

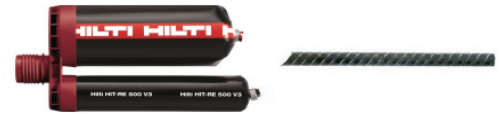
Company:		Page:	1
Address:		Specifier:	
Phone Fax:		E-Mail:	
Design:	Rebar - May 24, 2023	Date:	25.08.2023
Rebar application:	Sidewalk to Ex Deck Connection		

Specifier's comments: Dowels into deck for shear connection

1. Input data

General

Design standard	
Calculation method	Hilti Method
Post installed rebar approach	Overlay
Loading type	Static



Product

Mortar	HIT-RE 500 V3
Connector	Rebar #4
Item number	2123404 HIT-RE 500 V3 (adhesive)
Effective embedment depth	Existing concrete: $h_{ef,ex} = 4.000$ in.
Material	ASTM A706 Grade 60
Evaluation Service Report	ESR-3814
Issued	01.01.2023
Valid	01.01.2025
Proof	Design method Hilti Method
Epoxy coated reinforcement	no

Material

Concrete material	Cracked concrete, 4000, $fc' = 4,000$ psi;
Surface treatment	Not roughened, steel formed surface
Steel strain limit	0.02

Installation and temperature

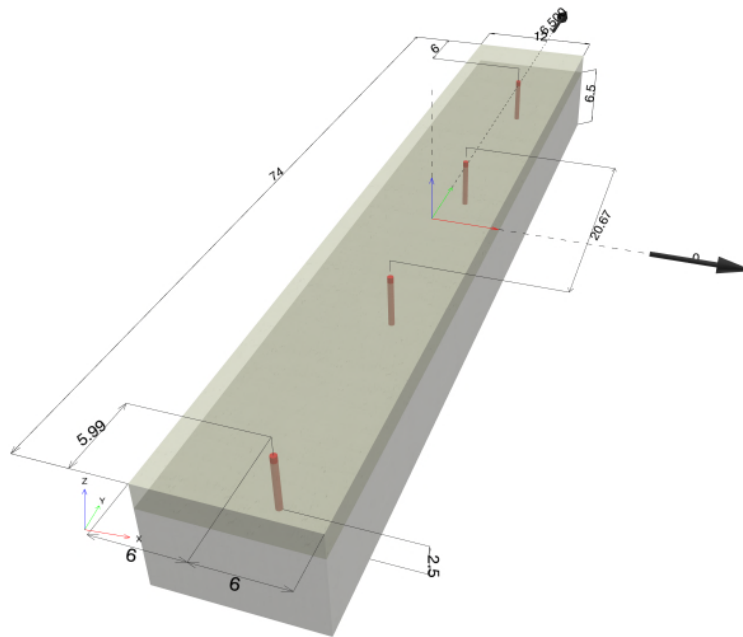
Temperature	During service: 32 °F / 32 °F (short / long term)
Installation	Hammer Drilling, Installation Condition: Dry Concrete

Company:
Address:
Phone | Fax: |
Design: Rebar - May 24, 2023
Rebar application: Sidewalk to Ex Deck Connection

Page: 2
Specifier:
E-Mail:
Date: 25.08.2023

1.1. Geometry & Loading

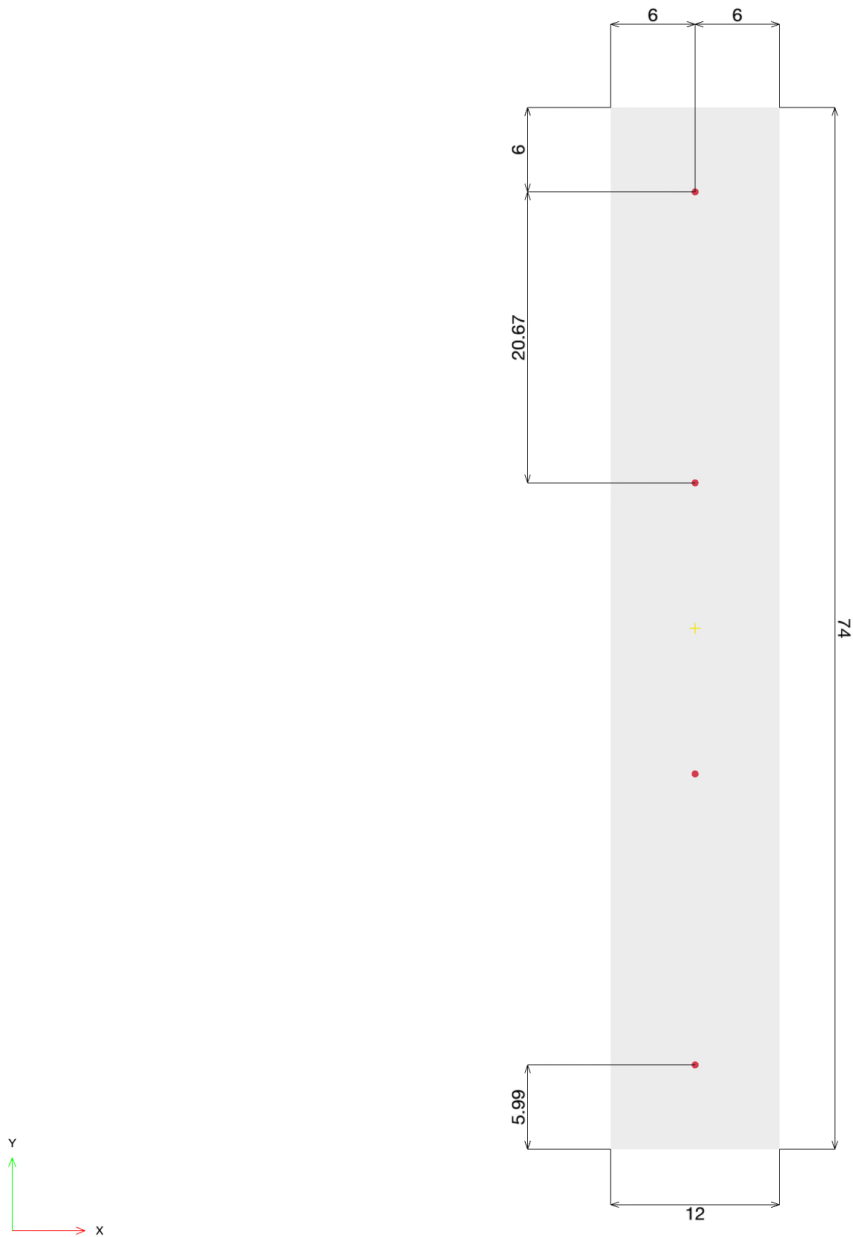
Geometrical dimensions in [in]. Loading values in [lb, in-lb]



Company:
Address:
Phone | Fax: |
Design: Rebar - May 24, 2023
Rebar application: Sidewalk to Ex Deck Connection

Page: 3
Specifier:
E-Mail:
Date: 25.08.2023

1.2. Cross section view



Company:		Page:	4
Address:		Specifier:	
Phone Fax:		E-Mail:	
Design:	Rebar - May 24, 2023	Date:	25.08.2023
Rebar application:	Sidewalk to Ex Deck Connection		

2. Loads and Cross section analysis

2.1. Load combinations

Case	Description	Forces [lb]	Load type	Max. Utilization [%]
1	Combination 1	$V_x = 0; V_y = 6,500;$	Static	13

Company:		Page:	5
Address:		Specifier:	
Phone Fax:		E-Mail:	
Design:	Rebar - May 24, 2023	Date:	25.08.2023
Rebar application:	Sidewalk to Ex Deck Connection		

3. Overview of results

3.1. Hilti Method Shear strength verification

Results

V_n [lb]	ϕ [-]	ϕV_n [lb]	V_u [lb]
69,089	0.750	51,817	6,500

Company:		Page:	6
Address:		Specifier:	
Phone Fax:		E-Mail:	
Design:	Rebar - May 24, 2023	Date:	25.08.2023
Rebar application:	Sidewalk to Ex Deck Connection		

4. Warnings

This design exclusively considers the local load transfer in the considered interface between new and existing concrete. The joint surfaces for concreting must be roughened to fulfil the design assumption.

Not required per input.
Please clarify

The capacity of the cross-section has to be designed separately.

The installation (drilling, cleaning, setting) must be according to the approval!

The accessory list in this report is 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.

Restraint (cracking) forces at the perimeter are not taken into account. The designer should consider alternate measures to counteract possible delaminating of the overlay due to contact shrinkage. EOTA Technical Reports TR066 provides guidance on a method of considering these forces.

Interface meets the design criteria!

Company:		Page:	7
Address:		Specifier:	
Phone Fax:		E-Mail:	
Design:	Rebar - May 24, 2023	Date:	25.08.2023
Rebar application:	Sidewalk to Ex Deck Connection		

5. Remarks; Your cooperation duties

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