphysik, Stuttgart.

Temperature stability:

between -20°C and +80°C.

Behaviour in fire:

B2 as per DIN 4102, Part 1, Behaviour of building materials and building components in fire, non-burning drops.

Noise insulation:

Sound absorption as per DIN EN 20354, Measurement of sound absorption in a reverberation chamber.

$$\alpha_s = \begin{matrix} 0.04 & \text{at } 1 \text{ kHz} \\ 0.12 & \text{at } 2 \text{ kHz} \\ 0.42 & \text{at } 4 \text{ kHz} \end{matrix}$$

Fischer Kondensstop has a sound-absorbing effect which means less noise from rain and hail.

Resistance to mould:

Fischer Kondensstop has an anti-bacterial treatment. Tests performed by Zeneca Biocides, Manchester.

Production, storage and assembly



Storage and assembly

FischerTRAPEZ-profiles with Fischer Kondensstop must be transported and stored under completely dry conditions. Work should be performed with clean gloves. The profiled sheets are delivered with the felt layer on the top. Before assembly - the easiest way is with the sheets still in the packaging - the end lap and the eaves area must be made non-absorbant so that rain-water is not absorbed by the felt. Please treat an approx. 5 cm wide area of the felt layer around the eaves and an approx. 15 cm wide area of the overlapping profiled sheet in the vicinity of the end lap with air-drying clear PVC lacquer or with a water-repelling separating agent, applying this with a paint roller.

Approx. 20 sheets can be treated with 1 kg of lacquer. The time required is approx. 2 minutes per sheet. The colour change indicates that the layer of felt has been soaked sufficiently.

Light dirt can be removed from Fischer Kondensstop with running water and a soft brush. Slightly damaged areas can be repaired by sticking touch-up material over the damaged spot.





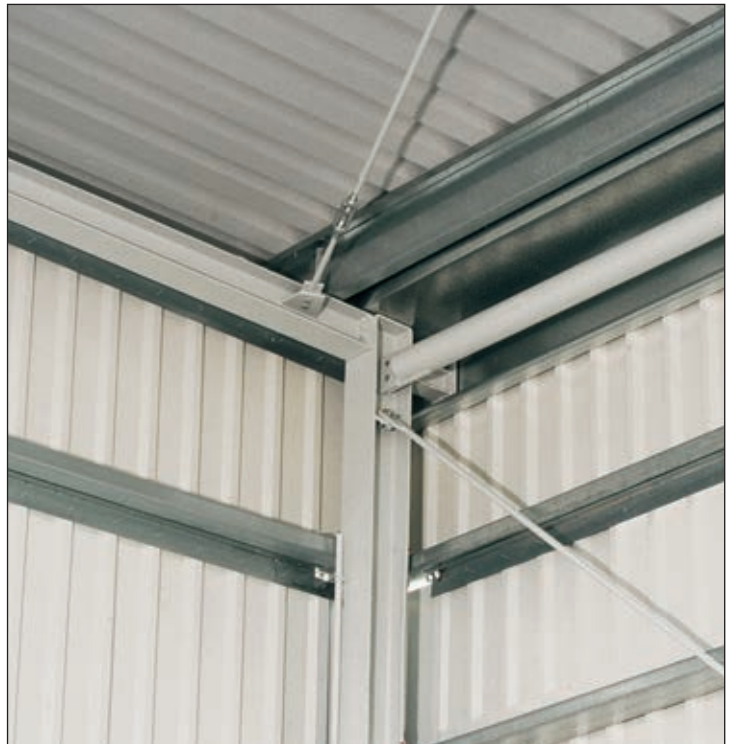
Hamburger Yachthafen Gemeinschaft
Boat Hangar
22880 Wedel

Facade: FischerTRAPEZ 35/207
Colour: Reseda green RAL 6011
(25 µm polyester coating)

Roof: FischerTRAPEZ-profile
KS 50/250

Colour: Grey white RAL 9002
(200 µm COLORCOAT HPS 200)

Underside of trapezoidal profile with 1,5 mm thick polyester felt to prevent condensation from dripping.



Product range

FischerTHERM



FischerTRAPEZ



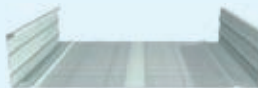
FischerTRAPEZ-Acoustic



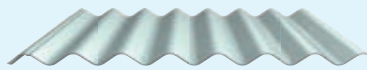
FischerKASSETTE



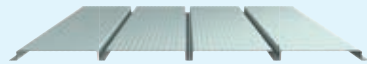
FischerKASSETTE-Acoustic



FischerWELLE



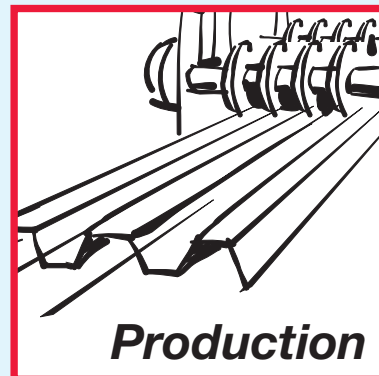
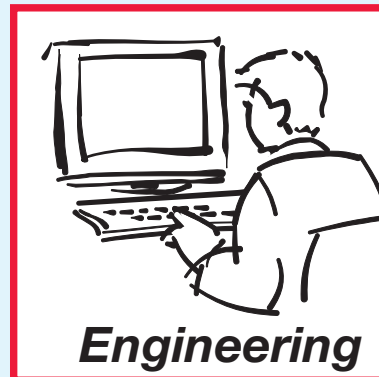
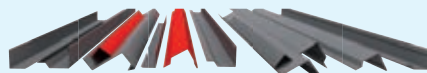
FischerPANEEL



FischerKLIPTEC



Flashings and accessories



This information has been created in the knowledge and belief that it is accurate. Tata steel and its subsidiaries does not accept responsibility or liability for errors or information which is found to be misleading. Reproduction is prohibited.