HILTI

Hilti SAFEset chemical anchoring

for engineers

One giant leap.

Hilti. Outperform. Outlast.

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Applications

- Post-installed rebar connections for concrete slab, column or wall extensions
- Heavy-duty anchoring with threaded rod in cracked or uncracked concrete, e.g. for steel beams, columns, manufacturing equipment or ledger angles
- Facade installation, steel and metal construction, installation of railings and safety barriers

What does SAFEset mean?

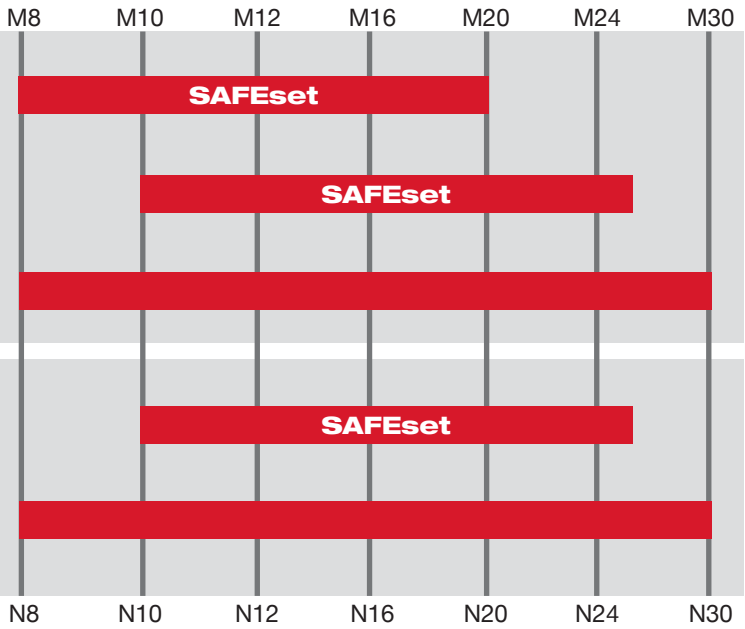
Hilti SAFEset Technology eliminates the most load-affecting and time-consuming step in the installation process: cleaning the hole before injection of the adhesive. The system improves reliability because the specified application is being performed on the jobsite just as it has been designed to in the plans.

A small step for engineers.
And a giant leap forward for your next design.

Now you can design anchor rod and post-installed rebar connections with more confidence. Inadequately cleaning holes during installation can reduce the performance of conventional chemical anchor systems significantly. Hilti SAFEset Technology eliminates this factor almost entirely – in both cracked and uncracked concrete, and with anchor rods or post-installed rebar.

Hilti proudly presents Hilti SAFEset Technology with the industry-leading, injectable adhesive anchors - HIT-HY 200 and HIT-RE 500.

Application Ranges



Introducing Hilti SAFEset Technology

Once in a blue moon, something comes along with the power to change the way you work.

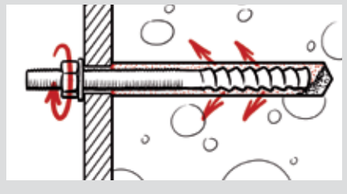
SAFEset

1 No cleaning required.

HIT-Z anchor rods

Designed for use with HIT-HY 200 injectable adhesive, the new Hilti HIT-Z anchor rod, with its cone-shaped helix, works as a torque-contolled bonded anchor. This means that because of their shape, HIT-Z anchor rods are not affected by uncleaned hammer drilled holes. Whether used in dry or water saturated concrete, in base materials above 5°C, the benefits are clear: fewer steps and extremely reliable anchoring.

Anchor diameter range	M8 to M20
Material	Carbon or stainless steel (A4)
Embedment depth	Up to 12 times rod diameter
Concrete compressive strengths	C20/25 to C50/60
Installation temperature range	5°C to 40°C



SAFEset Technology
with HIT-HY 200

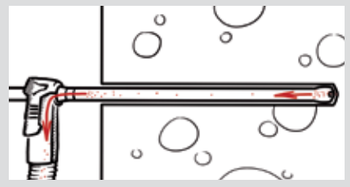
Drill → Install

2 Holes that clean themselves.

Hollow drill bits

Hilti TE-CD and TE-YD hollow drill bits, used in conjunction with HIT-HY 200 or HIT-RE 500, make subsequent hole cleaning completely unnecessary. Dust is removed by the Hilti vacuum system while drilling is in progress for more reliability and a virtually dustless working environment.

Rebar diameter range	N10 to N26
Threaded rod diameters	M10 to M24
Embedment depths	Up to 400 mm
Concrete compressive strengths	C20/25 to C50/60
Installation temperature range	-10°C to 40°C



SAFEset Technology
with HIT-HY 200 or HIT-RE 500

Drill → Install

3 The traditional method.

Brush and blow

The current industry standard installation method, uses compressed air and a wire brush to clean the drill hole. Like all Hilti adhesive anchors, HIT-HY 200 and HIT-RE 500 can be installed using the traditional blow-brush-blow method. When using the traditional method, the Hilti HIT system only requires two blows of compressed air, two brushes, and two more blows of compressed air – making it faster to install than many other adhesives on the market.

Rebar diameter range	N8 to N36
Threaded rod diameters	M8 to M36
Embedment depth	Up to 20 times element diameter
Concrete compressive strengths	C20/25 to C50/60
Installation temperature range	-10°C to 40°C

Traditional installation method with all Hilti HIT injectable adhesive anchors.

Drill → 2x2x2 → Install

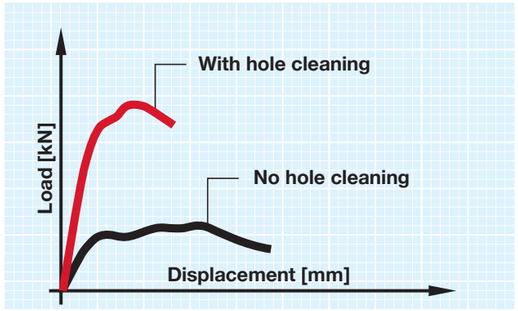
Hilti SAFEset chemical anchoring
for engineers

Engineering solutions

No cleaning required.
Set anchors and rebar reliably.

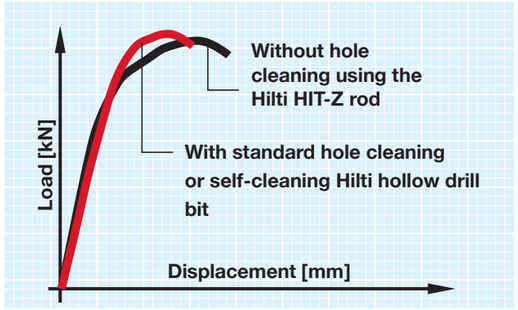
It's no secret that adhesive anchors encounter varying jobsite conditions. Hilti HIT injection technology, reliably and safely, combats this issue. Now Hilti SAFEset Technology, which offers the choice of either hollow drill bits with a Hilti vacuum system or HIT-Z anchor rods, takes a giant leap forward, by removing a step in the installation process entirely.

Potential effects of no hole cleaning



When a threaded rod or rebar is set with conventional injection adhesive, the load it can hold may be significantly reduced, if the hole is inadequately cleaned after drilling. The Hilti SAFEset system eliminates a cleaning step while still providing excellent load values.

Hilti HIT injectable adhesive with SAFEset Technology



The new SAFEset system featuring HIT-HY 200 or HIT-RE 500 allows a fastening point to take high loads, as though the hole was cleaned using traditional installation methods.

Design made easy.
Introducing simplified design tables from Hilti.

Hilti has made it even easier for engineers to comply with current codes and standards. The new, simplified anchor design tables from Hilti, ensure a quick and easy design process for typical anchor layouts, in compliance with the design method according to EOTA TR 029.

Table 1: Two Anchor Layout, HIT-HY 200 Design Resistance for HIT-V Rods in Uncracked Concrete.

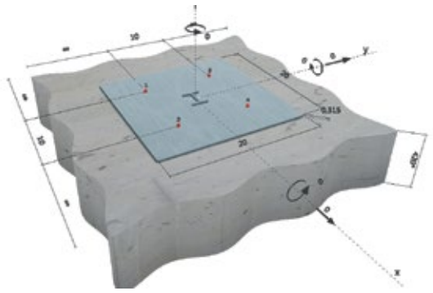
ANCHOR **M10**	Edge C (mm)														
	50			80			100			150			200		
spacing s1 (mm)	tension		shear	tension		shear	tension		shear	tension		shear	tension		shear
	$N^{*}_{Rd,p}$	$N^{*}_{Rd,c}$	$V^{*}_{Rd,c}$	$N^{*}_{Rd,p}$	$N^{*}_{Rd,c}$	$V^{*}_{Rd,c}$	$N^{*}_{Rd,p}$	$N^{*}_{Rd,c}$	$V^{*}_{Rd,c}$	$N^{*}_{Rd,p}$	$N^{*}_{Rd,c}$	$V^{*}_{Rd,c}$	$N^{*}_{Rd,p}$	$N^{*}_{Rd,c}$	$V^{*}_{Rd,c}$
50	20.7	16.6	9.0	26.0	19.7	15.0	29.9	21.9	17.4	37.2	27.8	23.4	37.2	34.1	29.3
100	23.9	18.4	11.3	30.1	21.9	17.6	34.6	24.3	19.9	43.1	30.9	25.7	43.1	38.0	31.5
150	27.2	20.3	13.5	34.2	24.1	20.2	39.2	26.8	22.4	48.9	34.1	28.1	48.9	41.8	33.8
200	30.4	22.2	13.5	38.2	23.3	22.8	43.9	29.2	24.9	54.7	37.2	30.4	54.7	45.6	36.0
250	33.6	24.0	13.5	42.3	28.5	24.8	48.6	31.7	27.4	60.5	40.3	32.7	60.5	49.4	38.3
300	34.9	25.9	13.5	43.9	30.7	24.8	50.4	34.1	29.9	62.8	43.4	35.1	62.8	53.3	40.6

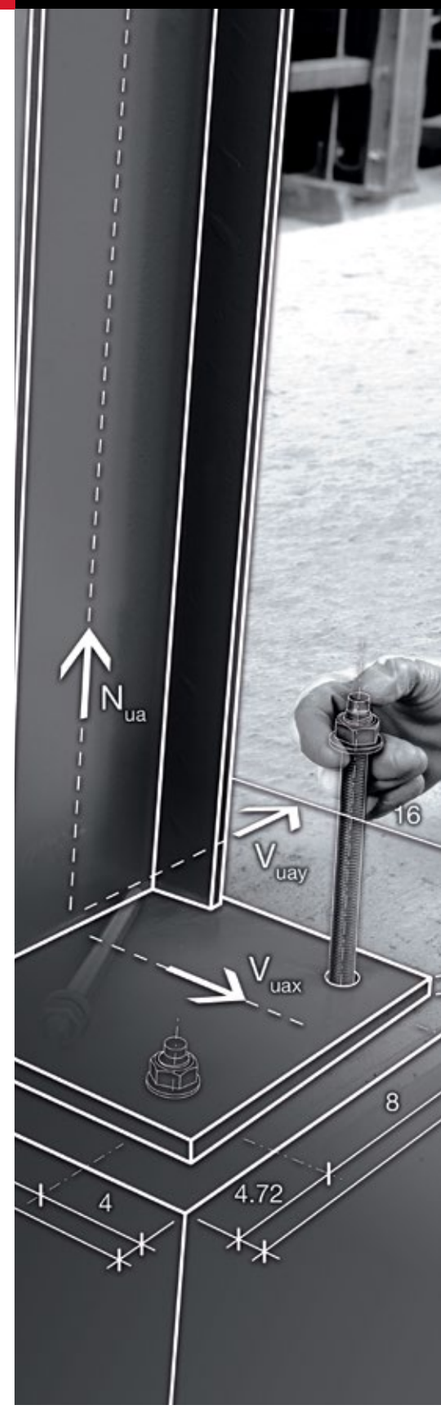
PROFIS Anchor software

Hilti PROFIS Anchor represents the next generation in anchor design software. For a more complex and accurate calculation according to the relevant guidelines, and for applications beyond the guidelines, e.g. group of anchors with more than four anchors close to the edge, or more than eight anchors far away from the edge, the Hilti design software PROFIS Anchor yields customised fastening solutions.

The new, alternative installation methods are now included in PROFIS Anchor. Look for HIT-Z Anchor Rods and Automatic Cleaning options when designing your next project.

Download your complimentary PROFIS Anchor software today!





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