



Hilti HAP 1.15 Elevator Hoist Anchor Point

Submission Folder

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Hoist anchor point HAP 1.15



APPLICATIONS

- Designed for load lifting applications

ADVANTAGES

- No limitations in load directions, also for use on the wall
- Compact design and low profile
- Two or more HAP 1.15 can be combined to increase the total WLL
- Design meets application requirements for dynamic loads in any direction (dynamic safety factor = 1.8)
- HAP 1.15 is designed for use with standard HST3 M12 anchors
- Supplied pre-assembled (one piece), no need to assemble individual components

Technical data

Dispenser, setting tool, accessory, Hoist anchor points
tester type



Technical data

| | |
|---------------------------------------|-----------------------|
| Anchor type | Plastic anchor |
| Head configuration | Flat head, Round head |
| Material composition | Polyamide PA 6 |
| Material, corrosion | Plastic |
| In-service temperature – range | -40 - 80 °C |
| Installation direction | Wall |

| | | |
|-----------------------------|----------------------------|--------------------|
| Ordering designation | Sales pack quantity | Item number |
| HAP 1.15 | 2 pc | 2032179 |

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HAP 1.15 Hoist anchor plate

Proven solution for hoisting applications

Anchor technology & design

Heavy / medium duty metal anchors

Plastic / light duty / other metal anchors

Chemical anchors

Anchor version

Benefits



- No limitation in load direction, hook (shackle) can rotate and swivel, symmetric design of base plate with 4 anchors
- Design fits application requirements of vibratory dynamic loads from motorized hoisting with dynamic safety factor of 1.8
- Anchorage of hoist point can be designed with PROFIS Anchor software, cracked and un-cracked concrete, \geq C20/25
- Recommended anchor HST3 M12 ($h_{ef}=70\text{mm}$)
- Two or more HAP 1.15 can be combined to increase total WLL
- Delivered pre-assembled (one piece), no need for assembly
- Compact design, only 155 x 155 x 52 mm (when shackle is folded to plate)
- Global safety factor of 4 for all steel connections

Applications

The HAP 1.15 is designed for temporary and permanent application under dry indoor conditions, to be used as post installed "master hoist point" for installation and/or maintenance in elevator shafts. It can be used with manual or motor hoists and bears a working load up to 1.15 metric tons in variable directions.

Basic loading data (for a single anchor)

Data for WLL_{total} applies to

- Correct design of anchorage (see "design of anchorage")
- Correct setting of anchors
- No edge distance influence
- Cracked concrete, C20/25, $f_{ck,cube} = 25 \text{ N/mm}^2$
- Cracked concrete, ACI 318-14 design (cylindrical test method): $f'_c = 2500 \text{ psi}$
- No shock loading; vibratory dynamic safety factor γ_{dyn} up to 1.8

| | | | Single point | Single pulley | Fixed motor hoist |
|---------------------------------|-----------|--------------|----------------|---------------|-------------------|
| | | | | | |
| $\alpha < 20^\circ$ | WLL total | [metric ton] | 1,15 | 2,25 | 0,55 |
| $20^\circ < \alpha < 45^\circ$ | WLL total | [metric ton] | 1,15 | 2,10 | 0,50 |
| $45^\circ < \alpha < 60^\circ$ | WLL total | [metric ton] | 1,15 | 2,00 | 0,45 |
| $60^\circ < \alpha < 90^\circ$ | WLL total | [metric ton] | 1,15 | 1,60 | 0,40 |
| $90^\circ < \alpha < 120^\circ$ | WLL total | [metric ton] | Not applicable | 1,15 | Not applicable |

a) Keep distance of min. $4 \times h_{ef}$ between anchors of the two HAP's

Design of anchorage

HAP 1.15 is designed to be used as hoist point for lifting loads under variable directions in elevator installation or maintenance.

The design of an anchorage for the HAP 1.15 must account for varying load conditions (varying directions, dynamic effects, etc.) For this the anchorage for HAP 1.15 has to be designed according to extreme load cases: A concrete anchor can only be considered as suitable for use with the HAP 1.15 hoist point if the approved anchor satisfies ALL of the following load scenarios (e.g. by PROFIS calculation¹) with ETAG or ICC calculation method:

ETA Design

- Base material: acc. to onsite conditions
- Cracked or un-cracked concrete
- Slab thickness: onsite slab thickness²
- Dimensions of baseplate see picture
- Partial safety factor for load $\gamma_L = 1.8$

Load scenario 1 (pure tension):

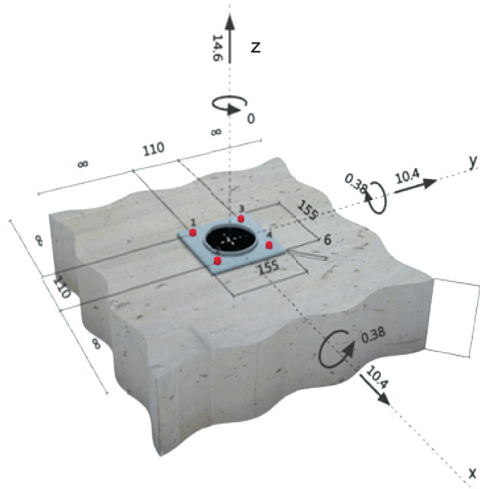
| | | |
|-------|------|----|
| F_z | 20.7 | kN |
|-------|------|----|

Load scenario 2 (diagonal 45°):

| | | |
|-------|------|-----|
| F_z | 14.6 | kN |
| F_x | 10.4 | kN |
| F_y | 10.4 | kN |
| M_x | 0.38 | kNm |
| M_y | 0.38 | kNm |

Load scenario 3 (diagonal shear):

| | | |
|-------|------|-----|
| F_x | 14.6 | kN |
| F_y | 14.6 | kN |
| M_x | 0.54 | kNm |
| M_y | 0.54 | kNm |



For use of HAP 1.15 as ETAG approved anchorage, Hilti recommends use of HST3 M12

¹ Free download of PROFIS Anchor design software from www.hilti.com Service & Support

² Minimum slab thickness according to tech. data of applied anchors

Onsite qualification

1. Make sure anchors for the HAP 1.15 are correctly installed. Make sure shackle is not attached (de-install shackle if necessary). Connect ring bolt adapter of HAT 30 to center bolt.



2. Connect HAT 30 with ring bolt adapter and position the tester with edges of tester baseplate parallel to edges of HAP plate.



Turn crank in clockwise direction until legs are in contact with the base material. Check that pullout force acts parallel to the axis of the anchors and parallel to the legs of the HAT 30 and HAP 1.15 is centered with HAT 30.

3. Set the red hand of the gauge to zero.



4. Hold the HAT 30 by the grip while increasing the load on the HAP 1.15 by turning the crank in a clockwise direction. Increase the load until proof load of 26.5 kN is attained.



5. Keep the proof load on HAP 1.15 for at least 5 minutes.



6. Check the load on the HAT 30 after 5 minutes (black hand) and note down the difference to the initially applied proof load (red hand).

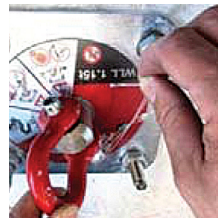
Release the load by turning the crank counterclockwise.

7. Remove HAT 30 and ring bolt adapter.

Perform visual check on HAP 1.15 and base material (damages, deformations, cracks).

The Hoist Anchor Kit has passed the test and can be loaded with a maximal working load of 1.15 metric tons if the following requirements are met:

- The applied proof load of 26.5 kN decreased less than 10% during the 5 minutes test duration
- No damage or deformation of the HAP 1.15
- No damage (e.g. cracks) in the base material



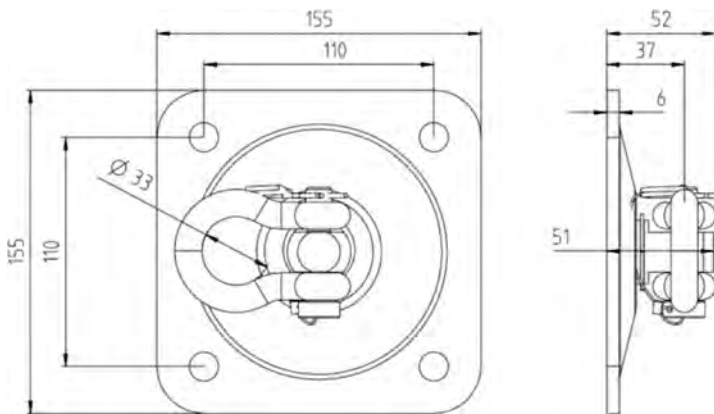
8. Install the shackle and plug in the safety pin, optional is to mark or label the HAP 1.15 with date of proof loading, name of testing person

Materials

Material quality

| Part | Material / Mechanical properties or standard |
|------------------|-------------------------------------------------------------------------------------------------------|
| Shackle axis | Galvanized steel $R_m > 550\text{N/mm}^2$ |
| Shackle (U-bolt) | Material, functional dimensions and mech. properties acc. to EN 13889, coated with 100my powder laque |
| Eye Bolt | Galvanized steel $R_m > 550\text{N/mm}^2$ |
| Base plate | Galvanized steel $R_m > 355\text{N/mm}^2$ |

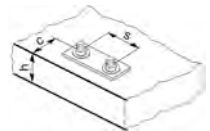
Setting information



HAP 1.15

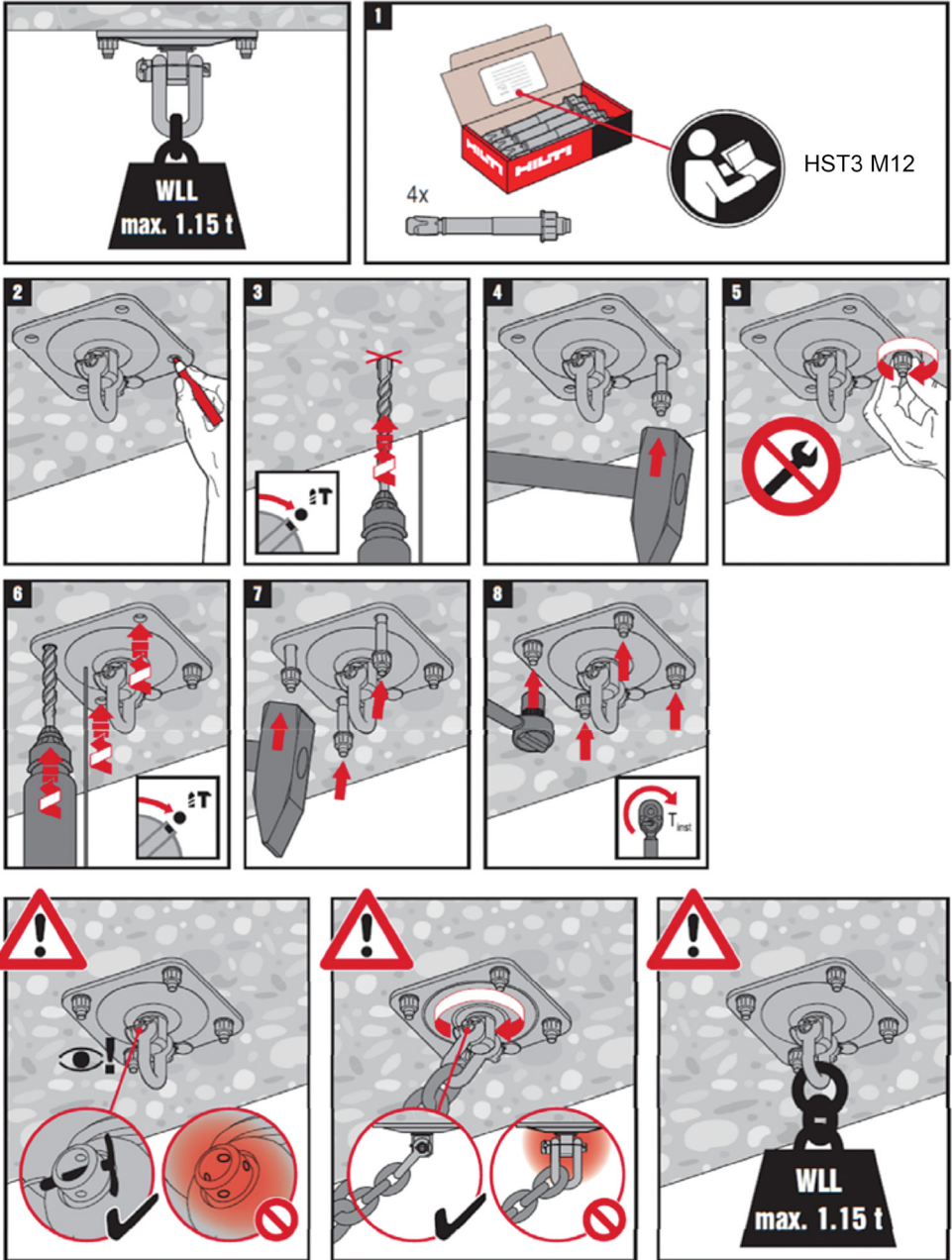
| | | | |
|---------------------------------|------------|------|--------------------------------------------------------------|
| Minimum base material thickness | h_{\min} | [mm] | according to technical data of applied anchors |
| Spacing (Hoist Anchor Plate) | s | [mm] | 110 |
| Edge distance | c | | according to technical data of applied anchors ^{a)} |

a) For smaller edge distances the design loads have to be reduced (see ETAG 001, Annex C).



Setting instructions

* For detailed information on installation see instruction for use given with the package of the product



Attn. : To whom it may concern

Date : 26 September 2023
Ref. : 094/FP/DY/23

Subject : Country of Origin – Hilti HAP 1.15 Hoist Anchor Plate

Dear Sir / Madam,

Enclosed please find the information of Hilti HAP 1.15 Hoist Anchor Plate.

Brand Name : Hilti

Model Name : Hilti HAP 1.15 Hoist Anchor Plate

Manufacturer : Hilti Corporation

Address of Manufacturer : FL-9494, Principality of Liechtenstein.

Manufacturer Contact Person : Dennis Yeung

Supplier : Hilti (Hong Kong) Ltd

Address of Supplier : 701-704, 7/F, Tower A, Manulife Financial Centre,
223 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

Supplier Contact Person : Dennis Yeung (+852 9723 4621)

Country of Origin : Germany

Should you have further questions, please do not hesitate to contact our Technical Representatives, Customer Service Hotline at 8228-8118, or email us at hksales@hilti.com.

Yours faithfully,



Dennis Yeung
Head of Product Leadership Strategy, F&P



Hilti HAP 1.15 Elevator Hoist Anchor Point Job Reference

| Year | Project Name | Customer Name | Project type |
|------|---------------------------------------------------------------------------|--------------------------------------|----------------------|
| 2020 | TMCLK C4 NORTH CONNECT TUNNEL BLDGS | GAMMON CONSTRUCTION LIMITED | Office |
| 2020 | SCL 1123 EXHIBITION STATION | LEIGHTON - CHINA STATE JOINT | Infrastructure |
| 2020 | ARTIST HOSTEL - WEST KLN | CHAMPION TIME ENGINEERING LIMITED | Hospitality |
| 2020 | EAST KOWLOON CULTURAL CENTRE | LEIGHTON M&E - SOUTH A JOINT VENTURE | Community & Cultural |
| 2020 | M PLUS-WEST KLN | PERMASTEELISA GARTNER HONG KONG | Community & Cultural |
| 2020 | HKIA P583 T1 ANNEX BLDG & CP4 EXT | LEIGHTON CONTRACTORS (ASIA) LTD | Infrastructure |
| 2020 | OCEAN PARK WATER PARK | GAMMON ENGINEERING & CONSTRUCTION | Sport & Recreation |
| 2020 | OCEAN PARK- FULLERTON HOTEL | HIN SUM ENGINEERING CO LTD | Hospitality |
| 2020 | CASTLE PEAK RD, AREA 48 (547) | AGGRESSIVE CONSTRUCTION COMPANY | Residential |
| 2020 | TMCLK TUNNEL | DRAGAGES-BOUYGUES J.V. | Infrastructure |
| 2021 | R6 CTL KLN ROUTE-CENTRAL TUNNEL HY/2018/08 | BOUYGUES TRAVAUX PUBLICS | Infrastructure |
| 2021 | R6 TRUNK ROAD T2 ED/2018/04 | BOUYGUES TRAVAUX PUBLICS | Infrastructure |
| 2021 | HKIA AIRPORT SKYCITY REGAL HOTEL | REC ENGINEERING COMPANY LIMITED | Hospitality |
| 2021 | R6 TKO BRIDGE & P2 ROAD NE/2015/02 | GOOD MIND ENGINEERING LIMITED | Infrastructure |
| 2021 | WEST KOWLOON - LYRIC THEATRE | GAMMON CONSTRUCTION LIMITED | Community & Cultural |
| 2021 | EAST KOWLOON CULTURAL CENTRE | LEIGHTON CONTRACTORS (ASIA) LTD | Community & Cultural |
| 2021 | DHL CENTRAL ASIA HUB PH3 | NGAI YEUNG HARDWARE | Industrial |
| 2021 | TMCLK C4 NORTH CONNECT TUNNEL BLDGS | GAMMON CONSTRUCTION LIMITED | Office |
| 2021 | HKIA 3508 TERMINAL 2 | YUE HING ENGINEERING LIMITED | Transport |
| 2021 | HKIA C18W07 AAHK OFFICE TOWER | | Office |
| 2022 | R6 TKO BRIDGE & P2 ROAD NE/2015/02 | GOOD MIND ENGINEERING LIMITED | Infrastructure |
| 2022 | HKIA 3508 TERMINAL 2 | GAMMON ENGINEERING & CONSTRUCTION | Transport |
| 2022 | R6 TKO-LAM TIN TUNNEL NE/2015/01 | GOOD MIND ENGINEERING LIMITED | Infrastructure |
| 2022 | WAN CHAI HOPEWELL CENTRE 2 | CHINA OVERSEAS BUILDING | Hospitality |
| 2022 | ON SAU RD, SITE KT2A, ANDERSON RD QUARRY - SCHOOL | CHUN WO-STEC-VASTEAM JOINT VENTURE | Education |
| 2022 | SAI SHA SAI KUNG N.157 GOLF CLUB | SANFIELD - GAMMON CONSTRUCTION | Sport & Recreation |
| 2022 | Anderson Road Quarry NE/2016/01 | CHINA OVERSEAS BUILDING | Sport & Recreation |
| 2022 | KING FUK ST, KAI SAN RD & TSAT PO ST, NKIL 6540 - YOUTH CE | SAN PO METAL ENGINEERING LIMITED | Community & Cultural |
| 2022 | LANTAU ISLAND EAST (ARTIFICIAL ISLAND NEAR KAU YI CHAU) | EAST GAIN METAL WORKS ENGINEERING | Residential |
| 2022 | R6 CTL KLN ROUTE-BUILDING AND E&M HY/2019/13 | GAMMON CONSTRUCTION LIMITED | Infrastructure |
| 2022 | HKIA P583 T1 ANNEX BLDG & CP4 EXT | LEIGHTON CONTRACTORS (ASIA) LTD | Infrastructure |
| 2022 | R6 CTL KLN ROUTE-CENTRAL TUNNEL HY/2018/08 | BOUYGUES TRAVAUX PUBLICS | Infrastructure |
| 2023 | HKIA 3508 TERMINAL 2 | GAMMON ENGINEERING & CONSTRUCTION | Transport |
| 2023 | SCL 1123 EXHIBITION STATION | LEIGHTON - CHINA STATE JOINT | Infrastructure |
| 2023 | 117-119 JERVOIS ST | W. M. CONSTRUCTION LIMITED | Office |
| 2023 | WAN CHAI HOPEWELL CENTRE 2 | CHINA OVERSEAS BUILDING | Hospitality |
| 2023 | WEST KOWLOON - LYRIC THEATRE | GAMMON CONSTRUCTION LIMITED | Community & Cultural |
| 2023 | 46-56 QUEEN'S RD EAST, 1-11 LANDALE ST & 2-12 ANTON ST | GAMMON ENGINEERING & CONSTRUCTION | Office |
| 2023 | ORGANIC RESOURCES RECOVERY CENTRE PH2 (WASTE TREA THE JARDINE ENGINEERING | | Utilities |
| 2023 | ORGANIC RESOURCES RECOVERY CENTRE PH2 (WASTE TREA JEC - AGRIVERT IJV | | Utilities |