HILTI TECHNICAL DATA

Date	18.01.2021
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For information	BU Anchor Technical Marketing

Hilti HIT-RE 500 V4
Technical data for concrete strength class C90/105
assessment based on ETA-20/0540 and ETA-20/0541

1 Scope

There data are intended for BU Anchor Technical Marketing to be applicable for concrete up to a strength class C90/105 and shall be released for PROFIS as Hilti Technical Data, only.

These data are not covered by ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020).
These data are valid for a service life of 50 years, only.

For further information see: Report ARA 20-003.

Application is restricted to static and quasi-static loading.

Released by:

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Technical Data and Approvals
18.01.2020

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20.01.2020

2 Intended use and restrictions

In Table 1 the application scope and limits are given.

Table 1: Application scope

Anchorages subject to	Static and quasi static loading
Base material	Concrete strength up to C90/105; Compacted reinforced or unreinforced normal weight concrete without fibres according to EN 206:2013+A1:2016 Uncracked and cracked concrete
Concrete condition	Dry and wet concrete condition **Excluded:** installation in flooded borehole
Embedment depth	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)
Installation direction	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)
Temperature in base material at installation	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)
Temperature in base material in-service	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)
Drilling technique	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)
Cleaning	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)/ MPII
Setting	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)/ MPII

3 Installation parameters

The installation parameters are given in Table 2.

Table 2: Installation parameters

Installation parameter	acc. ETA-20/0540 (issued 27.11.2020) and ETA-20/0541 (issued 21.11.2020)

4 Essential characteristics

In Table 3 and Table 4 the essential characteristics are summarized.

Table 3: Essential characteristics – anchoring

TENSION LOAD	
Steel failure	acc. ETA-20/0541 (issued 21.11.2020)
Combined pull-out and concrete cone failure	limited to C50/60
Concrete cone failure	increase to C90/105 possible
Splitting failure	increase to C90/105 possible
Displacements	acc. ETA-20/0541 (issued 21.11.2020)
SHEAR LOAD	
Steel failure	acc. ETA-20/0541 (issued 21.11.2020)
Pry-out and concrete edge failure	increase to C90/105 possible
Displacements	acc. ETA-20/0541 (issued 21.11.2020)

Table 4: Essential characteristics – PIR

Bond resistance $f_{bd,PIR}$	limited to C50/60 acc. ETA-20/0540 (issued 27.11.2020)