



The following pages are an excerpt from the North American Product Technical Guide, Volume 1: Direct Fastening Technical Guide, Edition 22.

Please refer to the publication in its entirety for complete details on this product including data development, base materials, general suitability, installation, corrosion, and product specifications.

[Direct Fastening Technical Guide, Edition 22](#)

To consult directly with a team member regarding our direct fastening products, contact Hilti's team of technical support specialists between the hours of 7:00am - 5:00pm CST.

US: 877-749-6337 or [HNATechnicalServices@hilti.com](mailto:HNATechnicalServices@hilti.com)

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## 3.6.5 BI-METAL KWIK-FLEX SELF-DRILLING SCREWS

### 3.6.5.1 PRODUCT DESCRIPTION

Owners, architects and design engineers expect longer life cycles from buildings. Extended warranties and use of more sustainable materials add up to greater expectations for performance — from structural integrity to the purely aesthetic — of all building components.

#### The solution: Bi-Metal Kwik-Flex Self-Drilling Fasteners

Made of 302/304 series (18/8) stainless steel alloy to provide unmatched corrosion resistance in your toughest applications

- Fused and hardened carbon steel drill point and lead threads quickly drill and tap structural steel and aluminum up 1/2" thick
- Coated with silver-colored Kwik-Cote, a galvanic barrier to help protect aluminum components from accelerated corrosion when in contact with 300 series stainless steel
- 300 series stainless alloy is virtually immune to delayed embrittlement failures seen with hardened 400 series stainless self-drilling fasteners

300 series stainless alloy is virtually immune to Hydrogen-Assisted Stress-Corrosion Cracking (HASCC). Hardened 410 stainless steel, 410 super-passivated stainless steel and 400 modified stainless steel self-drilling screws are generally considered susceptible to HASCC. Conventional hardened carbon steel screws with coatings that do not have Kwik-Flex technology (differential hardness) are also generally considered susceptible to HASCC.

#### Minimize corrosion in your applications

- Exposed fastening/coastal/aggressive environments
- Curtain wall/window wall systems/ rain screen systems
- Windows/doors/awnings/storefronts
- Panel systems to steel or aluminum framing
- Aluminum enclosures
- ACQ-treated wood (especially for applications with unknown or uncontrolled moisture conditions)
- Brick veneer anchoring

#### Product features

- Bi-metal technology — 300 (18-8) stainless steel head and shank provides outstanding corrosion resistance and long service life
- Fused and hardened carbon steel drill point quickly drills and taps into steel or aluminum up to 1/2" thick
- Silver-colored Kwik-Cote coating provides greater galvanic compatibility in dissimilar metal applications involving aluminum
- High strength, ductility and reliability
- Virtually immune to delayed embrittlement or to Hydrogen-Assisted Stress-Corrosion Cracking (HASCC)
- Wide variety of sizes and head styles
- High in-place value over the life of structures, components and systems

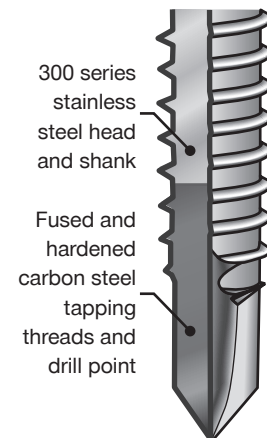
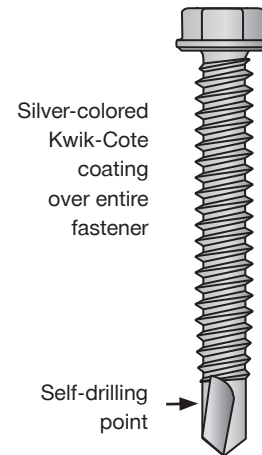
3.6.5.1 Product description

3.6.5.2 Material specifications

3.6.5.3 Technical data

3.6.5.4 Installation instructions

3.6.5.5 Ordering information



#### Listings/Approvals

**ICC-ES (International Code Council)**  
ESR-4374 with LABC/LARC Supplement

**COLA (City of Los Angeles)**  
RR 25886



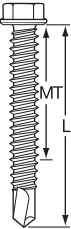
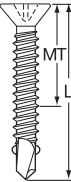
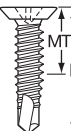
### 3.6.5.2 MATERIAL SPECIFICATIONS

Fastener designation	Fastener material <sup>1</sup>	Self-drilling point material	Fastener plating
Bi-Metal Kwik-Flex	Stainless steel	Carbon steel	Kwik-Cote

<sup>1</sup> Bi-Metal Kwik-Flex Fasteners with HWH style are SAE 304 stainless steel, while the PFH and PFHUC style fasteners are SAE 302 stainless steel. All head styles can be custom ordered in SAE 316 stainless steel with sufficient lead time and quantities.

### 3.6.5.3 TECHNICAL DATA

#### Selection guide

	Description	Size	Length (L)	Drive recess	Drill point size	Maximum drilling capacity (DC)	Maximum total thickness <sup>1</sup> (MT)	
hex washer head								
	S-MD 10-16 x 3/4" HWH #2 BM Kwik-Flex	10-16	3/4"	5/16" hex	2	0.110"	0.320"	
	S-MD 12-14 x 1" HWH #3 BM Kwik-Flex	12-14	1"		3	0.210"	0.500"	
	S-MD 12-14 x 1-1/2" HWH #3 BM Kwik-Flex		1-1/2"				1.00"	
	S-MD 12-14 x 2-1/2" HWH #3 BM Kwik-Flex		2-1/2"				2.00"	
	S-MD 12-24 x 2" HWH #5 BM Kwik-Flex	12-24	2"	3/8" hex	5	0.500"	1.100"	
	S-MD 14-20 x 1" HWH #3 BM Kwik-Flex	1/4-20	1"		3	0.312"	0.500"	
	S-MD 14-20 x 1-1/2" HWH #3 BM Kwik-Flex		1-1/2"				1.00"	
	S-MD 14-20 x 2" HWH #3 BM Kwik-Flex		2"				1.500"	
	S-MD 14-20 x 2-1/2" HWH #3 BM Kwik-Flex		2-1/2"				2.00"	
	S-MD 14-20 x 3" HWH #3 BM Kwik-Flex		3"				2.50"	
	S-MD 14-20 x 4" HWH #3 BM Kwik-Flex		4"				3.50"	
	S-MD 14-20 x 2" HWH #5 BM Kwik-Flex		2"				5	0.500"
Flat head reamers w/wings								
	S-WW 10-16 x 1-1/2" PFH #3 BM Kwik-Flex	10-16	1-1/2"	#2 phillips	3	0.140"	0.800"	
	S-WW 12-24 x 2-13/16" PFH #5 BM Kwik-Flex	12-24	2-13/16"	#3 phillips	5	0.500"	1.710"	
	S-WW 14-20 x 2-13/16" PFH #5 BM Kwik-Flex	1/4-20	2-13/16"				1.710"	
Flat head undercut								
	S-WD 12-14 x 1" PFHUC #3 BM Kwik-Flex	12-14	1"	#3 phillips	3	0.140"	0.500"	
	S-WD 12-14 x 1-1/2" PFHUC #3 BM Kwik-Flex		1-1/2"				1.00"	
	S-WD 1/4 - 20 x 3" PFHUC #2 BM Kwik-Flex	1/4-20	3"		2	0.210"	2.500"	
	S-WD 1/4 - 20 x4" PFHUC #2 BM Kwik-Flex		4"				3.500"	

<sup>1</sup> Maximum total thickness (MT) describes the maximum thickness of all attachments plus the base material thickness and is the load-bearing length of 300 series stainless under the hex head or including the flat head. Hardened carbon steel length (lead threads and point) should be completely through the base material and not in the load bearing section of the connection.

#### Ultimate tensile strengths — pullout (tension)<sup>1,3</sup>

Screw size	Drill point type	Drill cap (in.)	Pullout (lb)								
			Steel HRB = 60-75 F <sub>u</sub> = 50 – 66 ksi							Aluminum 6063-T5 22 ksi	
			18 ga.	16 ga.	14 ga.	12 ga.	1/8"	3/16"	1/4"	1/8"	1/4"
10-16	2	0.150	455	677	793	1394	1906	–	–	994	–
10-16	3	0.187	–	616	684	1242	1605	1527	–	961	–
12-14	2	0.187	528	750	892	1536	2602	2514	–	1132	–
12-14	3	0.210	417	679	802	1371	2028	2499	–	974	–
12-24	5	0.500	–	–	–	–	–	2110	2781	538	1995
1/4-20	3	0.312	–	680	780	1442	2623	3684	4069	1037	2786
1/4-20	5	0.500	–	–	–	–	–	–	2622	–	1724

<sup>1</sup> All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate allowable load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the person designing the connection. For additional product information and technical assistance, please contact Hilti directly at 1-877-749-6337.

<sup>2</sup> Values are for 300 series stainless fastener threaded shank.

<sup>3</sup> The lower of the ultimate pullout and tensile fastener strength of screw should be used for design. Pullover or shear bearing capacity of the material being fastened must be independently evaluated.

#### Ultimate fastener strength of screw<sup>1,2,3</sup>

Size	Tensile (lb)	Shear (lb)
10-16	1847	1282
12-14	2628	1950
12-24	2734	2284
1/4-20	4124	2860

### 3.6.5.4 INSTALLATION INSTRUCTIONS

For general discussion of Hilti screw fastener installation, reference Section 3.6.1.7.

Installation recommendation — Since the Bi-Metal Kwik-Flex fasteners are 300 series (18-8) stainless steel and considered non-magnetic, conventional magnetic setters will not retain them. Hilti offers red ring setters to provide faster, more reliable, and more consistent driving of the Bi-Metal Kwik-Flex fasteners.



#### Identification

The head marking consists of the number “3” as shown below.



flat head



hex washer head

### 3.6.5.5 ORDERING INFORMATION

Description	Maximum drilling capacity	Maximum total thickness (MT)	Drive recess	Box qty
<b>Countersinking head - winged reamers</b>				
S-WW 10-16 x 1 1/2" PFH # 3 BM KF	0.140"	0.800"	PH2 TEK	3,500
S-WW 12-24 x 2 13/16" PFH #5 BM KF	0.500"	1.710"	PH3	1,500
S-WW 14-20 x 2 13/16" PFH #5 BM KF	0.500"	1.710"	PH3	1,000
<b>Countersinking head</b>				
S-WD 12-14 x 1" PFHUC #2 BM KF	0.140"	0.500"	PH3	4,000
S-WD 12-14 x 1 1/2" PFHUC #2 BM KF	0.140"	1.000"	PH3	2,500
S-WD 1/4-20 x 3" PFHUC #2 BM KF	0.210"	2.500"	PH3	500
S-WD 1/4-20 x 4" PFHUC #2 BM KF	0.210"	3.500"	PH3	500
<b>#10 diameter HWH</b>				
S-MD 10-16 x 3/4" HWH #2 BM KF	0.110"	0.320"	5/16"	5,000
<b>#12 diameter HWH</b>				
S-MD 12-14 x 1" HWH #3 BM KF	0.210"	0.500"	5/16"	4,000
S-MD 12-14 x 1 1/2" HWH #3 BM KF	0.210"	1.000"	5/16"	2,500
S-MD 12-14 x 2 1/2" HWH #3 BM KF	0.210"	2.000"	5/16"	1,000
S-MD 12-24 x 2" HWH #5 BM KF	0.500"	1.100"	5/16"	2,000
<b>1/4 diameter HWH</b>				
S-MD 1/4-20 x 1" HWH #3 BM KF	0.312"	0.500"	3/8"	2,500
S-MD 1/4-20 x 1 1/2" HWH #3 BM KF	0.312"	1.000"	3/8"	1,000
S-MD 1/4-20 x 2" HWH #3 BM KF	0.312"	1.500"	3/8"	1,000
S-MD 1/4-20 x 2" HWH #5 BM KF	0.500"	1.100"	3/8"	1,500
S-MD 1/4-20 x 2 1/2" HWH #3 BM KF	0.312"	2.000"	3/8"	1,000
S-MD 1/4-20 x 3" HWH #3 BM KF	0.312"	2.500"	3/8"	500
S-MD 14-20 x 4" HWH #3 BMKF	0.312"	3.500"	3/8"	500

1 Bi-Metal Kwik-Flex screws are available by special order.