

www.hilti.com

Company:		Page:	1
Address:		Specifier:	
Phone   Fax:		E-Mail:	
Design:	Masonry - Jul 3, 2024	Date:	7/3/2024
Fastening point:			

**Specifier's comments:**

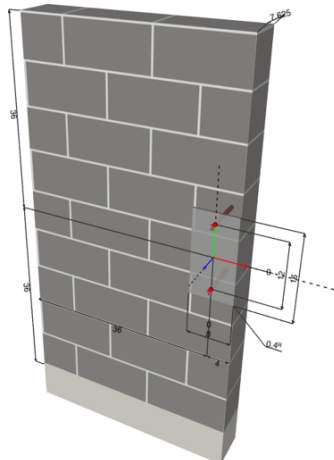
**1 Input data**

<b>Anchor type and diameter:</b>	<b>HY 270 + threaded rod A36 3/4</b>
Item number:	2198030 HAS-V-36 3/4"x10" (element) / 2194247 HIT-HY 270 (adhesive)
Specification text:	Hilti HIT-V threaded rod with HIT-HY 270 injection mortar with 6.75 in embedment hef, 3/4, Steel galvanized, Hammer drilled installation per instruction for use
Effective embedment depth:	$h_{ef} = 6.750$ in.
Material:	ASTM A 36
Evaluation Service Report:	Hilti Technical Data
Issued   Valid:	-   -
Proof:	Design Method ASD Masonry
Stand-off installation:	$e_b = 0.000$ in. (no stand-off); $t = 0.400$ in.
Anchor plate <sup>R</sup> :	$l_x \times l_y \times t = 8.000$ in. x $16.000$ in. x $0.400$ in.; (Recommended plate thickness: not calculated)
Profile:	no profile
Base material:	Grout-filled CMU, L x W x H: $16.000$ in. x $8.000$ in. x $8.000$ in.; Joints: vertical: $0.375$ in.; horizontal: $0.375$ in. Base material temperature: $68$ °F
Installation:	Face installation
Seismic loads	no



<sup>R</sup> - The anchor calculation is based on a rigid anchor plate assumption.

**Geometry [in.]**

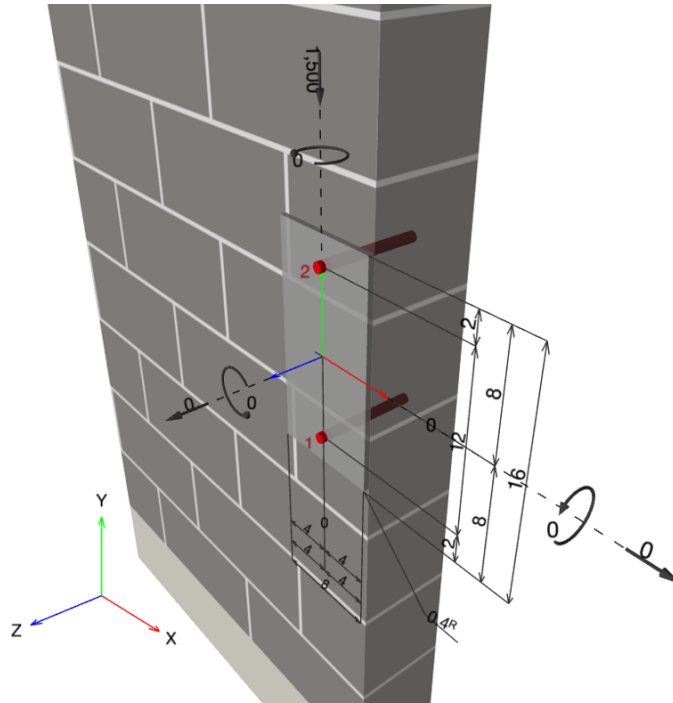


www.hilti.com

Company:  
 Address:  
 Phone | Fax:  
 Design: Masonry - Jul 3, 2024  
 Fastening point:

Page: 2  
 Specifier:  
 E-Mail:  
 Date: 7/3/2024

**Geometry [in.] & Loading [lb, in.lb]**



**1.1 Design results**

Case	Description	Forces [lb] / Moments [in.lb]	Seismic	Max. Util. Anchor [%]
1	Combination 1	N = 0; V <sub>x</sub> = 0; V <sub>y</sub> = -1,500; M <sub>x</sub> = 0; M <sub>y</sub> = 0; M <sub>z</sub> = 0;	no	105



www.hilti.com

Company:		Page:	3
Address:		Specifier:	
Phone   Fax:		E-Mail:	
Design:	Masonry - Jul 3, 2024	Date:	7/3/2024
Fastening point:			

## 2 Proof I Utilization (Governing Cases)

Loading	Proof	Design values [lb]		Utilization	Status
		Load	Capacity	$\beta_N / \beta_V$ [%]	
Tension	Overall strength	0	0	0 / -	N/A
Shear	Bond strength	-	-	- / 105	not recommended

Loading	$\beta_N$	$\beta_V$	$\alpha$	Utilization $\beta_{N,V}$ [%]	Status
Combined tension and shear loads	-	-	-	-	N/A

## 3 Warnings

- Please consider all details and hints/warnings given in the detailed report!

### Fastening does not meet the design criteria!

**Table 3 — Hilti HIT-HY 270 allowable adhesive bond shear loads for threaded rods and reinforcing bars in the face of grout-filled concrete masonry walls<sup>1,2,3,4,5,6,7,8</sup>**

Nominal anchor diameter	Rebar size	Effective embedment in. (mm) <sup>11</sup>	Shear lb (kN)	Spacing <sup>9</sup>			Edge distance <sup>10</sup>			
				Critical $s_{cr}$ in. (mm)	Minimum $s_{min}$ in. (mm)	Load reduction factor @ $s_{min}$ <sup>12</sup>	Critical $c_{cr}$ in. (mm)	Minimum $c_{min}$ in. (mm)	Load reduction factor @ $c_{min}$ <sup>12</sup>	
									Load perpendicular to edge	Load parallel to edge
3/8	#3	3-3/8 (86)	850 (3.8)	13.5 (343)	4 (102)	1.00	12 (305)	4 (102)	0.88	1.00
1/2	#4	4-1/2 (114)	1,495 (6.7)	18 (457)		1.00	12 (305)		0.49	1.00
5/8	#5	5-5/8 (143)	2,615 (11.6)	22.5 (572)		0.50	20 (508)		0.40	0.78
3/4	#6	6-3/4 (171)	4,090 (18.2)	27 (686)		0.50	20 (508)		0.26	0.60

The following footnotes apply to both Tables 1 and 2:

REDUCTION FACTOR FOR BOLT SPACING (12") = 0.67  
 REDUCTION FACTOR FOR EDGE DISTANCE (4") = 0.78  
 REDUCED ALLOWABLE SHEAR CAPACITY = 4090 LB \* 0.67 \* 0.78 = 2137.4 LB

LOAD PER ANCHOR BOLT = 750 LB  
 IC = 750 LB/2137.4 LB = 0.35 < 1.0 O.K.



www.hilti.com

Company:		Page:	4
Address:		Specifier:	
Phone   Fax:		E-Mail:	
Design:	Masonry - Jul 3, 2024	Date:	7/3/2024
Fastening point:			

---

#### 4 Remarks; Your Cooperation Duties

- Any and all information and data contained in the Software concern solely the use of Hilti products and are based on the principles, formulas and security regulations in accordance with Hilti's technical directions and operating, mounting and assembly instructions, etc., that must be strictly complied with by the user. All figures contained therein are average figures, and therefore use-specific tests are to be conducted prior to using the relevant Hilti product. The results of the calculations carried out by means of the Software are based essentially on the data you put in. Therefore, you bear the sole responsibility for the absence of errors, the completeness and the relevance of the data to be put in by you. Moreover, you bear sole responsibility for having the results of the calculation checked and cleared by an expert, particularly with regard to compliance with applicable norms and permits, prior to using them for your specific facility. The Software serves only as an aid to interpret norms and permits without any guarantee as to the absence of errors, the correctness and the relevance of the results or suitability for a specific application.
- You must take all necessary and reasonable steps to prevent or limit damage caused by the Software. In particular, you must arrange for the regular backup of programs and data and, if applicable, carry out the updates of the Software offered by Hilti on a regular basis. If you do not use the AutoUpdate function of the Software, you must ensure that you are using the current and thus up-to-date version of the Software in each case by carrying out manual updates via the Hilti Website. Hilti will not be liable for consequences, such as the recovery of lost or damaged data or programs, arising from a culpable breach of duty by you.