



The following excerpt are pages from the North American Product Technical Guide, Volume 2: Anchor Fastening, Edition 19.

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

US&CA: <https://submittals.us.hilti.com/PTGVol2/>

To consult directly with a team member regarding our anchor fastening products, contact Hilti's team of technical support specialists between the hours of 7:00am – 6:00pm CST.


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

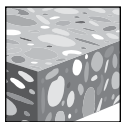
CA: 1-800-363-4458, ext. 6 or [CATechnicalServices@hilti.com](mailto:CATechnicalServices@hilti.com)

### 3.3.4 HSL-I INTERNALLY THREADED EXPANSION ANCHORS

#### PRODUCT DESCRIPTION

##### HSL-I internally threaded expansion anchors

Anchor System	Features and Benefits
<p>HSL-I Internally Threaded Expansion Anchor</p> 	<ul style="list-style-type: none"> <li>• Passed Telecordia NEBS GR-63-CORE Zone 4 earthquake level qualification testing</li> <li>• High load capacity in thin slabs</li> <li>• Force controlled expansion</li> </ul>



Uncracked concrete

Approvals/Listings	
ICC-ES (International Code Council)	ESR-1545 in concrete per ACI 318-14 Ch. 17 / ACI 355.2/ ICC-ES AC193
European Technical Approval	ETA-02/0042
City of Los Angeles	Research Report No. 25903
Nuclear Quality Assurance	Qualified under NQA-1 Nuclear Quality Program

#### MATERIAL SPECIFICATIONS

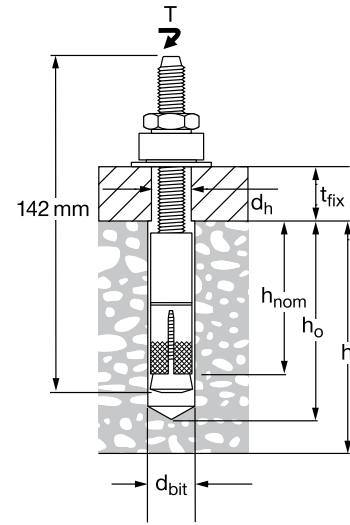
Carbon steel bolt or threaded rod conform to ISO 898-1, Class 8.8, $f_{ya} \geq 93$ ksi, $f_{uta} \geq 116$ ksi.
Carbon steel expansion sleeve conforms to DIN 2393, Grade ST-52-3.
Carbon steel nut conforms to DIN 934, Grade 8, $f_{uta} \geq 116$ ksi.
Carbon steel cone conforms to DIN 1654, Type CQ35, $f_{uta} \geq 87$ ksi.
Carbon steel washer conforms to DIN 1544, Grade ST37, $f_{uta} \geq 91$ ksi.

## INSTALLATION PARAMETERS

**Table 1 - Hilti HSL-I M12 65/80 specifications**

Setting information	Symbol	Units	HSL-I M12 65/80	
Nominal bit diameter	$d_{bit}$	mm	18	
Minimum nominal embedment	$h_{nom}$	mm (in.)	65 (2-9/16)	80 (3-3/16)
Minimum hole depth	$h_{nom}$	mm (in.)	80 (3-3/16)	95 (3-3/4)
Fixture hole diameter	$d_h$	mm (in.)	14 (9/16)	
Maximum fixture thickness	$t_{fix}$	mm (in.)	40 (1-9/16)	25 (1)
Installation torque	$T_{inst}$	Nm (ft-lb)	80 (60)	
Wrench size		mm	19	
Minimum concrete member thickness	$h$	mm (in.)	115 (4-1/2)	130 (5)

**Figure 1 - HSL-I M12 65/80 specifications<sup>1,2</sup>**



- 1 Figure illustrates 65 mm embedment.
- 2 Torque nut configuration before application of installation torque.

3.3.4

## DESIGN DATA IN CONCRETE PER ALLOWABLE STRESS DESIGN

**Table 2 - Hilti HSL-I M12 allowable loads in 4,000 psi normal-weight concrete<sup>1</sup>**

Description	Anchor length mm	Nominal embedment mm	Tension lb	Shear lb
HSL - I M12 65/80	113	65	2,335	2,265
	130	80	3,150	2,350

1 Allowable loads calculated using a 4:1 factor of safety.



### Combined shear and tension loading

$$\left( \frac{N_d}{N_{rec}} \right)^{5/3} + \left( \frac{V_d}{V_{rec}} \right)^{5/3} \leq 1.0$$

## INSTALLATION INSTRUCTIONS

Installation Instructions For Use (IFU) are included with each product package. They can also be viewed or downloaded online at [www.hilti.com](http://www.hilti.com). Because of the possibility of changes, always verify that downloaded IFU are current when used. Proper installation is critical to achieve full performance. Training is available on request. Contact Hilti Technical Services for applications and conditions not addressed in the IFU.

## ORDERING INFORMATION



### HSL-I M12 65/80

Description	Box qty
HSL-I M12 65/80	20