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Company:

Address:

Phone | Fax:

Design:

Fastening point:

Concrete - Jun 22, 2023

Page:

Specifier:

E-Mail:

Date:

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6/22/2023

Specifier's comments:

## 1 Anchor Design

### 1.1 Input data

Anchor type and diameter:

HIT-HY 200 V3 + HIT-Z 1/2

Item number:

2018443 HIT-Z 1/2" x 4 1/2" (element) / 2334276 HIT-HY 200-R V3 (adhesive)

Effective embedment depth:

$h_{ef, opti} = 2.750$  in. ( $h_{ef, limit} = 3.750$  in.)

Material:

DIN EN ISO 4042

Evaluation Service Report:

ESR-4868

Issued | Valid:

11/1/2022 | 11/1/2024

Proof:

Design Method ACI 318-19 / Chem

Stand-off installation:

$e_b = 0.000$  in. (no stand-off);  $t = 0.750$  in.

Anchor plate<sup>CBFEM</sup>:

$l_x \times l_y \times t = 12.000$  in. x  $12.000$  in. x  $0.750$  in.;

Profile:

Rectangular HSS (AISC), HSS6X4X.250; (L x W x T) =  $6.000$  in. x  $4.000$  in. x  $0.250$  in.

Base material:

cracked concrete,  $2500$ ,  $f_c' = 2,500$  psi;  $h = 6.000$  in., Temp. short/long:  $32/32$  °F

Installation:

**hammer drilled hole, Installation condition: Dry**

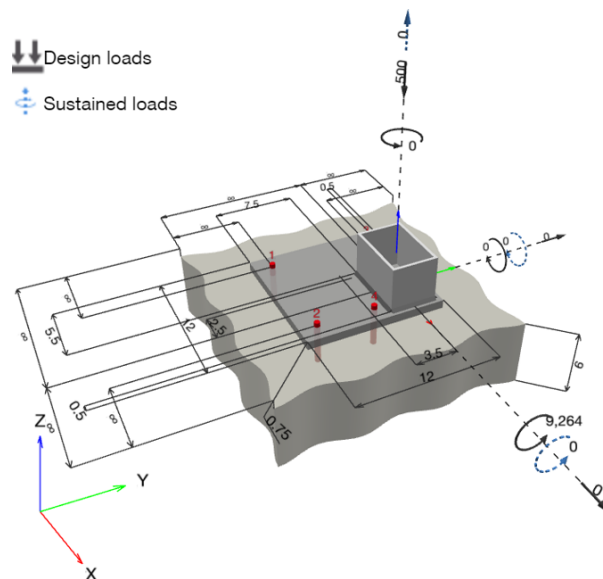
Reinforcement:

tension: not present, shear: not present; no supplemental splitting reinforcement present  
edge reinforcement: none or < No. 4 bar



<sup>CBFEM</sup> - The anchor calculation is based on a component-based Finite Element Method (CBFEM)

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



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### 1.7 Installation data

Profile: Rectangular HSS (AISC), HSS6X4X.250; (L x W x T) = 6.000 in. x 4.000 in. x 0.250 in.

Hole diameter in the fixture (pre-setting) :  $d_f = 0.562$  in.

Hole diameter in the fixture (through fastening) :  $d_f = 0.625$  in.

Plate thickness (input): 0.750 in.

Drilling method: Hammer drilled

Cleaning: Compressed air cleaning of the drilled hole according to instructions for use is required

Anchor type and diameter: HIT-HY 200 V3 + HIT-Z 1/2

Item number: 2018443 HIT-Z 1/2" x 4 1/2" (element) / 2334276 HIT-HY 200-R V3 (adhesive)

Maximum installation torque: 354 in.lb

Hole diameter in the base material: 0.562 in.

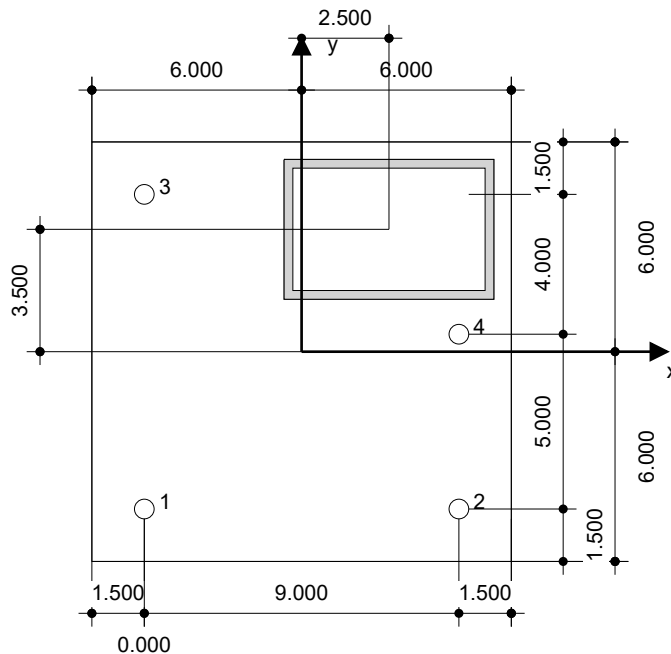
Hole depth in the base material: 3.750 in.

Minimum thickness of the base material: 5.000 in.

1/2 Hilti HIT-Z Carbon steel non-cleaning bonded expansion anchor with Hilti HIT-HY 200 V3 Safe Set System

#### 1.7.1 Recommended accessories

Drilling	Cleaning	Setting
<ul style="list-style-type: none"> <li>Suitable Rotary Hammer</li> <li>Properly sized drill bit</li> </ul>	<ul style="list-style-type: none"> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>Dispenser including cassette and mixer</li> <li>Torque wrench</li> </ul>



Coordinates Anchor [in.]

Anchor	x	y	c <sub>-x</sub>	c <sub>+x</sub>	c <sub>-y</sub>	c <sub>+y</sub>
1	-4.500	-4.500	-	-	-	-
2	4.500	-4.500	-	-	-	-
3	-4.500	4.500	-	-	-	-
4	4.500	0.500	-	-	-	-