

1 Hotel Residence

No national annex

2 Loading report: Roof cladding

Comment:

Roof cladding
Building C

Permanent load	Charact. [kN/m ²]	Coef. [-]	Design [kN/m ²]
Other permanent loads			
plain tile inc. roof sheathing	0,75	1,35	1,01
Section: rectangle 0,1x0,2 (0,08 / 1,100)	0,07	1,35	0,09
mineral felt (0,30 × 0,180)	0,05	1,35	0,07
plasterboard 1x15,0 mm inc. counter lath	0,18	1,35	0,24
Sum: Other permanent loads	1,05	1,35	1,42
Sum: Permanent load	1,05	1,35	1,42

Varying load	Charact. [kN/m ²]	Coef. [-]	Design [kN/m ²]
Climatic load			
Snow load - medium-term	0,80	1,50	1,20
Sum: Climatic load	0,80	1,50	1,20
Sum: Varying load	0,80	1,50	1,20
Sum of load	1,85	1,41	2,62

2.1 Loading report: Rafter, l.w. 1,10 m

Comment:

Rafter K1
Building C

Permanent load	Charact. [kN/m]	Coef. [-]	Design [kN/m]
Other permanent loads			
plain tile inc. roof sheathing (0,75× 1,10)	0,82	1,35	1,11
Section: rectangle 0,1x0,2 (0,07× 1,10)	0,08	1,35	0,10
mineral felt (0,05× 1,10)	0,06	1,35	0,07
plasterboard 1x15,0 mm inc. counter lath (0,18× 1,10)	0,20	1,35	0,27
Sum: Other permanent loads	1,16	1,35	1,56
Sum: Permanent load	1,16	1,35	1,56

Varying load	Charact. [kN/m]	Coef. [-]	Design [kN/m]
Climatic load			
Snow load (0,80× 1,10)	0,88	1,50	1,32
Sum: Climatic load	0,88	1,50	1,32
Sum: Varying load	0,88	1,50	1,32
Sum of load	2,04	1,41	2,88

3 Loading report: Floor 1st

Comment:

Floor structure
Building C

Permanent load	Charact. [kN/m ²]	Coef. [-]	Design [kN/m ²]
Other permanent loads			

ceramic tile flooring (22,00 × 0,010)	0,22	1,35	0,30
concrete screed (19,00 × 0,080)	1,52	1,35	2,05
mineral wool, compressed (1,00 × 0,050)	0,05	1,35	0,07
concrete normal weight (23,00 × 0,200)	4,60	1,35	6,21
inside plaster (19,00 × 0,200)	3,80	1,35	5,13
Sum: Other permanent loads	10,19	1,35	13,76
Sum: Permanent load	10,19	1,35	13,76

Varying load	Charact. [kN/m ²]	Coef. [-]	Design [kN/m ²]
Utility load			
A Areas for domestic and residential activities - floors - long-term	2,00	1,50	3,00
Sum: Utility load	2,00	1,50	3,00
Sum: Varying load	2,00	1,50	3,00
Sum of load	12,19	1,37	16,76

4 Loading report: Snow load

Comment:

Building C

Load according to EN 1991-1-3

Basic snow weight	s_k	= 1,00 kN/m ²
Landscape type:		common
Exposition coefficient	C_e	= 1,00
Thermal coefficient	C_t	= 1,00
Load factor	γ_f	= 1,50

Roofing type: gable roof

Roof slope	α_1	= 40,0 °
Roof slope	α_2	= 40,0 °
Shape coefficient	$\mu_1(\alpha_1)$	= 0,53
Shape coefficient	$\mu_1(\alpha_2)$	= 0,53

Characteristic load values (design values in brackets)

Case (i) - load from non-drifted snow:

$$s_1 = 0,53 \text{ kN/m}^2 \text{ (} 0,80 \text{ kN/m}^2 \text{)}$$

$$s_2 = 0,53 \text{ kN/m}^2 \text{ (} 0,80 \text{ kN/m}^2 \text{)}$$

Case (ii) - load from drifted snow:

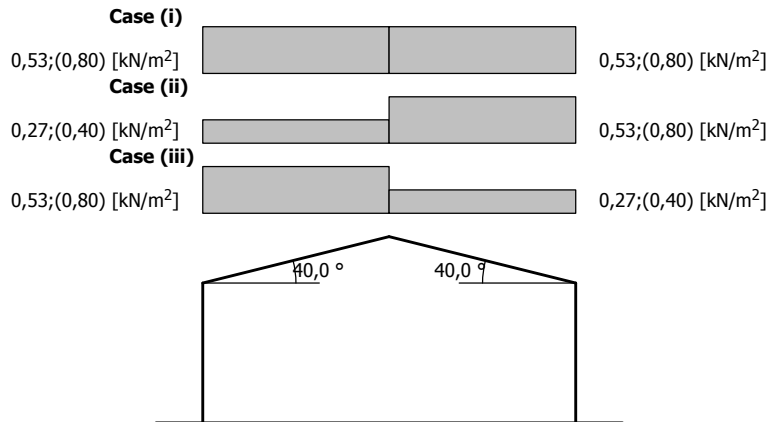
$$s_1 = 0,27 \text{ kN/m}^2 \text{ (} 0,40 \text{ kN/m}^2 \text{)}$$

$$s_2 = 0,53 \text{ kN/m}^2 \text{ (} 0,80 \text{ kN/m}^2 \text{)}$$

Case (iii) - load from drifted snow:

$$s_1 = 0,53 \text{ kN/m}^2 \text{ (} 0,80 \text{ kN/m}^2 \text{)}$$

$$s_2 = 0,27 \text{ kN/m}^2 \text{ (} 0,40 \text{ kN/m}^2 \text{)}$$



4.1 Localization for load width 1,10 m:

Comment:

Building C

Characteristic load values (design values in brackets)

Case (i) - load from non-drifted snow:

$$s_1 = 0,59 \text{ kN/m (0,88 kN/m)}$$

$$s_2 = 0,59 \text{ kN/m (0,88 kN/m)}$$

Case (ii) - load from drifted snow:

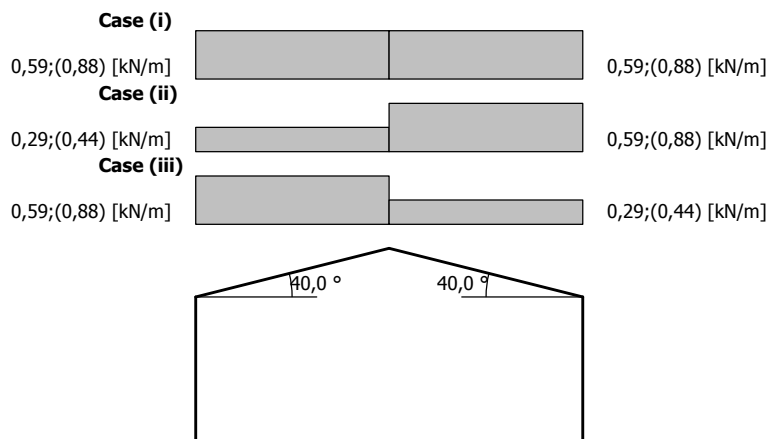
$$s_1 = 0,29 \text{ kN/m (0,44 kN/m)}$$

$$s_2 = 0,59 \text{ kN/m (0,88 kN/m)}$$

Case (iii) - load from drifted snow:

$$s_1 = 0,59 \text{ kN/m (0,88 kN/m)}$$

$$s_2 = 0,29 \text{ kN/m (0,44 kN/m)}$$



5 Loading report: Wind to roof

Comment:

Building C

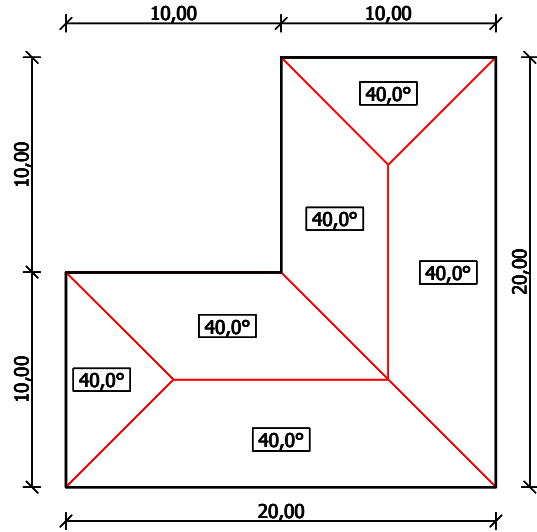
Load according to EN 1991-1-4

Wind speed	v_{b0}	= 26,00 m/s
Terrain category:		II
Building reference height	Z_e	= 15,00 m
Wind direction coefficient	C_{dir}	= 1,00
Season coefficient	C_{season}	= 1,00

Air mass density $\rho = 1,250 \text{ kg/m}^3$
 Orography coefficient $c_o = 1,51$
 Maximum dynamic pressure $q_p = 2,05 \text{ kN/m}^2$
 Load factor $\gamma_f = 1,50$
 Area for determination $c_{pe} A = 10,00 \text{ m}^2$

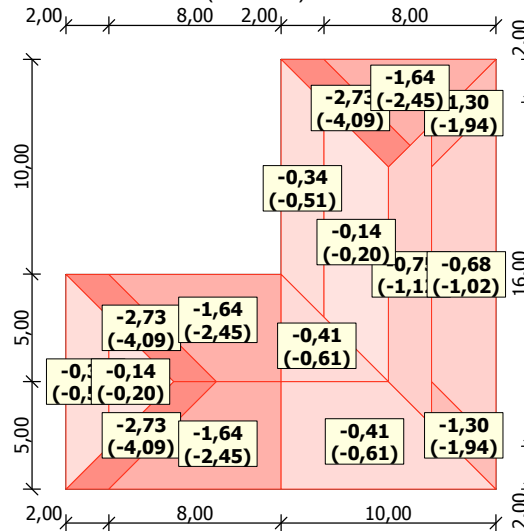
Roof

Constr. measurements

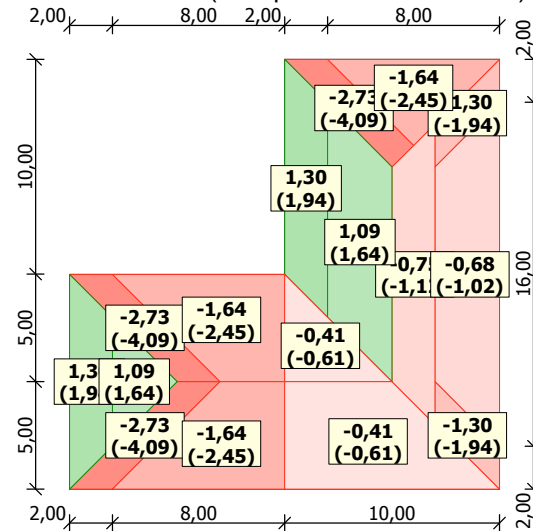


Characteristic load values (design values in brackets)

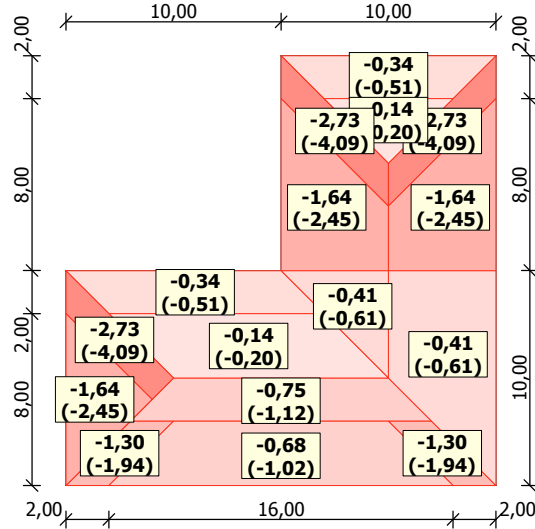
Wind from left 1 (suction)



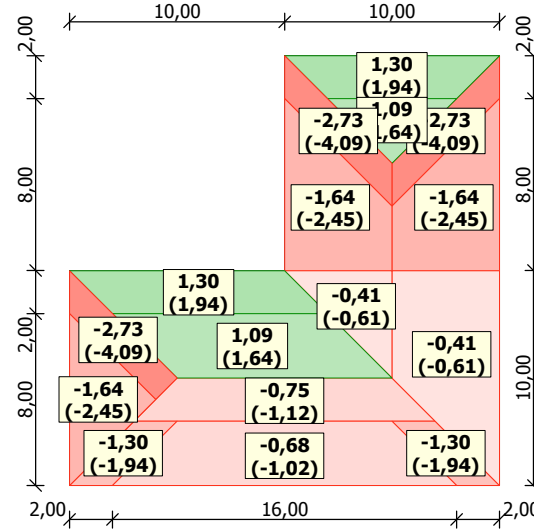
Wind from left 2 (Compression and suction)



Wind from above 1 (suction)



Wind from above 2 (Compression and suction)



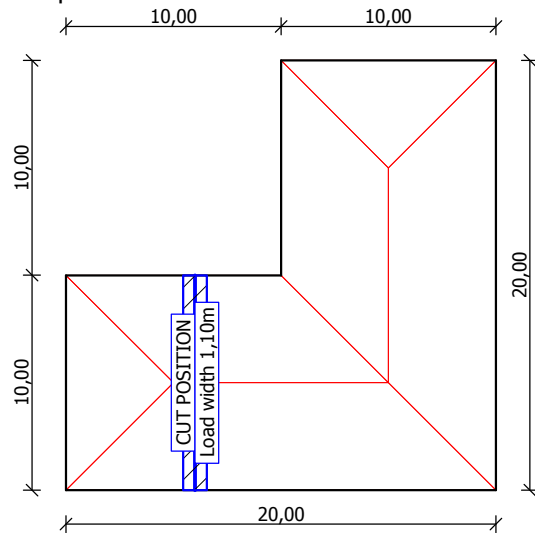
5.1 Localization for load width 1,10 m:

Comment:

Objekt C

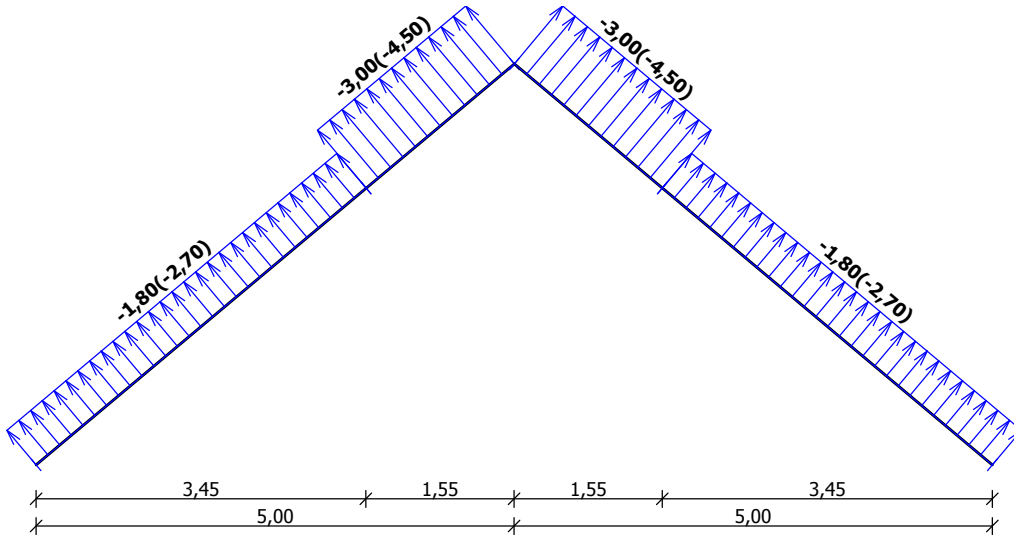
Roof

Cut position

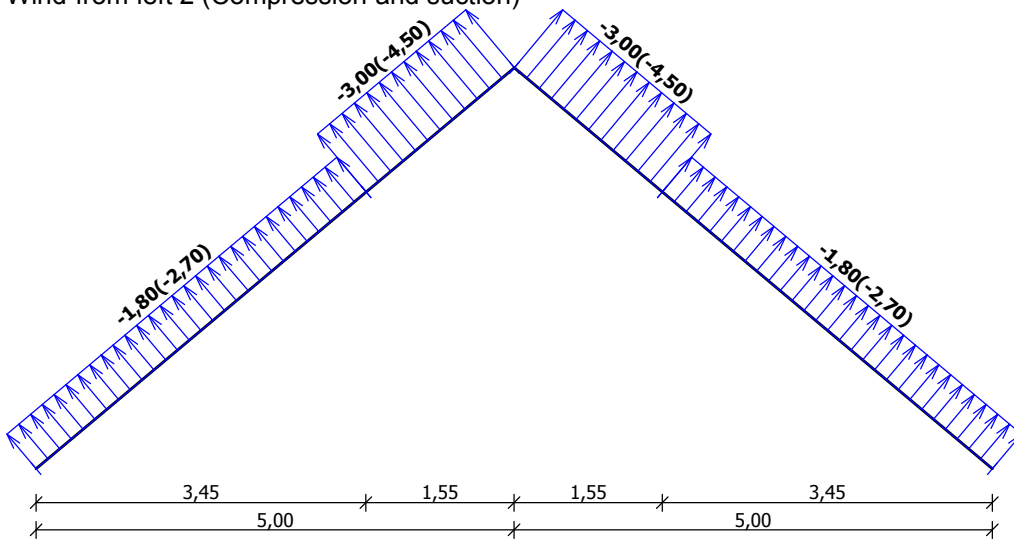


Characteristic load values (design values in brackets)

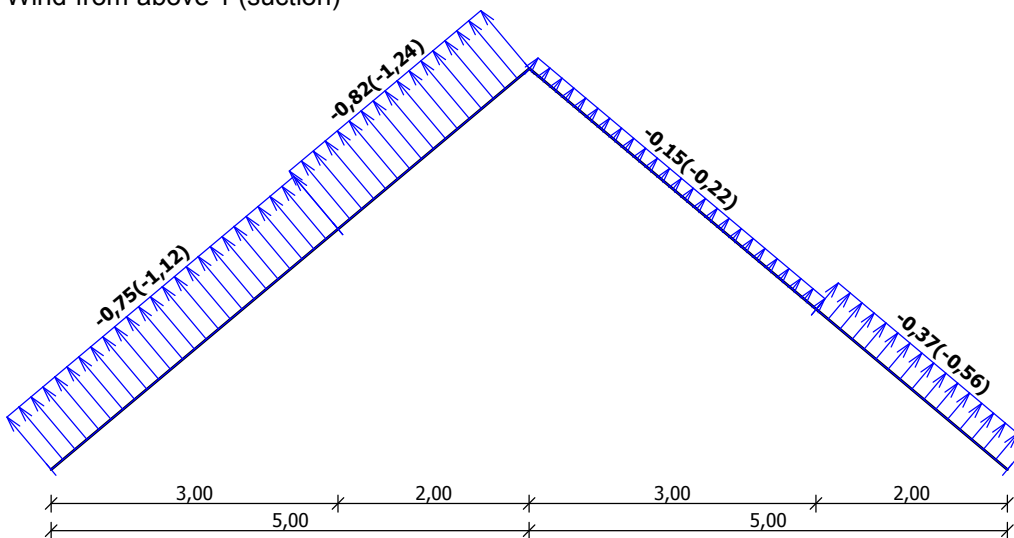
Wind from left 1 (suction)



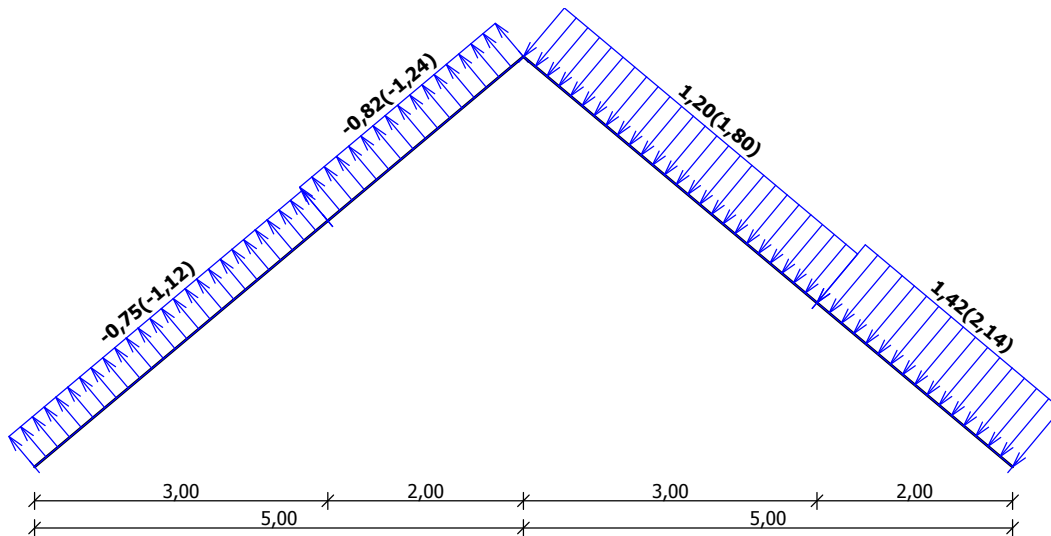
Wind from left 2 (Compression and suction)



Wind from above 1 (suction)



Wind from above 2 (Compression and suction)



6 Loading report: Wind to wall

Comment:

Building B

Load according to EN 1991-1-4

Wind speed	v_{b0}	= 26,00 m/s
Terrain category:		0
Building reference height	z_e	= 30,00 m
Wind direction coefficient	c_{dir}	= 1,00
Season coefficient	c_{season}	= 1,00
Air mass density	ρ	= 1,250 kg/m ³
Orography coefficient	c_o	= 1,51
Maximum dynamic pressure	q_p	= 2,98 kN/m ²
Load factor	γ_f	= 1,50
Area for determination c_{pe}	A	= 10,00 m ²

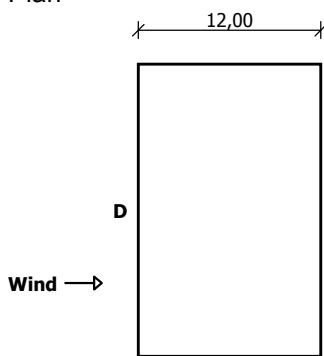
Vertical walls of buildings with right-angle plan

Object height $h = 30,00$ m

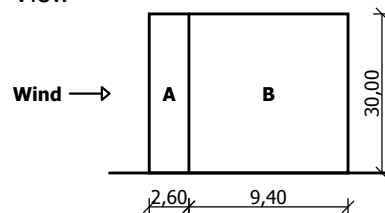
Object length $d = 12,00$ m

Object width $b = 13,00$ m

Plan



View



Characteristic load values (design values in brackets)

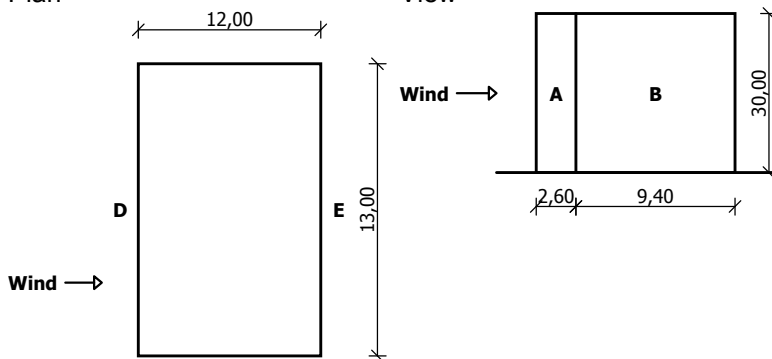
Height above terrain [m]	Wind pressure in areas [kN/m ²]			
	A	B	D	E
3,00	-3,06 (-4,59)	-2,04 (-3,06)	2,04 (3,06)	-1,47 (-2,20)
6,00	-3,06 (-4,59)	-2,04 (-3,06)	2,04 (3,06)	-1,47 (-2,20)
9,00	-3,06 (-4,59)	-2,04 (-3,06)	2,04 (3,06)	-1,47 (-2,20)
12,00	-3,06 (-4,59)	-2,04 (-3,06)	2,04 (3,06)	-1,47 (-2,20)
15,00	-3,14 (-4,72)	-2,10 (-3,14)	2,10 (3,14)	-1,51 (-2,26)
18,00	-3,58 (-5,37)	-2,39 (-3,58)	2,39 (3,58)	-1,71 (-2,57)
21,00	-3,58 (-5,37)	-2,39 (-3,58)	2,39 (3,58)	-1,71 (-2,57)
24,00	-3,58 (-5,37)	-2,39 (-3,58)	2,39 (3,58)	-1,71 (-2,57)
27,00	-3,58 (-5,37)	-2,39 (-3,58)	2,39 (3,58)	-1,71 (-2,57)
30,00	-3,58 (-5,37)	-2,39 (-3,58)	2,39 (3,58)	-1,71 (-2,57)

6.1 Localization for load width 3,00 m:

Comment:

Horizontal linear load into floor slab
Building B

Plan



Characteristic load values (design values in brackets)

Height above terrain [m]	Wind pressure in areas [kN/m ²]			
	A	B	D	E
3,00	-9,17 (-13,76)	-6,11 (-9,17)	6,11 (9,17)	-4,40 (-6,59)
6,00	-9,17 (-13,76)	-6,11 (-9,17)	6,11 (9,17)	-4,40 (-6,59)
9,00	-9,17 (-13,76)	-6,11 (-9,17)	6,11 (9,17)	-4,40 (-6,59)
12,00	-9,17 (-13,76)	-6,11 (-9,17)	6,11 (9,17)	-4,40 (-6,59)
15,00	-9,43 (-14,15)	-6,29 (-9,43)	6,29 (9,43)	-4,52 (-6,78)
18,00	-10,74 (-16,10)	-7,16 (-10,74)	7,16 (10,74)	-5,14 (-7,72)
21,00	-10,74 (-16,10)	-7,16 (-10,74)	7,16 (10,74)	-5,14 (-7,72)
24,00	-10,74 (-16,10)	-7,16 (-10,74)	7,16 (10,74)	-5,14 (-7,72)
27,00	-10,74 (-16,10)	-7,16 (-10,74)	7,16 (10,74)	-5,14 (-7,72)
30,00	-10,74 (-16,10)	-7,16 (-10,74)	7,16 (10,74)	-5,14 (-7,72)

