

## Product data

# YTONG VHP partition wall panels

### Product description

The YTONG panels type G4/600 and type G5/800 are prefabricated and made of autoclaved aerated concrete (AAC). The panels are provided with a reinforcement (for non structural purposes) for handling during transport. For this purpose each panel is containing reinforcing bars (steel bars  $\varnothing$  4 mm with ribbed profile) in the longitudinal direction. In the cross section of the panel the bars are positioned in the centre.

### Composition

Raw material: a mixture of cement and/or lime and ground silica sand. This is then mixed with water and a small quantity of aluminium powder. The mixture is poured into moulds into which the reinforcing bars have been pre-positioned. After the mass has risen and stiffened it is cut to the required size and then placed into an autoclave to be hardened.





### Practical density

G4/600 501 - 600 kg/m<sup>3</sup>

G5/800 701 - 800 kg/m<sup>3</sup>

### Shape, size

Shape: oblong panels.

Thickness : 70 & 100 mm

Width: 600 mm for the G4 type &

500 mm for the G5 type.

Length: 2200 - 3000 mm in steps of 20 mm

Tolerances: length ±3 mm, width ±2 mm, and thickness ±1 mm.

### Appearance

Surface structure: smooth.

Colour: white

### Moisture content on delivery:

Maximal 20%

### Quality

Standard: G4/600

Extra (sound insulation): G5/800

### Fire

Non-combustable class A1



### Classification of resistance to fire

Partition type	Thickness [mm]	Joint filler	
		Assembly foam Regular polyurethane foam	Assembly foam Fire resistant polyurethane foam
G4/600	70	No performance determined	E 120 / EI 60 <sup>1)</sup>
	100	No performance determined	E 180 / EI 120
G5/800	70	No performance determined	E 120 / EI 60 <sup>1)3)</sup>
	100	No performance determined	E 180 / EI 120 <sup>3)</sup>

1) Exchanging the assembly foam by mineral wool as joint filler the classification of the resistance to fire of the 70 mm panel will upgrade from E 120 / EI 60 to E 120 / EI 120

2) The classification is based upon test performed using type G4/600 thickness 70 mm

3) The classification is based upon test performed using type G4/600

### Airborne sound insulation

Partition type	Thickness mm	Measured mass per unit area [kg/m <sup>2</sup> ]	Laboratory sound insulation (ISO 717-1) 100 Hz - 3150 Hz RW (C;C <sub>p</sub> ) [dB]
G4/600	70	52,5	
	100	75,0	
G5/800	70	57,3	
	100	81,8	37[-1;-3]

\*) this value is generated by testing the most unfavourable one of the three types mentioned, being the partition type G4/600 with thickness 70 mm.



### Watervapour diffusion coefficient

Vapour resistance:  $\mu = 12$

### Water vapour permability:

5/10

### Thermal characteristics

Linear coefficient of expansion:

$\alpha = 8 - 12 \times 10^{-6} \text{ K}^{-1}$

Thermal conductivity:  $\lambda = 0,16$

W/m.K.

### Application, design

Non-load bearing wall with fire separating capabilities and/or acoustic insulation and/or thermal properties.

### Building Process

Storage: on stable, even and non-contaminated surface.

Preparation: pre-processing check (by client) if the order is complete.

Installation of the panels: The panels are installed side by side in vertical position respecting that joints in between with a width of  $2 \pm 1 \text{ mm}$  are made. The jointing is made by applying the adhesive YTONG Thin layer mortar fix P in a sufficient amount, that is brought up before along one side of the panel. For the preparation of the adhesive the prescriptions that are mentioned on the packaging are to be followed. The workable life of the YTONG Thin joint mortar fix P after mixing is 4 hours.

Workability: sawing

### Thermal resistance RT calculated according EN-ISO 6946

Partition type	Thickness (mm)	RT [(m <sup>2</sup> ·K)/W]
<b>G4/600</b>	70	0,66
	100	0,83
<b>G5/800</b>	70	0,56
	100	0,70

The design thermal conductivity  $\lambda_U$  used for the determination of the thermal resistance RT is calculated from the basic  $\lambda$ -value, which is determined from the  $\lambda_{10,dry}$ -values ( $P = 90\%$ ) given in table A10 of EN 1745, which relate  $\lambda_{10,dry}$  to density.

The calculated value of the moisture conversion factor  $F_m$ , using the formula  $F_m = e_{fu(u2-u1)}$  with  $f_u = 4 \text{ (kg/kg)}$  and  $u_{2-u1} = 0,02 \text{ (kg/kg)}$ , is 1,083.



### Properties for the calculation of the thermal inertia

Partition type	Thickness [mm]	Density of the dry material ( $\rho$ ) [kg/m <sup>3</sup> ]	Heat capacity c [kJ/(kg.K)]	Thermal transmittance U [W/(m <sup>2</sup> ·K)]
<b>G4/600</b>	70	580	1,0	1,51
	100	580	1,0	1,19
<b>G5/800</b>	70	725	1,0	1,76
	100	725	1,0	1,43



# YTONG

## **Other information**

Xella's technical staff are on hand to render assistance with written or telephone enquiries.

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