

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 C16/20
assessment based on ETA-20/0541

1 Scope

These data are intended for BU Anchor Technical Marketing to be applicable for concrete with the strength class C16/20 and shall be released for PROFIS as Hilti Technical Data, only.

These data are not covered by 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

Anchorage subject to	Static and quasi static loading
Base material	Concrete strength C16/20 Compacted reinforced or unreinforced normal weight concrete without fibres according to EN 206:2013+A1:2016 Uncracked and cracked concrete
Concrete condition	acc. ETA-20/0541 (issued 21.11.2020)
Embedment depth	acc. ETA-20/0541 (issued 21.11.2020)
Installation direction	acc. ETA-20/0541 (issued 21.11.2020)
Temperature in base material at installation	acc. ETA-20/0541 (issued 21.11.2020)
Temperature in base material in-service	acc. ETA-20/0541 (issued 21.11.2020)
Drilling technique	Hammer drilling Hammer drilling with Hilti hollow drill bit TE-CD, TE-YD Diamond coring Excluded: diamond coring with roughening with Hilti Roughening tool TE-YRT
Cleaning	acc. ETA-20/0541 (issued 21.11.2020) / MPII
Setting	acc. 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-20/0541 (issued 21.11.2020) Excluded: $n_{min}, s_{min}, c_{min}$
Minimum thickness of concrete member h_{min}	increased with a factor of $1,16 = 2,2/1,9 = f_{ctm}(C20/25)/f_{ctm}(C16/20)$
Minimum spacing s_{min}	
Minimum edge distance c_{min}	

4 Essential characteristics

In Table 3 the essential characteristics are summarized.

Table 3: Essential characteristics

TENSION LOAD	
Steel failure	acc. ETA-20/0541 (issued 21.11.2020)
Combined pull-out and concrete cone failure	reduced by a factor of $0,89 = (16/20)^{0,5}$ compared to ETA-20/0541 (issued 21.11.2020)
Concrete cone failure	reduced to C16/20
Splitting failure	reduced to C16/20
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	reduced to C16/20
Displacements	acc. ETA-20/0541 (issued 21.11.2020)