TECHNOLOGY MANUAL

Anchor Fastening

Version December 2025

Foreword

Dear customer,

As it is our ambition to be the worldwide leader in fastening technology and related structural and non-structural connections, we are continuously striving to provide you with state-of-the-art technical information reflecting the latest development in codes, regulations, and approvals as well as technical information for our products.

The ‘Fastening Technology Manual’ is the gateway to technical documents for post-installed anchoring as well as cast-in anchors and channels. It reflects our ongoing investment into long-term research and development of leading fastening products.

While the selection and detailed design of our solutions has largely moved to digital means, i.e. using our design software PROFIS Engineering or the Hilti webpages, the Fastening Technology Manual is still a very valuable tool when solving fastening tasks and looking up technical details. It guides you through the complex world of Applications, Code Landscape, and wide variety of fastener products, provide you with profound technical know-how and help you to be more productive in your daily work without any compromise regarding reliability and safety.

We are available at any time to answer additional questions that go beyond this content.

Dr. Lars Taenzer
Business Unit Anchors

Important notices

1) The technical data presented in the Product Technical Data Sheets (PDS) linked to this Anchor Fastening Technology Manual is based on numerous tests and evaluation criteria according to the current state of the art and the relevant European regulations.

2) For all those anchors holding a European Technical Assessment (ETA), the technical data given in the PDS is based on and is in accordance with the information given in the respective ETA. The relevant ETA is listed in the certificates with a link to the document. Additional Hilti technical data may be available and will be noted on footnotes and/or tables.

3) For all those anchors not holding an ETA, the technical data given in the PDS is based on numerous tests and evaluation criteria according to the current state of the art and/or the relevant European applicable regulations for the assessment of fasteners, which are the basis for obtaining an ETA.

4) In addition to the tests for different loading conditions considered by the ETA, in some cases, tests have been performed following local guidelines, e.g., to assess the resistance to fatigue, fire and shock. In such cases national approvals, industrial certificates or expert reports are referenced in the applicable PDS.

5) The data and values are based on tests under laboratory or other controlled conditions, or on generally accepted methodology. It is the customer's responsibility to use the provided data taking into account the local conditions and to consider the intended use of the respective products. The customer must check that the listed prerequisites and criteria conform with the conditions existing on the jobsite. Whilst Hilti can give general guidance and advice, the nature of Hilti products means that the ultimate responsibility for selecting the right product for a particular application must lie with the customer.

6) Technical data presented herein was current as of the date of publication (see cover sheet of each linked PDS). Hilti's policy is one of continuous development. We therefore reserve the right to alter technical data and specifications, etc. without notice.

7) The given technical data in each PDS are valid for the service conditions indicated. Due to variations in local base materials, on-site testing may be required to determine or confirm the performance at any specific jobsite. If the base material is not found to be suitable for the scope of the published technical data of the selected product, contact the Engineering Competence Center of your local Hilti organization for further assistance.

8) instructions for use published by Hilti. The actual documents can be found using the links provided in the installation instructions table of each PDS.

9) The Product Technical Data Sheet (PDS) selectors contain extensive information on fastening types, substrates, installation methods, and load types. Each PDS and its linked documents provide the necessary details on which combinations have been tested and approved.

10) All product deliveries and advisory services are subject to the terms and conditions of the relevant local Hilti organization.

11) While reasonable efforts have been made to ensure the accuracy and completeness of the information provided, no guarantee is given as to its freedom from errors. Hilti shall not, under any circumstances, be held liable for any direct, indirect, incidental, consequential, or other damage, losses, or expenses arising from or in connection with the use of, or inability to use, the products or information for any purpose. Any implied warranties of merchantability or fitness for a particular purpose are expressly disclaimed.

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Table of contents

1. Applications

Anchors @ Hilti Online

Engineering Center
Engineering center is the platform for customer and designer to get more information about structural connections. It is available 24/7 and give you access to: technical data, technical articles, CAD/BIM details, education & learning (Webinars, How-to videos and E-learning) design software PROFIS and Ask Hilti.

Ask Hilti
Get answers to all your engineering questions. Ask Hilti is an online community offering collaborative environment and experts advice to construction engineers and architects. Ask Hilti is part of Engineering Center and available 24/7.

Main information

Corrosion handbook
This handbook helps in raising your general awareness of everything about corrosion. It provides you with essential information on causes and types of corrosion, its behavior and assessment procedures as well as the materials used to protect metallic products.

View online

Supporting information

Possibilities and limitations of on-site anchor testing
This expert article for engineers discusses and explains why and under which conditions on-site testing of anchors can be useful, and the advantages of using Hilti's on-site testing service with some jobsite case studies.

View online

On-site anchor testing under tensile loads
This article for engineers and project managers list tips and tricks to support execution and assessment of On-Site Anchor testing.

View online

Hilti Academy for engineering e-learnings

Steel-to-concrete connection
Dive into the fundamentals of engineering with our focused e-learnings on steel-to-concrete connections. Learn the essential techniques, from anchor design to load transfer principles, ensuring durable and safe structures. Whether you're a beginner or looking to refine your expertise, the course modules on Hilti Academy equip you with the right knowledge. Ready to build stronger connections?

View online Romanian | View online Slovenian
View online Greek | View online Bulgarian
View online Serbian

Concrete-to-concrete connection
Discover the essentials of concrete-to-concrete connections, from joint design to load transfer techniques. The specific e-learning modules equip you with the tools to create seamless, durable structures with confidence.

View online Romanian | View online Slovenian
View online Greek | View online Bulgarian
View online Serbian

Baseplate design optimization
Discover how Hilti's Value Engineering for baseplate design optimization and PROFIS Engineering software can transform your projects. This course equips structural engineers to reduce costs, enhance efficiency and improve outcomes by leveraging Smart Design technology for anchor selection and base plate optimization. Unlock smarter, faster, and more cost-effective solutions with Hilti.

View online Romanian | View online Slovenian
View online Greek | View online Bulgarian
View online Serbian

Design software

PROFIS Engineering Suite
PROFIS Engineering is a one-stop tool for designing structural connections to leverage efficiency and productivity. It consists of several module, e.g., concrete-to-concrete, steel-to-concrete, steel-to-masonry. It uses state-of-the-art and code compliant design methods in an illustrated 3D and 2D user interface environment.

View online

1.1. Steel-to-concrete connections (post-installed anchors)

The connection between structural (beams, columns, plates, brackets etc.) and non-structural (railings, facades, mechanical supports, fencing etc.) steel sections to existing concrete members cast at a previous point in time is called steel-to-concrete (S2C) post-installed connections. These connections are typically used for structural modifications, retrofitting existing structures and light fixtures for architectural or secondary applications. S2C connections provide essential support in both new or retrofitting applications allowing flexibility, strength and durability.

1.1.1 Images of applications

Steel-to-concrete connections (post-installed anchors)

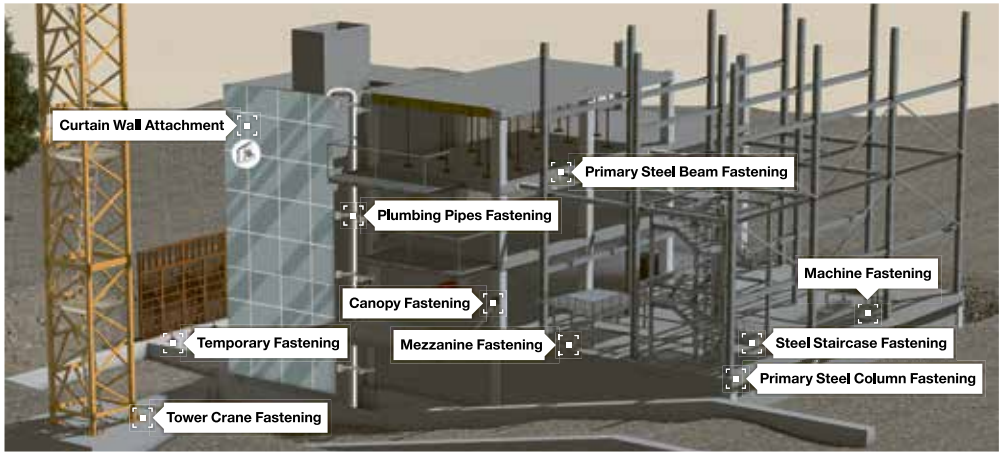


Illustration of typical applications in a building under construction

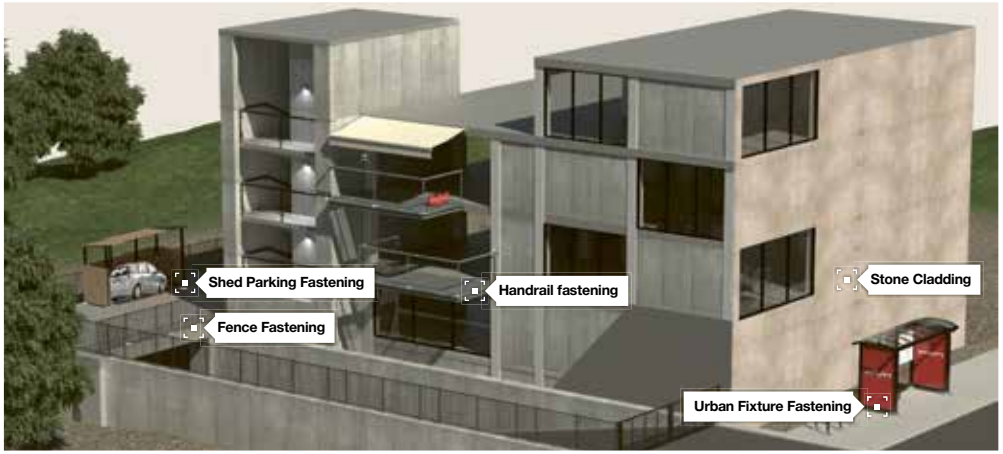
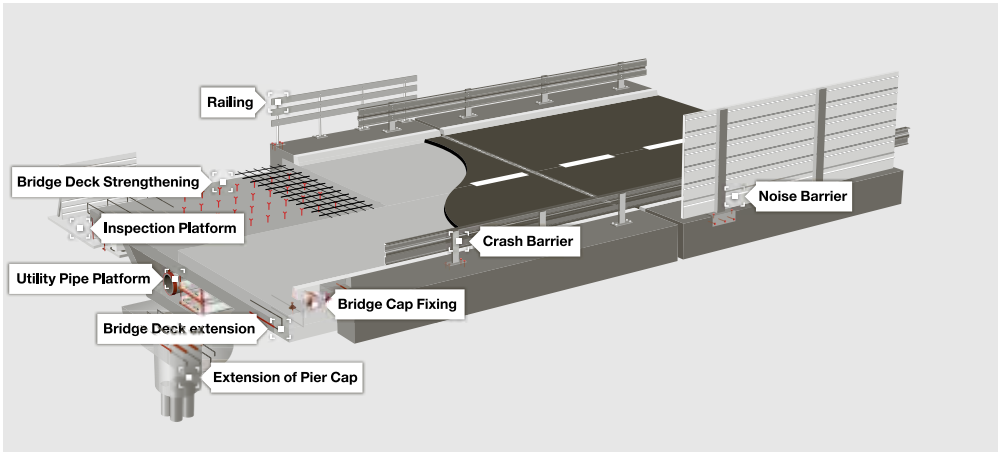


Illustration of typical applications for building finishings



Illustrations of typical applications for jobsite bridges

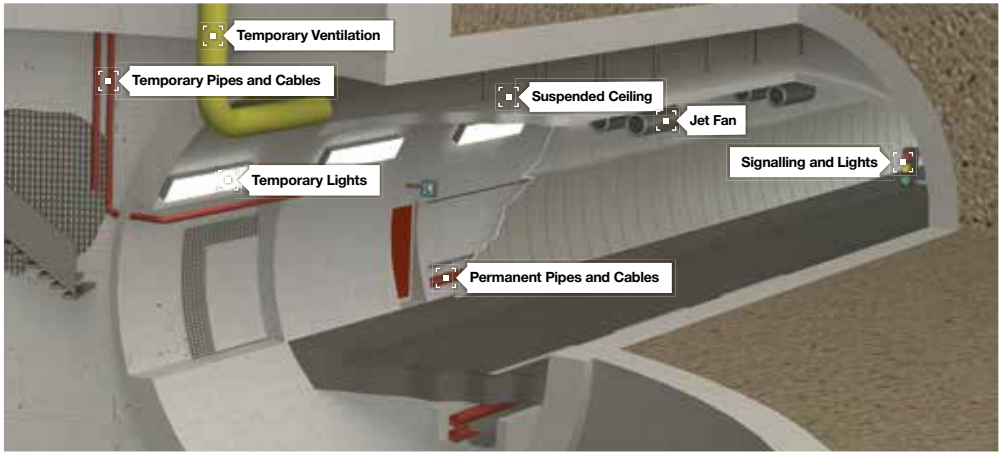


Illustration of typical applications for tunnel structures

1.1.1 Images of applications

Steel-to-concrete connections (post-installed anchors)

Primary steel column

Primary steel beam

Canopies

Steel staircase

Temporary wall support

Tower crane support

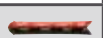
Handrails

Seats in stadium

1.1.2 Product technical data sheet selector: chemical anchors

View detailed PDS selector

Steel-to-concrete connections (post-installed anchors)

			Fastener type				Base material		Setting		Design app
											
	Link to product technical data sheet (PDS)	Product picture	Threaded rod HAS (U)	Internal threaded sleeve HIS-N HIT-IC	Expansion threaded rod HIT-Z HAS-D HAS-TZ HIT-CS-F	Rebar	Cracked concrete	Uncracked concrete	Fast cure @ 20 °C	Slow cure @ 20 °C	PROFIS Engineering
Injection system	HIT-HY 200-R V3		✓	✓	✓	✓	✓	✓	✓		✓
	HIT-HY 200-A V3		✓	✓	✓	✓	✓	✓	✓		✓
	HIT-RE 500 V4		✓	✓		✓	✓	✓		✓	✓
	HIT-RE 100		✓			✓	✓	✓		✓	✓
	HIT-HY 170		✓	✓	✓	✓	✓	✓	✓		✓
	HIT-MM Plus		✓	✓		✓		✓	✓		
	HIT-1		✓					✓	✓		
Capsule system	HVU2		✓	✓			✓	✓	✓		✓
	HVU-TZ				✓		✓	✓	✓		✓

1.1.2 Product technical data sheet selector: mechanical anchors

View detailed PDS selector

Steel-to-concrete connections (post-installed anchors)

			Fastener type						Base material		Design app
	Link to product technical data sheet (PDS)	Product picture	Externally threaded	Internally threaded	Hex head	Countersunk	Flat head	Close / open eye bolt	Cracked concrete	Uncracked concrete	PROFIS Engineering
Metal expansion anchor	HSL4		✓		✓	✓			✓	✓	✓
	HSL-3-R		✓		✓	✓			✓	✓	✓
	HST4		✓						✓	✓	✓
	HST3		✓						✓	✓	✓
	HST2 V3		✓						✓	✓	✓
	HST2		✓						✓	✓	✓
	HSA		✓							✓	✓
	HSB		✓							✓	
Undercut anchor	HDA		✓			✓			✓	✓	✓
	HSC		✓	✓		✓			✓	✓	
Flush anchor	HKD			✓						✓	
	HKD redundant			✓					✓	✓	
	HKV			✓						✓	
Screw anchor	HUS4		✓		✓	✓			✓	✓	✓
	HUS4-R				✓	✓			✓	✓	✓
	HUS3		✓	✓	✓	✓	✓		✓	✓	✓
	HUS(-S) 6						✓		✓	✓	
	HUS redundant		✓	✓	✓	✓	✓		✓	✓	
Bonded screw anchor	HUS4-MAX	 	✓		✓	✓			✓	✓	✓

			Fastener Type						Base Material		Design App
	Link to product technical data sheet (PDS)	Product picture	Externally threaded	Internally threaded	Hex head	Countersunk	Flat head	Close / open eye bolt	Cracked concrete	Uncracked concrete	PROFIS Engineering
Plastic anchor	HRD				✓	✓	✓		✓	✓	✓
	HRD red.				✓	✓	✓		✓	✓	
	HPS-1						✓			✓	
	HUD-1			✓						✓	
	HUD-2			✓						✓	
	HLD			✓						✓	
	GD14			✓				✓		✓	
Light duty anchor	HFB		✓				✓		✓	✓	
	DBZ						✓		✓	✓	
	HCA				✓				✓	✓	
	HA8 NG							✓		✓	
	HLC		✓		✓	✓	✓	✓		✓	
	HAM			✓	✓					✓	
Insulation fastener	IDP						✓			✓	
	IZ 8						✓			✓	
Others	HAP 2.5		Hoist Anchor Plate						✓	✓	
	HAP 1.15		Hoist Anchor Plate						✓	✓	

1.1.3 Handbooks, articles and design software

Steel-to-concrete connections (post-installed anchors)

Main information

Steel-to-concrete connections
This technical handbook for post-installed anchors in steel-to-concrete applications provides an overview on working principle, qualifications and design details against static/seismic/fire/fatigue loads as per European guidelines. It also describes methods of proper installation, on-site testing and other jobsite services offered by Hilti as total solution provider.

View online

Supporting information

Bridges and viaducts
This document helps to understand the different applications of post-installed fastening systems in bridges and viaducts. It includes brief overview on concrete extensions, overlays and baseplate fastenings with design and qualification details and some Hilti recommended solutions.

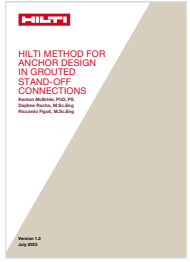
View online

Beyond the edge with the Hilti method for fastening design
This document presents the Hilti SOFA method, which introduces an updated approach for distributing shear to a greater number of anchors beyond edge conditions. It includes design details and calculation examples based on EN and fib guidelines, along with features available in the PROFIS software for anchor design.

View online

Hilti method for anchor design in ungrouted stand-off connections
This document helps to understand the detail design criteria for Hilti Solution for Fastening (SOFA) method for shear force application with ungrouted stand-off. It presents design examples along with the functionalities in PROFIS Engineering.

View online



Hilti method for anchor design in grouted stand-off connections
This document helps to understand the detail design criteria for Hilti Solution for Fastening (SOFA) method for shear force application with grouted stand-off. It presents design examples along with the functionalities in PROFIS Engineering.

View online

1.1.3 Handbooks, articles and design software

Steel-to-concrete connections (post-installed anchors)

Supporting information

Post-installed bonded screw anchor, an innovative technology
This document showcases the advantages of using post-installed bonded screw anchor HUS4-MAX over mechanical and chemical anchors. It describes updated design method with examples, qualification criteria as per European framework.

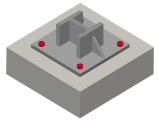
View online

Design software

PROFIS Engineering

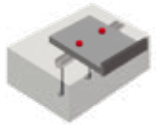
PROFIS Engineering for design of post installed anchor to concrete connections is an integrated software for design of anchors and steel baseplate.

View online



Anchoring to concrete

Handrail



Façade

1.2. Concrete-to-concrete connections and strengthening (post-installed anchors)

The need to connect concrete members cast at different times – or to strengthen existing structural members – is becoming increasingly important and relevant. This growing demand arises from factors such as aging buildings, hazard-related risks, updated codes, sustainability goals, functional repurposing, and construction efficiency. Post-installed rebars (PIR) and shear connectors installed into hardened concrete are well-established solutions that enable faster, safer, more economical, and more reliable connections between existing and new concrete elements (C2C connections). C2C connections can be used for member extensions, end anchorages, and shear strengthening using concrete overlays.

1.2.1 Images of applications

Concrete-to-concrete connections and strengthening (post-installed anchors)

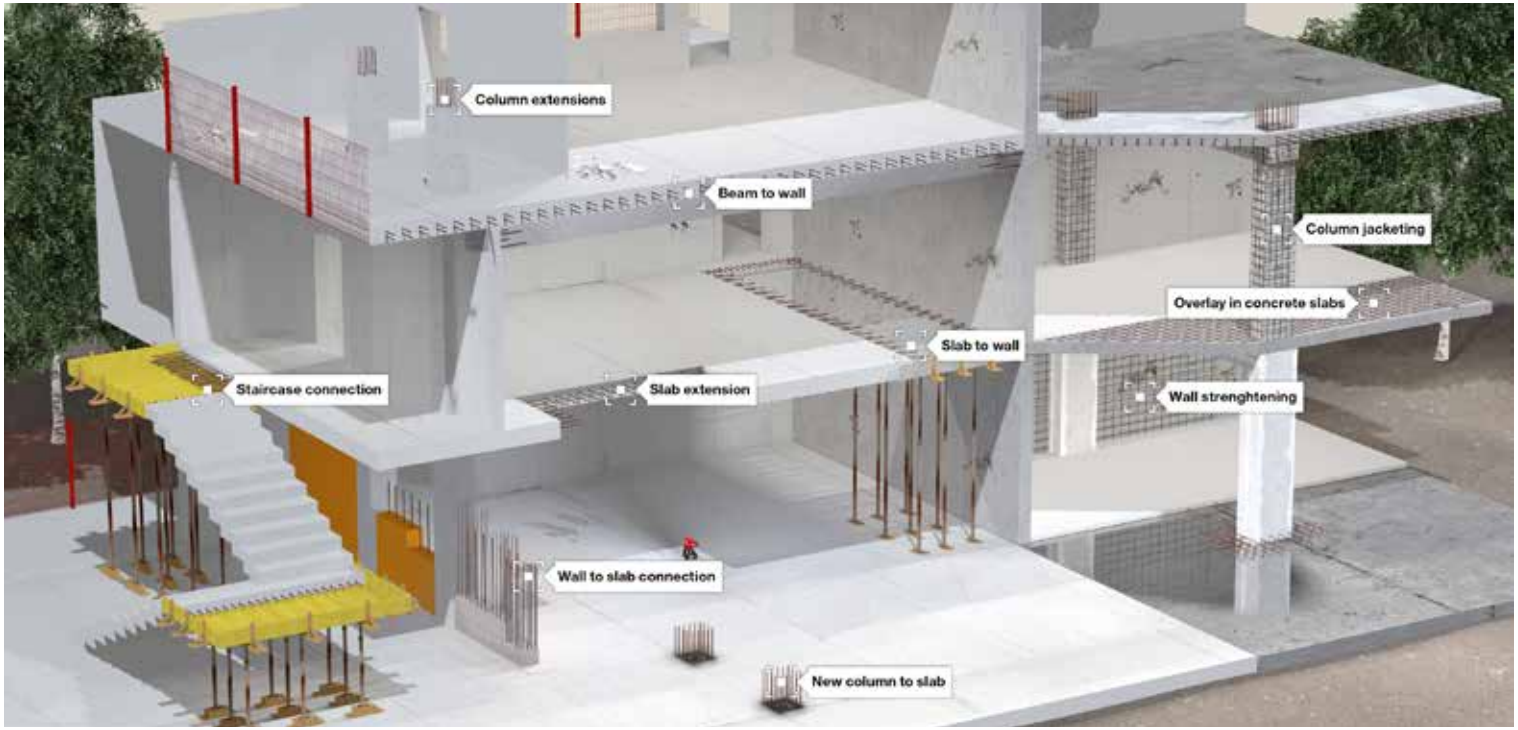


Illustration of typical applications in a building under construction

1.2.1 Images of applications

Concrete-to-concrete connections and strengthening (post-installed anchors)

Stair-to-wall connection

Slab-to-wall connection

Column-to-slab connection

Beam-to-column connection

Increasing RC beam depth

Strengthening of industrial floor

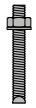
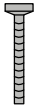
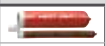
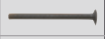
Increasing bridge girder thickness

Increasing bridge deck slab thickness

1.2.2 Product technical data sheet selector

View detailed PDS selector

Concrete-to-concrete connections and strengthening (post-installed anchors)

			Fastener type					Base material		Setting		Design app
												
	Link to product technical data sheet (PDS)	Product picture	Threaded rod HAS (U)	Internal threaded sleeve HIS-N HIT-IC	Expansion threaded rod HIT-Z HAS-D HAS-TZ HIT-CS-F	Rebar	Concrete connector HCC-K HCC-B HCC-U	Cracked concrete	Uncracked concrete	Fast cure @ 20 °C	Slow cure @ 20 °C	PROFIS Engineering
Injection system	HIT-HY 200-R V3					✓		✓	✓	✓		✓
	HIT-HY 200-A V3					✓		✓	✓	✓		✓
	HIT-RE 500 V4					✓		✓	✓		✓	✓
	HIT-FP 700 R					✓		✓	✓		✓	✓
	HIT-HY 170					✓		✓	✓	✓		✓
	HIT-RE 100					✓		✓	✓		✓	✓
Shear connector	HCC-K						✓	✓	✓	✓	✓	✓
	HUS4 connector						✓	✓	✓			✓
Strengthening	Shear strengthening		✓					✓			✓	✓
	Punching shear strengthening		✓					✓			✓	✓

1.2.3 Handbooks, articles and design software

Concrete-to-concrete connections and strengthening (post-installed anchors)

Main information

Concrete-to-concrete connections
The handbook is a one-stop reference guide for post-installed rebar applications, including shear-connectors. It explains the state-of-the-art design methods & qualifications based on the European framework for static, seismic, fire, and fatigue loads. It also includes several design calculation examples.

View online

Strengthening concrete members for punching shear
This document introduces techniques to strengthen reinforced concrete members deficient in punching shear resistance, featuring Hilti's new post-installed HIT-Punching Shear Strengthening solution. It presents the qualification criteria and introduces the design method and reinforcement detailing of the new Hilti solution to EN 1992-1-1:2004 and the German National Annex with a worked design example for slabs and foundations.

View online

Strengthening concrete members in shear
This document introduces techniques to strengthen reinforced concrete members deficient in shear resistance, featuring Hilti's new post-installed HIT-Shear Strengthening solution. It presents the qualification criteria and introduces the design method and reinforcement detailing of the new Hilti solution to EN 1992-1-1:2004 and the German National Annex with a worked design example for a beam.

View online

Supporting information

Shear friction applications and concrete overlays
This document details advanced design and construction practices for post-installed concrete overlays. Utilizing the EOTA TR 066 design framework, it enables optimized thin overlay configurations. The Hilti method can be applied where bent-end rebars embedded in the cast-in substrate function as shear connectors.

View online

Bridges and viaducts
This document provides an overview of the main applications of fastening systems in bridges and viaducts, implemented through post-installed solutions—namely, rebars for concrete extensions and overlays, and baseplates for anchoring steel elements or equipment to concrete structures.

View online

1.2.3 Handbooks, articles and design software

Concrete-to-concrete connections and strengthening (post-installed anchors)

Supporting information

Post-installed reinforcement in end anchorages
EOTA TR 069 provides a design method based on improved bond-splitting behavior for end anchorages in structural members experiencing moment actions, using post-installed rebars without the need for establishing lap splices with existing reinforcement.

View online

Tunnel structures
This document explores how post-installed rebars can be designed to form monolithic connections between new concrete elements and existing tunnel linings across a wide range of applications. It also addresses key considerations such as fatigue, fire resistance, seismic loading, corrosion, and service life.

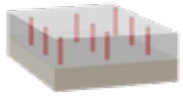
View online

Design software

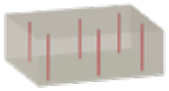
PROFIS Engineering
The design software solution for post-installed rebar connections, shear friction applications and concrete overlays enables precise, code-compliant structural calculations and supports efficient detailing for complex reinforcement scenarios. Additional modules addressing strengthening solutions for shear and punching-shear are available.

View online

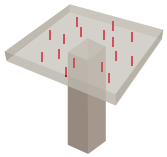
Post-installed rebar



Concrete overlay



Shear strengthening



Punching shear strengthening

1.3. Steel-to-masonry connections (post installed anchors)

The connection between non-structural (railings, facades, mechanical supports, fencing etc.) steel sections to existing masonry units built at a previous point in time is called steel-to-masonry (S2M) post-installed connections. These connections are typically used for retrofitting existing structures and light fixtures for architectural or secondary applications. S2M connections provide essential support in both new or retrofitting applications allowing flexibility, strength and durability.

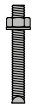
1.3.1 Images of applications

Steel-to-masonry connections (post-installed anchors)

1.3.2 Product technical data sheet selector: Light duty anchors

Steel-to-masonry connections (post-installed anchors)

View detailed PDS selector

			Fastener Type				Base Material		Setting		Design App
											
	Link to product technical data sheet (PDS)	Product picture	Threaded rod HAS (U)	Internal threaded sleeve HIS-N HIT-IC	Expansion threaded rod HIT-Z HAS-D HAS-TZ HIT-CS-F	Rebar	Solid brick masonry	Hollow brick masonry	Fast cure @ 20 °C	Slow cure @ 20 °C	PROFIS Engineering
Injection system	HIT-HY 270		✓	✓		✓	✓	✓	✓		✓
	HIT-HY 170		✓	✓			✓	✓	✓		✓
	HIT-MM Plus		✓	✓			✓	✓	✓		

			Fastener Type						Base Material			Design App
												
	Link to product technical data sheet (PDS)	Product picture	Externally threaded	Internally thread-ed	Hex head	Countersunk	Flat head	Close / open eye bolt	Solid brick masonry	Hollow brick masonry	Drywall	PROFIS Engineering
Screw anchor	HUS4		✓		✓	✓			✓			
	HUS4-R				✓	✓			✓			
	HUS3		✓	✓	✓	✓	✓		✓			
	HUS(-S) 6						✓		✓			
Plastic anchor	HRD red				✓	✓	✓		✓	✓		
	HPS-1						✓		✓	✓		
	HUD-1								✓	✓	✓	
	HUD-2			✓					✓	✓	✓	
	HLD			✓							✓	
Light duty anchors	HAM			✓	✓				✓			
	HHD-S			✓							✓	
	HSP, HFP			✓							✓	
	HTB 3			✓							✓	
Insulation fastener	IDP						✓		✓	✓		
	IZ 8						✓		✓	✓		
Others	Heli-Brick		Masonry connector / strengthening						✓			

1.3.3 Design software

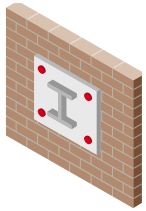
Steel-to-masonry connections (post-installed anchors)

Design software

PROFIS Engineering

The design software solution for post-installed anchor-to-masonry connections enables structural calculations and supports efficient detailing for various masonry base materials.

View online



Anchoring to masonry

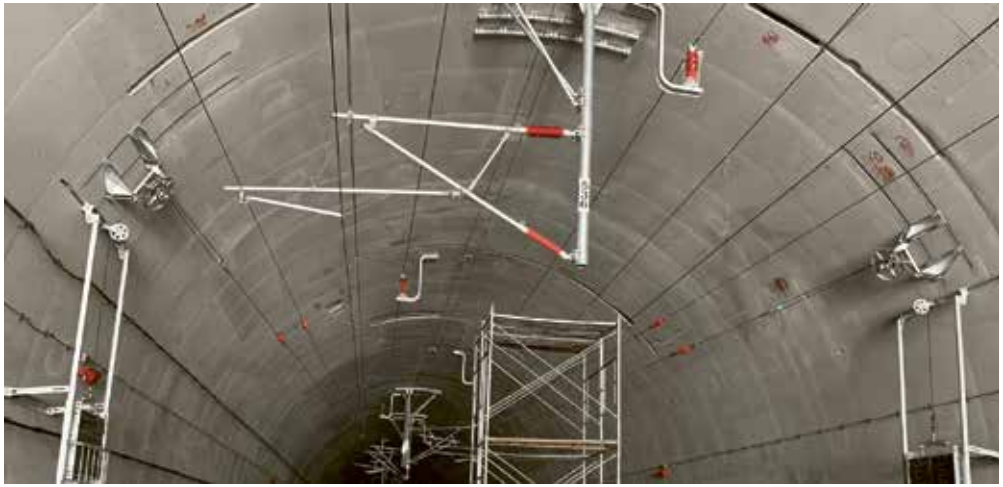
1.4. Steel-to-concrete connections (cast-in systems)

Anchor channel and single point cast-in systems are a cost-effective cast-in anchoring to concrete technology. These technologies provide solutions for job site tolerances and on-site adjustability when connecting structural and non-structural elements. Anchor channel systems consist of a group of anchors connected to a channel profile (anchor channel) and a proprietary matching head channel bolt (T-bolt). The anchor channel is installed prior to casting of the concrete.

Single point fastenings consist of a steel element installed in the desired position of a concrete member before casting the concrete. While they require a high level or pre-planning to ensure the right positioning, they ensure reliable load transfer with minor sensitivity to onsite installation conditions.

1.4.1 Images of applications

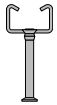
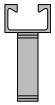
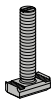
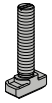
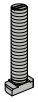
Steel-to-concrete connections (cast-in-systems)



1.4.2 Product technical data sheet selector

Steel-to-concrete connections (cast-in-systems)

View detailed PDS selector

			Channel type							Bolt type				Base material			Design app
																	
	Link to product technical data sheet (PDS)	Product picture	Round anchor	I-anchor	Smooth channel lip	Serrated channel lip	Cold formed	Hot rolled	TCRS	Serrated bolt	Notched bolt	Smooth bolt	Internal thread	Cracked concrete	Uncracked concrete	Steel	PROFIS Engineering
Anchor channels	HAC-C-T		✓			✓		✓		✓				✓	✓		✓
	HAC-C cold		✓		✓		✓					✓		✓	✓		✓
	HAC-V		✓		✓	✓			✓	✓	✓	✓		✓	✓		✓
	HAC-V with MQM Wing nut		✓			✓							✓	✓	✓		✓
Weldable channels	HMC				✓	✓		✓		✓		✓				✓	

1.4.3 Handbooks, articles and design software

Steel-to-concrete connections (cast-in-systems)

Main information

Anchor channel fastening
This document explains the design of anchor channel fastening systems for static, fatigue, and fire loads in accordance with European guidelines. It also presents design examples using Hilti's core products.

View online

Supporting information

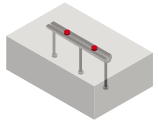
Field fixes
This document provides technical guidance on field fixes for installation errors involving HAC, HAC-T, and HAC-C(-P) cast-in anchor channels used with HBC channel bolts. It illustrates the correct installation procedures and offers recommendations and corrective measures to be applied on-site in cases of improper installation.

View online

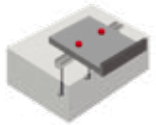
Design software

PROFIS Engineering
The design software solution for cast-in anchor channel connections enables structural calculations and supports efficient detailing for various concrete applications. A specific module for fixing of façade elements to concrete is also available.

View online



Anchor channel



Façade

2. Code landscape

2.1. Qualification and design

European framework

European standards and regulatory frameworks guide testing, assessment, and design of post-installed systems. The Construction Products Regulation (CPR) lays down harmonized rules for the marketing of construction products (taken from the EU webpage) in Europe. Below are definitions to clarify terminology that may be used throughout this document:

European Committee for Standardization (CEN)
CEN, recognized by the European Union as a European Standardization Organization, brings together knowledge and expertise from its members, business and industry, and from other stakeholders, to develop European Standards. CEN provides a platform for the development of European Standards and other technical documents in relation to various kinds of products, materials, services and processes. These standards help to protect the environment, as well as the health and safety of consumers and workers.

Eurocodes
Eurocodes (EC or EN) are harmonized technical rules specifying how structural design should be conducted within the European Union. These codes are developed by the European Committee for Standardization upon the request of the European Commission.

European Organization for Technical Assessment (EOTA)
EOTA was established by Regulation (EU) No 305/2011 and comprises all Technical Assessment Bodies (TABs) designated by member states of the European Union and the European Economic Area. EOTA coordinates the application of the procedures set for requests for European Technical Assessment (ETA) and for the procedures for adopting a European Assessment Document (EAD). EOTA also informs the European Commission and the Standing Committee on Construction of any issues related to the preparation of EADs and suggests improvements to the European Commission based on its experience.

European Assessment Document (EAD)
A European Assessment Document (EAD) is a harmonized technical specification developed by EOTA as the basis for European Technical Assessments (ETAs). The development of new, or the amendment of existing, EADs is usually triggered by an ETA request from a manufacturer.

European Technical Assessment (ETA)
The European Technical Assessment (ETA), also referred to as an “Approval” provides an independent Europe-wide procedure for assessing the essential performance characteristics of a construction product. It provides the documented assessment of the performance of a construction product, in relation to its essential characteristic, in accordance with the respective EAD.

CE-marking
The manufacturer is required to affix CE marking to construction products covered by an ETA as a recognizable indication of compliance with a Europe-wide technical specification (which, in the case of product qualification via an ETA, is the underlying EAD). CE stands for “Conformité Européenne.” The complete CE mark includes not only the letters “CE” in a predefined format but also references to relevant supporting content.

2.1. Qualification and design

Certificate of Constancy of Performance (CoCP)
For construction products covered by a European Technical Assessment (ETA), it is required to continuously assess and verify the constancy of performance (AVCP) as defined in the ETA. To ensure this, the manufacturer must implement and maintain a quality assurance program at the manufacturing plant, known as Factory Production Control (FPC).

Due to its critical safety relevance—particularly for anchor products—it is required to appoint a surveillance agency, independent of the supplier, to verify the proper execution of the FPC through audits at the manufacturing facility. This surveillance agency is referred to as the Notified Body (NB), whose competence for the relevant European Assessment Document (EAD) must be confirmed in advance by notification through the appropriate building authority.

The Notified Body issues the Certificate of Constancy of Performance, referencing the ETA, as independent confirmation that constancy of performance is ensured through the successful implementation and maintenance of the FPC.

Declaration of Performance (DoP)
This document is prepared by the manufacturer for a construction product being placed on the market, which is either subject to a European Technical Assessment (ETA) or covered by a harmonized standard. It contains a statement about the product's performance in relation to its essential characteristics, in accordance with the relevant EAD or harmonized technical specification.

Each DoP has a unique identification code, which is referenced in the CE marking affixed to the product. The DoP serves as the manufacturer's binding confirmation that the delivered product complies with the performance as assessed in the corresponding ETA according to the relevant EAD.

Technical Reports (TR)
EOTA Technical Reports are developed as supporting documents to EADs. They contain detailed aspects relevant to construction products—such as design, execution, and evaluation of tests—and reflect the shared understanding of existing knowledge and experience among the Technical Assessment Bodies in EOTA at a given point in time.

National Approvals
Most technical data for the products and solutions listed in this document have been assessed by TABs according to EOTAs EADs. However, in some case national approvals are also referenced, as they address state-of-the-art assessment of product characteristics, which are not covered by EADs. Such approvals find a wide acceptance at international level. Examples are fatigue assessment of post-installed rebar system (DIBt) and shock approvals for post-installed anchors (Swiss Federal Civil Protection BZS).

Refer to each Product Technical Data Sheet (PDS) for more details.

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