



Attached are page(s) from the 2008 Hilti North American Product Technical Guide. For complete details on this product, including data development, product specifications, general suitability, installation, corrosion, and spacing & edge distance guidelines, please refer to the Technical Guide, or contact Hilti.

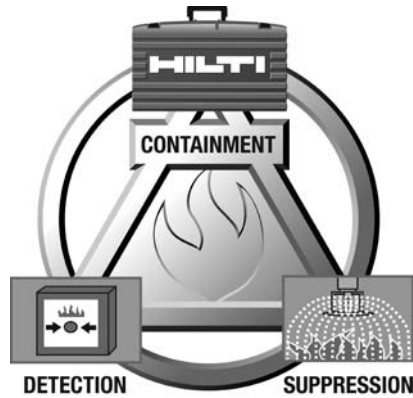


PROFIS: The World's Most Powerful Anchor Design Software

- Easy to Learn – Start working in just minutes
- Fast and Powerful – Produce detailed designs quickly
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Firestop Systems

When it comes to Life Safety and building code compliance, Hilti provides complete solutions with a wide range of products and unmatched technical support.

- Firestop Systems Guides
 - Through Penetrations
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Hilti Diaphragm Deck Design

The Hilti Diaphragm Deck Design Program allows designers to quickly and accurately design roof deck and composite floor deck diaphragms.

- Ability to design with innovative Hilti fasteners for frame and sidelap connection
- Creates easy to use load tables with span ranges based on user input
- Allows for different safety factors depending on load type, building code and field quality control
- Direct link to Hilti website



Hilti Online

- Technical Library
- Design Centers
- Interactive Product Advisors
- Full-line Product Catalog
- Online Ordering
- Maps to Hilti locations
- "Contact Us" program to answer your questions



MI - Industrial Pipe Support Technical Guide






A guide to specifying the Hilti modular pipe support system for medium to heavy loads without welding.

- MI System is the ideal solution for pipes up to 24 in. diameter
- Reliable fastenings without welds
- Easily installed

4.1.14 Anchor Selection Guide

Applications Grid

Key: ● Very Suitable ○ May be Suitable Per Application

Anchor Products		HVA Adhesive	HIT HY 150 MAX		HIT ICE [®] /HIT HY 150 Adhesive	
		HVU Capsule with HAS threaded rod	with HAS threaded rod	with HIT-TZ rod	with HAS threaded rod	with HIT-TZ rod
						
Fastening Base Material ¹	Non-cracked Concrete	●	●	●	●	●
	Cracked Concrete			○		○
	Lightweight Concrete	○	●	○	●	○
	Hollow Core Concrete					
	Grout Filled Concrete Block	○	●	○	●	○
	Hollow Concrete Block					
	Solid Brick	○	○		○	
	Hollow Brick					
	Hard Natural Stone	○	○	○	○	○
	Soft Natural Stone	○	○	○	○	○
Installation ²	Oversized Holes		○		○	
	Cored Holes	●		●		●
	Water Saturated Concrete	●	●	●	●	●
	Water-Filled Holes			●		
	Submerged					
Application Criteria ²	In-place (through) Fastening	●	●	●	●	●
	Immediate Loading					
	Bolt Head or Flush Finish	w/ HIS Insert	w/ HIS or HIT-I		w/ HIS or HIT-I	
	Removable to Flush Surface	w/ HIS Insert	w/ HIS or HIT-I		w/ HIS or HIT-I	
	Seismic	○	○	○	○	○
	High Cycle Fatigue	●	○	○	○	○
	Shock / Impact Load	○	○	○	○	○
	High Temperature Resistance	○	○	○	○	○
Corrosion ³	Electro or Mechanically Zinc Plated	●	●	●	●	●
	Sherardized Carbon Steel					
	Hot-dipped Galvanized	7/8" Diameter	7/8" Diameter		7/8" Diameter	
	Stainless Steel (AISI Series)	304 & 316	304 & 316	316	304 & 316	304 & 316
Miscellaneous	Anchor Rod Diameters Available (in.) ⁴	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	3/8, 1/2, 5/8, 3/4	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	3/8, 1/2, 5/8, 3/4
	Anchor Versions Available	Stud, Rebar, Insert	Stud, Rebar, Insert	Stud	Stud, Rebar, Insert	Stud
	Anchor Working Principles ⁵	Anchor is bonded to base material	Anchor is bonded to base material	Expansion against and bonding to base material	Anchor is bonded to base material	Expansion against and Bonding to base material

1 Base materials may vary widely. Site specific anchor testing may be required.

2 Most testing is performed in normal weight concrete. For specific base materials tested, see selected anchor.

3 Refer to Section 2.3 for a more detailed discussion on corrosion and corrosion resistance.

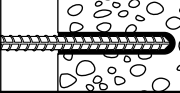
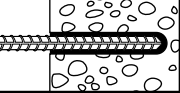
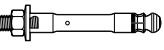
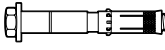
4 Listed diameters are those with published load data. Larger diameter anchor rods may be used. Contact Hilti for more information.

5 Refer to Section 4.1.2.1 for a more detailed discussion on anchor working principles.

Anchor Selection Guide 4.1.14

Applications Grid

Key: ● Very Suitable ○ May be Suitable Per Application

Anchor Products		HIT HY 20 Adhesive		HIT-RE 500-SD Epoxy Anchoring System	HIT-RE 500 Epoxy Anchoring System	HDA Undercut Anchor	HSL-3 Heavy-Duty Expansion Anchor
		Masonry Construction with Voids	Hollow CMU, Tile & Brick with Holes				
Design Criteria							
Fastening Base Material ¹	Non-cracked Concrete	○		●	●	●	●
	Cracked Concrete			●		●	●
	Lightweight Concrete	○		○	○		●
	Hollow Core Concrete		○				
	Grout Filled Concrete Block			○	○		
	Hollow Concrete Block		●				
	Solid Brick	●		○	○		
	Hollow Brick	●	●				
	Hard Natural Stone	○		○	○		
	Soft Natural Stone	○		○	○		
Installation ²	Oversized Holes			●	●		
	Cored Holes	○	○	●	●	●	●
	Water Saturated Concrete (per ICC)			●	●	●	●
	Water-filled holes (per ICC)			●	●	●	●
	Submerged			●	●	○	
Application Criteria ²	In-place (through) Fastening	○	○	●	●	●	●
	Immediate Loading					●	●
	Bolt Head or Flush Finish		w/ HIT-I	w/ HIS Insert	w/ HIS Insert	Bolt	●
	Removable to Flush Surface		w/ HIT-I	w/ HIS Insert	w/ HIS Insert	●	●
	Seismic	○	○	●	○	●	●
	High Cycle Fatigue	○	○	●	●	●	●
	Shock / Impact Load			○	○	●	●
Corrosion ³	High Temperature Resistance	○	○	○	○	●	●
	Electro or Mechanically Zinc Plated	●	●	●	●	●	●
	Sherardized Carbon Steel					●	
	Hot-dipped Galvanized	7/8" Diameter		7/8" Diameter	7/8" Diameter		
Miscellaneous	Stainless Steel (AISI Series)	304 & 316	304 & 316	304 & 316	304 & 316	316	
	Anchor Diameters Available (in.) ⁴	3/8, 1/2, 5/8, 3/4	5/16, 3/8, 1/2	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	3/8, 1/2, 5/8, 3/4, 7/8, 1, 1-1/4	M10, M12, M16, M20	M8, M10, M12, M16, M20, M24
	Anchor Versions Available	Stud, Rebar	Stud, Insert	Rebar, Stud, Insert	Rebar, Stud, Insert	Stud	Stud, Bolt, Torque Cap
	Anchor Working Principles ⁵	Anchor is attached to base material by adhesive keying		Anchor is bonded to base material	Anchor is bonded to base material	Metal Undercut Keying	Metal Circumferential Expander Sleeve

1 Base materials may vary widely. Site specific anchor testing may be required.

2 Most testing is performed in normal weight concrete. For specific base materials tested, see selected anchor.

3 Refer to Section 2.3 for a more detailed discussion on corrosion and corrosion resistance.

4 Listed Diameters are those with published load data. Larger diameter anchor rods may be used. Contact Hilti for more information.

5 Refer to Section 4.1.2.1 for a more detailed discussion on anchor working principles.

4.1.14 Anchor Selection Guide

Applications Grid

Key: ● Very Suitable ○ May be Suitable Per Application

Anchor Products		HSL Heavy-Duty Expansion Anchor	Kwik Bolt TZ Expansion Anchor	Kwik Bolt 3 Expansion Anchor	HUS-H Concrete Screw Anchor	HCA Coil Anchor
Fastening Base Material ¹	Non-cracked Concrete	●	●	●	●	●
	Cracked Concrete	●	●		○	
	Lightweight Concrete	○	●	●	●	○
	Hollow Core Concrete				○	
	Grout Filled Concrete Block			●	○	
	Hollow Concrete Block					
	Solid Brick					
	Hollow Brick					
	Hard Natural Stone					○
	Soft Natural Stone					
Installation ²	Oversized Holes					
	Cored Holes	●	○	●	●	●
	Water Saturated Concrete (per ICC)	●	●	●	●	●
	Water-filled holes (per ICC)	●	●	●	●	●
	Submerged	○	○	○	○	○
No Hole Cleaning Procedures						
Application Criteria ²	In-place (through) Fastening	●	●	●	●	●
	Immediate Loading	●	●	●	●	●
	Bolt Head or Flush Finish	see offering	bolt	both	●	●
	Removable to Flush Surface	●	●	●	●	●
	Seismic		●			
	High Cycle Fatigue	●				
	Shock / Impact Load	●				
High Temperature Resistance	●	●	●	●	●	
Corrosion ³	Electrodeposited or Mechanically Zinc Plated	HSL-I M12 65/80	●	●	●	●
	Sherardized Carbon Steel					
	Hot-dipped Galvanized			●		
	Stainless Steel (AISI Series)	A4 (316)	304	304 & 316		
Miscellaneous	Anchor Diameters Available (in. except as noted) ⁴	M12, M16, M20	3/8, 1/2, 5/8, 3/4	1/4, 3/8, 1/2, 5/8, 3/4, 1	3/8, 1/2, 5/8	1/4, 3/8, 1/2, 5/8, 3/4
	Anchor Versions Available	Stud, Insert	Stud	Stud, Long Thread, Counter Sunk, Tie Wire, Rod coupling	Bolt	Bolt
	Anchor Working Principles ⁵	Metal Circumferential Expander Sleeve	Single metal expansion piece three section wedge.	Single metal expansion piece three section wedge.	Undercutting Screw Threads	Metal Expansion Coil

1 Base materials may vary widely. Site specific anchor testing may be required.

2 Most testing is performed in normal weight concrete. For specific base materials tested, see selected anchor.

3 Refer to Section 2.3 for a more detailed discussion on corrosion and corrosion resistance.

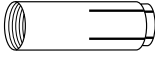


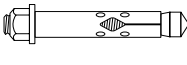

4 Listed Diameters are those with published load data. Larger diameter anchor rods may be used. Contact Hilti for more information.

5 Refer to Section 4.1.2.1 for a more detailed discussion on anchor working principles.

Anchor Selection Guide 4.1.14

Applications Grid

Key: ● Very Suitable ○ May be Suitable Per Application

Anchor Products		HDI / HDI-L Drop-In Anchors	HDI-P Drop-In Anchors	HCI-WF/MD Cast-in Anchors	HLC Sleeve Anchor	Kwik Con II+ Screw Anchor
						
Fastening Base Material ¹	Non-cracked Concrete	●	●	●	●	●
	Cracked Concrete					
	Lightweight Concrete	●	○	●	○	○
	Hollow Core Concrete		●		○	○
	Grout Filled Concrete Block				○	●
	Hollow Concrete Block		○		●	●
	Solid Brick				●	
	Hollow Brick				○	○
	Hard Natural Stone	○	○		○	
	Soft Natural Stone				○	
Installation ²	Oversized Holes			N/A		
	Cored Holes	●	●	N/A	●	
	Water Saturated Concrete (per ICC)	●	●	N/A	●	●
	Water-filled holes (per ICC)	●	●	N/A	●	●
	Submerged	○	○	N/A	○	○
No Hole Cleaning Procedures			N/A			
Application Criteria ²	In-place (through) Fastening				●	●
	Immediate Loading	●	●	●	●	●
	Bolt Head or Flush Finish	●	●	○	●	●
	Removable to Flush Surface	●	●	●	○	●
	Seismic					
	High Cycle Fatigue					
	Shock / Impact Load					
High Temperature Resistance	●	●	●	●	●	
Corrosion ³	Electrodeposited or Mechanically Zinc Plated	●	●	●	●	●
	Sherardized Carbon Steel					
	Hot-dipped Galvanized					
	Stainless Steel (AISI Series)	303			304	410
Miscellaneous	Anchor Diameters Available (in.)	1/4, 3/8, 1/2, 5/8, 3/4	3/8	1/4, 3/8, 1/2, 5/8, 3/4	1/4, 3/8, 5/16, 1/2, 5/8, 3/4	3/16, 1/4, 3/8
	Anchor Versions Available	Insert	Insert	Insert	Bolt, rod coupling, hex nut, wire tie	Torx HWH, Torx Flat Head, Phillips Flat Head
	Anchor Working Principles ⁵	Impact Expansion Sleeve	Impact Expansion Sleeve	Cast-in Head	Metal Circumferential Expander Sleeve	Thread Undercut Keying

1 Base materials may vary widely. Site specific anchor testing may be required.

2 Most testing is performed in normal weight concrete. For specific base materials tested, see selected anchor.

3 Refer to Section 2.3 for a more detailed discussion on corrosion and corrosion resistance.

4 Listed Diameters are those with published load data. Larger diameter anchor rods may be used. Contact Hilti for more information.

5 Refer to Section 4.1.2.1 for a more detailed discussion on anchor working principles.

4.1.14 Anchor Selection Guide

Applications Grid

Key: ● Very Suitable ○ May be Suitable Per Application

Anchor Products		Metal HIT Anchor	HPS-1 Impact Anchor	HTB TOGGLER® Bolt	HLD Kwik-Tog	HSP/HFP Drywall Anchor	IDP Insulation Anchor
Fastening Base Material ¹	Non-cracked Concrete	●	●		○		●
	Light Weight Concrete	○	○		○		●
	Hollow Core Concrete	○	○		○		●
	Grout Filled Concrete Block	○	○		○		○
	Hollow Concrete Block	●	●	●	●		○
	Solid Brick	●	●		○		●
	Hollow Brick	○	○		●		○
	Hard Natural Stone	○	○		○		●
	Soft Natural Stone	○	○		○		●
	Gypsum Drywall			●	●	●	
Installation	Oversized Holes						
	Cored Holes	○	○	●	○		○
	Water Saturated Concrete (per ICC)	●	●	●	●	●	●
	Water-filled holes (per ICC)	●	●	●	●	●	●
	Submerged	○	○	○	○	○	○
	No Hole Cleaning Procedures	●	●	●	○	●	●
Application Criteria	In-place (through) Fastening	●	●				●
	Immediate Loading	●	●	●	●	●	●
	Bolt Head or Flush Finish	●	●	●	●	●	●
	Removable to Flush Surface	○	●	●	●	●	○
	Seismic						
	High Cycle Fatigue						
	Shock / Impact Load						
	High Temperature Resistance	○	●	○	○		
Corrosion ²	Electrodeposited or Mechanically Zinc Plated	● (Drive Pin)	● (Drive Screw)	●			
	Zinc Aluminum Alloy	● (Body)				●	
	Plastic		● (Body)		●	●	●
	Stainless Steel (AISI Series)	304 (Drive Pin)	304 (Drive Screw)				
	Anchor Diameters Available (in.)	3/16, 1/4	3/16, 1/4, 5/16	3/16, 1/4, 3/8, 1/2	#8, #10	3/16, 1/4, 3/8	
Miscellaneous	Anchor Versions Available	Nail	Drive-screw	Round Head, Phillips, Flat Head, Machine Screw			Round Head Plastic
	Anchor Working Principles ³	Impact Expansion Anchor	Impact Expansion Anchor	Anchor holds by keying	Keying in hollow base materials. Friction in solid base materials.	Self-drilling Self-tapping	Anchor holds by friction

1 Base materials may vary widely. Site specific anchor testing may be required.

2 Refer to Section 2.3 for a more detailed discussion on corrosion and corrosion resistance.

3 Refer to Section 4.1.2.1 for a more detailed discussion on anchor working principles.

In The United States

PAYMENT TERMS:	Net 30 days from date of invoice. Customer agrees to pay all costs incurred by Hilti in collecting any delinquent amounts, including attorney's fees.
FREIGHT:	All sales are F.O.B. Destination with transportation allowed via Hilti designated mode. Delivery dates are estimates only. Additional charges for expedited shipments, special handling requirements, and orders below certain dollar amounts shall be the responsibility of Customer. Fuel surcharges may apply depending on market conditions.
CREDIT:	All orders sold on credit are subject to Credit Department approval.
RETURN POLICY:	Products must be in saleable condition to qualify for return. Saleable condition is defined as unused items in original undamaged packaging and unbroken quantities and in as-new condition. All returns are subject to Hilti inspection and acceptance, and a \$125 restocking charge if returned more than 90 days after invoice date. Proof of purchase is required for all returned materials. Special orders products and discontinued items are not eligible for return credit. Dated materials are only returnable in case quantity, and within 30 days after invoice date.
WARRANTY:	<p>Hilti warrants that for a period of 12 months from the date it sells a product it will, at its sole option and discretion, refund the purchase price, repair, or replace such product if it contains a defect in material or workmanship. Absence of Hilti's receipt of notification of any such defect within this 12-month period shall constitute a waiver of all claims with regard to such product.</p> <p>THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Hilti shall in no event be liable for, and Customer hereby agrees to indemnify Hilti against all claims related to special, direct, indirect, incidental, consequential, or any other damages arising out of or related to the sale, use, or inability to use the product.</p>
ACCEPTANCE OF ORDER:	Acceptance is limited to the express terms contained herein, and terms are subject to change by Hilti without notice. Additional or different terms proposed by Customer are deemed material and are objected to and rejected, but such rejection shall not operate as a rejection of the offer unless it contains variances in the terms of the description, quantity, price or delivery schedule of the goods. Orders are not deemed "accepted" by Hilti unless and until it ships the associated items.
DOMESTIC ORIGIN:	Any non-domestic Hilti product will be so identified on shipping documents and invoices for customers who properly identify themselves as a federal government entity. All other customers may obtain such information by written request to Hilti, Inc., Contract Compliance, P.O. Box 21148, Tulsa, Oklahoma 74121. Hilti's Quality Department personnel are the only individuals authorized to warrant the country of origin of Hilti products.
BUSINESS SIZE:	Hilti is a large business.
PRICES:	Prices are those stated on the order, and unless otherwise noted are based on purchasing all items on the order — pricing for individual products may vary for purchases of different quantities or item combinations. Hilti does not maintain most favored customer records, makes no representation with respect to same, and rejects any price warranty terms proposed by Customer. Hilti's published net price list is subject to change without notice.
CONSENT TO JURISDICTION:	All transactions made pursuant hereto shall be deemed to have been made and entered into in Tulsa, Oklahoma. Any and all disputes arising directly or indirectly from such transactions shall be resolved in the courts of the County of Tulsa, State of Oklahoma, to the exclusion of any other court, and any resulting judgment may be enforced by any court having jurisdiction of such an action. All transactions shall be governed by and construed in accordance with the laws of the State of Oklahoma.
INDEMNIFICATION:	Customer hereby agrees to indemnify Hilti for any costs, including attorney's fees, incurred by Hilti as a result, in whole or in part, of any violation by Customer of any Federal, State or Local statute or regulation, or of any nationally accepted standard. It shall be Customer's sole responsibility to comply with all applicable laws and regulations regarding the handling, use, transportation, or disposal of products upon taking possession of same.
AUTHORIZATION:	HILTI LEGAL DEPARTMENT PERSONNEL ARE THE ONLY INDIVIDUALS AUTHORIZED TO MODIFY THESE TERMS AND CONDITIONS, WARRANT PRODUCT SUITABILITY FOR SPECIFIC APPLICATIONS, OR EXECUTE CUSTOMER DOCUMENTS, AND ANY SUCH ACTION IS NULL AND VOID UNLESS IN WRITTEN FORM SIGNED BY SUCH INDIVIDUAL.

In Canada

PAYMENT TERMS:	Net 30 days from date of invoice. Customer agrees to pay all costs incurred by Hilti in collecting delinquent amounts, if any, including reasonable attorney's fees.
FREIGHT:	Sales are F.O.B. Destination Point with transportation allowed via Hilti designated mode. Additional charges may apply for expedited delivery, special handling requirements, and order under certain limits. A fuel surcharge may apply depending on market conditions.
CREDIT:	All orders sold on credit are subject to Credit Department approval.
RETURN POLICY:	Product may be returned prepaid (unless otherwise authorized) to Hilti provided: <ul style="list-style-type: none"> i) it is returned by the original purchaser ii) it is not dated product returned more than 30 days after the original delivery date iii) it is not discontinued, clearance or special order product iv) it is unused, in original packaging and in unbroken quantities. <p>Hilti will inspect product and, if the above requirements are satisfied, will credit to customer the original purchase price. A 15% restocking fee may apply.</p>
WARRANTY:	Other than the manufacturer's published warranty, no warranties or conditions, express or implied, written or oral, statutory or otherwise are implied. Any and all conditions and warranties implied by law or by the Sale of Goods Act or any similar statutes of any Province are hereby expressly waived.
TITLE TO PRODUCT:	Title to product remains with Hilti until the total purchase price of product is paid.
PRICES:	Customer agrees to pay Hilti prices set out on invoice. Customer agrees to pay taxes as indicated on invoice unless Hilti receives acceptable exemption certificates.
INDEMNIFICATION:	Customer agrees to use product at own risk and to indemnify Hilti against all liabilities, including legal fees, to third parties arising out of the use or possession thereof. Hilti shall in no event be liable for special, incidental or consequential damages.
CHANGES:	Hilti sales personnel are not authorized to modify these Terms and Conditions or modify Customer's credit terms. Terms are subject to change by Hilti with reasonable notice to Customer.
CASH SALES:	Payment in full is due prior to goods being released.
QUOTATIONS:	All terms and conditions apply once customer agrees to purchase product. Quotations on special promotion products are only valid until end of promotion period.