



## Designated according to The Construction Products (Amendment etc.) (EU Exit) Regulations 2020

UK Technical Assessment	UKTA-0836-23/6696 of 04/05/2023
Technical Assessment Body issuing the UK Technical Assessment:	British Board of Agrément
Trade name of the construction product:	Injection system Hilti HIT-HY 170
Product family to which the construction product belongs:	Injection system for use in masonry
Manufacturer:	Hilti AG Feldkircherstraße 100 9494 Schaan FÜRSTENTUM LIECHTENSTEIN
Manufacturing plant(s):	Hilti plants
This UK Technical Assessment contains:	27 pages including 3 Annexes which form an integral part of this assessment.
This UK Technical Assessment is issued in accordance with The Construction Products (Amendment etc.) (EU Exit) Regulations 2020 on the basis of:	UKAD 330076-00-0604 Metal injection anchors for use in masonry

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**1. Technical description of the product**

The Injection system Hilti HIT-HY 170 for masonry is a bonded anchor (injection type) consisting of a mortar foil pack with injection mortar Hilti HIT-HY 170, a perforated sieve sleeve and an anchor rod with hexagon nut and washer in the range of M8 to M12 or an internal threaded sleeve in the range of M8 to M12. The steel elements are made of zinc coated steel, stainless steel or high corrosion resistant steel.

The anchor rod is placed into a drilled hole filled with injection mortar and is anchored via the bond and/or mechanical interlock between steel element, injection mortar and masonry.

The product description is given in Annex A.

**2. Specification of the intended use(s) in accordance with the applicable UK Assessment Document (hereinafter UKAD)**

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this UK Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

**3. Performance of the product and references to the methods used for its assessment**

**3.1. Mechanical resistance and stability (BWR 1)**

<b>Essential characteristic</b>	<b>Performance</b>
Characteristic resistance for steel elements	See Annex C2
Characteristic resistance for anchors in masonry units	See Annexes C3 – C8
Displacements under shear and tension loads	See Annexes C3 – C8
Reduction Factor for job site tests ( $\beta$ -Factor)	See Annex C1
Edge distances and spacing	See Annexes C3 – C8
Group factor for group fastenings	See Annexes C3 – C8

**3.2. Safety in case of fire (BWR 2)**

<b>Essential characteristic</b>	<b>Performance</b>
Reaction to fire	Class A1
Resistance to fire	No performance assessed

### **3.3. Health, hygiene and the environment (BWR 3)**

Regarding dangerous substances there may be requirements (e.g. transposed UK legislation and national laws, regulations and administrative provisions) applicable to the products falling within the scope of this UK Technical Assessment. In order to meet the provisions of Regulation (EU) No 305/2011, these requirements need also to be complied with, when and where they apply.

### **3.4. Safety and accessibility in use (BWR 4)**

The essential characteristics regarding Safety and accessibility in use are included under Basic Works Requirement 1: Mechanical resistance and stability.

### **3.5. Protection against noise (BWR 5)**

Not relevant.

### **3.6. Energy economy and heat retention (BWR 6)**

Not relevant.

### **3.7. Sustainable use of natural resources (BWR 7)**

No performance assessed.

## **4. Assessment and verification of constancy of performance (hereinafter AVCP) system applied.**

### **4.1. System of assessment and verification of constancy of performance**

According to UKAD No. 330076-00-0604 and Annex V of the Construction Products Regulation (Regulation (EU) 305/2011) as brought into UK law and amended, the system of assessment and verification of constancy of performance (AVCP) 1 applies.

## **5. Technical details necessary for the implementation of the AVCP system, as provided for in the applicable UKAD.**

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with the British Board of Agrément and made available to the UK Approved Bodies involved in the conformity attestation process.

### **5.1. UKCA marking for the product/ system must contain the following information:**

- Identification number of the Approved Body
- Name/address of the manufacturer of the product/ system
- Marking with intention of clarification of intended use
- Date of marking
- Number of certificate of constancy of performance (where applicable)
- UKTA number.

On behalf of the British Board of Agrément



Date of Issue: 4 April 2023

**Hardy Giesler**  
Chief Executive Officer



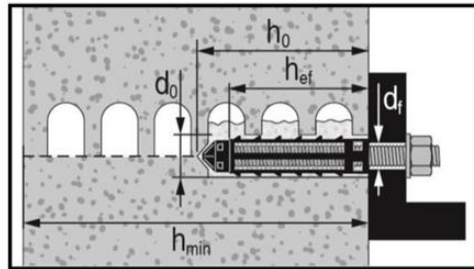
**British Board of Agrément,**  
1<sup>st</sup> Floor Building 3,  
Hatters Lane,  
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WD18 8YG

**ANNEX A1**

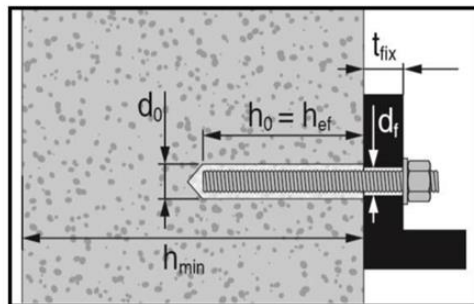
This annex applies to the product described in the main body of the UK Technical Assessment.

**Installed condition**

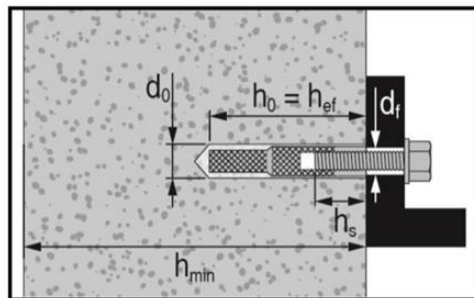
**Figure A1:** Hollow and solid brick with threaded rod, HIT-V... and sieve sleeve HIT-SC (see Table B5) or with internally threaded sleeve HIT-IC and sieve sleeve HIT-SC (see Table B6)



**Figure A2:** Solid brick with threaded rod, HIT-V... (see Table B7)







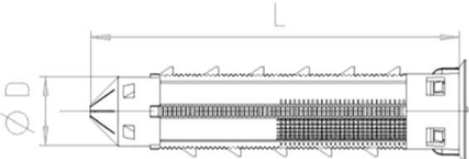
**Figure A3:** Solid brick with internally threaded sleeve HIT-IC (see Table B8)



<b>Hilti HIT-HY 170</b>	<b>Annex A1</b>
<b>Product description</b> Installed condition.	

## ANNEX A2

This annex applies to the product described in the main body of the UK Technical Assessment.

<p><b>Product description: Injection mortar and steel elements</b></p> <p><b>Injection mortar Hilti HIT-HY 170: hybrid system with aggregate 330 ml and 500 ml</b></p> <p>Marking          HILTI HIT          Production number and production line          Expiry date mm/yyyy</p>  <p>Product name: "Hilti HIT-HY 170"</p> <p><b>Static mixer Hilti HIT-RE-M</b></p>  <p><b>Threaded rod, HIT-V-...: M8 to M12</b></p>  <p>Commercial standard threaded rod with:</p> <ul style="list-style-type: none"> <li>• Materials and mechanical properties according to Table A1.</li> <li>• Inspection certificate 3.1 according to EN 10204:2004. The documents shall be stored.</li> <li>• Marking of embedment depth.</li> </ul> <p><b>Internally threaded sleeve: HIT-IC M8 to M12</b></p>  <p>Marking: e. g. HIT-IC M8x80</p> <p><b>Sieve sleeve: HIT-SC 16 to 22</b></p>  <p>Head marking: e. g. HIT-SC 18x85</p>		
<p><b>Hilti HIT-HY 170</b></p> <p><b>Product description</b>          Injection mortar / Static mixer / Steel elements / Sieve sleeve.</p>	<p><b>Annex A2</b></p>	

## ANNEX A3

This annex applies to the product described in the main body of the UK Technical Assessment.

<b>Table A1: Materials</b>	
<b>Designation</b>	<b>Material</b>
<b>Metal parts made of zinc coated steel</b>	
Threaded rod HIT-V-5.8(F)	Strength class 5.8, $f_{uk} = 500 \text{ N/mm}^2$ , $f_{yk} = 400 \text{ N/mm}^2$ . Elongation at fracture ( $l_0 = 5d$ ) > 8% ductile. Electroplated zinc coated $\geq 5 \mu\text{m}$ , (F) Hot dip galvanized $\geq 45 \mu\text{m}$ .
Threaded rod HIT-V-8.8(F)	Strength class 8.8, $f_{uk} = 800 \text{ N/mm}^2$ , $f_{yk} = 640 \text{ N/mm}^2$ . Elongation at fracture ( $l_0 = 5d$ ) > 8% ductile. Electroplated zinc coated $\geq 5 \mu\text{m}$ , (F) Hot dip galvanized $\geq 45 \mu\text{m}$ .
Internally threaded sleeve HIT-IC	$f_{uk} = 490 \text{ N/mm}^2$ , $f_{yk} = 390 \text{ N/mm}^2$ . Elongation at fracture ( $l_0 = 5d$ ) > 8% ductile. Electroplated zinc coated $\geq 5 \mu\text{m}$ .
Washer	Electroplated zinc coated $\geq 5 \mu\text{m}$ . Hot dip galvanized $\geq 45 \mu\text{m}$ .
Nut	Strength class of nut adapted to strength class of threaded rod. Electroplated zinc coated $\geq 5 \mu\text{m}$ , (F) Hot dip galvanized $\geq 45 \mu\text{m}$ .
<b>Metal parts made of stainless steel</b>	
Threaded rod HIT-V-R	Strength class 70 $f_{uk} = 700 \text{ N/mm}^2$ , $f_{yk} = 450 \text{ N/mm}^2$ . Elongation at fracture ( $l_0 = 5d$ ) > 8% ductile. Stainless steel 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362 EN 10088-1:2014.
Washer	Stainless steel 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362 EN 10088-1:2014.
Nut	Strength class of nut adapted to strength class of threaded rod Stainless steel 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362 EN 10088-1:2014.
<b>Metal parts made of high corrosion resistant steel</b>	
Threaded rod HIT-V-HCR	$f_{uk} = 800 \text{ N/mm}^2$ , $f_{yk} = 640 \text{ N/mm}^2$ . Elongation at fracture ( $l_0 = 5d$ ) > 8% ductile. High corrosion resistant steel 1.4529, 1.4565 EN 10088-1:2014.
Washer	High corrosion resistant steel 1.4529, 1.4565 EN 10088-1:2014.
Nut	Strength class of nut adapted to strength class of threaded rod. High corrosion resistant steel 1.4529, 1.4565 EN 10088-1:2014.
<b>Plastic parts</b>	
Sieve sleeve HIT-SC	Frame: FPP 20T. Sieve: PA6.6 N500/200.
<b>Hilti HIT-HY 170</b>	
<b>Product description</b> Materials.	<b>Annex A3</b>

## ANNEX B1


This annex applies to the product described in the main body of the UK Technical Assessment.

### Specifications of intended use

#### Base materials:

- Solid brick masonry (use category b) according to Annex B3.  
Note: The characteristic resistances are also valid for larger brick sizes and larger compressive strengths of the masonry unit.
- Hollow brick masonry (use category c) according to Annex B3 and B5.
- Mortar strength class of the masonry: M2,5 at minimum according to EN 998-2:2010.
- For masonry made of other solid, hollow or perforated bricks, the characteristic resistance of the anchor may be determined by job site tests according to UKAD 330076-00-0604, Annex B under consideration of the  $\beta$ -factor given in Annex C1, Table C1.

**Table B1: Overview use categories**

Anchorages subject to:		HIT-HY 170 with threaded rod, HIT-V-... or HIT-IC	
		in solid bricks	in hollow bricks
Hole drilling		hammer mode	rotary mode
Static and quasi static loading		Annex: C2 (steel), C3, C4	Annex: C2 (steel), C5, C6, C7, C8
Use category: dry or wet structure		Category <b>d/d</b> - <b>Installation and use</b> in structures subject to <b>dry</b> internal conditions. Category <b>w/d</b> - <b>Installation in dry or wet substrate and use</b> in structures subject to <b>dry</b> internal conditions Category <b>w/w</b> - <b>Installation and use</b> in structures subject to <b>dry or wet</b> environmental conditions	
Installation direction		horizontal	
Use category		b (solid masonry)	c (hollow or perforated masonry)
Temperature in the base material at installation		+5 °C to +40 °C (Table B9)	-5 °C to +40 °C (Table B10)
In-service temperature	Temperature range Ta:	-40 °C to +40 °C	(max. long term temperature +24 °C and max. short term temperature +40 °C)
	Temperature range Tb:	-40 °C to +80 °C	(max. long term temperature +50 °C and max. short term temperature +80 °C)

**Hilti HIT-HY 170**

**Intended Use**  
Specifications.

**Annex B1**



## ANNEX B2

This annex applies to the product described in the main body of the UK Technical Assessment.

<p><b>Use conditions (Environmental conditions):</b></p> <ul style="list-style-type: none"><li>Structures subject to dry internal conditions (zinc coated steel, stainless steel or high corrosion resistant steel).</li><li>Structures subject to external atmospheric exposure (including industrial and marine environment) and to permanently damp internal conditions, if no particular aggressive conditions exist (stainless steel or high corrosion resistant steel).</li><li>Structures subject to external atmospheric exposure and to permanently damp internal conditions, if other particular aggressive conditions exist (high corrosion resistant steel).</li></ul> <p>Note: Particular aggressive conditions are e.g. permanent, alternating immersion in seawater or the splash zone of seawater, chloride atmosphere of indoor swimming pools or atmosphere with extreme chemical pollution (e.g. in desulphurization plants or road tunnels where de-icing products are used).</p> <p><b>Design:</b></p> <ul style="list-style-type: none"><li>Anchorage are designed under the responsibility of an engineer experienced in anchorages and masonry work.</li><li>Verifiable calculation notes and drawings are prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e. g. position of the anchor relative to supports).</li><li>Anchorage under static or quasi-static loading are designed in accordance with: ETAG 029, Annex C, Design method A.</li></ul> <p><b>Installation:</b></p> <ul style="list-style-type: none"><li>Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.</li></ul>	
<b>Hilti HIT-HY 170</b>	<b>Annex B2</b>
<b>Intended Use Specifications.</b>	

## ANNEX B3











This annex applies to the product described in the main body of the UK Technical Assessment.

<b>Table B2: Overview brick types and properties</b>					
<b>Brick type</b>	<b>Picture</b>	<b>Brick size [mm]</b>	<b>Compressive strength [N/mm<sup>2</sup>]</b>	<b>Bulk density [kg/dm<sup>3</sup>]</b>	<b>Annex</b>
Solid clay brick EN 771-1		≥ 240x115x113	12	2,0	C3
Solid calcium silicate brick EN 771-2		≥ 240x115x113	12 / 28	2,0	C4
Hollow clay brick EN 771-1		300x240x238	12 / 20	1,4	C5
Hollow calcium silicate brick EN 771-2		248x240x238	12 / 20	1,4	C6
Hollow lightweight concrete brick EN 771-3		495x240x238	2 / 6	0,8	C7
Hollow normal weight concrete brick EN 771-3		500x200x200	4 / 10	1,0	C8
<b>Hilti HIT-HY 170</b>				<b>Annex B3</b>	
<b>Intended Use</b> Brick types and properties.					

## ANNEX B4

This annex applies to the product described in the main body of the UK Technical Assessment.

**Table B3: Overview fastening elements (including sizes) and corresponding brick types.**  
Embedment depth  $h_{ef} = 80$  mm

Brick type	Picture	HIT-V <sup>1)</sup> 	HIT-IC 	HIT-V <sup>1)</sup> + HIT-SC 	HIT-IC + HIT-SC 	Annex
Solid clay brick EN 771-1		M8 to M12	M8 to M12	M8 to M12	M8 to M12	C3
Solid calcium silicate brick EN 771-2		M8 to M12	M8 to M12	M8 to M12	M8 to M12	C4
Hollow clay brick EN 771-1		-	-	M8 to M12	M8 to M12	C5
Hollow calcium silicate brick EN 771-2		-	-	M8 to M12	M8 to M12	C6
Hollow lightweight concrete brick EN 771-3		-	-	M8 to M12	M8 to M12	C7
Hollow normal weight concrete brick EN 771-3		-	-	M8 to M12	M8 to M12	C8

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Hilti HIT-HY 170**


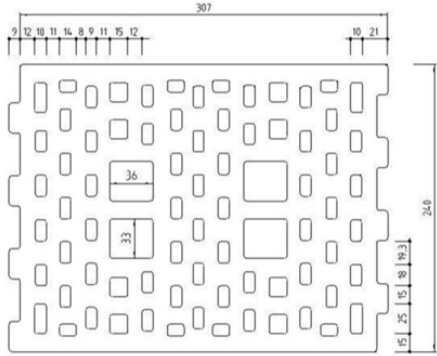

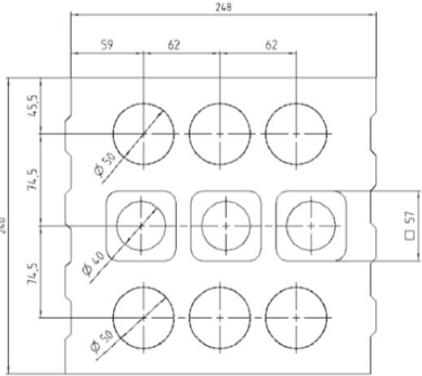

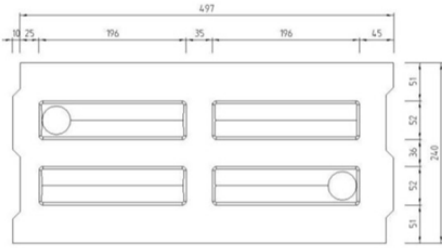

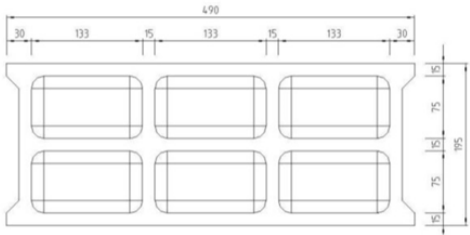
**Intended Use**

Fastening elements and corresponding brick types.

**Annex B4**

**ANNEX B5**



This annex applies to the product described in the main body of the UK Technical Assessment.

<p><b>Table B4: Details of hollow bricks</b></p>	
<p>Hollow clay brick EN 771-1</p> <p>Rapis Ziegel Hz 12-1,4-10DF</p>  	<p>Hollow calcium silicate brick EN 771-2</p> <p>KS Südbayern KSL-R(P) 12-1,4-8DF</p>  
<p>Hollow lightweight concrete brick EN 771-3</p> <p>Knobel Betonwerk Hbl 6-0,8-500x240x238</p>  	<p>Hollow normal weight concrete brick EN 771-3</p> <p>Parpaing creux B40</p>  
<p><b>Hilti HIT-HY 170</b></p>	
<p><b>Intended Use</b> Details of hollow bricks.</p>	<p><b>Annex B5</b></p>



## ANNEX B6

This annex applies to the product described in the main body of the UK Technical Assessment.

**Table B5: Installation parameters of threaded rod, HIT-V-... with sieve sleeve HIT-SC in hollow brick and solid brick (Figure A1)**

Threaded rod, HIT-V-...		M8	M10	M12
with HIT-SC		16x85	16x85	18x85
Nominal diameter of drill bit	$d_0$ [mm]	16	16	18
Drill hole depth	$h_0$ [mm]	95	95	95
Effective embedment depth	$h_{ef}$ [mm]	80	80	80
Maximum diameter of clearance hole in the fixture	$d_f$ [mm]	9	12	14
Minimum wall thickness	$h_{min}$ [mm]	115	115	115
Brush HIT-RB	- [-]	16	16	18
Maximum torque moment for all brick types except "parpaing creux"	$T_{max}$ [Nm]	3	4	6
Maximum torque moment for "parpaing creux"	$T_{max}$ [Nm]	2	2	3
Number of strokes HDM	- [-]	6	6	8
Number of strokes HDE-500	- [-]	5	5	6

**Table B6: Installation parameters of internally threaded sleeve HIT-IC with HIT-SC in hollow brick and solid brick (Figure A1)**

HIT-IC		M8x80	M10x80	M12x80
with HIT-SC		16x85	18x85	22x85
Nominal diameter of drill bit	$d_0$ [mm]	16	18	22
Drill hole depth	$h_0$ [mm]	95	95	95
Effective embedment depth	$h_{ef}$ [mm]	80	80	80
Thread engagement length	$h_s$ [mm]	8...75	10...75	12...75
Maximum diameter of clearance hole in the fixture	$d_f$ [mm]	9	12	14
Minimum wall thickness	$h_{min}$ [mm]	115	115	115
Brush HIT-RB	- [-]	16	18	22
Maximum torque moment	$T_{max}$ [Nm]	3	4	6
Number of strokes HDM	- [-]	6	8	10
Number of strokes HDE-500	- [-]	5	6	8

Hilti HIT-HY 170


Intended Use  
Installation parameters.

Annex B6


## ANNEX B7

This annex applies to the product described in the main body of the UK Technical Assessment.

**Table B7: Installation parameters of threaded rod, HIT-V-... in solid brick (Figure A2)**

Threaded rod, HIT-V-...		M8	M10	M12
Nominal diameter of drill bit	$d_0$ [mm]	10	12	14
Drill hole depth = Effective embedment depth	$h_0 =$ $h_{ef}$ [mm]	80	80	80
Maximum diameter of clearance hole in the fixture	$d_f$ [mm]	9	12	14
Minimum wall thickness	$h_{min}$ [mm]	115	115	115
Brush HIT-RB	- [-]	10	12	14
Maximum torque moment	$T_{max}$ [Nm]	5	8	10

**Table B8: Installation parameters of internally threaded sleeve HIT-IC in solid brick (Figure A3)**

HIT-IC		M8x80	M10x80	M12x80
Nominal diameter of drill bit	$d_0$ [mm]	14	16	18
Drill hole depth = Effective embedment depth	$h_0 =$ $h_{ef}$ [mm]	80	80	80
Thread engagement length	$h_s$ [mm]	8...75	10...75	12...75
Maximum diameter of clearance hole in the fixture	$d_f$ [mm]	9	12	14
Minimum wall thickness	$h_{min}$ [mm]	115	115	115
Brush HIT-RB	- [-]	14	16	18
Maximum torque moment	$T_{max}$ [Nm]	5	8	10

Hilti HIT-HY 170

**Intended Use**  
Installation parameters.

**Annex B7**

## ANNEX B8

This annex applies to the product described in the main body of the UK Technical Assessment.

**Table B9: Maximum working time and minimum curing time for solid bricks <sup>1)</sup>**

Temperature in the base material T	Maximum working time $t_{work}$	Minimum curing time $t_{cure}$
5 °C to 10 °C	8 min	2,5 h
> 10 °C to 20 °C	5 min	1,5 h
> 20 °C to 30 °C	3 min	45 min
> 30 °C to 40 °C	2 min	30 min




<sup>1)</sup> The curing time data are valid for dry base material only.  
In wet base material the curing times must be doubled.

**Table B10: Maximum working time and minimum curing time for hollow bricks <sup>1)</sup>**

Temperature in the base material T	Maximum working time $t_{work}$	Minimum curing time $t_{cure}$
-5 °C to 0 °C	10 min	12 h
> 0 °C to 5 °C	10 min	5 h
> 5 °C to 10 °C	8 min	2,5 h
> 10 °C to 20 °C	5 min	1,5 h
> 20 °C to 30 °C	3 min	45 min
> 30 °C to 40 °C	2 min	30 min

<sup>1)</sup> The curing time data are valid for dry base material only.  
In wet base material the curing times must be doubled.

**Table B11: Cleaning tools**

<p><b>Manual Cleaning (MC):</b> Hilti hand pump for blowing out drill holes</p> 
<p><b>Compressed air cleaning (CAC) <sup>1)</sup>:</b> air nozzle with an orifice opening of minimum 3,5 mm in diameter for blowing out drill hole</p> 
<p><b>Steel brush HIT-RB:</b> according to tables B5 to B8 depending on borehole diameter for MC and CAC</p> 

<sup>1)</sup> Compressed Air Cleaning (CAC) is also allowed.

**Hilti HIT-HY 170**

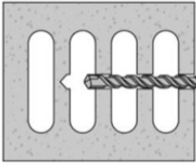
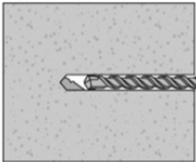
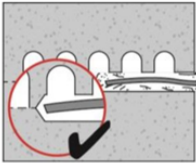
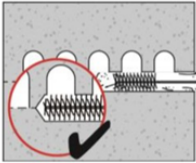
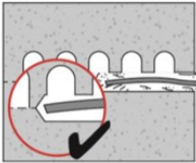
**Intended Use**

Maximum working time and minimum curing time.  
Cleaning tools.

**Annex B8**

## ANNEX B9


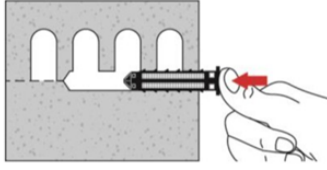
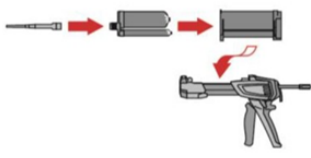

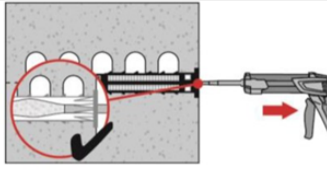
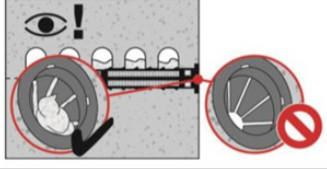
This annex applies to the product described in the main body of the UK Technical Assessment.

<b>Installation</b>	
<b>Hole drilling</b>	If no significant resistance is felt over the entire depth of the hole when drilling (e.g. in unfilled butt joints), the anchor should not be set at this position.
<b>Drilling mode</b>	
	<b>In hollow bricks (use category c): rotary mode</b> Drill hole to the required embedment depth with a hammer drill set in rotary mode using an appropriately sized carbide drill bit.
	<b>In solid bricks (use category b): hammer mode</b> Drill hole to the required embedment depth with a hammer drill set in hammer mode using an appropriately sized carbide drill bit.
<b>Drill hole cleaning</b>	Just before setting the anchor, the drill hole must be free of dust and debris. Inadequate hole cleaning = poor load values.
<b>Manual Cleaning (MC) for hollow and solid bricks</b>	
	Blow out at least 2 times from the back of the drill hole with the Hilti hand pump until return air stream is free of noticeable dust.
	Brush 2 times with the specified steel brush (tables B5 to B8) by inserting the steel brush Hilti HIT-RB to the back of the hole in a twisting motion and removing it. The brush must produce natural resistance as it enters the drill hole (brush $\varnothing \geq$ drill hole $\varnothing$ ) - if not the brush is too small and must be replaced with the proper brush diameter.
	Blow out again with the Hilti hand pump at least 2 times until return air stream is free of noticeable dust.
<b>Hilti HIT-HY 170</b>	<b>Annex B9</b>
<b>Intended Use</b> Installation instructions.	



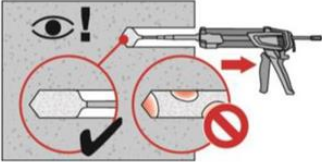
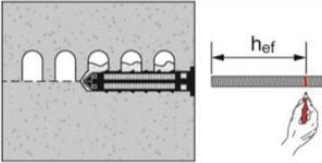
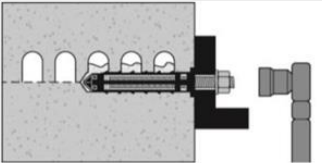
## ANNEX B10

This annex applies to the product described in the main body of the UK Technical Assessment.

<b>Injection preparation in masonry with holes or voids: installation with sieve sleeve HIT-SC</b>	
	<p><b>Sieve sleeve HIT-SC</b> Close lid.</p>
	<p>Insert sieve sleeve manually.</p>
<b>For all applications</b>	
	<p>Tightly attach new Hilti mixing nozzle HIT-RE-M to foil pack manifold (snug fit). Do not modify the mixing nozzle. Observe the instruction for use of the dispenser and foil pack. Check foil pack holder for proper function. Do not use damaged foil packs / holders. Insert foil pack into foil pack holder and put holder into HIT-dispenser.</p>
	<p>Discard initial adhesive. The foil pack opens automatically as dispensing is initiated. Depending on the size of the foil pack an initial amount of adhesive has to be discarded. Discarded quantities are: 2 strokes for 330 ml foil pack, 3 strokes for 500 ml foil pack.</p>
<b>Inject adhesive without forming air voids</b>	
<b>Installation with sieve sleeve HIT-SC</b>	
	<p><b>Sieve sleeve HIT-SC</b> Insert mixer approximately 1 cm through the lid. Inject required amount of adhesive (see tables B5 and B6). Adhesive must emerge through the lid.</p>
	<p>Control amount of injected mortar. Adhesive has to protrude into the lid. After injection is completed, depressurize the dispenser by pressing the release trigger. This will prevent further adhesive discharge from the mixer.</p>
<b>Hilti HIT-HY 170</b>	<b>Annex B10</b>
<b>Intended Use</b> Installation instructions.	

## ANNEX B11



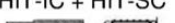
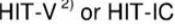




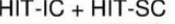
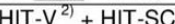
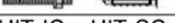


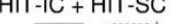
This annex applies to the product described in the main body of the UK Technical Assessment.

<p><b>Solid bricks: installation without sieve sleeve</b></p>  <p>Inject the adhesive starting at the back of the hole, slowly withdrawing the mixer with each trigger pull. Fill holes approximately 2/3 full to ensure that the annular gap between the anchor and the base material is completely filled with adhesive along the embedment length. After injection is completed, depressurize the dispenser by pressing the release trigger. This will prevent further adhesive discharge from the mixer.</p>	
<p><b>Setting the element:</b></p>  <p><b>HIT-V... or HIT-IC in hollow and solid bricks:</b> <b>Pre-setting (Figure A1 to Figure A3)</b> Mark and set element to the required embedment depth until working time <math>t_{work}</math> has elapsed. The working time <math>t_{work}</math> is given in Table B9 and Table B10.</p>	
<p><b>Loading the anchor</b></p>  <p>After required curing time <math>t_{cure}</math> (see Table B9 and Table B10) the anchor can be loaded. The applied installation torque shall not exceed the values <math>T_{max}</math> given in Table B5 to Table B8.</p>	
<p><b>Hilti HIT-HY 170</b></p>	
<p><b>Intended Use</b> Installation instructions.</p>	<p><b>Annex B11</b></p>

## ANNEX C1

This annex applies to the product described in the main body of the UK Technical Assessment.

**Table C1:  $\beta$ -factor for job-site testing under tension loading**

Use categories		w/w and w/d		d/d	
Temperature range		Ta <sup>1)</sup>	Tb <sup>1)</sup>	Ta <sup>1)</sup>	Tb <sup>1)</sup>
Base material	Elements				
Solid clay brick EN 771-2	HIT-V <sup>2)</sup> or HIT-IC 	0,97	0,83	0,97	0,83
	HIT-V <sup>2)</sup> + HIT-SC 				
	HIT-IC + HIT-SC 				
Solid calcium silicate brick EN 771-2	HIT-V <sup>2)</sup> or HIT-IC 	0,96	0,84	0,97	0,84
	HIT-V <sup>2)</sup> + HIT-SC 	0,69	0,62	0,91	0,82
	HIT-IC + HIT-SC 				
Hollow clay brick EN 771-1	HIT-V <sup>2)</sup> + HIT-SC 	0,97	0,83	0,97	0,83
	HIT-IC + HIT-SC 				
Hollow calcium silicate brick EN 771-2	HIT-V <sup>2)</sup> + HIT-SC 	0,69	0,62	0,91	0,82
	HIT-IC + HIT-SC 				
Hollow light weight concrete brick EN 771-3	HIT-V <sup>2)</sup> + HIT-SC 	0,89	0,81	0,97	0,86
	HIT-IC + HIT-SC 				
Hollow normal weight concrete brick EN 771-3	HIT-V <sup>2)</sup> + HIT-SC 	0,97	0,80	0,97	0,80
	HIT-IC + HIT-SC 				

<sup>1)</sup> Temperature range Ta / Tb see Annex B1.

<sup>2)</sup> Commercial standard threaded rods can also be used.

**Hilti HIT-HY 170**

**Performances**

$\beta$ -factors for job-site testing under tension load.

**Annex C1**

## ANNEX C2

This annex applies to the product described in the main body of the UK Technical Assessment.

**Table C2: Characteristic values of steel resistance for threaded rod, HIT-V-... under tension and shear loads in masonry**

HIT-HY 170 with threaded rod, HIT-V-...		M8	M10	M12
<b>Steel failure tension loads</b>				
Characteristic steel resistance	$N_{Rk,s}$ [kN]	$A_s \cdot f_{uk}$		
<b>Steel failure shear loads without lever arm</b>				
Characteristic steel resistance	$V_{Rk,s}$ [kN]	$0,5 \cdot A_s \cdot f_{uk}$		
<b>Steel failure shear loads with lever arm</b>				
Characteristic bending moment	$M_{Rk,s}$ [kN]	$1,2 \cdot W_{el} \cdot f_{uk}$		

**Table C3: Characteristic values of steel resistance for internally threaded sleeve HIT-IC under tension and shear loads in masonry**

HIT-HY 170 with HIT-IC		M8	M10	M12
<b>Steel failure tension loads</b>				
Characteristic steel resistance	$N_{Rk,s}$ [kN]	5,9	7,3	13,8
Partial safety factor	$\gamma_{Ms,N}$ [-]	1,50		
<b>Steel failure shear loads without lever arm</b>				
Characteristic steel resistance	$V_{Rk,s}$ [kN]	$0,5 \cdot A_s \cdot f_{uk}$		
<b>Steel failure shear loads with lever arm</b>				
Characteristic bending moment	$M_{Rk,s}$ [Nm]	$1,2 \cdot W_{el} \cdot f_{uk}$		

**Hilti HIT-HY 170**

**Performances**

Characteristic resistances under tension and shear load – steel failure.


**Annex C2**

## ANNEX C3

This annex applies to the product described in the main body of the UK Technical Assessment.

### Brick type: Solid clay brick Mz, 2DF

**Table C4: Description of brick**

Brick type		[-]	Solid Mz, 2DF	
Bulk density	$\rho$	[kg/dm <sup>3</sup> ]	$\geq 2,0$	
Compressive strength	$f_b$	[N/mm <sup>2</sup> ]	$\geq 12$	
Code		[-]	EN 771 - 1	
Producer		[-]	-	
Brick dimensions		[mm]	$\geq 240 \times 115 \times 113$	
Minimum wall thickness	$h_{min}$	[mm]	$\geq 115$	



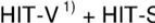

**Table C5: Installation parameter for all anchor combinations (see Table B3)**

Anchor type			see Table B3
Edge distance	$c_{min} = c_{cr}$	[mm]	115
Spacing	$s_{min \parallel} = s_{cr \parallel}$	[mm]	240
	$s_{min \perp} = s_{cr \perp}$	[mm]	115

**Table C6: Group factor for group fastenings**

Group factor	$\alpha_{q,N \parallel} \alpha_{q,V \parallel} \alpha_{q,N \perp} \alpha_{q,V \perp}$	[-]	2 at $c_{cr}$ and $s_{cr}$
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**Table C7: Characteristic tension resistance at edge distance  $c \geq c_{cr}$**

Use category				w/w = w/d		d/d	
Service temperature range				(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$N_{RK}$ [kN]				
HIT-V <sup>1)</sup> 	M8, M10, M12	80	12	3,0	2,5	3,0	2,5
HIT-IC 	M8	80	12	3,0	2,5	3,0	2,5
	M10, M12			4,0	3,5	4,0	3,5
HIT-V <sup>1)</sup> + HIT-SC 	M8, M10, M12	80	12	4,0	3,5	4,0	3,5
HIT-IC + HIT-SC 	M8, M10, M12	80	12	4,0	3,5	4,0	3,5

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C8: Characteristic shear resistance at edge distance  $c \geq c_{cr}$**

Use category				w/w = w/d		d/d	
Service temperature range				(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$V_{RK}$ [kN]				
All anchors	M8, M10, M12	80	12	3,5			

**Table C9: Displacements**

$h_{ef}$ [mm]	N [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	V [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
80	0,9	0,2	0,4	1,0	1,0	1,5

### Hilti HIT-HY 170

#### Performances solid clay brick Mz, 2DF

Installation parameters and group factor.

Characteristic values of resistance under tension and shear loads. Displacements.


Annex C3

## ANNEX C4

This annex applies to the product described in the main body of the UK Technical Assessment.

### Brick type: Solid calcium silicate brick KS, 2DF

**Table C10: Description of brick**

Brick type		[-]	Solid KS, 2DF	
Bulk density	$\rho$	[kg/dm <sup>3</sup> ]	≥ 2,0	
Compressive strength	$f_b$	[N/mm <sup>2</sup> ]	≥ 12 or ≥ 28	
Code		[-]	EN 771 - 2	
Producer		[-]	-	
Brick dimensions		[mm]	≥ 240 x 115 x 113	
Minimum wall thickness	$h_{min}$	[mm]	≥ 115	





**Table C11: Installation parameter for all anchor combinations (see Table B3)**

Anchor type		see Table B3
Edge distance	$c_{min} = c_{cr}$ [mm]	115
Spacing	$s_{min \parallel} = s_{cr \parallel}$ [mm]	240
	$s_{min \perp} = s_{cr \perp}$ [mm]	115

**Table C12: Group factor for group fastenings**

Group factor	$\alpha_{g,N \parallel} \alpha_{g,V \parallel} \alpha_{g,N \perp} \alpha_{g,V \perp}$ [-]	2 at $c_{cr}$ and $s_{cr}$
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**Table C13: Characteristic tension resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$N_{Rk}$ [kN]			
HIT-V <sup>1)</sup> 	M8, M10, M12	12	5,5	5,0	6,0	5,0
HIT-IC 		28	8,5	7,5	8,5	7,5
HIT-V <sup>1)</sup> + HIT-SC 	M8, M10, M12	12	4,0	3,5	5,5	5,0
HIT-IC + HIT-SC 		28	6,0	5,5	8,0	7,5

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C14: Characteristic shear resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$V_{Rk}$ [kN]			
All anchors	M8, M10, M12	12	4,0			
		28	6,0			

**Table C15: Displacements**

$h_{ef}$ [mm]	N [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	V [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
80mm	2,3	0,2	0,4	1,5	1,2	1,8

### Hilti HIT-HY 170

#### Performances solid silica brick KS, 2DF

Installation parameters and group factor.

Characteristic values of resistance under tension and shear loads. Displacements.


Annex C4

## ANNEX C5

This annex applies to the product described in the main body of the UK Technical Assessment.

### Brick type: Hollow clay brick Hz, 10DF

**Table C16: Description of brick**

Brick type		[-]	Hlz 12-1,4-10 DF	 <p>Drawing of the brick see Table B4</p>
Bulk density	$\rho$	[kg/dm <sup>3</sup> ]	$\geq 1,4$	
Compressive strength	$f_b$	[N/mm <sup>2</sup> ]	$\geq 12$ or $\geq 20$	
Code		[-]	EN 771 - 1	
Producer		[-]	Rapis (D)	
Brick dimensions		[mm]	300 x 240 x 238	
Minimum wall thickness	$h_{min}$	[mm]	$\geq 240$	





**Table C17: Installation parameter for all anchor combinations (see Table B3)**

Anchor type		see Table B3
Edge distance	$c_{min} = c_{cr}$ [mm]	150
Spacing	$s_{min \parallel} = s_{cr \parallel}$ [mm]	300
	$s_{min \perp} = s_{cr \perp}$ [mm]	240

**Table C18: Group factor for group fastenings**





Group factor	$\alpha_{g,N \parallel} \alpha_{g,V \parallel} \alpha_{g,N \perp} \alpha_{g,V \perp}$ [-]	2 at $c_{cr}$ and $s_{cr}$
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**Table C19: Characteristic tension resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$N_{RK}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC   M8, M10, M12	80	12	3,0	2,5	3,0	2,5
HIT-IC + HIT-SC  		20	3,5	3,0	3,5	3,0

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C20: Characteristic shear resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$V_{RK}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC   M8, M10, M12	80	12	2,0			
HIT-IC + HIT-SC  		20	3,0			

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C21: Displacements**

$h_{ef}$ [mm]	N [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	V [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
80	0,9	0,2	0,3	0,9	1,0	1,5

### Hilti HIT-HY 170

#### Performances hollow clay brick Hz, 10DF

Installation parameters and group factor.

Characteristic values of resistance under tension and shear loads. Displacements.


Annex C5

## ANNEX C6

This annex applies to the product described in the main body of the UK Technical Assessment.

### Brick type: Hollow calcium silicate brick KSL, 8DF

**Table C22: Description of brick**

Brick type	[-]	KSL-12-1,4-8 DF	 <p>Drawing of the brick see Table B4</p>
Bulk density	$\rho$ [kg/dm <sup>3</sup> ]	$\geq 1,4$	
Compressive strength	$f_b$ [N/mm <sup>2</sup> ]	$\geq 12$ or $\geq 20$	
Code	[-]	EN 771 – 2	
Producer	[-]	KS Südbayern (D)	
Brick dimensions	[mm]	248 x 240 x 238	
Minimum wall thickness	$h_{min}$ [mm]	$\geq 240$	





**Table C23: Installation parameter for all anchor combinations (see Table B3)**

Anchor type		see Table B3
Edge distance	$c_{min} = c_{cr}$ [mm]	125
Spacing	$s_{min \parallel} = s_{cr \parallel}$ [mm]	248
	$s_{min \perp} = s_{cr \perp}$ [mm]	240

**Table C24: Group factor for group fastenings**





Group factor	$\alpha_{g,N \parallel} \alpha_{g,V \parallel} \alpha_{g,N \perp} \alpha_{g,V \perp}$ [-]	2 at $c_{cr}$ and $s_{cr}$
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**Table C25: Characteristic tension resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$N_{Rk}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC  	80	12	3,0	2,5	3,5	3,0
HIT-IC + HIT-SC  		20	4,0	3,5	5,0	4,5

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C26: Characteristic shear resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$V_{Rk}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC  	80	12	8,5			
HIT-IC + HIT-SC  		20	12,0			

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C27: Displacements**

$h_{ef}$ [mm]	N [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	V [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
80	1,8	0,2	0,3	3,4	2,5	3,8

### Hilti HIT-HY 170

#### Performances hollow silica brick KSL, 8DF

Installation parameters and group factor.

Characteristic values of resistance under tension and shear loads. Displacements.

Annex C6




## ANNEX C7

This annex applies to the product described in the main body of the UK Technical Assessment.

### Brick type: Hollow lightweight concrete brick Hbl, 16DF

**Table C28: Description of brick**

Brick type	[-]	Hbl-4-0,7	 <p>Drawing of the brick see Table B4</p>
Bulk density	$\rho$ [kg/dm <sup>3</sup> ]	$\geq 0,8$	
Compressive strength	$f_b$ [N/mm <sup>2</sup> ]	$\geq 2$ or $\geq 6$	
Code	[-]	EN 771-3	
Producer	[-]	Knobel (D)	
Brick dimensions	[mm]	495 x 240 x 238	
Minimum wall thickness	$h_{min}$ [mm]	$\geq 240$	

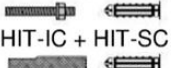
**Table C29: Installation parameter for all anchor combinations (see Table B3)**

Anchor type		see Table B3
Edge distance	$c_{min} = c_{cr}$ [mm]	250
Spacing	$s_{min \parallel} = s_{cr \parallel}$ [mm]	240
	$s_{min \perp} = s_{cr \perp}$ [mm]	240

**Table C30: Group factor for group fastenings**

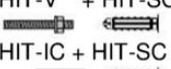
Group factor	$\alpha_{q,N \parallel} \alpha_{q,V \parallel} \alpha_{q,N \perp} \alpha_{q,V \perp}$ [-]	2 at $c_{cr}$ and $s_{cr}$
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**Table C31: Characteristic tension resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$N_{Rk}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC  M8, M10, M12	80	2	1,2	0,9	1,5	1,2
		6	2,0	1,5	2,5	2,0

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C32: Characteristic shear resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$V_{Rk}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC  M8, M10, M12	80	2	2,5			
		6	4,0			

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C33: Displacements**

$h_{ef}$ [mm]	N [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	V [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
80	2,4	0,2	0,4	3,4	1,3	1,9

### Hilti HIT-HY 170

#### Performances hollow lightweight concrete brick Hbl 16DF

Installation parameters and group factor.

Characteristic values of resistance under tension and shear loads. Displacements.


Annex C7

## ANNEX C8

This annex applies to the product described in the main body of the UK Technical Assessment.

### Brick type: Hollow normal weight concrete brick - parpaing creux

**Table C34: Description of brick**

Brick type	[-]	B40	 <p>Drawing of the brick see Table B4</p>
Bulk density	$\rho$ [kg/dm <sup>3</sup> ]	$\geq 1,0$	
Compressive strength	$f_b$ [N/mm <sup>2</sup> ]	$\geq 4$ or $\geq 10$	
Code	[-]	EN 771-3	
Producer	[-]	Fabemi (F)	
Brick dimensions	[mm]	500 x 200 x 200	
Minimum wall thickness	$h_{min}$ [mm]	$\geq 200$	





**Table C35: Installation parameter for all anchor combinations (see Table B3)**

Anchor type		see Table B3
Edge distance	$c_{min} = c_{cr}$ [mm]	200
Spacing	$s_{min \parallel} = s_{cr \parallel}$ [mm]	200
	$s_{min \perp} = s_{cr \perp}$ [mm]	200

**Table C36: Group factor for group fastenings**





Group factor	$\alpha_{g,N \parallel} \alpha_{g,V \parallel} \alpha_{g,N \perp} \alpha_{g,V \perp}$ [-]	2 at $c_{cr}$ and $s_{cr}$
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**Table C37: Characteristic tension resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$N_{Rk}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC  	80	4	0,9	0,9	0,9	0,9
HIT-IC + HIT-SC  		10	1,2	1,2	1,5	1,5

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C38: Characteristic shear resistance at edge distance  $c \geq c_{cr}$**

Use category			w/w = w/d		d/d	
Service temperature range			(Ta)	(Tb)	(Ta)	(Tb)
Anchor type and size	$h_{ef}$ [mm]	$f_b$ [N/mm <sup>2</sup> ]	$V_{Rk}$ [kN]			
HIT-V <sup>1)</sup> + HIT-SC  	80	4	2,5			
HIT-IC + HIT-SC  		10	4,0			

<sup>1)</sup> Commercial standard threaded rods can also be used.

**Table C39: Displacements**

$h_{ef}$ [mm]	N [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	V [kN]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
80	1,0	0,6	1,2	2,3	0,6	0,9

### Hilti HIT-HY 170

**Performances hollow normal weight concrete brick - parpaing creux**  
Installation parameters and group factor.  
Characteristic values of resistance under tension and shear loads. Displacements.

**Annex C8**



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