

### HVU with HAS / HAS-E rod adhesive anchor

Mortar System	Benefits
 <p>Hilti HVU foil capsule</p>  <p>HAS rods HAS-E (Zinc) HAS-E-F (Gal) HAS-E-R (A4-70) HAS-HCR rods</p>	<ul style="list-style-type: none"> <li>■ suitable for non-cracked concrete C 20/25 to C 50/60</li> <li>■ high loading capacity</li> <li>■ suitable for dry and water saturated concrete</li> <li>■ large diameter applications</li> <li>■ high corrosion resistant</li> <li>■ small edge distance and anchor spacing possible</li> </ul>



Concrete



Small edge distance & spacing



Fire resistance



Corrosion resistance



High corrosion resistance



European Technical Approval



CE conformity



Hilti anchor design software

### Basic loading data (for a single anchor)

#### All data in this section applies to

- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Steel failure
- Base material thickness, as specified in the table
- One typical embedment depth, as specified in the table
- One anchor material, as specified in the tables
- Non cracked concrete  $f_{c,cyl} = 32$  MPa
- Temperate range I  
(min. base material temperature  $-40^{\circ}\text{C}$ , max. long term/short term base material temperature:  $+24^{\circ}\text{C}/40^{\circ}\text{C}$ )
- Installation temperature range  $-5^{\circ}\text{C}$  to  $+40^{\circ}\text{C}$

### Embedment depth and base material thickness for the basic loading data

#### Recommended loads

Anchor size	M8	M10	M12	M16	M20	M24	M30
Typical embedment depth [mm]	80	90	110	125	170	210	270
Base material thickness [mm]	110	120	140	170	220	270	340

### Recommended loads

#### Anchor HAS-E (5.8 unless otherwise noted)

		Data according ETA-05/0255, issue 2011-06-23						
Anchor size		M8	M10	M12	M16	M20	M24	M30*
Tensile $N_{rec}$	[kN]	8.1	12.4	18.1	30.7	53.3	71.5	127.4
Shear $V_{rec}$	[kN]	4.9	7.4	10.9	20.6	32.0	45.7	120.6

**Note:** Contact your Hilti Field engineer for further details

\* Grade 8.8

## Approvals / certificates

Description	Authority / Laboratory	No. / date of issue
European technical approval <sup>a)</sup>	DIBt, Berlin	ETA-05/0255 / 2011-06-23
Fire test report	IBMB, Braunschweig	UB-3333/0891-1 / 2004-03-26
Fire test report ZTV-Tunnel	IBMB, Braunschweig	UB 3333/0891-2 / 2003-08-12
Assessment report (fire)	warringtonfire	WF 166402 / 2007-10-26

a) All data given in this section according ETA-05/0255, issue 2011-06-23

## Curing time for general conditions

Data according ETA-05/0255, issue 2011-06-23	
Temperature of the base material	Curing time before anchor can be fully loaded $t_{cure}$
20 °C to 40 °C	20 min
10 °C to 19 °C	30 min
0 °C to 9 °C	1 h
-5 °C to - 1 °C	5 h

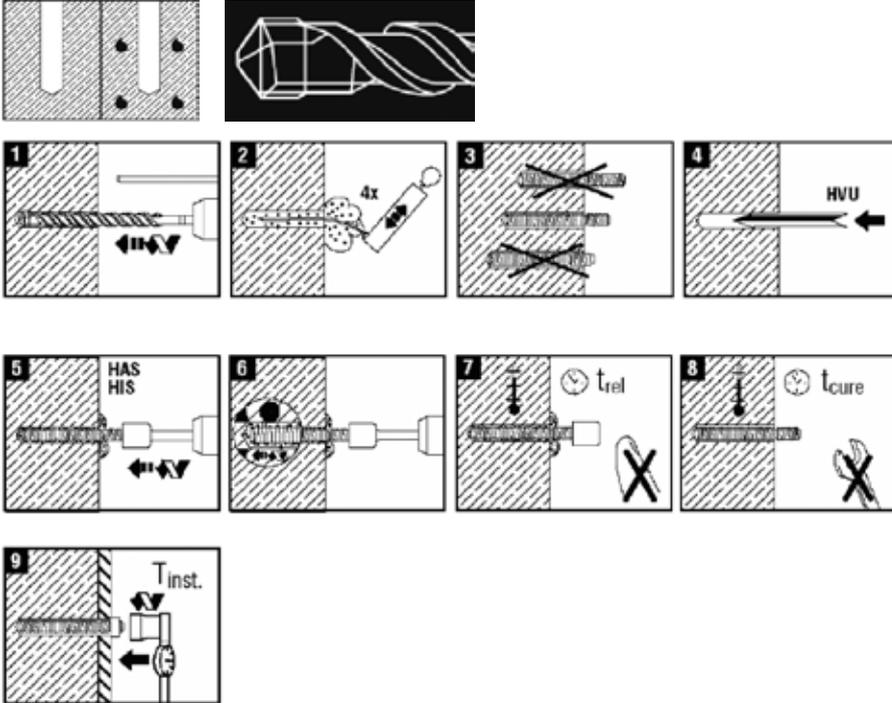
## Setting details

		Data according ETA-05/0255, issue 2011-06-23						
Anchor size		M8	M10	M12	M16	M20	M24	M30
Nominal diameter of drill bit	$d_0$ [mm]	10	12	14	18	24	28	35
Effective anchorage and drill hole depth	$h_{ef,min}$ [mm]	80	90	110	125	170	210	270
Diameter of clearance hole in the fixture	$d_f$ [mm]	9	12	14	18	22	26	33
Minimum spacing	$s_{min}$ [mm]	40	45	55	65	90	120	135
Minimum edge distance	$c_{min}$ [mm]	40	45	55	65	90	120	135
Torque moment <sup>a)</sup>	$t_{max}$ [Nm]	10	20	40	80	150	200	300

a) This is the maximum recommended torque moment to avoid splitting failure during installation for anchors with minimum spacing and/or edge distance.

## Setting instructions

Dry and water-saturated concrete, hammer drilling



For detailed information on installation see instruction for use given with the package of the product.

For technical data for anchors in diamond drilled holes please contact the Hilti Technical advisory service.