

# heating Williams.xlsm



## Dimensioning of Variotherm Heating Systems

Building project: Williams - VarioKomp

ZIP: \_\_\_\_\_

City: Jersey

Date: 20.01.14

Processed by: ba

No.	Room name	Floor space A [m²]	Maximum length of DCH or SH L [m]	Heating load Q [W]	Supplement heating load Suppl. [%]	Heating load incl. Supplement Q+Suppl. [W]	Room temp. ti [°C]	Heat transfer system	Floor covering FH [d/λ]	Dimensioning temperature tf/tr [°C]	Mathematical			Practical				Supply pipe	Supply line length per circuit [m]	Pressure loss per circuit [mWC]	Flow quantity per circuit [kg/h]	Distribution manifold number
											Dim.	Unit	Type	No. of circuits	Dim.	Unit	Type					
	bedroom 3	12,30		0		0	20	Compact floor heating	0,075	45/35	0,10 m²	K RA20	2	4,85	m²	RA10	854	28		0,44	37	•1
	bathroom	4,30		0		0	24	Compact floor heating	0,010	45/35	0,10 m²	K RA20	1	4,30	m²	RA10	378	29		0,33	33	•1
	bedroom 5	13,60		0		0	20	Compact floor heating	0,075	45/35	0,10 m²	K RA20	2	5,50	m²	RA10	968	28		0,64	42	•1
	bedroom 6	13,60		0		0	20	Compact floor heating	0,075	45/35	0,10 m²	K RA20	2	5,50	m²	RA10	968	28		0,64	42	•1
	hall way	7,00		0		0	20	Compact floor heating	0,075	45/35	0,10 m²	K RA20	1	7,00	m²	RA10	616	28		1,22	54	(•1)
	bedroom 4	12,30		0		0	20	Compact floor heating	0,075	45/35	0,10 m²	K RA20	2	4,85	m²	RA10	854	28		0,44	37	•1

### Summary of the heating systems

Amount	Unit	Heating system	Type	Pipe / Heating element
m²		System wall heating	SWHK2	
m²		System wall heating	SWHK3	
m²		Modular wall heating	MSW	
m²		EasyFlex wall heating	EW77F	
m²		EasyFlex wall heating	EW77	
m²		EasyFlex wall heating	EW115	
m²		Modular ceiling heating	MSD/MRD	
m²		Screed floor heating	RA10	
m²		Screed floor heating	RA15	
m²		Screed floor heating	RA20	
m²		Screed floor heating	RA25	
m²		Screed floor heating	RA30	
52,7	m²	Compact floor heating	RA10	527,0 lfm
m		Compact floor heating	RA20	
m		Skirting heating	HL mini	
m		Skirting heating	HL Ia	
m		Skirting heating	HL IIa	
m		Skirting heating	HL IIa	
m		Ducted channel heating	BKH1 mini	
m		Ducted channel heating	BKH1	
m		Ducted channel heating	BKH2 mini	
m		Ducted channel heating	BKH2	
m		Supply pipe	16x2	
m		Supply pipe	11.6x1.5	
<b>Total filling water</b>				<b>30,6 litres</b>

### Summary of pipe length by line

Line	Room	m ∅ 16	m ∅ 11,6	Line	Room	m ∅ 16	m ∅ 11,6
1	bedroom 3		97,0	14			
2				15			
3	bathroom		43,0	16			
4				17			
5				18			
6	bedroom 5		110,0	19			
7				20			
8	bedroom 6		110,0	21			
9				22			
10	hall way		70,0	23			
11				24			
12	bedroom 4		97,0	25			
13				<b>TOTAL</b>			<b>527,0</b>

### Summary of the floor heating surface area

Screed floor heating	m²
Compact floor heating	52,7 m²

### Summary of loads

Total heating load	1 W
Total installed load	4.638 W

	tf/tr	Number of heating circuits	Flow quantity manifold [kg/h]	Max. pressure loss + 0,1 mWC for manifold [mWC]	Manifold notation according to drawing
Distribution manifold •1	45/35	10	403	1,32	A
Distribution manifold •2					
Distribution manifold •3					
Distribution manifold •4					
Distribution manifold •5					
When all distribution manifolds are fed via one pump, the following applies:					
Total flow quantity:			403	kg/h	
Maximum pressure loss from distribution manifold incl. 0.1mWC for max. opened valve			1,32	mWC	