FIRE PROOF TRIMOTERM PANELS – description and application

The fire proof panels Trimoterm FTV and Trimoterm SNV are mostly used for roof and facade claddings.
The panels consist of two shallow profiled (or flat) surfaces, both sides galvanised and coated, made of steel sheet of thickness 0.6 mm and a constructional insulation core made of non-combustible laminated mineral wool of class A1 (DIN 4102). All three layers are glued into a compact panel. External and internal panel surfaces are protected with a clear plastic strippable film.

The external lining is always profiled in a trapezium form. Profile types of the inner lining are stepped (SNV_S), smooth (SNV_G) or V-profile (SNV_V). The standard profile is the stepped one (SNV_S).
The fire proof panels Trimoterm FTV are mostly used for facade lining, partition walls, ceilings and various closing methods in industry (e.g. varnishing chambers, drying stoves, etc.).
Possible profile types of panels Trimoterm FTV:

- stepped (FTV_S) - standard profile
- V profile (FTV_V)
- micro ribbed (FTV_M)
- flat (FTV_G)

Trimoterm FTV panels can be chosen in the following combinations:

- FTV_S - standard / standard
- FTV_{SV} - standard / V-profile
- FTV_{SG} - standard / flat
- FTV_{MS} - micro ribbed / standard
- FTV_{MV} - micro ribbed / V-profile
- FTV_{MG} - micro ribbed / flat
- FTV_{GV} - flat / V-profile
- FTV_{GG} - flat / flat

Steel sheet is galvanised on both sides by a zinc coat 275 g (Zn)/m^2 (DIN EN 10142, DIN EN 10147) and coated. The coating of the steel sheet is performed in a steelworks according to the »Coil Coating« method (coating and drying in a furnace at temperatures of min. 200°C).
Two types of anti-corrosive protection for steel sheet are used:

- protection based on polyester, marked as SP (standard protection); nominal coat thickness 25µm
- protection based on polyvinyldenfluoride, marked PVDF; nominal coat thickness 25µm

Standard TRIMO colour shades based on polyester are:

- RAL 9002 – grey white
- RAL 9010 – snow white
- RAL 9006 – aluminium white
- RAL 8017 – chocolate brown
- RAL 7035 – light grey
- RAL 3009 – oxide red
- RAL 5010 – gentian blue
- RAL 1015 – light ivory

Other colour shades according to RAL colour scale; PVDF protection and other kinds of protection are possible upon special request.

FIRE PERFORMANCE OF PANELS TRIMOTERM SNV and FTV

ROOF PANELS	***SNV 80***	***SNV 100***	***SNV 120***	***SNV 150***	***SNV 200***
Core thickness »s« (mm):	80	100	120	150	200
Combustibility of insulant core (acc to DIN 4102 Part 1)	***Non-combustible, class A1***				
Fire resistance class **W** (acc to DIN 4102 Part 3)	**W90-AB** →				
Fire resistance class **F** (acc to DIN 4102 Part 2)	**F60-AB**	**F90-AB**	**F120-AB** →		

WALL PANELS	***FTV 80***	***FTV 100***	***FTV 120***	***FTV 150***	***FTV 200***
Panel thickness »s« (mm):	80	100	120	150	200
Combustibility of insulant core (acc to DIN 4102, Part 1)	***non-combustible, class A1***				
Fire resistance class W (acc to DIN 4102, Part 3)	**W90-AB** ®				
Fire resistance class F (acc to DIN 4102, Part 2)	**F60-AB**	**F90-AB**	**F120-AB** ®		

TECHNICAL DATA FOR FIRE PROOF PANELS TRIMOTERM SNV AND FTV

ROOF PANELS		***SNV 60***	***SNV 80***	***SNV 100***	***SNV 120***	***SNV 150***	***SNV 200***
Core thickness »s« (mm):		60	80	100	120	150	200
Weight (kg/m^2)	Fe 0.6 / Fe 0.6	19.6	21.9	24.3	26.7	30.3	36.3
Thermal transmittance k (W/m^{2}K): DIN 52 611 and DIN 4108		0.56	0.42	0.34	0.28	0.22	0.16
Sound reduction DIN 52 210			R_w =30 dB →				
Min. roof slope		5^o					
Cover width		1000 mm					
Panel lengths		For all panel thicknesses up to 14 m					

WALL PANELS		***FTV 60***	***FTV 80***	***FTV 100***	***FTV 120***	***FTV 150***	***FTV 200***
Panel thickness »s« (mm):		60	80	100	120	150	200
Weight (kg/m2)	Fe 0.6 / Fe 0.6	19.0	21.3	23.7	26.1	29.7	35.7
Thermal transmittance k (W/m2K): DIN 52 611 and DIN 4108		0.60	0.44	0.35	0.29	0.23	0.17
Sound reduction DIN 52 210			Rw =32 dB →				
Cover width		1000 mm					
Panel Lengths		For all panel thicknesses up to 14 m					

CORROSION PROTECTION

TRIMOTERM SNV

Characteristics of coats		SP	PVDF
Class of corrosion protection according to DIN 55928/1		III	III
Mark of anti-corrosive system according to DIN 55928/8		3-160.2	3-600.1
Temperature resistance (oC)		-20 up to +80	-30 up to +110
Nominal coat thickness (µm)		25	25
External - atmosphere	normal atmosphere	·	· · ·
	town and industrial atmosphere	·	· · ·
	severe industrial atmosphere	-	· ·
Maritime atmosphere	1 to 10 km from the coast	-	· ·
	< 1 km from the coast	-	·
Conditions inside the building	t ≤ 25°C , φ ≤ 80 %	· · ·	· · ·
	t ≤ 25°C , φ > 80 %	· ·	· ·
	t ≤ 50°C , φ > 80 %	-	· ·
	without heating	·	· ·
Cooling storage	up to - 20 °C	·	· · ·
	up to - 30 °C	-	· ·

· · · *suitable without qualifications* · · *very suitable* · *suitable* - *unsuitable*

TRIMOTERM FTV

Characteristics of coats		SP	PVDF
Class of corrosion protection according to DIN 55928/1		III	III
Marking of anti-corrosive system according to DIN 55928/8		3-160.2	3-600.1
Temperature resistance (oC)		-20 do +80	-30 do +110
Nominal coat thickness (µm)		25	25
External atmosphere	normal atmosphere	·	· · ·
	town and industrial atmosphere	·	· · ·
	severe industrial atmosphere	-	· ·
Maritime atmosphere	1 to 10 km from the coast	-	· ·
	< 1 km from the coast	-	·
Conditions inside the building	t ≤ 25oC , φ ≤ 80 %	· · ·	· · ·
	t ≤ 25oC , φ > 80 %	· ·	· ·
	t ≤ 50oC , φ > 80 %	-	· ·
	without heating	·	· ·
Cooling storage	up to - 20 oC	·	· · ·
	up to - 30 oC	-	· ·

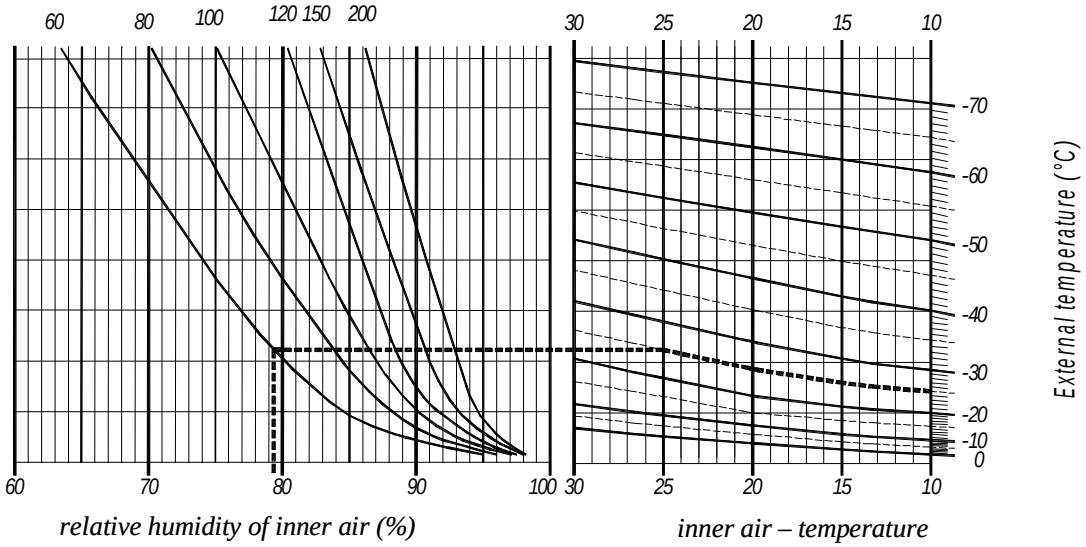
· · · *suitable without reservations* · · *very suitable* · *suitable* - *unsuitable*

THERMAL PERFORMANCES OF FIRE PROOF PANELS TRIMOTERM

According to DIN 4108 diagram 1 represents dependence of condensate appearance on the surface of the panel Trimoterm SNV on the following variables:

- inner temperature in the room
- relative humidity in the room
- external temperature
- external relative humidity
- panel thickness

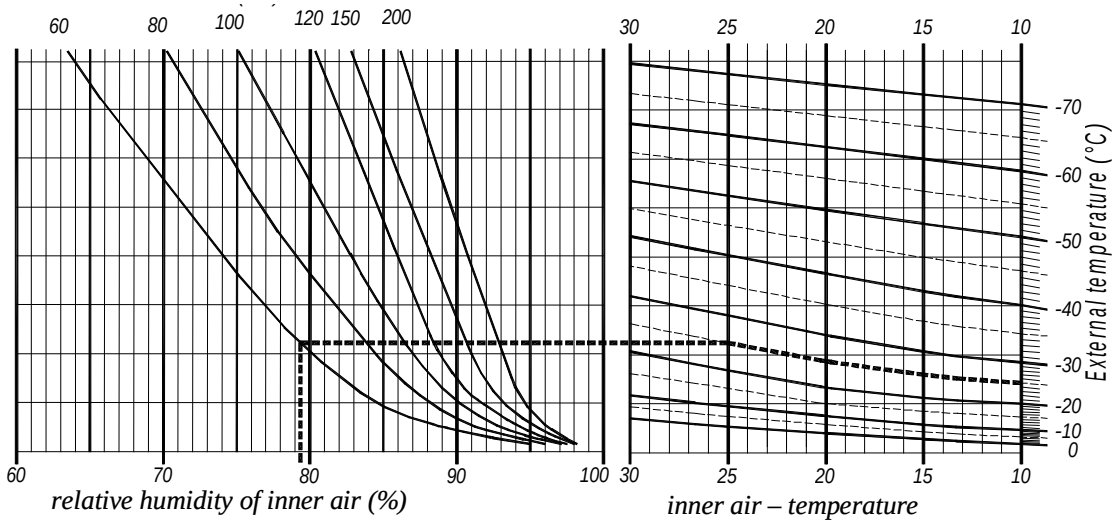
Panel tickness



According to DIN 4108 diagram No. 1 represents dependence of condensate appearance on the surface of panel Trimoterm FTV on the following variables:

temperature of inner air
relative humidity
external temperature
external relative humidity
panel thickness

Panel Thickness (mm)



Fire proof panels TRIMOTERM