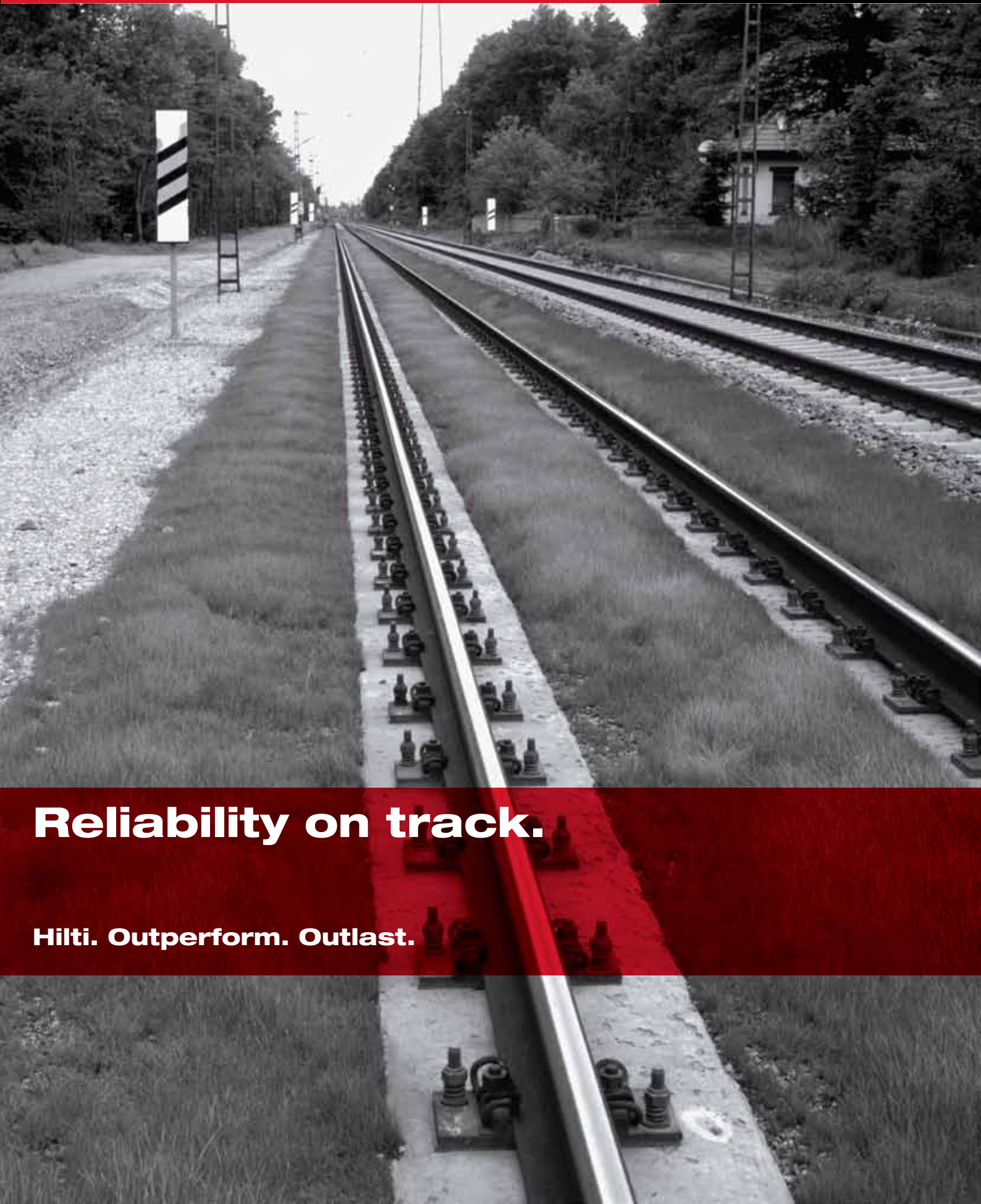


HILTI

**Anchors for
railway
construction**



Reliability on track.

Hilti. Outperform. Outlast.

Selection of Hilti rail anchors.

For fastening rails to concrete track slab, based on axle load (A), stiffness (c) and thickness (t) of elastic pad

Anchor*	Elastic pad, t (mm)**	Tramway A = 100kN	Metro A = 135kN	Commuter A = 170kN	Full size A = 250kN
HRT M22x215	10				–
	20				–
	30		–	–	–
HRT-WH M22x220	10				
	20		–	–	–
HRT-I (P) M22	15				–
	25				–
HRT-I (P) M27	10				
	20				
	30				–
HRC M22x215	10				
	20				
	30				–
HRC-DB M22x225	10 +26mm shim				
HRA M22x220a M22x220b M22x270 M22x310	10				
	20				
	30				–
Criteria	V _{max}	60 km/h	80 km/h	120 km/h	≥ 250 km/h
	R _{min} (V _{max})***	70 m (25 km/h)	200 m (60 km/h)	350 m (80 km/h)	3000 m
	Support spacing	750 mm	750 mm	700 mm	650 mm

* Configuration of base plate (support)



○ = Anchors per support

** Stiffness of elastic pad:
t = 10mm → c = 20 - 30 kN/mm
t = 20mm → c = 10 - 20 kN/mm
t = 30mm → c = 5 - 10 kN/mm

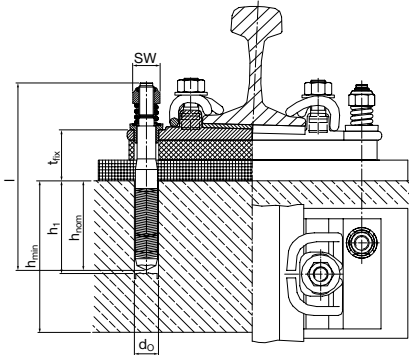
*** Indicative value: V_{max} is a function of the existing superelevation (cant) and the lateral acceleration.

Verification is contained in research reports issued by the Technical University of Munich

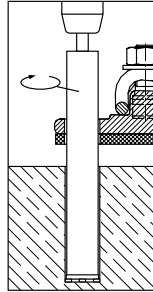
Hilti HRA rail anchor



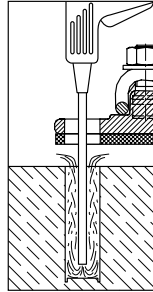
Setting details



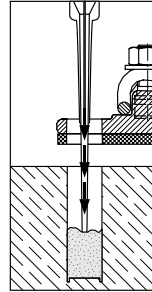
Setting operation using HIT-RE 500 injection mortar



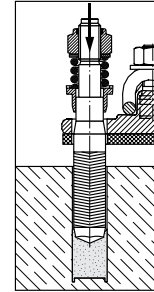
Drill hole
(diamond drill)



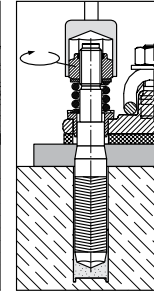
Blow out dust and
fragments
(compressed air)



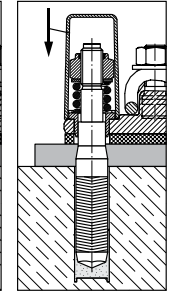
Inject adhesive



Drive in HRA anchor
by hand

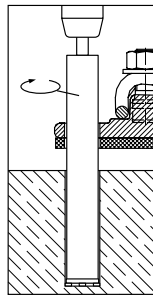


After curing time
tighten stop nut

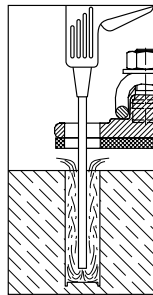


The rail fastening is
complete

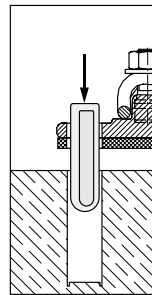
Setting operation using HVU-G/EA glass capsule



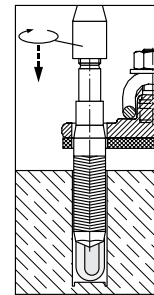
Drill hole
(diamond drill)



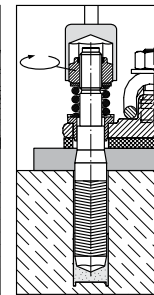
Blow out dust and
fragments
(compressed air)



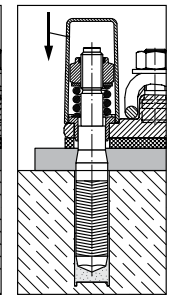
Insert 2 HVU-G/EA
16S glass capsules
by hand



Drive in HRA anchor
with setting tool



After curing time
tighten stop nut

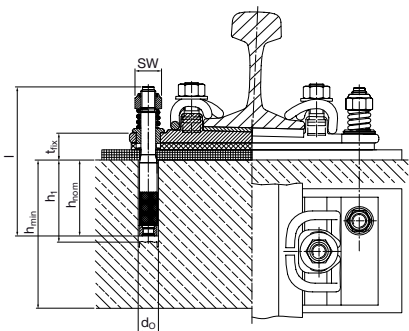


The rail fastening is
complete

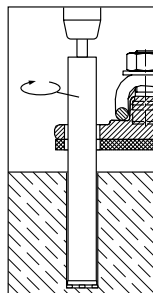
Hilti HRC / HRC-DB rail anchor



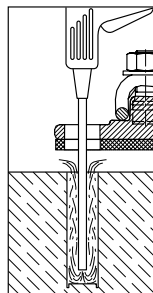
Setting details



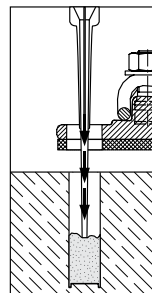
Setting operation using HIT-RE 500 injection mortar



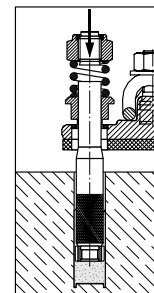
Drill hole
(hammer drill or
diamond drill)



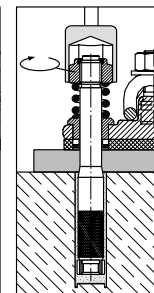
Blow out dust and
fragments
(compressed air)



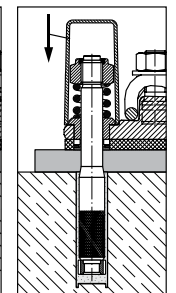
Inject adhesive



Drive in HRC anchor
by hand



After curing time
tighten stop nut

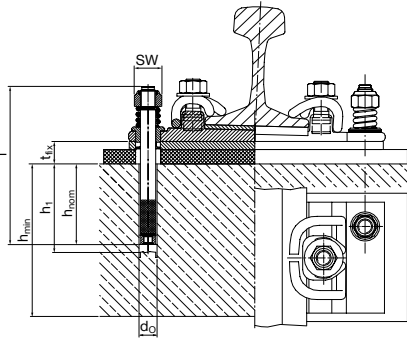


The rail fastening is
complete

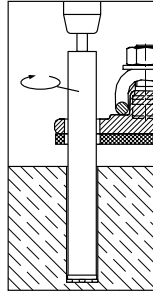
Hilti HRT rail anchor



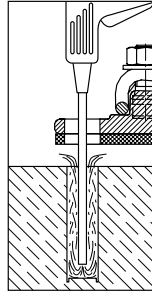
Setting details



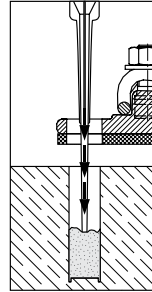
Setting operation using HIT-RE 500 injection mortar



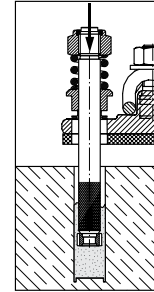
Drill hole
(hammer drill or
diamond drill with
roughening)



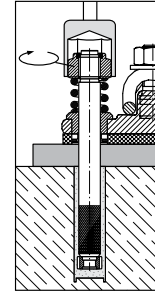
Blow out dust and
fragments
(compressed air)



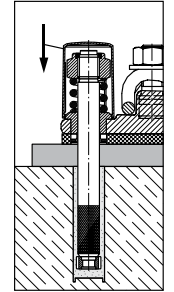
Inject adhesive



Drive in HRT anchor
by hand



After curing time
tighten stop nut

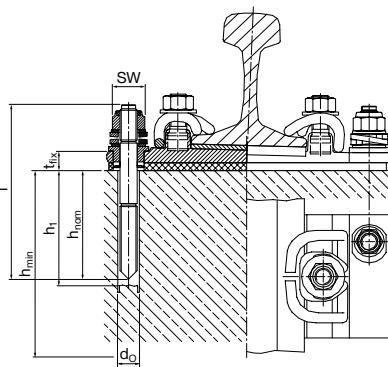


The rail fastening is
complete

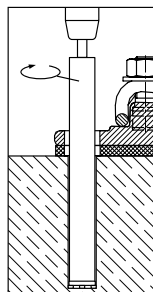
Hilti HRT-WH rail anchor



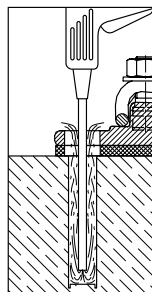
Setting details



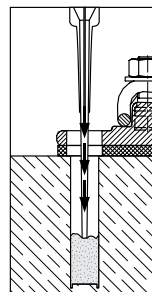
Setting operation using HIT-RE 500 injection mortar



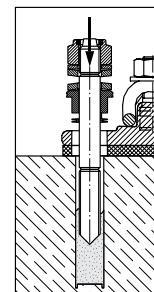
Drill hole
(hammer drill or
diamond drill with
roughening)



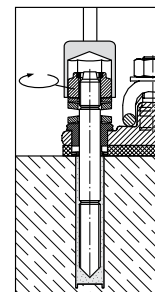
Blow out dust and
fragments
(compressed air)



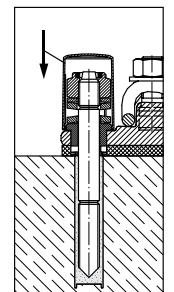
Inject adhesive



Drive in HRT-WH
anchor by hand

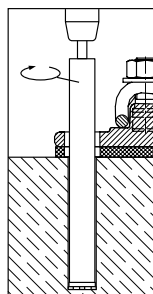


After curing time
tighten stop nut

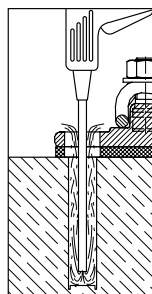


The rail fastening is
complete

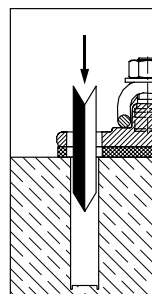
Setting operation using HVU foil capsule



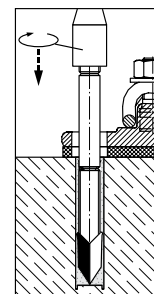
Drill hole
(hammer drill or
diamond drill with
roughening)



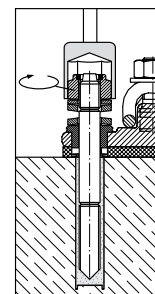
Blow out dust and
fragments
(compressed air)



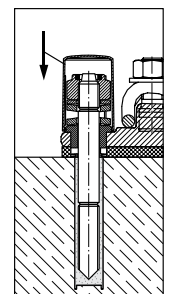
Insert HVU foil
capsule



Drive in HRT-WH
with setting tool



After curing time
tighten stop nut

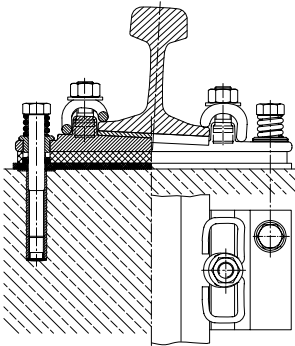
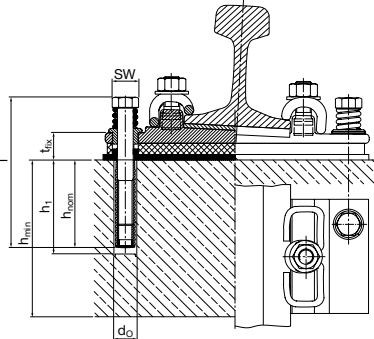


The rail fastening is
complete

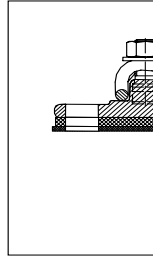
Hilti HRT-I(P) rail anchor (elastic)



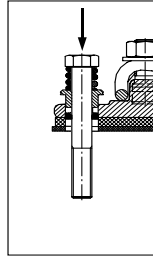
Setting details



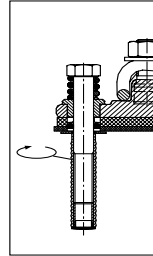
Setting operation cast-in



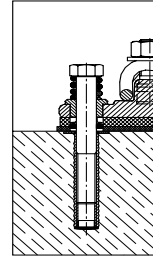
Install and align track at correct elevation



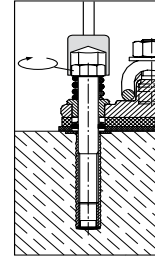
Use HRT-IP to fix pads



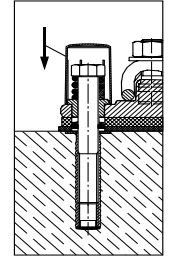
Tighten bolt / nut by hand



Pour concrete

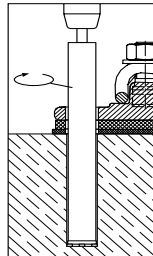


Tighten bolt / nut after curing time

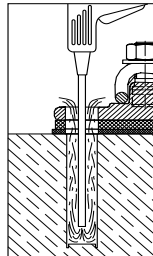


The rail fastening is complete

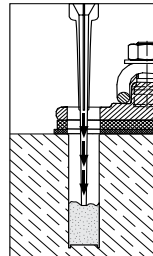
Setting operation using HIT-RE 500 injection mortar



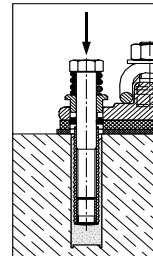
Drill hole (hammer drill or diamond drill)



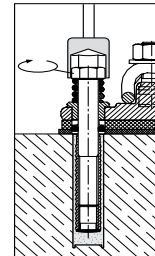
Blow out dust and fragments (compressed air)



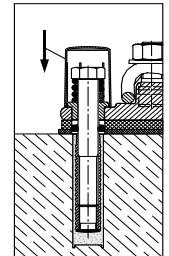
Inject adhesive



Drive in HRT-I anchor by hand



After curing time tighten stop nut

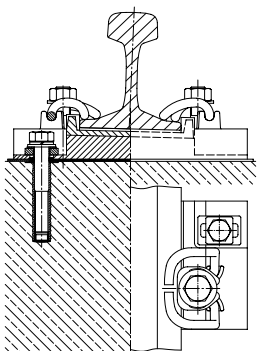
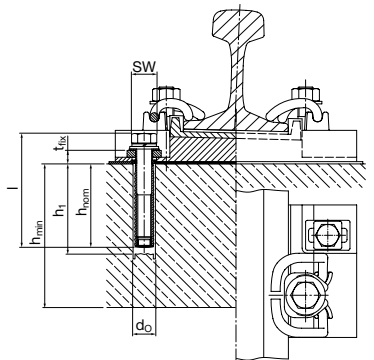


The rail fastening is complete

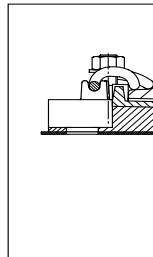
Hilti HRT-I(P) rail anchor (rigid)



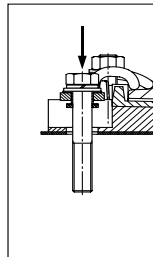
Setting details



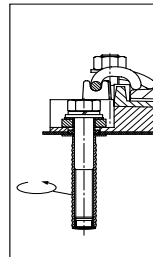
Setting operation cast-in



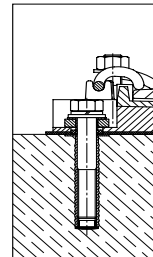
Install and align track at correct elevation



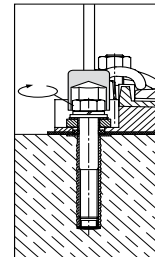
Use HRT-IP to fix pads



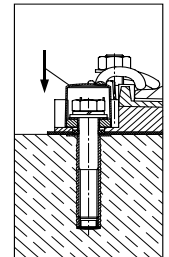
Tighten bolt / nut by hand



Pour concrete

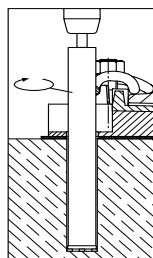


Tighten bolt / nut after curing time

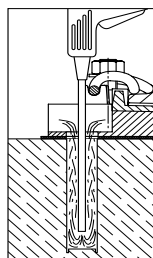


The rail fastening is complete

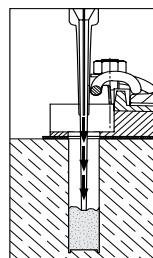
Setting operation using HIT-RE 500 injection mortar



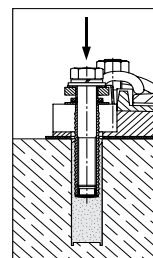
Drill hole (hammer drill or diamond drill)



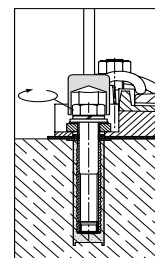
Blow out dust and fragments (compressed air)



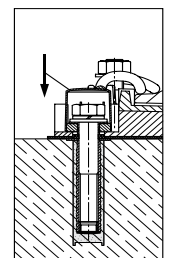
Inject adhesive



Drive in HRT-I anchor by hand



After curing time tighten stop nut



The rail fastening is complete

Rail anchors

Ordering designation	Package contents		Item no.
HRA-M22x220 a complete	10	①	256088
HRA-M22x220 b complete	10		256089
HRA-M22x270 complete	10		256087
HRA-M22x310 complete	10		256090
HRC-M22x215 (26) complete	10	②	251674
HRC-DB M22x225 complete	10		306700
HRC-BR M22x238 complete	10		288489
HRC-BR M22x263 complete	10		288762
HRC-M22x225 complete	10		344658
HRT M22x215 (22)	10	③	251673
HRT M22x250	10		353416
HRT-CH M27x260	10		418918
HRT-WH M22x200	10	④	322909
HRT-WH M22x200 EXZ.	10		322908
HRT-WH M27x360	5		385063
HRT-I M22x175	10	⑤	2004596
HRT-I M22x185	10		2004661
HRT-IP M22x175	10	⑥	2004660
HRT-IP M22x185	10		2004662
HRT-I M22x190	10	⑦	2004598
HRT-I M27x240	10		2020803
HRT-IP M22x190	10	⑧	2004599
HRT-IP M27x240	10		2020804
HRT-I M22x210	10	⑨	2004682
HRT-IP M22x210	10	⑩	2004681



①



②



③



④



⑤



⑥



⑦



⑧



⑨



⑩

Accessories

Ordering designation	Package contents	Item no.
HIT-RE 500/330/1	1 ①	337109
HIT-RE 500/500/1	1	369109
HIT-RE 500/1400/1	4	373958
HVU M20x110	5 ②	380516
HVU-G/EA 16S	10 ③	384954
HRA-SP M22x22	100 ④	311123
HRA-SP M22x35	100	015779
HRA-SP M22x55	100	015778
HRA-SP M27x40	100	385065
HRA-CP M22x100	180 ⑤	015781
HRA-CP M22x70	180	386288
TE-Y-E M20	1 ⑥	369228
DD-BL 25/430 H4S	1 ⑦	430104
DD-BL 28/430 H4S	1	430106
DD-BL 30/430 H4S	1	430108
DD-BL 32/430 H4S	1	430109
DD-BL 35/430 H4S	1	430077
DD-BL-ET 300	1 ⑧	305903
DD-CB 25	1 ⑨	338360
DD-CB 28	1	338362
DD-CB 30	1	338364
DD-CB 32	1	338365
DD-CB 35	1	338368
TE-YX 25/92	1 ⑩	339028
TE-YX 28/92	1	283605
TE-YX 30/57	1	339033
TE-YX 32/57	1	339035
TE-YX 35/57	1	370846
Drilling wagon with twin adapter	1 ⑪	415172
Drilling wagon	1	385255
Twin adapter	1	385260



Verified through in-depth research and extensive testing.

High forces on rail fastenings

The high forces acting on rail fastenings can be determined only by research plus large-scale field and laboratory testing. Know-how gained in this way drives the development of suitable fastening systems. The advanced laboratory and test facilities in Hilti's development centers allow reliable verification and documentation of the resulting designs.

Documented quality

Testing focuses primarily on static and dynamic loading tests with products, material testing and measuring electrical values. Requirements specified during development work are implemented in manufacturing through our documented quality assurance system. Customers can check our high quality standards at all times.



Static pull-out testing ensures highest quality



Computer evaluation of a static loading test



Dynamic loading of the entire system using hydropulse test equipment

Hilti. Outperform. Outlast.

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