TEHNIČNO POROČILO JEKLENEGA NADSTREŠKA NA KOTNIKOVI ULICI

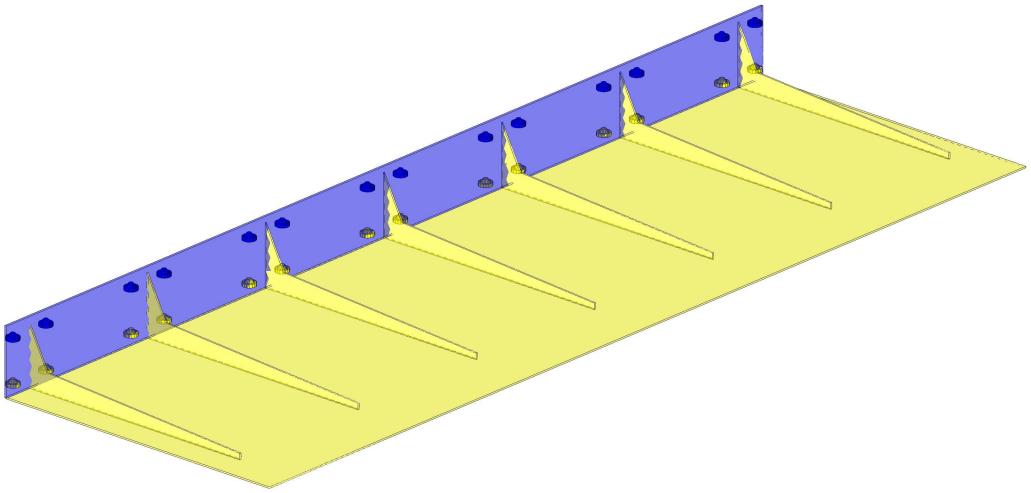
Nadstrešek se izvede iz pločevin debelin t = 5 mm in t = 8 mm, uporabi se jeklo kvalitete S235 JR. Vsi čelni zvari se izvedejo kot obojestranski polno nosilni (a = 2 x 0,46t). Nastrešek se protikorozijsko zaščiti z vročim cinkanjem v skladu s standardom SIST EN ISO 12994 ter nato barva po želji arhitekta. Nadstrešek se v objekt sidra z navojnimi palicami 8 x 4 M12/250 mm (8.8), pri čemer se uporabi kemijska malta HILTI HIT-HY (odvisno od materiala sidranja):

- če se sidra v polno opeko se uporabi HIT-HY 270
- če se sidra v votlo opeko se uporabi kombinacija HIT-HY 270 + mrežica HIT-SC
- če se sidra v AB preklado se uporabi HIT-HY 200 (v tem primeru so lahko navojne palice krajše - M12/160 mm (8.8)

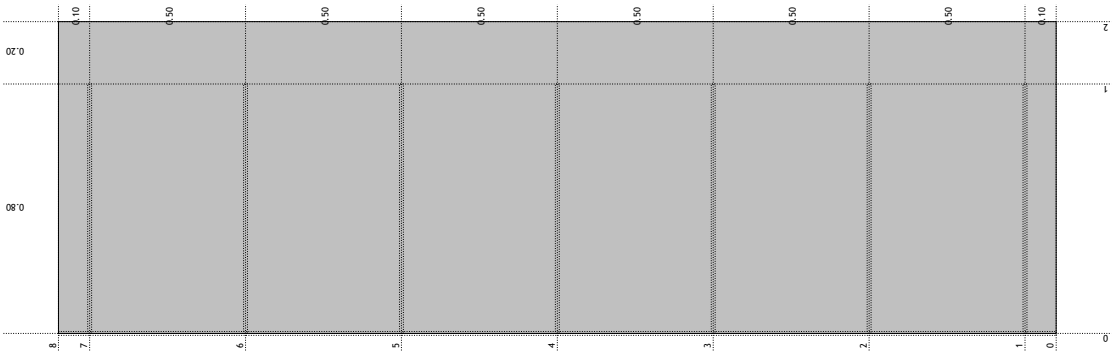
Pri sidranju upoštevati navodila proizvajalca (npr HILTI) za kemijsko sidranje – velikost prevrtane luknje, čiščenje lukenj, etc…

OPOMBA: Med nadstrešek ter zid se namesti trda izolacija debeline 30 mm – PURENIT za preprečitev nastanka toplotnega mostu.

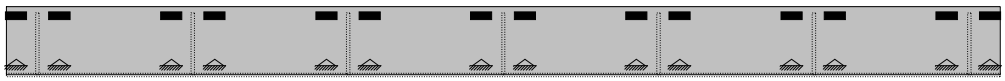
Vhodni podatki - Konstrukcija



Izometrija



Nivo: [0.00 m]

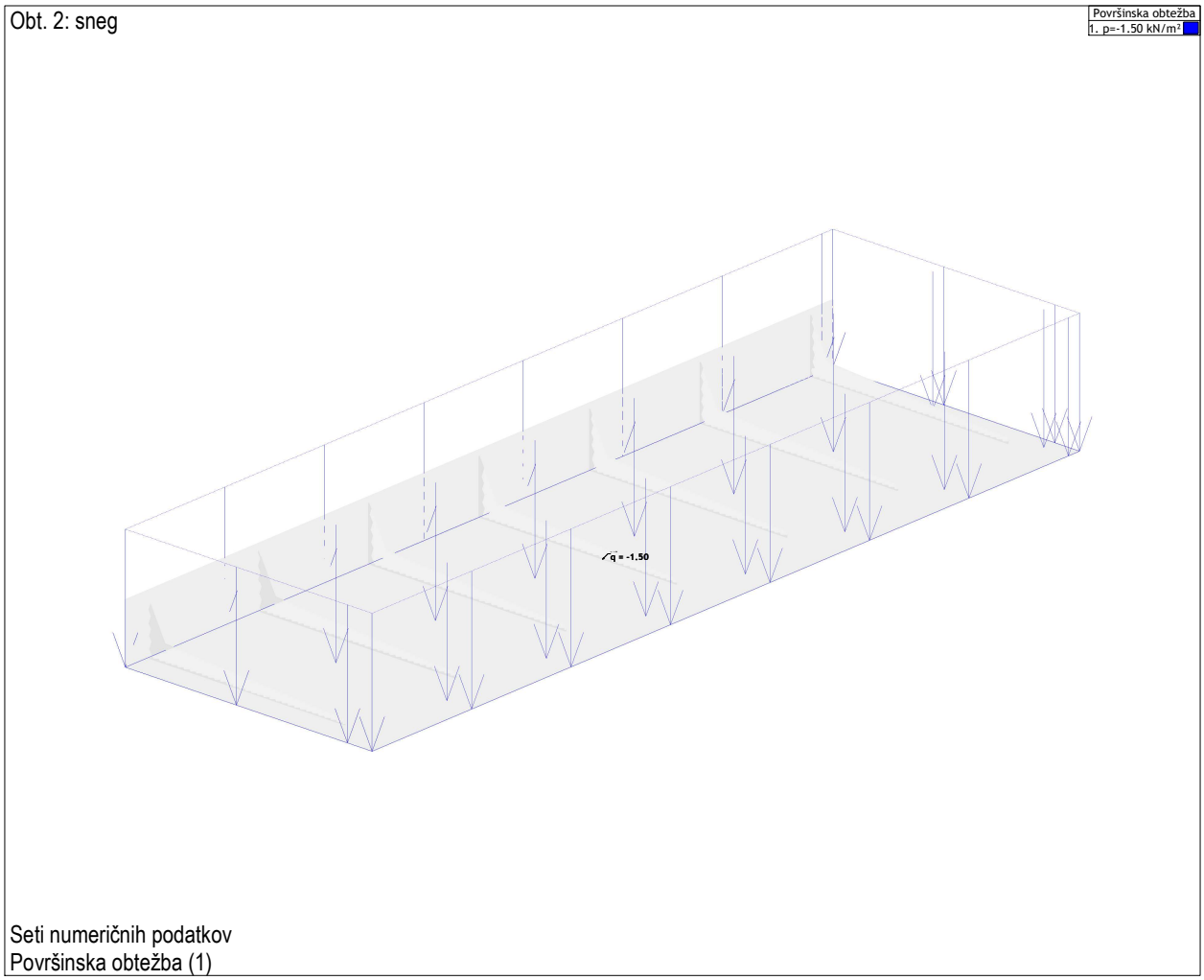


Okvir: V_1

Vhodni podatki - Obtežba

Lista obtežnih primerov	
LC	Naziv
1	lastna teža (g)
2	sneg
3	Komb.: MSN (1.35xI+1.5xII)
4	Komb.: MSU (I+II)

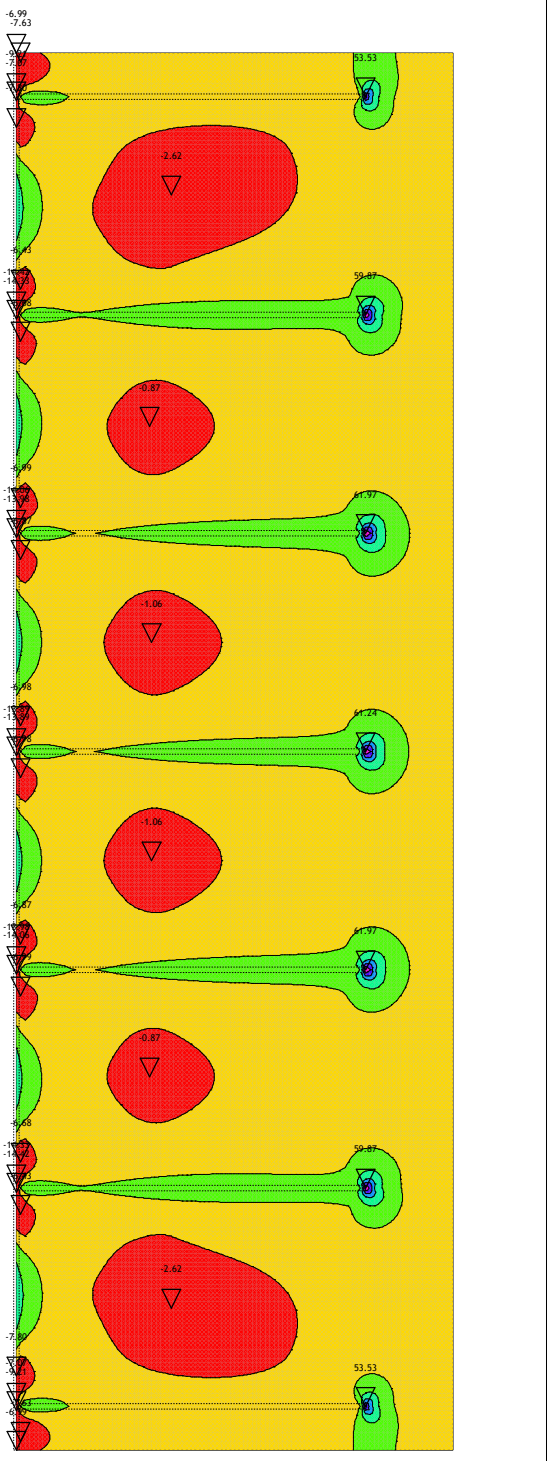
Obt. 2: sneg



Seti numeričnih podatkov
Površinska obtežba (1)

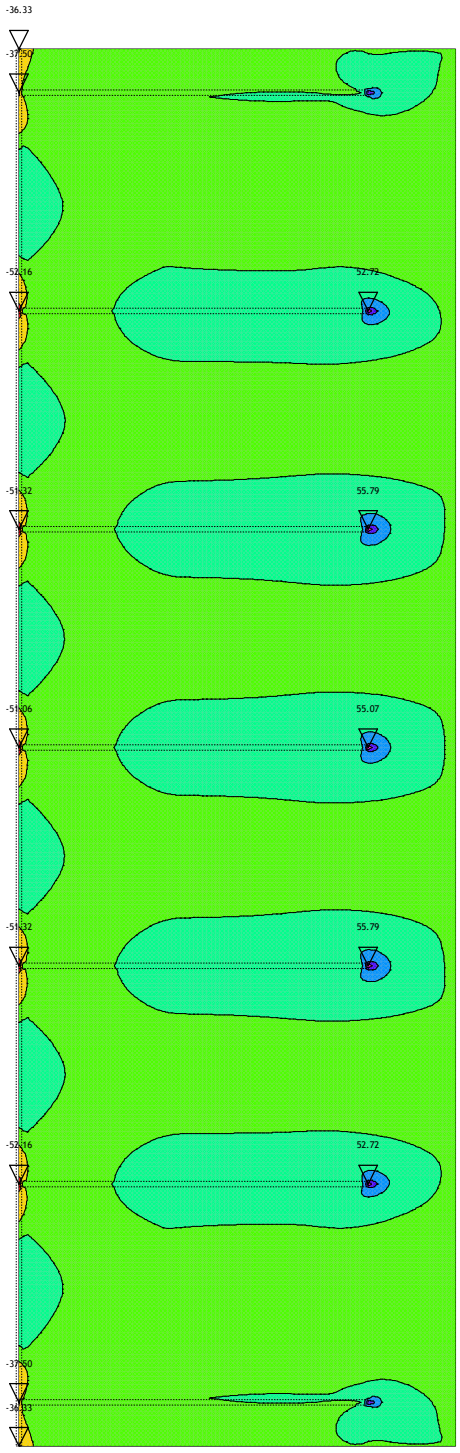
Statični preračun

Obt. 3: MSN



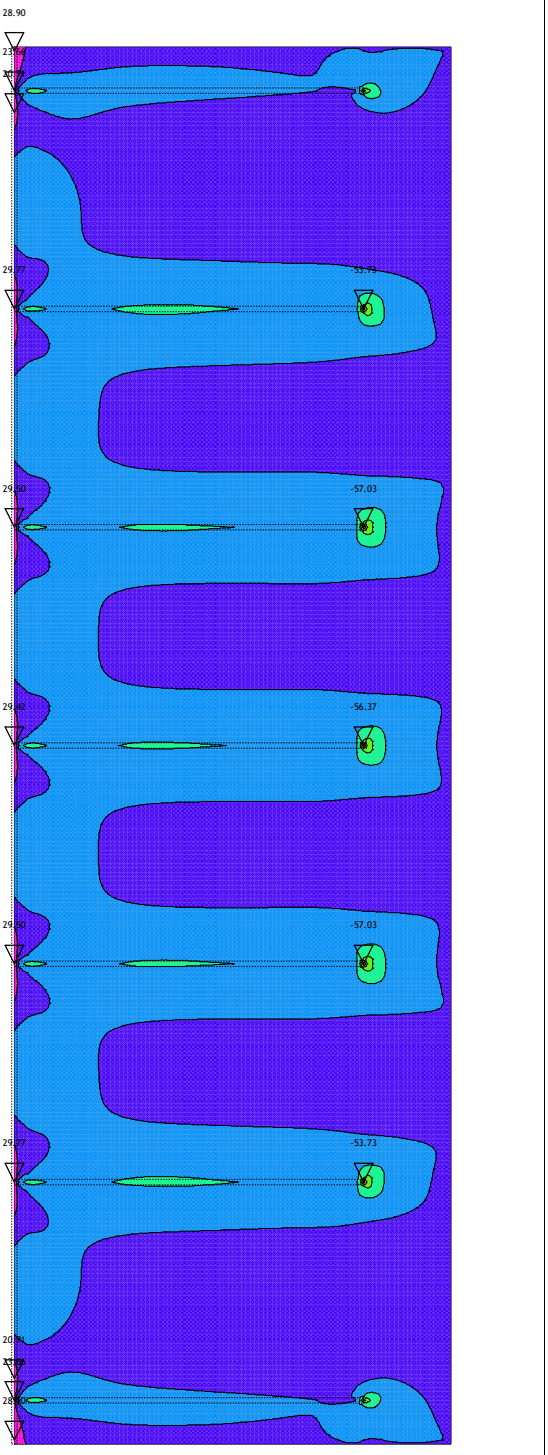
Nivo: [0.00 m]
Vplivi v plošči: max σ1,z= 61.97 / min σ1,z= -14.42 MPa

Obt. 3: MSN



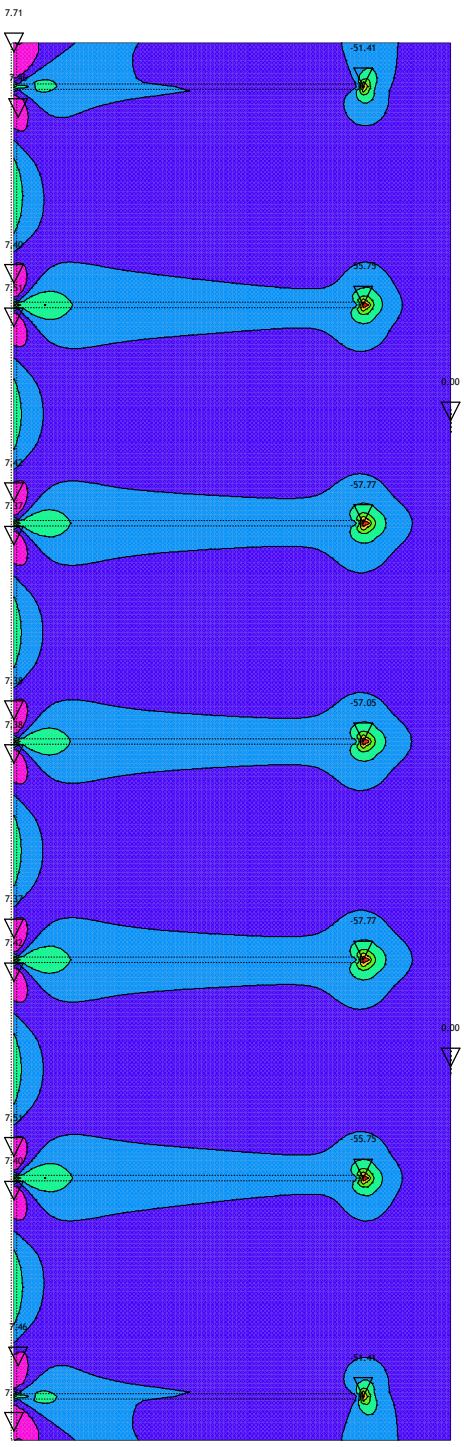
Nivo: [0.00 m]
Vplivi v plošči: max σ2,z= 55.79 / min σ2,z= -52.16 MPa

Obt. 3: MSN



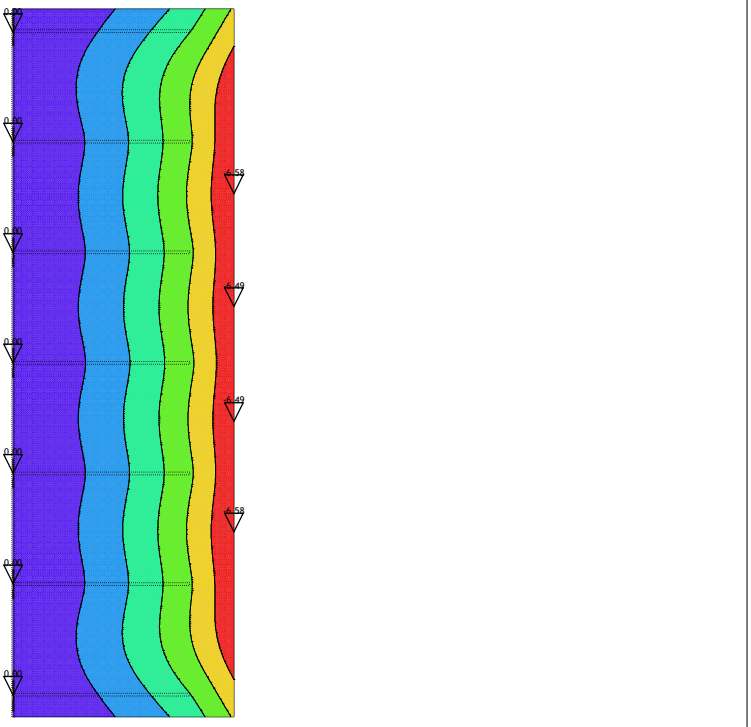
Nivo: [0.00 m]
Vplivi v plošči: max σ1,s= 29.77 / min σ1,s= -57.03 MPa

Obt. 3: MSN



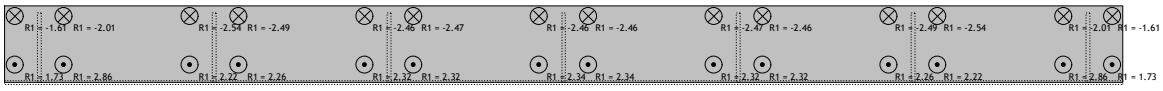
Nivo: [0.00 m]
Vplivi v plošči: max σ2,s= 7.71 / min σ2,s= -57.77 MPa

Obt. 3: MSN



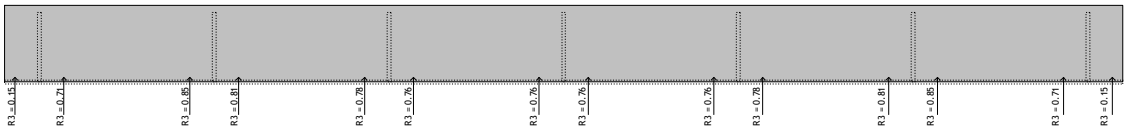
Nivo: [0.00 m]
Vplivi v plošči: max Zp= 0.00 / min Zp= -6.58 m / 1000

Obt. 3: MSN



Okvir: V_1
Reakcije podpor

Obt. 3: MSN



Okvir: V_1
Reakcije podpor

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Phone I Fax:	|	E-Mail:	
Design:	Masonry - 6 Feb 2026	Date:	6. 02. 2026
Fastening Point:			

Specifier's comments:

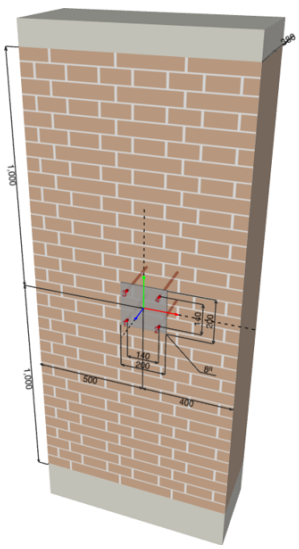
1 Input data



Anchor type and size:	**HIT-HY 270 + HAS-U 8.8 M12**
Item number:	2223883 HAS-U 8.8 M12x300 (insert) / 2092828 HIT-HY 270 (mortar)
Specification text:	Hilti HAS-U 8.8 threaded rod with HIT-HY 270 injection mortar with 220 mm embedment hef, M12, Steel galvanized, Hammer drilled installation per ETA-22/0395
Effective embedment depth:	$h_{ef,act}$ = 220.0 mm
Material:	8.8
Approval No.:	ETA-22/0395
Issued I Valid:	25. 09. 2023 | -
Proof:	Design Method EOTA TR054
Stand-off installation:	e_b = 0.0 mm (no stand-off); t = 8.0 mm
Baseplate[R] :	l_x x l_y x t = 200.0 mm x 200.0 mm x 8.0 mm; (Recommended plate thickness: not calculated)
Profile:	no profile
Base material:	Brick layout: English; Brick: Rosso Classico A6R55 / Rosso Vivo A6R55W (solid brick), Clay, L x W x H: 250.0 mm x 120.0 mm x 55.0 mm; $f_{b,v}$ = 18.00 N/mm^2; E_{wall} = 4,159.62 N/mm^2 Mortar: f_m= 10.00 N/mm^2, M10 - M20; Vertical joints filled: YES; vertical: 10.0 mm; horizontal: 6.0 mm
Installation/Use:	Installation condition: Dry; Use condition: Dry; Cleaning: compressed air Temp. short/long: 40/24 °C

[R] - The anchor calculation is based on a rigid baseplate assumption.

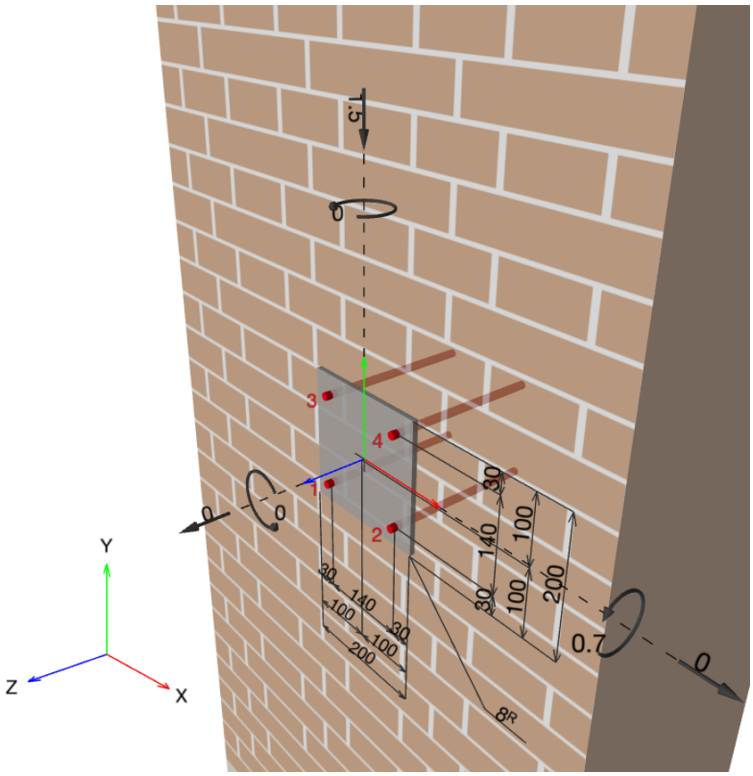
Geometry [mm]



Input data and results must be checked for conformity with the existing conditions and for plausibility!
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Geometry [mm] & Loading [kN, kNm]



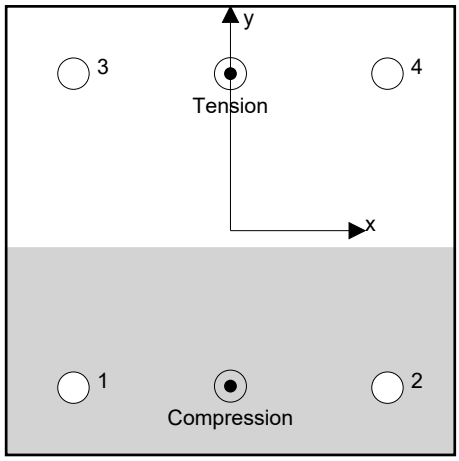
1.1 Load combination

Case	Description	Forces [kN] / Moments [kNm]	Seismic	Fire	Max. Util. Anchor [%]
1	Load case: Design loads	N = 0.000; V_x = 0.000; V_y = -1.500; M_x = 0.700; M_y = 0.000; M_z = 0.000;	no	no	99

Input data and results must be checked for conformity with the existing conditions and for plausibility!
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2 Load case/Resulting anchor forces



Anchor reactions [kN]
Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	0.000	0.375	0.000	-0.375
2	0.000	0.375	0.000	-0.375
3	2.512	0.375	0.000	-0.375
4	2.512	0.375	0.000	-0.375

max. compressive strain:	0.13 [‰]
max. compressive stress:	0.55 [N/mm^2]
Resulting tension force in (x/y)=(0.0/70.0):	5.024 [kN]
Resulting compression force in (x/y)=(0.0/-69.3):	5.024 [kN]

Anchor forces are calculated based on the assumption of a rigid baseplate.

3 Tension load (EOTA TR054, Section 4.2.1)

	Load [kN]	Capacity [kN]	Utilization β_N [%]	Status
Steel failure*	2.512	44.933	6	OK
Pull-out failure*	2.512	5.120	50	OK
Brick breakout**	5.024	5.120	99	OK
Pullout of one brick*	2.512	5.250	48	OK
Combined pullout + breakout*	2.512	5.250	48	OK
Combined pullout + fastener pullout*	2.512	5.250	48	OK

* highest loaded anchor **anchor group (anchors in tension)

3.1 Steel failure

$N_{Rk,s}$ [kN]	γ_{Ms}	$N_{Rd,s}$ [kN]	N_{Ed} [kN]	A-ID
67.400	1.500	44.933	2.512	4

3.2 Pull-out failure

$N_{Rk,p}$ [kN]	α_j	$\gamma_{M,m}$	$N_{Rd,p}$ [kN]	N_{Ed} [kN]	A-ID
12.800	1.000	2.500	5.120	2.512	4

3.3 Brick breakout

$s_{\parallel}$ [mm]	$c_{\parallel}$ [mm]	$s_{ETA,\parallel}$ [mm]	$c_{ETA,\parallel}$ [mm]	$\alpha_{g,N,\parallel}$	$e_{c,N,\parallel}$ [mm]	$\psi_{g,N,\parallel}$
140.0	330.0	50.0	150.0	1.000	0.0	1.000

$s_{\perp}$ [mm]	$c_{\perp}$ [mm]	$s_{ETA,\perp}$ [mm]	$c_{ETA,\perp}$ [mm]	$\alpha_{g,N,\perp}$	$e_{c,N,\perp}$ [mm]	$\psi_{g,N,\perp}$
140.0	430.0	50.0	150.0	1.000	0.0	1.000

$N_{Rk,b,ETA}$ [kN]	$N_{Rk,b}$ [kN]	c_j [mm]	$c_{j,min,ETA}$ [mm]	α_j
12.800	12.800	0.0	150.0	1.000

$\gamma_{M,m}$	$N_{Rd,b}$ [kN]	N_{Ed} [kN]
2.500	5.120	5.024

Input data and results must be checked for conformity with the existing conditions and for plausibility!
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3.4 Pullout of one brick

A^{H}_{act} [mm²]	A^{V}_{act} [mm²]	f_{vko} [N/mm²]	σ_d [N/mm²]
60,000	27,500	0.30	0.00

$N_{Rk,pb}$ [kN]	$\gamma_{M,m}$	$N_{Rd,pb}$ [kN]	N_{Ed} [kN]
13.125	2.500	5.250	2.512

3.5 Combined pullout of one brick and brick breakout

A^{H}_{act} [mm²]	A^{V}_{act} [mm²]	f_{vko} [N/mm²]	σ_d [N/mm²]	$N_{Rk,pb}$ [kN]
60,000	27,500	0.30	0.00	13.125

$s_{\parallel}$ [mm]	$c_{\parallel}$ [mm]	$s_{ETA,\parallel}$ [mm]	$c_{ETA,\parallel}$ [mm]	$\alpha_{g,N\parallel}$	$e_{c,N\parallel}$ [mm]	$\psi_{g,N\parallel}$
0.0	0.0	0.0	0.0	2.000	0.0	1.000

$s_{\perp}$ [mm]	$c_{\perp}$ [mm]	$s_{ETA,\perp}$ [mm]	$c_{ETA,\perp}$ [mm]	$\alpha_{g,N\perp}$	$e_{c,N\perp}$ [mm]	$\psi_{g,N\perp}$
0.0	0.0	0.0	0.0	2.000	0.0	1.000

$h_{ef,2}$ [mm]	$N_{Rk,b,ETA}$ [kN]	c_j [mm]	$c_{j,min,ETA}$ [mm]	α_j
0.0	-	0.0	0.0	1.000

n_A	$N_{Rk,b,hef2}$ [kN]	$N_{Rk,pb} + N_{Rk,b}$ [kN]
1	-	13.125

$\gamma_{M,m}$	N_{Rd} [kN]	N_{Ed} [kN]
2.500	5.250	2.512

3.6 Combined pullout of one brick and fastener pullout

A^{H}_{act} [mm²]	A^{V}_{act} [mm²]	f_{vko} [N/mm²]	σ_d [N/mm²]	$N_{Rk,pb}$ [kN]
60,000	27,500	0.30	0.00	13.125

$h_{ef,2}$ [mm]	α_j	A-ID	$N_{Rk,p}$ [kN]	$N_{Rk,pb} + N_{Rk,p}$ [kN]
0.0	1.000	4	-	13.125

$\gamma_{M,m}$	N_{Rd} [kN]	N_{Ed} [kN]
2.500	5.250	2.512

4 Shear load (EOTA TR054, Section 4.2.2)

	Load [kN]	Capacity [kN]	Utilization β_V [%]	Status
Steel failure (without lever arm)*	0.375	26.960	2	OK
Steel failure (with lever arm)*	N/A	N/A	N/A	N/A
Local brick failure*	-	-	18	OK
Brick edge failure in direction x-**	-	-	18	OK
Pushing out of one brick in direction **	N/A	N/A	N/A	N/A

* highest loaded anchor **anchor group (relevant anchors)

4.1 Steel failure (without lever arm)

$V_{Rk,s}$ [kN]	γ_{Ms}	$V_{Rd,s}$ [kN]	V_{Ed} [kN]	A-ID
33.700	1.250	26.960	0.375	4

Input data and results must be checked for conformity with the existing conditions and for plausibility!
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4.2 Local brick failure

A1-ID	A2-ID	s [mm]	c [mm]
2	4	140.0	330.0

$s_{ETA,\parallel}$ [mm]	$c_{ETA,\parallel}$ [mm]	$V_{Rk,b,ETA,\parallel}$ [kN]	$\alpha_{g,V,\parallel}$	$e_{c,V,\parallel}$ [mm]	$\psi_{g,V,\parallel}$	$\alpha_{j,\parallel}$
50.0	320.0	11.000	1.000	0.0	1.000	1.000

$s_{ETA,\perp}$ [mm]	$c_{ETA,\perp}$ [mm]	$V_{Rk,b,ETA,\perp}$ [kN]	$\alpha_{g,V,\perp}$	$e_{c,V,\perp}$ [mm]	$\psi_{g,V,\perp}$	$\alpha_{j,\perp}$
0.0	0.0	0.000	0.000	0.0	0.000	0.000

$\gamma_{M,m}$
2.500

$V_{Rk,b,\parallel}$ [kN]	$V_{Rd,b,\parallel}$ [kN]	$V_{Ed,\parallel}$ [kN]	$\beta_{\parallel}$
11.000	4.400	0.750	0.170

$V_{Rk,b,\perp}$ [kN]	$V_{Rd,b,\perp}$ [kN]	$V_{Ed,\perp}$ [kN]	$\beta_{\perp}$
0.000	0.000	0.000	-

$\beta_{\parallel+\perp}$
0.170

4.3 Brick edge failure in direction x-

A1-ID	A2-ID	s [mm]	c [mm]
3	1	140.0	430.0

$s_{ETA,\parallel}$ [mm]	$c_{ETA,\parallel}$ [mm]	$V_{Rk,c,ETA,\parallel}$ [kN]	$\alpha_{g,V,\parallel}$	$\alpha_{j,\parallel}$
50.0	320.0	11.000	1.000	1.000

$s_{ETA,\perp}$ [mm]	$c_{ETA,\perp}$ [mm]	$V_{Rk,c,ETA,\perp}$ [kN]	$\alpha_{g,V,\perp}$	$\alpha_{j,\perp}$	$e_{c,V,\perp}$ [mm]	$\psi_{g,V,\perp}$
-	-	-	-	-	-	-

$\gamma_{M,m}$
2.500

$V_{Rk,c,\parallel}$ [kN]	$V_{Rd,c,\parallel}$ [kN]	$V_{Ed,\parallel}$ [kN]	$\beta_{\parallel}$
11.000	4.400	0.750	0.170

$V_{Rk,c,\perp}$ [kN]	$V_{Rd,c,\perp}$ [kN]	$V_{Ed,\perp}$ [kN]	$\beta_{\perp}$
-	-	-	-

$\beta_{\parallel+\perp}$
0.170

5 Combined tension and shear loads (EOTA TR054, Section 4.2.3)

β_N	β_V	α	Utilization $\beta_{N,V}$ [%]	Status
0.981	0.170	1.000	96	OK

$(\beta_N + \beta_V) / 1.2 \leq 1$

Input data and results must be checked for conformity with the existing conditions and for plausibility!
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6 Warnings

- The anchor design methods in PROFIS Engineering require rigid anchor plates per current regulations (EN1992-4, AS5216, etc.). This means load re-distribution on the anchors due to elastic deformations of the anchor plate are not considered - the anchor plate is assumed to be sufficiently stiff, in order not to be deformed when subjected to the design loading. PROFIS Engineering calculates the minimum required anchor plate thickness with FEM to limit the stress of the anchor plate based on the assumptions explained above. The proof if the rigid anchor plate assumption is valid is not carried out by PROFIS Engineering. Input data and results must be checked for agreement with the existing conditions and for plausibility!
- The equations presented in this report are based on metric units. When inputs are displayed in imperial units, the user should be aware that the equations remain in their metric format.
- Only the local load transfer from the anchor(s) to the wall is considered, a further load transfer in the wall is not covered by PROFIS!
- Wall is assumed as being perfectly aligned vertically – checking required(!): Noncompliance can lead to significantly different distribution of forces and higher tension loads than those calculated by PROFIS. Masonry wall must not have any damages (neither visible nor not visible)! While installation, the positioning of the anchors needs to be maintained as in the design phase i.e. either relative to the brick or relative to the mortar joints.
- The effect of the joints on the compressive stress distribution on the plate / bricks was not taken into consideration.
- If no significant resistance is felt over the entire depth of the hole when drilling (e.g. in unfilled butt joints), the anchor should not be set at this position or the area should be assessed and reinforced. Hilti recommends the anchoring in masonry always with sieve sleeve. Anchors can only be installed without sieve sleeves in solid bricks when it is guaranteed that it has not any hole or void.
- The accessories and installation remarks listed on this report are for the information of the user only. In any case, the instructions for use provided with the product have to be followed to ensure a proper installation.
- The compliance with current standards (e.g. EOTA TR054, EOTA TR053) is the responsibility of the user.
- The Young's modulus of the wall E_{wall} (not plastered!) is determined in accordance to EN 1996-1-1:2012
- Drilling method (hammer, rotary) to be in accordance with the approval!
- Masonry should be built according to industry standards.
- Please note that, for ETA approved masonry units, the resistance and parameters are only valid for that particular brick (hollow/solid) or for bricks of the same base material with larger size and larger compressive strength (solid), according to EOTA TR054.
- Compressive stress (0.55 N/mm^2) on plaster/brick must be checked by user. Hilti will not take any responsibility for cracks or damage!

Fastening meets the design criteria!

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7 Installation data

Baseplate, steel: S 235; E = 210,000.00 N/mm^2; f_{yk} = 235.00 N/mm^2

Profile: no profile

Hole diameter in the fixture: d_f = 14.0 mm

Plate thickness (input): 8.0 mm

Recommended plate thickness: not calculated

Drilling method: Drilled in hammer mode

Cleaning: compressed air

Fastening option: Pre-fastening

Anchor type and size: HIT-HY 270 + HAS-U 8.8 M12

Item number: 2223883 HAS-U 8.8 M12x300 (insert) / 2092828 HIT-HY 270 (mortar)

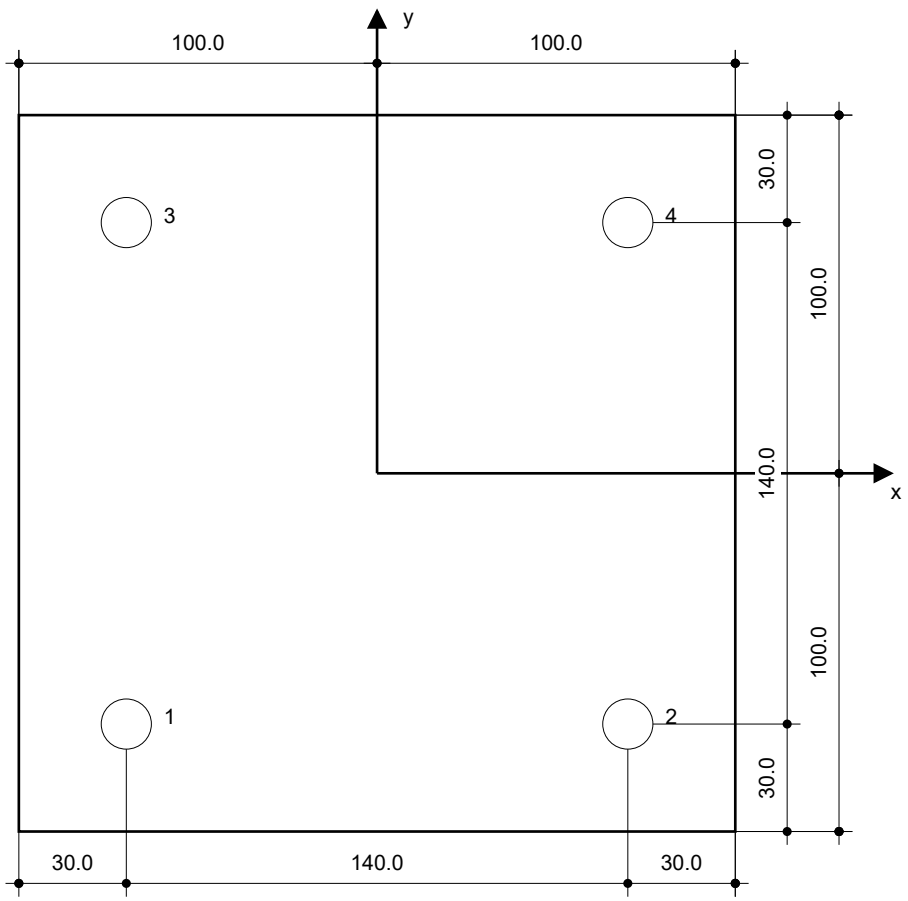
Maximum installation torque: 10 Nm

Hole diameter in the base material: 14.0 mm

Hole depth in the base material: 220.0 mm

Minimum thickness of the base material: 250.0 mm

Hilti HAS-U 8.8 threaded rod with HIT-HY 270 injection mortar with 220 mm embedment hef, M12, Steel galvanized, Hammer drilled installation per ETA-22/0395



Coordinates Anchor [mm]

Anchor	x	y	c_{-x}	c_{+x}	c_{-y}	c_{+y}
1	-70.0	-70.0	430.0	470.0	930.0	1,070.0
2	70.0	-70.0	570.0	330.0	930.0	1,070.0
3	-70.0	70.0	430.0	470.0	1,070.0	930.0
4	70.0	70.0	570.0	330.0	1,070.0	930.0

Input data and results must be checked for conformity with the existing conditions and for plausibility!
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Design:	Masonry - 6 Feb 2026	Date:	6. 02. 2026
Fastening Point:			

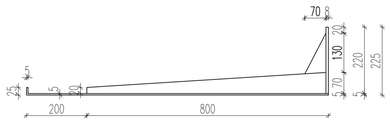
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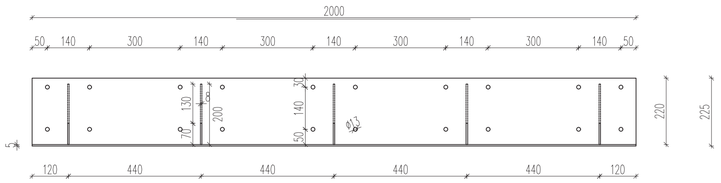
Input data and results must be checked for conformity with the existing conditions and for plausibility!
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8 x 4 M12/250 mm (8.8)
+ HILTI HIT-HY (odvisno od materiala):
- če se sidra v polno opeko se uporabi HIT-HY 270
- če se sidra v votlo opeko se uporabi kombinacija HIT-HY 270 + mrežica HIT-SC
- če se sidra v AB preklado se uporabi HIT-HY 200 (v tem primeru so lahko navojne palice krajše - M12/160 mm (8.8)
OPOMBA: med nadstrešek ter zid se namesti trda izolacija debeline 30 mm - PURENIT

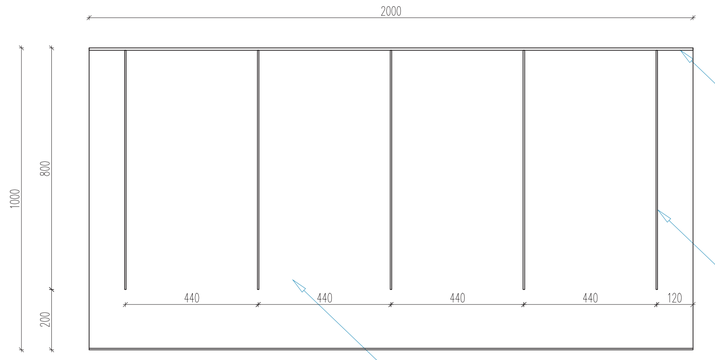
prerez:

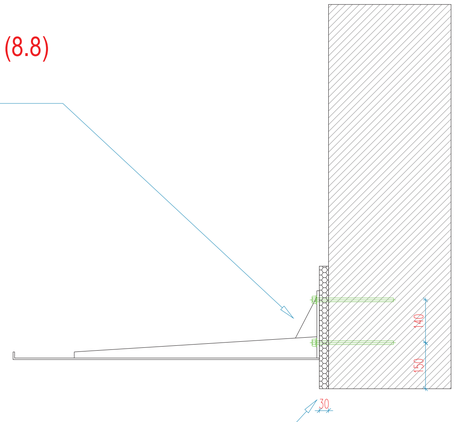


pogled sidrne pločevine:



tloris:





PURENIT 30 mm

sidrna pločevina t = 8 mm (S235)

rebra t = 5 mm (S235)

pločevina t = 5 mm (S235)

CBD Contemporary Building Design — gradbeno in poslovno projektiranje d.o.o., Lopata 19 G, SI-3000 Celje

Investitor:	Ministrstvo za javno upravo, direktorat za stvarno premoženje Tržaška cesta 21, 1000 Ljubljana		Ime projekta: Nadstrešnica na Kotnikovi ulici
Projektant:	CBD d.o.o., Lopata 19g, 3000 Celje		Vrsta načrta: NAČRT S PODROČJA GRADBENIŠTVA
Pooblaščeni inženir:	dr. Jurij Jančar, univ.dipl.inž.grad.	IZ. ŠT. G-4821	
Izdelal:	Aleksander Felc, mag. inž. grad	IZ. ŠT.	Vsebina načrta: Tehnični prikaz
Identifikacijska št.:	AF-015/2026		
Datum:	FEBRUAR 2026		
Faza načrtovanja:	Manjša rekonstrukcija		Merilo: 1:10 — Št. / oznaka načrta: 1