

REF-A14

BASEPLATE CONNECTION FOR SLAB EXTENSION
PROJECT

48, Avenue building
Slab extension
baseplate application

LOCATION

Rajkot, Gujarat, India

CLIENT

A-One Infrabuild
Developers LLP

DESIGNER

Mr. Sanay Unjia

INSTALLATION

2024


Application

Slab extension baseplate connection

Design std.

EN 1992-4 (Post-installed anchors)

Hardware

HIT-HY 200 R V3, TE-50, HDE-A12

Software

PROFIS Engineering (anchor to concrete)

Services

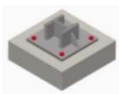
Application training, consultation at jobsite

CHALLENGES

- Extension of slab and transferring loads to beam, column
- Distribution of minimum stress on existing structure
- Approved manufacturer for post-installed connection

HILTI TOTAL SOLUTION

- ✓ Connection to existing beam, column by post-installed anchors
- ✓ Bonded anchors for ease of installation
- ✓ Submission of design with necessary ETA approval


LOAD/ CONDITIONS

Static

PROJECT HIGHLIGHT

Submission of design and solution on time

APPLICATION AND REQUIREMENT



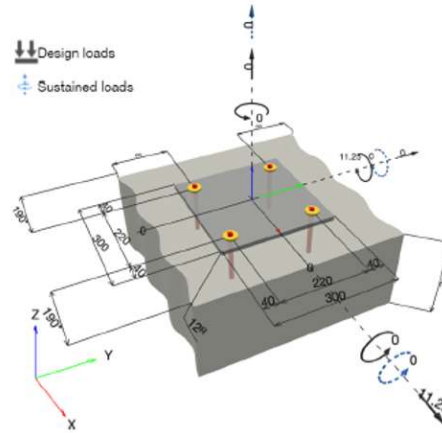
Application Details: Slab extension

Without disturbing the existing structure, we had to extend the floor slab, transferring the loads to the existing beam and column. The developer wanted to increase the saleable area. However, the structure almost in completion stage it had to fulfil the structure compliance.

Post-installed anchor solution

Hilti discussed on the possibilities of the required solution which will exhibit minimum stress on the existing structure as well as solve the requirement for transferring loads without any modification in existing structure design. Post-installed chemical anchors were finalized as reliable and easy solution with respect to installation.

APPROACH TOWARDS SOLUTION



Hilti approach to get specified

Hilti got the requirement during a visit to a developer's office. Developer decided to have a joint discussion with structure consultant. After several discussions, the structural consultant liked the proposal by Hilti and specification got approved based on the submission of design done in PROFIS and ETA approvals.

Post-installed anchors and other tools

- Post-installed chemical anchors- **HIT-HY 200 R V3 + HIT-V 5.8** of size **M16x165 mm**
- Drilling was done with **TE-50** and adhesive dispenser Hilti **HDE-A12** was used for filling holes.

THE FINAL OUTCOME



Ongoing anchor installation and finished post-installed connection

1 Input data		
Anchor type and diameter:	HIT-HY 200-R V3 + HIT-V (5.8) M16	
Return period (service life in years):	50	
Item number:	2057873 HIT-V-5.8 M16x200 (element) / 2262134 HIT-HY 200-R V3 (adhesive)	
Filling set or any suitable annular gap filling solution		
Effective embedment depth:	$f_{p,eff} = 124.0 \text{ mm}$ ($f_{p,max} = 194.0 \text{ mm}$)	
Material:	5.8	
Evaluation Service Report:	ETA 19/0001	
Issued / Valid:	02/06(2023) -	
Proof:	SCPA based on EN 1992-4 and its bulletin 58, Chemical	
Stand-off installation:	$a_{st} = 0.0 \text{ mm}$ (no stand-off), $l = 12.0 \text{ mm}$	
Anchor plate ^{a)} :	$l_p \times l_s \times t = 300.0 \text{ mm} \times 300.0 \text{ mm} \times 12.0 \text{ mm}$, (Recommended plate thickness: not calculated)	
Profile:	no profile	
Base material:	cracked concrete, $M 25$, $f_{cm} = 20.00 \text{ N/mm}^2$, $h = 230.0 \text{ mm}$, Temp. short/long: 40/24 °C, User-defined partial material safety factor $\gamma_m = 1.500$	
Installation:	hammer drilled hole, installation condition: Dry	
Reinforcement:	no reinforcement or reinforcement spacing $s = 150 \text{ mm}$ (any d) or $\leq 100 \text{ mm}$ ($d \leq 10 \text{ mm}$) with longitudinal edge reinforcement $d = 12.0 \text{ (min)} \times$ close mesh (strips, hangers) $s = 100.0 \text{ (min)}$ Reinforcement to control splitting acc. to EN 1992-4, 7.2.1.7 (2) (b) 2) present	

^{a)} - The anchor calculation is based on a rigid anchor plate assumption.