

# WANPAN<sup>®</sup> PLANNING

## The planning must cover the following requirements:

Ensure to obtain the best heat installation from a technical point of view.

Collect all necessary information to calculate the price.

Collect all necessary information for the installation.

## Calculation for WANPAN

A drawing or a sketch of the room showing measurements, doors and if there are built-in cupboards etc. is used for the calculation.

If you wish to use the WANPAN elements option for integrating fittings such as a socket, phone/data plug or an aerial connection, the location of these should be considered.

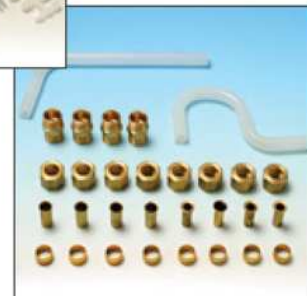
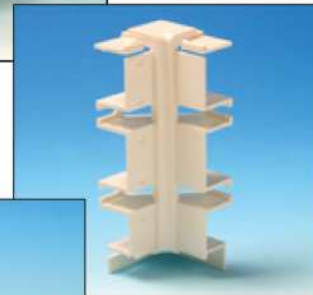
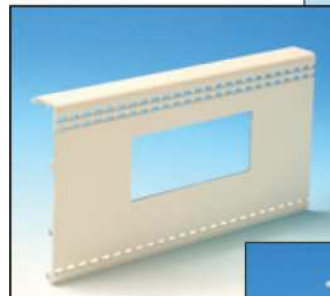
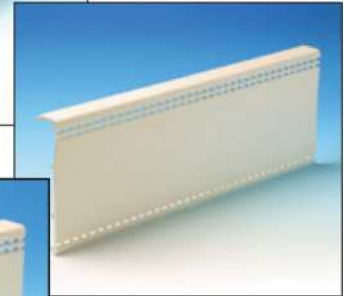
The calculation is made in the following order:

- Stating at the drawing, where WANPAN is going to be placed.
- Calculate the loss of heat in each room due to current law.
- Measure the walls.
- Determine the amount of heat panels each wall due to the table 2 at page 3.
- Determine the lengths at each panel in the room.
- Determine the lengths at the blind panels, which is used. Deduct the total length of the panels from the total length in the room.
- Calculate the performance per metre.
- Determine as well the supply as the return temperature due to the table 3 at page 3.
- Determine what kind of control to be used.

## Please notice:

At each heat panel up to 2000 mm (WP20) 2 brackets are used for the mounting. Afterwards up to (WP32) 3 brackets are used.

In large rooms there can be several connections. The maximum circuit length for heating panels should not exceed 15 meters.



**Remember that you save 20-25% in heating cost in the years to come, because of the thermal encirclement principle.**

## Product survey

White RAL 9010 / Grey RAL 7035

Table 1

Type	Description	Type	Description	Type	Description
WP	Heat panel	PC	Cover		
APT 32	Blind panel 320 mm	PB	Bracket f. Blind panel	HT	Insulating foil
AP 120	Blind panel 1200 mm	PO	Corner, inside		
AP 240	Blind panel 2400 mm	PP	Corner, outside		
KT	Connection	PQ	Plug		
KL	Connection, straight	KA	Bracket f. Blind panel		
KV	Connection, corner	KB	Bracket f. mounting		
KC	Coupling	KD	Brace		
KUL	U-coupling with vent.	CRA	Thermostat valve		

### Example of calculation

In the below room WANPAN is supposed to be installed.

- The loss of heat is calculated to 1000 W.  
Measure the walls.  
Due to the table 3 of the lengths of the walls, we can determine as follows:

Wall A = 3100 mm	WP26 = 2600 mm
Wall B = 2850 mm	WP24 = 2400 mm
Wall C = 4000 mm	WP16 + WP18 = 3400 mm
Wall D = 2850 mm	WP24 = 2400 mm

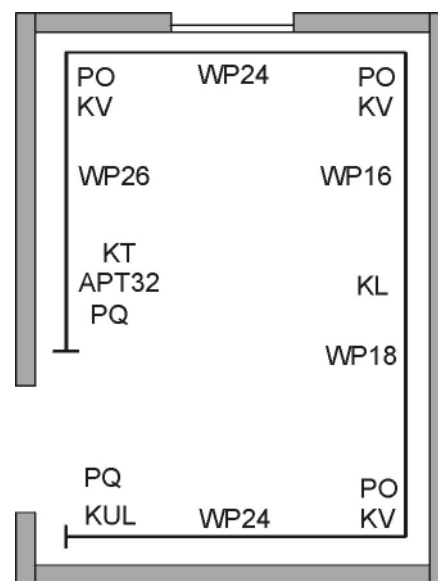
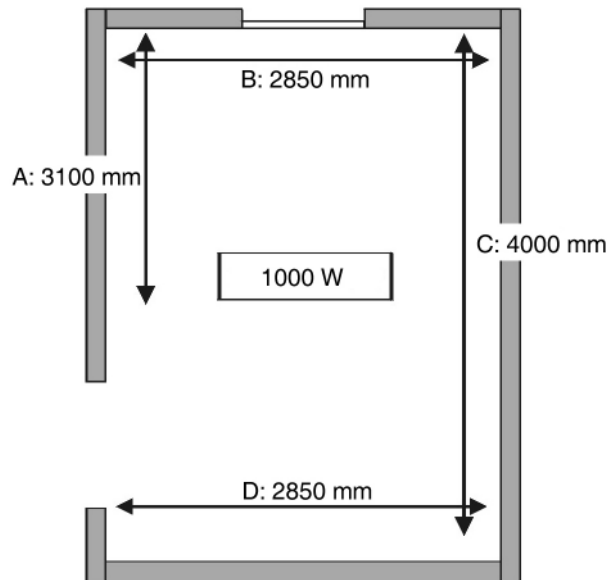
Total : 12800 mm      Total : 10800 mm

- Lengths of blind panels:  
 $12800 - 10800 = 2000$  mm  
we have to use type AP240 (table 1)
- Lengths of heat panels:  
 $10800 \text{ mm} : 1000 = 10,8$  m
- Performance per meter of WANPAN:  
 $1000 : 10,8 = 92,6$  W/m
- The supply and return temperatures are determined in the table 3 to:  $T(\text{supply}) = 60^\circ\text{C}$   $T(\text{return}) = 50^\circ\text{C}$

The connection is carried out with a connector type KT and blind panel type AP32. In the corners 3 connection corners type KV are used. For closing circuit U coupling (with ventilation) type KUL are used. Insulating foil type HT should be placed on cold walls. The foil helps project the heat into the room.

To finish the assembly the following parts are used:

2 pcs. Plug type PQ	10 pcs. type PB = 2 pcs. per WP panel
3 pcs. Inside corner type PO	13 pcs. type KB = 4 pcs. for WP under 2000 mm and 9 pcs. at above 2000 mm
	10 pcs. type PC = 2 pcs. per WP
10,8 meters HT Insulating foil	1 pcs. type KL (straight connection)



This example of calculation is made for programmable thermostat.

## Wall lengths/module requirements

Table 2

Wall lengths, mm	Module	Wall lengths, mm	Module
540 – 640	2	6920 – 7120	20 + 20 + 22
640 – 670	3	7120 – 7320	20 + 22 + 22
740 – 940	4	7320 – 7520	22 + 22 + 22
940 – 1140	6	7520 – 7720	22 + 22 + 24
1140 – 1340	8	7720 – 7920	22 + 24 + 24
1340 – 1540	10	7920 – 8120	24 + 24 + 24
1540 – 1740	12	8120 – 8320	24 + 24 + 26
1740 – 1940	14	8320 – 8520	24 + 26 + 26
1940 – 2140	16	8520 – 8720	26 + 26 + 26
2140 – 2340	18	8720 – 8920	26 + 26 + 28
2340 – 2540	20	8920 – 9120	26 + 28 + 28
2540 – 2740	22	9120 – 9320	28 + 28 + 28
2740 – 2940	24	9320 – 9520	28 + 28 + 30
2940 – 3140	26	9520 – 9720	28 + 30 + 30
3140 – 3340	28	9720 – 9920	30 + 30 + 30
3340 – 3540	30	9920 – 10120	30 + 30 + 32
3540 – 3740	32	10120 – 10320	30 + 32 + 32
3740 – 3940	16 + 16	10320 – 10520	32 + 32 + 32
3940 – 4140	16 + 18	10510 – 10710	24 + 24 + 24 + 24
4130 – 4330	18 + 18	10710 – 10910	24 + 24 + 24 + 26
4330 – 4530	18 + 20	10910 – 11110	24 + 24 + 26 + 26
4530 – 4730	20 + 20	11110 – 11310	24 + 26 + 26 + 26
4730 – 4930	20 + 22	11310 – 11510	26 + 26 + 26 + 26
4930 – 5130	22 + 22	11510 – 11710	26 + 26 + 26 + 28
5130 – 5330	22 + 24	11710 – 11910	26 + 26 + 28 + 28
5330 – 5530	24 + 24	11910 – 12110	26 + 28 + 28 + 28
5530 – 5730	24 + 26	12110 – 12310	28 + 28 + 28 + 28
5730 – 5930	26 + 26	12310 – 12510	28 + 28 + 28 + 30
5930 – 6130	26 + 28	12510 – 12710	28 + 28 + 30 + 30
6130 – 6330	28 + 28	12710 – 12910	28 + 30 + 30 + 30
6330 – 6530	28 + 30	12910 – 13110	30 + 30 + 30 + 30
6530 – 6730	30 + 30		
6730 – 6930	30 + 32		

Survey of heat performance per metre WANPAN, at different  $\Delta t$ -values on the basis of a standard test no. 1073 from the technological institute.

The stated results are taken at 21°C room temperature.

Table 3

At $\Delta t$	W/m	Supply temp. °C	Return temp. °C
60	189	86	76
58	181	84	74
56	174	82	72
54	166	80	70
52	159	78	68
50	151	76	66
48	144	74	64
46	136	71	62
44	128	70	60
42	121	68	58
40	113	66	56
38	106	64	54
36	100	62	52
34	93	60	50
32	87	58	48
30	79	56	46
28	74	54	44
26	66	52	42
24	60	50	40
22	55	48	38
20	47	46	36
18	42	44	34
16	36	42	32
14	30	40	30
12	25	38	28
10	21	36	26
8	15	34	24
6	11	32	22

Calculation of  $\Delta t$ :

$$\Delta t = (t(\text{supply}) + t(\text{return})/2) - t(\text{room})$$

## WANPAN panels

Table 4

Type WP	Measures in mm	White RAL 9010 EAN-Nr.	Grey RAL 7035 EAN-Nr.
WP2	200 x 136 x 24	5705428202610	5705428302624
WP3	300 x 136 x 24	5705428203617	5705428303621
WP4	400 x 136 x 24	5705428204614	5705428304628
WP6	600 x 136 x 24	5705428206618	5705428306622
WP8	800 x 136 x 24	5705428208612	5705428308626
WP10	1000 x 136 x 24	5705428210615	5705428310629
WP12	1200 x 136 x 24	5705428212619	5705428312623
WP14	1400 x 136 x 24	5705428214613	5705428314627
WP16	1600 x 136 x 24	5705428216617	5705428316621
WP18	1800 x 136 x 24	5705428218611	5705428318625
WP20	2000 x 136 x 24	5705428220614	5705428320628
WP22	2200 x 136 x 24	5705428222618	5705428322622
WP24	2400 x 136 x 24	5705428224612	5705428324626
WP26	2600 x 136 x 24	5705428226616	5705428326620
WP28	2800 x 136 x 24	5705428228610	5705428328624
WP30	3000 x 136 x 24	5705428230613	5705428330627
WP32	3200 x 136 x 24	5705428232617	5705428332621