

# Sika AnchorFix<sup>®</sup>-1

## Injection anchors for use in masonry

### DECLARATION OF PERFORMANCE

## No. 38701859

1	<b>UNIQUE IDENTIFICATION CODE OF THE PRODUCT- TYPE:</b>	38701859
2	<b>INTENDED USE/S</b>	ETA 17/0179 of 27/02/2017 Injection anchors for use in masonry
3	<b>MANUFACTURER:</b>	Sika Services AG Tüffenwies 16-22 8048 Zürich
4	<b>AUTHORISED REPRESENTATIVE:</b>	
5	<b>SYSTEM/S OF AVCP:</b>	System 1
6b	<b>EUROPEAN ASSESSMENT DOCUMENT:</b>	ETAG 029, edition 2013, used as European Assessment Document (EAD)
	European Technical Assessment:	ETA 17/0179 of 27/02/2017
	Technical Assessment Body:	TECHNICKY A ZKUSEBNI USTAV STAVEBNI PRAHA s.p.
	Notified body/ies:	1020

#### Declaration of Performance

Sika AnchorFix<sup>®</sup>-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

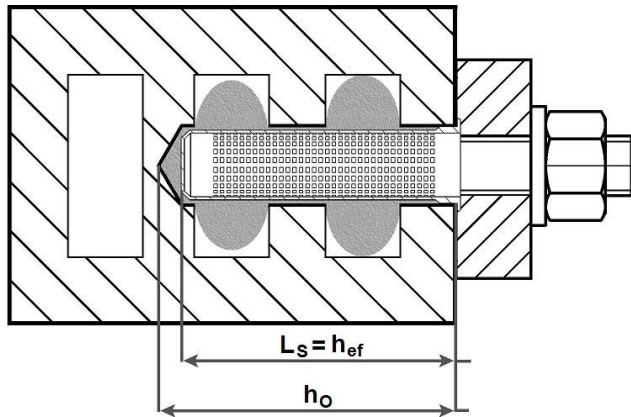
## 7 DECLARED PERFORMANCE/S

Reaction to fire - Anchorages satisfy requirements for Class A1

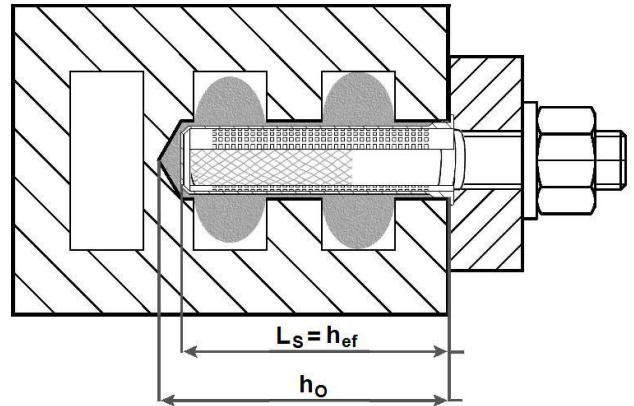
Resistance to fire - No performance assessed

### Installation in hollow or perforated brick masonry

Installation of anchor rod with sieve sleeve

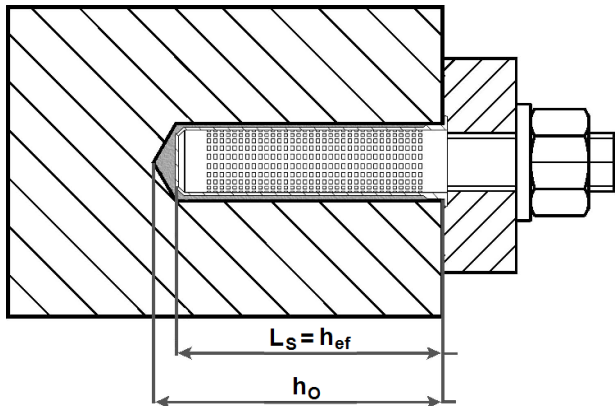


Installation of internal threaded socket with sieve sleeve

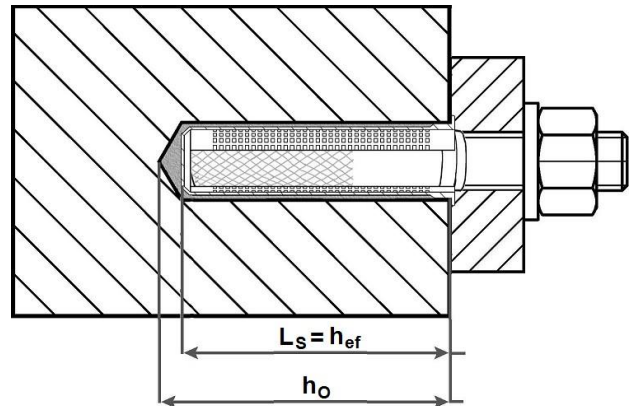


### Installation in solid brick masonry

Installation of anchor rod with or without sieve sleeve



Installation of internal threaded socket with sieve sleeve

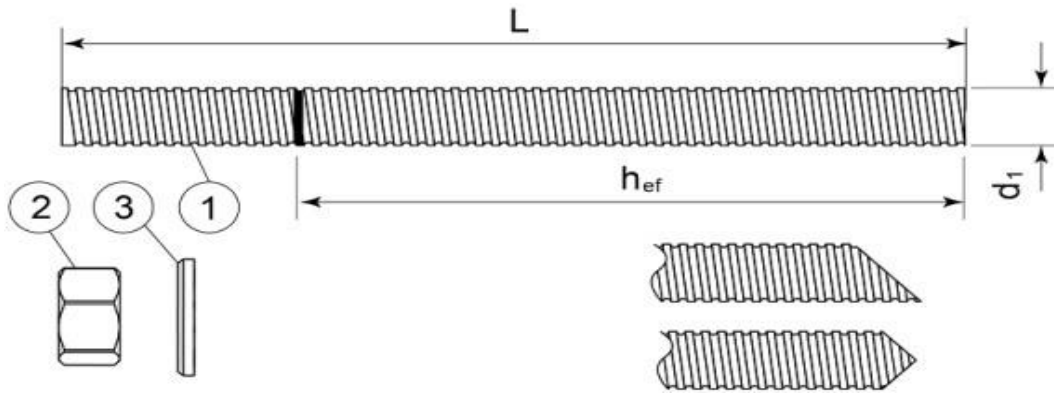


- $L_s$  = length of the sieve sleeve
- $h_{ef}$  = effective setting depth
- $h_0$  = bore hole depth

### Declaration of Performance

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

**Threaded rod M8, M10, M12**



Standard commercial threaded rod with marked embedment depth

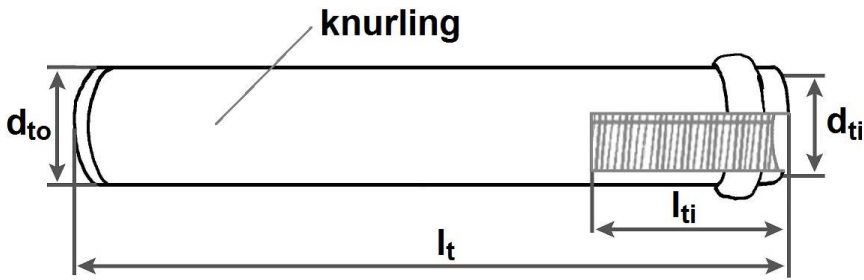
Part	Designation	Material
<b>Steel, zinc plated <math>\geq 5 \mu\text{m}</math> acc. to EN ISO 4042 or Steel, hot-dip galvanized <math>\geq 40 \mu\text{m}</math> acc. to EN ISO 1461 and EN ISO 10684 or Steel, zinc diffusion coating <math>\geq 15 \mu\text{m}</math> acc. to EN 13811</b>		
1	Anchor rod	Steel, EN 10087 or EN 10263 Property class 5.8, 8.8, 10.9* EN ISO 898-1
2	Hexagon nut EN ISO 4032	According to threaded rod, EN 20898-2
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
<b>Stainless steel</b>		
1	Anchor rod	Material: A2-70, A4-70, A4-80, EN ISO 3506
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
<b>High corrosion resistant steel</b>		
1	Anchor rod	Material: 1.4529, 1.4565, EN 10088-1
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod

\*Galvanized rod of high strength are sensitive to hydrogen induced brittle failure

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Sika AnchorFix®-1 Injection anchors for  
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38701859  
2017.08 , ver. 1  
1138

### Internal threaded socket



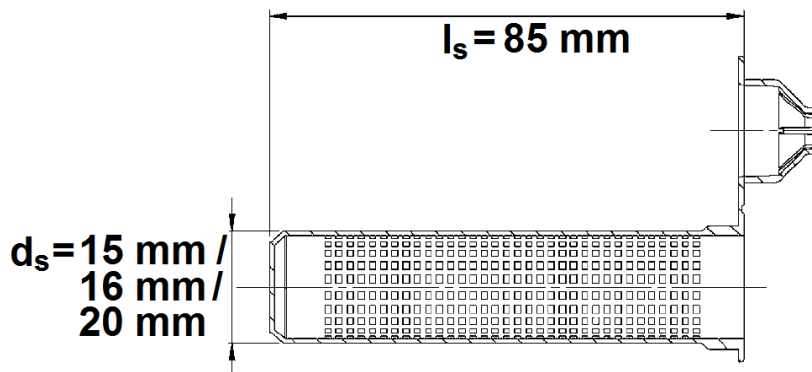
Marking:  
Identifying mark of the producer "m" Size of internal thread e.g. M8

**Table A1: Dimensions of internal threaded socket**

Internal threaded socket	Inner diameter $d_{ti}$	Outer diameter $d_{to}$ [mm]	Length of the internal thread $l_{ti}$ [mm]	Total length $l_t$ [mm]
12 x 80	M8	12	30	80
14 x 80	M10	14	30	80
16 x 80	M12	16	30	80

Designation	Material
Internal threaded socket	strength class 5.8 EN ISO 898-1, galvanized $\geq 5 \mu\text{m}$ EN ISO

### Sieve sleeve



Types:  
SH15/85  
SH16/85  
SH20/85

Designation	Material
Sieve sleeve	Polypropylene

### Declaration of Performance

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

**Anchorage subject to:**

- Static and quasi-static loads

**Base materials**

- Solid brick masonry (Use category b), according to Annex B2.
- Hollow brick masonry (Use category c), according to Annex B2 to B3.
- Mortar strength class of the masonry M2,5 at minimum according to EN 998-2:2010.
- For other bricks in solid masonry and in hollow or perforated masonry, the characteristic resistance of the anchorages may be determined by job site tests according to ETAG 029, Annex B and under consideration of the  $\beta$ -factor to Annex C1, Table C1.

Note: The characteristic resistance for solid bricks are also valid for larger brick sizes and larger compressive strength of the masonry unit.

**Temperature range:**

- T: -40°C to +80°C (max. short. term temperature +80°C and max. long term temperature +50°C)

**Use conditions (Environmental conditions)**

- Structures subject to dry internal conditions (zinc coated steel)

**Use categories in respect of installation and use:**

- Category d/d - Installation and use in structures subject to dry, internal conditions
- Category w/d - Installation in dry or wet substrate and use in structures subject to dry, internal conditions

**Design:**

- Verifiable calculation notes and drawings are prepared taking account the relevant masonry in the region of the anchorage, the loads to be transmitted and their transmission to the supports of the structure. The position of the anchor is indicated on the design drawings.
- The anchorages are designed in accordance with the ETAG 029, Annex C, Design method A, under the responsibility of an engineer experienced in anchorages and masonry work.

**Installation:**

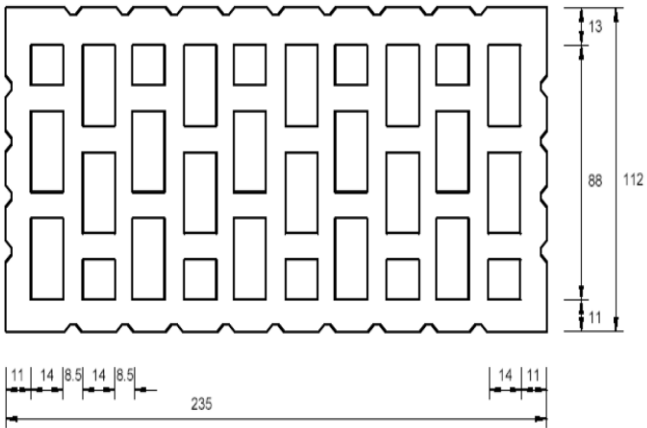
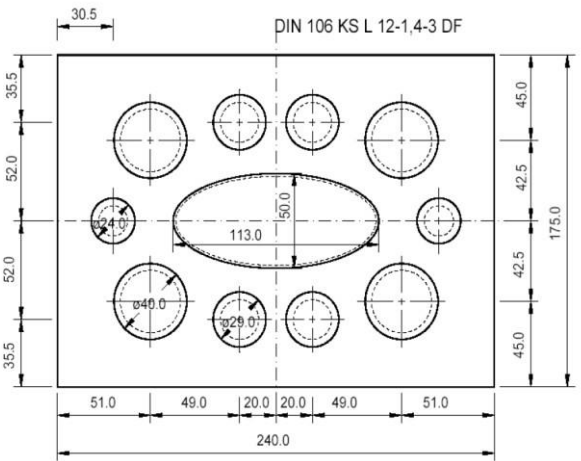
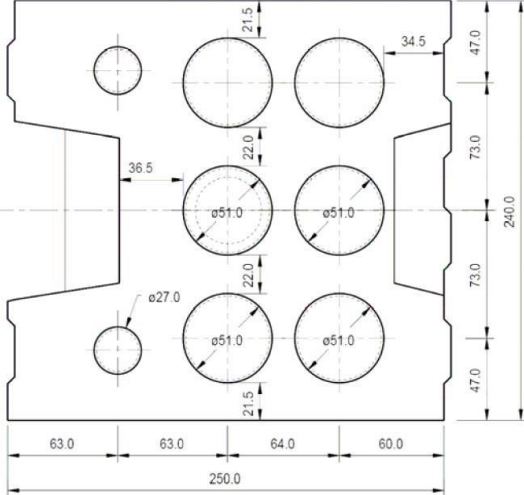
- Dry or wet structures

Anchor Installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.

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use in masonry  
38701859  
2017.08 , ver. 1  
1138

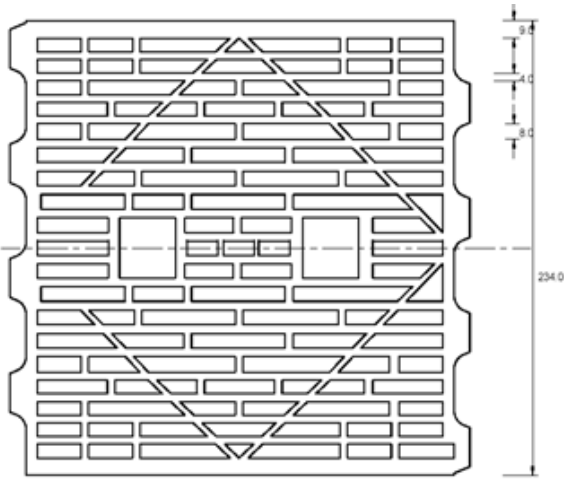
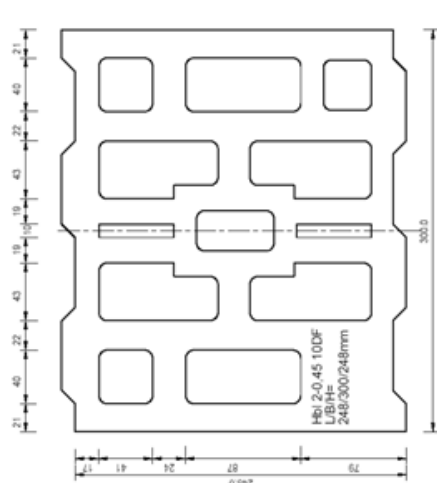
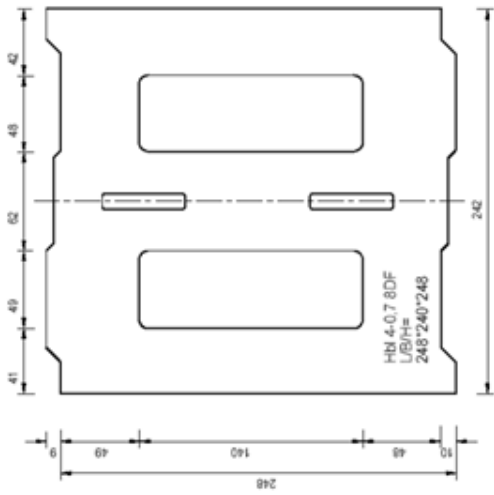
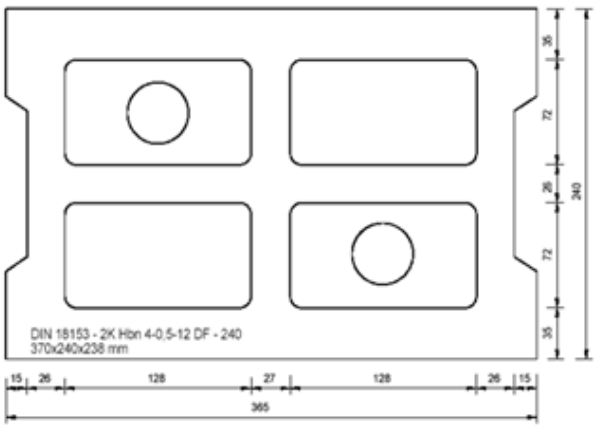
**Table B1: Types and dimensions of block and bricks**

<p><b>Brick N° 1</b></p>  <p>Hollow clay brick HLz 12-1,0-2DF according to EN 771-1 length/width/height = 235 mm/112 mm/115 mm <math>f_b \geq 12 \text{ N/mm}^2</math> / <math>\rho \geq 1,0 \text{ kg/dm}^3</math></p>	<p><b>Brick N° 2</b></p>  <p>Hollow sand lime brick KSL 12-1,4-3DF according to EN 771-2 length/width/height = 240 mm/175 mm/113 mm <math>f_b \geq 12 \text{ N/mm}^2</math> / <math>\rho \geq 1,4 \text{ kg/dm}^3</math></p>
<p><b>Brick N° 3</b></p>  <p>Hollow sand lime brick KSL 12-1,4-8DF according to EN 771-2 length/width/height = 250 mm/240 mm/237 mm <math>f_b \geq 12 \text{ N/mm}^2</math> / <math>\rho \geq 1,4 \text{ kg/dm}^3</math></p>	<p><b>Brick N° 4</b></p> <p>Solid clay brick Mz 12-2,0-NF according to EN 771-1 length/width/height = 240 mm/116 mm/71 mm <math>f_b \geq 12 \text{ N/mm}^2</math> / <math>\rho \geq 2,0 \text{ kg/dm}^3</math></p> <p><b>Brick N° 5</b></p> <p>Solid sand lime brick KS 12-2,0-NF according to EN 771-2 length/width/height = 240 mm/115 mm/70 mm <math>f_b \geq 12 \text{ N/mm}^2</math> / <math>\rho \geq 2,0 \text{ kg/dm}^3</math></p>

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

**Table B2: Types and dimensions of block and bricks**

<p><b>Brick N° 6</b></p>  <p>Hollow clay brick HLzW 6-0,7-8DF according to EN 771-1 length/width/height = 250 mm/240 mm/240 mm <math>f_b \geq 6 \text{ N/mm}^2</math> / <math>\rho \geq 0,8 \text{ kg/dm}^3</math></p>	<p><b>Brick N° 7</b></p>  <p>Lightweight concrete hollow block Hbl 2-0,45-10DF according to EN 771-3 length/width/height = 250 mm/300 mm/248 mm <math>f_b \geq 2,0 \text{ N/mm}^2</math> / <math>\rho \geq 0,45 \text{ kg/dm}^3</math></p>
<p><b>Brick N° 8</b></p>  <p>Lightweight concrete hollow block Hbl 4-0,7-8DF according to EN 771-3 length/width/height = 250 mm/240 mm/248 mm <math>f_b \geq 4,0 \text{ N/mm}^2</math> / <math>\rho \geq 0,7 \text{ kg/dm}^3</math></p>	<p><b>Brick N° 9</b></p>  <p>Concrete masonry unit Hbn 4-12DF according to EN 771-3 length/width/height = 370 mm/240 mm/238 mm <math>f_b \geq 4 \text{ N/mm}^2</math> / <math>\rho \geq 1,2 \text{ kg/dm}^3</math></p>

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

**Table B3: Installation parameters in solid and hollow masonry**

Anchor type		Anchor rod						Internal threaded socket					
Size		M8	M10	M12	M8	M10	M12	M8	M10	M12			
Internal threaded socket	dtoxlt	-	-	-	-	-	-	12x80	14x80	16x80			
Sieve sleeve	ls [mm]	-	-	-	85	85	85	85	85	85			
	ds [mm]	-	-	-	15	16	15	16	20	15	16	20	20
Nominal drill hole diameter	d0 [mm]	15	15	20	15	16	15	16	20	15	16	20	20
Diameter of cleaning brush	db [mm]	20±1	20±1	22±1	20±1	20±1	22±1	20±1	22±1	22±1			
Depth of the drill hole	h0 [mm]	90											
Effective anchorage depth	hef [mm]	85						80					
Diameter of clearance hole in the fixture	df ≤ [mm]	9	12	14	9	12	14	9	12	14			
Torque moment	Tinst ≤ [mm]	2											

**Table B4: Edge distances and spacing**

Base material <sup>1)</sup>	Anchor rod								
	M8			M10			M12		
	$C_{cr} = C_{min}$	$S_{cr  } = S_{min  }$	$S_{cr⊥} = S_{min⊥}$	$C_{cr} = C_{min}$	$S_{cr  } = S_{min  }$	$S_{cr⊥} = S_{min⊥}$	$C_{cr} = C_{min}$	$S_{cr  } = S_{min  }$	$S_{cr⊥} = S_{min⊥}$
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	100	235	115	100	235	115	120	235	115
Brick N° 2	100	240	113	100	240	113	120	240	113
Brick N° 3	100	250	237	100	250	237	120	250	237
Brick N° 4	128	255	255	128	255	255	128	255	255
Brick N° 5	128	255	255	128	255	255	128	255	255
Brick N° 6	100	250	240	100	250	240	120	250	240
Brick N° 7	100	250	248	100	250	248	-	-	-
Brick N° 8	100	250	248	100	250	248	120	250	248
Brick N° 9	100	370	238	100	370	238	120	370	238

Base material <sup>1)</sup>	Internal threaded socket								
	M8			M10			M12		
	$C_{cr} = C_{min}$	$S_{cr  } = S_{min  }$	$S_{cr⊥} = S_{min⊥}$	$C_{cr} = C_{min}$	$S_{cr  } = S_{min  }$	$S_{cr⊥} = S_{min⊥}$	$C_{cr} = C_{min}$	$S_{cr  } = S_{min  }$	$S_{cr⊥} = S_{min⊥}$
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	100	235	115	120	235	115	120	235	115
Brick N° 2	100	240	113	120	240	113	120	240	113
Brick N° 3	-	-	-	120	250	237	120	250	237
Brick N° 4	128	255	255	128	255	255	128	255	255
Brick N° 5	128	255	255	128	255	255	128	255	255
Brick N° 6	100	250	240	120	250	240	120	250	240
Brick N° 7	100	250	248	120	250	248	120	250	248
Brick N° 8	-	-	-	120	250	248	120	250	248
Brick N° 9	100	370	238	120	370	238	120	370	238

1) Brick N° according to Annex B 2 and B 3

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for use in masonry  
 38701859  
 2017.08 , ver. 1  
 1138



**Table B5: Minimum curing time Sika AnchorFix®-1**

Resin cartridge temperature [°C]	T Work [mins]	Base material Temperature [°C]	T Load [mins]
min +5	18	min +5	145
+5 to +10	10	+5 to +10	
+10 to +20	6	+10 to +20	85
+20 to +25	5	+20 to +25	50
+25 to +30	4	+25 to +30	40
+30		+30	35

T work is typical gel time at highest temperature

T load is set at the lowest temperature

**Table C1: Characteristic resistance under tension and shear loading**

Base material	Anchor rods $N_{Rk} = V_{Rk}$ [kN] <sup>1)</sup>			Internal threaded sockets $N_{Rk} = V_{Rk}$ [kN] <sup>1)</sup>		
	M8	M10	M12	M8	M10	M12
Brick N°	2,5	2,0	2,0	1,5	2,5	2,5
Brick N°	0,75	1,2	0,5	0,6	0,75	0,9
Brick N°	0,75	1,2	0,5	-	0,75	0,4
Brick N°	1,5	1,5	3,0	2,0	3,0	4,0
Brick N°	0,75	0,9	1,5	2,0	1,5	0,9
Brick N°	1,2	1,2	0,9	0,9	1,5	0,6
Brick N°	0,6	0,3	-	0,5	0,3	0,75
Brick N°	0,6	1,5	1,2	-	0,4	0,6
Brick N°	2,5	1,5	2,5	0,6	1,2	0,9

<sup>1)</sup> For design according ETAG 029, Annex C:  $N_{Rk} = N_{Rk,p} = N_{Rk,b} = N_{Rk,s}$ ;  $N_{Rk,pb}$  according to ETAG 029, Annex C For  $V_{Rk,s}$  see Annex C1, Table C2; Calculation of  $V_{Rk,pb}$  and  $V_{Rk,c}$  according to ETAG 029, Annex C

**Table C2: Characteristic bending moment**

Size		M8	M10	M12
Steel grade 5.8	$M_{Rk,s}$ [N.m]	19	37	66
Steel grade 8.8	$M_{Rk,s}$ [N.m]	30	60	105
Steel grade 10.9	$M_{Rk,s}$ [N.m]	37	75	131
Stainless steel grade A2-70, A4-70	$M_{Rk,s}$ [N.m]	26	52	92
Stainless steel grade A4-80	$M_{Rk,s}$ [N.m]	30	60	105
Stainless steel grade 1.4529 strength class 70	$M_{Rk,s}$ [N.m]	26	52	92
Stainless steel grade 1.4565 strength class 70	$M_{Rk,s}$ [N.m]	26	52	92

**Table C3: Displacements under tension and shear load**

Base material	F [kN]	$\delta_{N0}$ [mm]	$\delta_{N\infty}$ [mm]	$\delta_{V0}$ [mm]	$\delta_{V\infty}$ [mm]
Solid bricks	$N_{Rk} / (1,4 \cdot \gamma_M)$	0,6	1,2	1,0 <sup>1)</sup>	1,5 <sup>1)</sup>
Perforated and hollow		0,14	0,28	1,0 <sup>1)</sup>	1,5 <sup>1)</sup>

<sup>1)</sup> the hole gap between bolt and fixture shall be considered additionally

**Table C4:  $\beta$  - factors for job site tests according to ETAG 029, Annex B**

Brick N°	N° 1	N° 2	N° 3	N° 4	N° 5	N° 6	N° 7	N° 8	N° 9
$\beta$ - factor	0,62	0,28	0,22	0,48	0,26	0,43	0,42	0,36	0,60

**Declaration of Performance**

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use in masonry  
38701859  
2017.08 , ver. 1  
1138

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**8 APPROPRIATE TECHNICAL DOCUMENTATION AND/OR -  
SPECIFIC TECHNICAL DOCUMENTATION**

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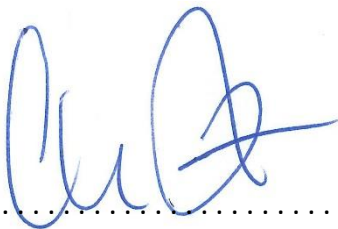
The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

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Name : Anders Beier  
Function: General Manager  
At Farum on 29 November 2019

Name : Lasse Jakobsen  
Function: Senior Technical Manager  
At Farum on 29 November 2019



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End of information as required by Regulation (EU) No 305/2011

**RELATED DECLARATION OF PERFORMANCE**

Product Name	Harmonised technical specification	DoP Number
Sika AnchorFix®-1 galvanized or stainless steel bonded anchor	ETAG 029; ETA-13/0720	68816162

**Declaration of Performance**  
Sika AnchorFix®-1 Injection anchors for  
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38701859  
2017.08 , ver. 1  
1138

**FULL CE MARKING**



17

Sika Services AG, Zurich, Switzerland

DoP No. 38701859

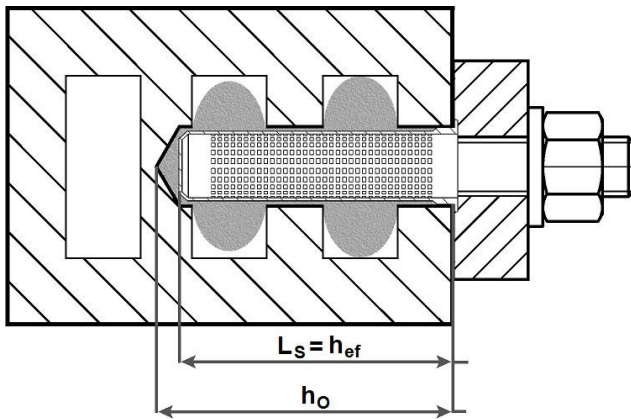
ETAG 029

Notified Body 1020

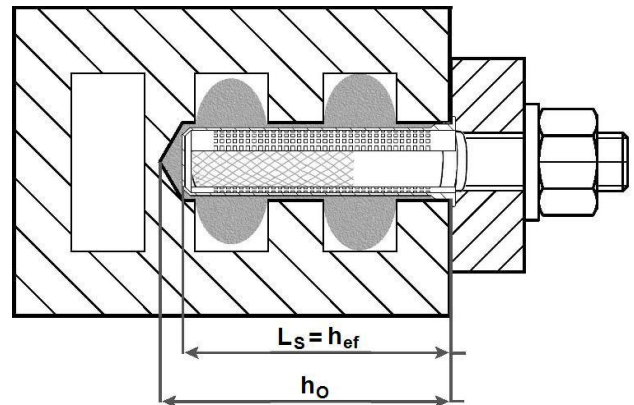
Injection anchors for use in masonry

**Installation in hollow or perforated brick masonry**

Installation of anchor rod with sieve sleeve

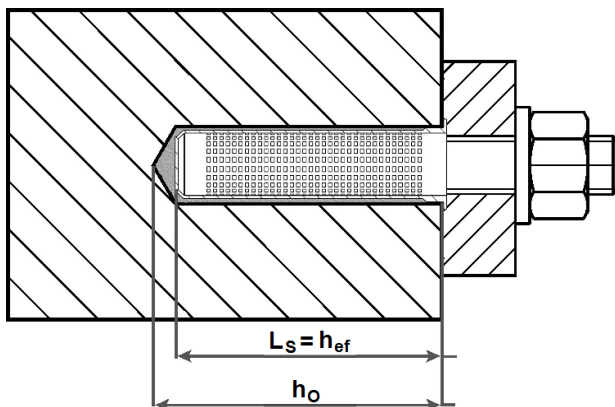


Installation of internal threaded socket with sieve sleeve

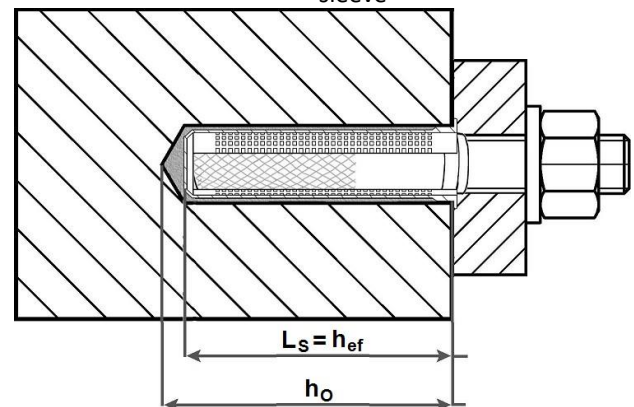


**Installation in solid brick masonry**

Installation of anchor rod with or without sieve sleeve



Installation of internal threaded socket with sieve sleeve

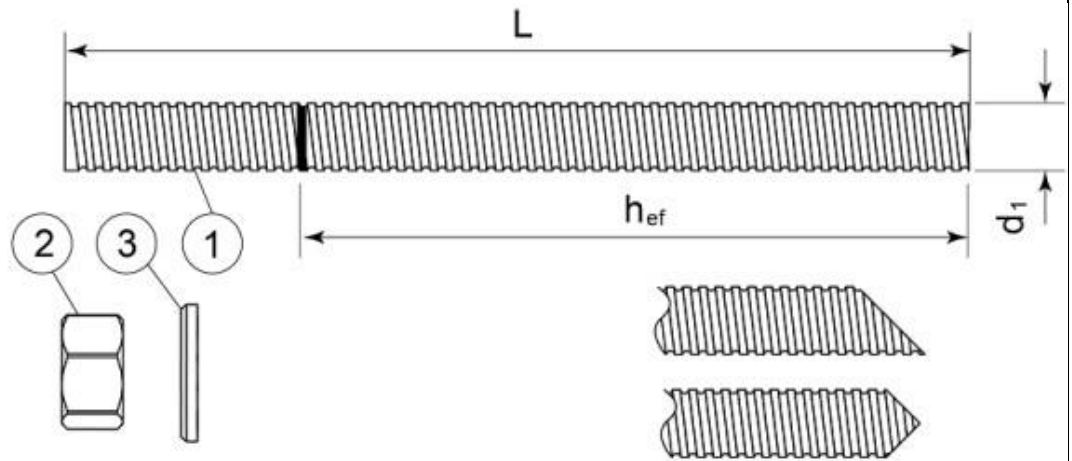


- Ls = length of the sieve sleeve
- hef = effective setting depth
- h0 = bore hole depth

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for use in masonry  
 38701859  
 2017.08 , ver. 1  
 1138





## Threaded rod M8, M10, M12

Standard commercial threaded rod with marked embedment depth

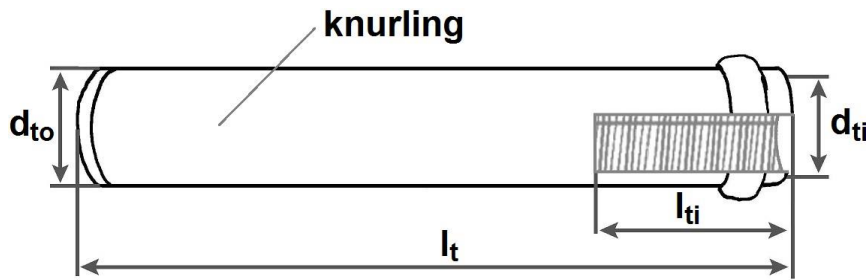
Part	Designation	Material
<b>Steel, zinc plated <math>\geq 5 \mu\text{m}</math> acc. to EN ISO 4042 or</b>		
<b>Steel, hot-dip galvanized <math>\geq 40 \mu\text{m}</math> acc. to EN ISO 1461 and EN ISO 10684 or Steel, zinc diffusion coating <math>\geq 15 \mu\text{m}</math> acc. to EN 13811</b>		
1	Anchor rod	Steel, EN 10087 or EN 10263 Property class 5.8, 8.8, 10.9* EN ISO 898-1
2	Hexagon nut EN ISO 4032	According to threaded rod, EN 20898-2
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
<b>Stainless steel</b>		
1	Anchor rod	Material: A2-70, A4-70, A4-80, EN ISO 3506
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod
<b>High corrosion resistant steel</b>		
1	Anchor rod	Material: 1.4529, 1.4565, EN 10088-1
2	Hexagon nut EN ISO 4032	According to threaded rod
3	Washer EN ISO 887, EN ISO 7089, EN ISO 7093 or EN ISO 7094	According to threaded rod

\*Galvanized rod of high strength are sensitive to hydrogen induced brittle failure

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38701859  
2017.08 , ver. 1  
1138

**Internal threaded socket**



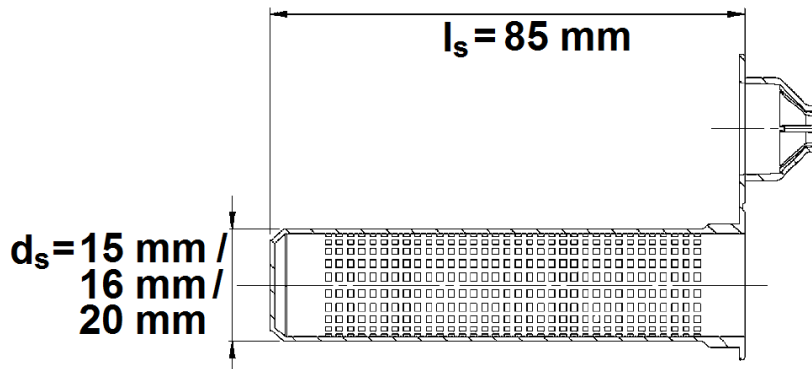
Marking:  
Identifying mark of the producer "m" Size of internal thread e.g. M8

**Table A1: Dimensions of internal threaded socket**

Internal threaded socket	Inner diameter $d_{ti}$	Outer diameter $d_{to}$ [mm]	Length of the internal thread $l_{ti}$ [mm]	Total length $l_t$ [mm]
12 x 80	M8	12	30	80
14 x 80	M10	14	30	80
16 x 80	M12	16	30	80

Designation	Material
Internal threaded socket	strength class 5.8 EN ISO 898-1, galvanized $\geq 5 \mu\text{m}$ EN ISO

**Sieve sleeve**



Types:  
SH15/85  
SH16/85  
SH20/85

Designation	Material
Sieve sleeve	Polypropylene

**Reaction to fire** - Anchorages satisfy requirements for Class A1

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

**Anchorage subject to:**

- Static and quasi-static loads

**Base materials**

- Solid brick masonry (Use category b), according to Annex B2.
- Hollow brick masonry (Use category c), according to Annex B2 to B3.
- Mortar strength class of the masonry M2,5 at minimum according to EN 998-2:2010.
- For other bricks in solid masonry and in hollow or perforated masonry, the characteristic resistance of the anchorages may be determined by job site tests according to ETAG 029, Annex B and under consideration of the  $\beta$ -factor to Annex C1, Table C1.

Note: The characteristic resistance for solid bricks are also valid for larger brick sizes and larger compressive strength of the masonry unit.

**Temperature range:**

- T: -40°C to +80°C (max. short. term temperature +80°C and max. long term temperature +50°C)

**Use conditions (Environmental conditions)**

- Structures subject to dry internal conditions (zinc coated steel)

**Use categories in respect of installation and use:**

- Category d/d - Installation and use in structures subject to dry, internal conditions
- Category w/d - Installation in dry or wet substrate and use in structures subject to dry, internal conditions

**Design:**

- Verifiable calculation notes and drawings are prepared taking account the relevant masonry in the region of the anchorage, the loads to be transmitted and their transmission to the supports of the structure. The position of the anchor is indicated on the design drawings.
- The anchorage are designed in accordance with the ETAG 029, Annex C, Design method A, under the responsibility of an engineer experienced in anchorages and masonry work.

**Installation:**

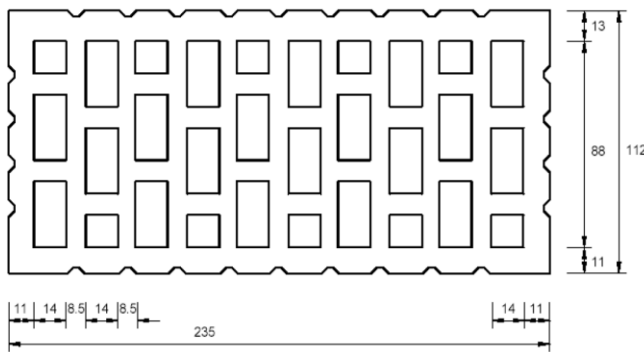
- Dry or wet structures  
Anchor Installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site.

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

**Table B1: Types and dimensions of block and bricks**

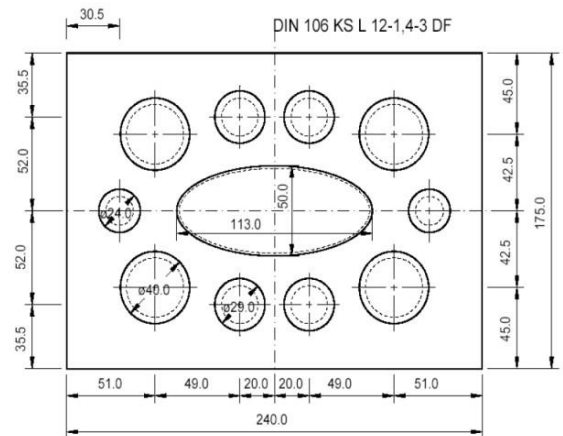
**Brick N° 1**



Hollow clay brick HLz 12-1,0-2DF  
according to EN 771-1

length/width/height = 235 mm/112 mm/115 mm  $f_b$   
 $\geq 12 \text{ N/mm}^2$  /  $\rho \geq 1,0 \text{ kg/dm}^3$

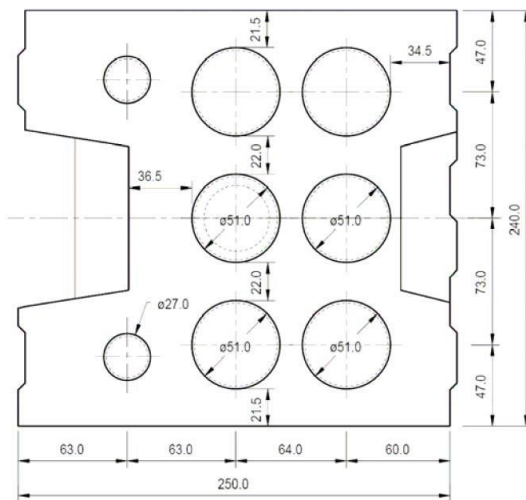
**Brick N° 2**



Hollow sand lime brick KSL 12-1,4-3DF  
according to EN 771-2

length/width/height = 240 mm/175 mm/113 mm  
 $\geq 12 \text{ N/mm}^2$  /  $\rho \geq 1,4 \text{ kg/dm}^3$

**Brick N° 3**



Hollow sand lime brick KSL 12-1,4-8DF  
according to EN 771-2

length/width/height = 250 mm/240 mm/237 mm  
 $f_b \geq 12 \text{ N/mm}^2$  /  $\rho \geq 1,4 \text{ kg/dm}^3$

**Brick N° 4**

Solid clay brick Mz 12-2,0-NF  
according to EN 771-1

length/width/height = 240 mm/116 mm/71 mm  
 $f_b \geq 12 \text{ N/mm}^2$  /  $\rho \geq 2,0 \text{ kg/dm}^3$

**Brick N° 5**

Solid sand lime brick KS 12-2,0-NF  
according to EN 771-2

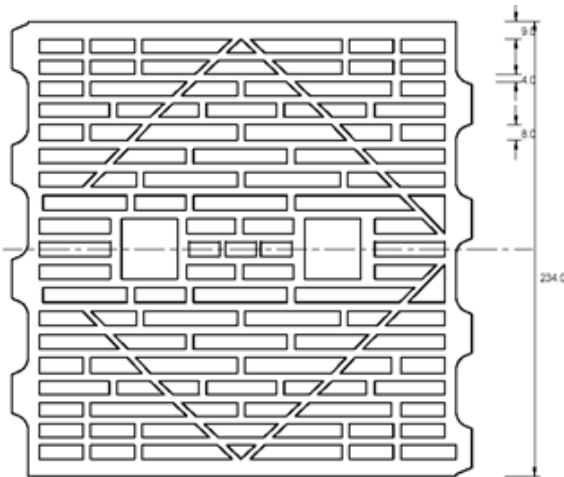
length/width/height = 240 mm/115 mm/70 mm  
 $f_b \geq 12 \text{ N/mm}^2$  /  $\rho \geq 2,0 \text{ kg/dm}^3$

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

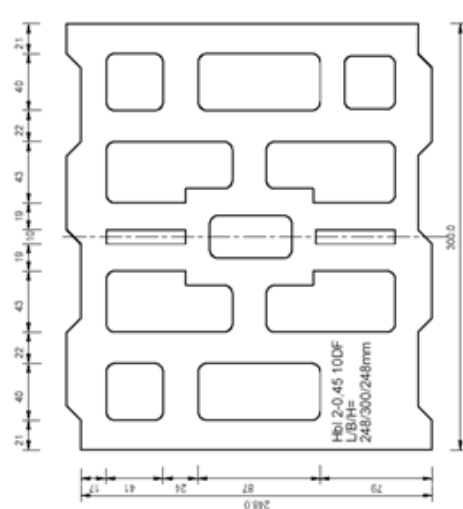
**Table B2: Types and dimensions of block and bricks**

**Brick N° 6**



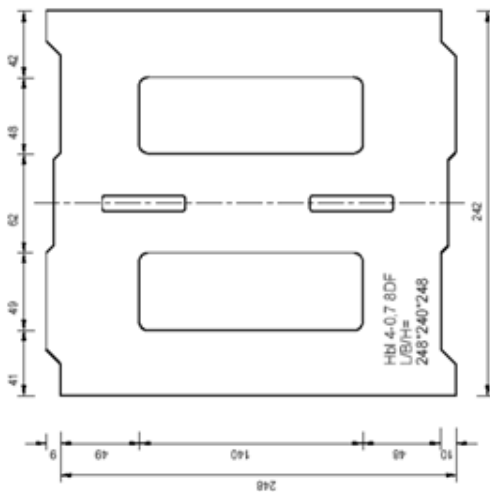
Hollow clay brick HLzW 6-0,7-8DF  
according to EN 771-1  
length/width/height = 250 mm/240 mm/240 mm  
fb ≥ 6 N/mm<sup>2</sup> / ρ ≥ 0,8 kg/dm<sup>3</sup>

**Brick N° 7**



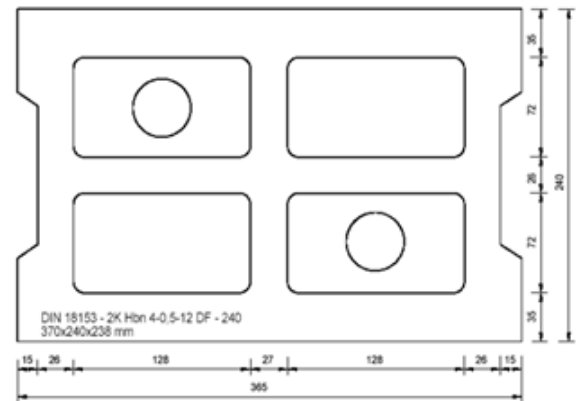
Hbl 2-0,45-10DF  
according to EN 771-3  
length/width/height = 250 mm/300 mm/248 mm  
fb ≥ 2,0 N/mm<sup>2</sup> / ρ ≥ 0,45 kg/dm<sup>3</sup>

**Brick N° 8**



Lightweight concrete hollow block Hbl 4-0,7-8DF  
according to EN 771-3  
length/width/height = 250 mm/240 mm/248 mm  
fb ≥ 4,0 N/mm<sup>2</sup> / ρ ≥ 0,7 kg/dm<sup>3</sup>

**Brick N° 9**



Concrete masonry unit Hbn 4-12DF  
according to EN 771-3  
length/width/height = 370 mm/240 mm/238 mm  
fb ≥ 4 N/mm<sup>2</sup> / ρ ≥ 1,2 kg/dm<sup>3</sup>

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138



**Table B3: Installation parameters in solid and hollow masonry**

Anchor type	Anchor rod	Internal threaded socket											
		M8	M10	M12	M8	M10	M12	M8	M10	M12			
Size													
Internal threaded socket	d <sub>toxt</sub>	-	-	-	-	-	-	12x80	14x80	16x80			
Sieve sleeve	l <sub>s</sub> [mm]	-	-	-	85	85	85	85	85	85			
	d <sub>s</sub> [mm]	-	-	-	15	16	15	16	20	15	16	20	20
Nominal drill hole diameter	d <sub>0</sub>	15	15	20	15	16	15	16	20	15	16	20	20
Diameter of cleaning brush	d <sub>b</sub> [mm]	20±1	20±1	22±1	20±1	20±1	22±1	20±1	22±1	22±1	22±1	22±1	22±1
Depth of the drill hole	h <sub>0</sub>	90											
Effective anchorage depth	h <sub>ef</sub> [mm]	85						80					
Diameter of clearance [mm] hole in the fixture	d <sub>f</sub> ≤	9	12	14	9	12	14	9	12	14			
Torque moment	T <sub>inst</sub> ≤	2											

**Table B4: Edge distances and spacing**

Base material <sup>1)</sup>	Anchor rod								
	M			M1			M1		
	C <sub>cr</sub> = C <sub>min</sub>	S <sub>cr,II</sub> = S <sub>min,II</sub>	S <sub>cr,I</sub> = S <sub>min,I</sub>	C <sub>cr</sub> = C <sub>min</sub>	S <sub>cr,II</sub> = S <sub>min,II</sub>	S <sub>cr,I</sub> = S <sub>min,I</sub>	C <sub>cr</sub> = C <sub>min</sub>	S <sub>cr,II</sub> = S <sub>min,II</sub>	S <sub>cr,I</sub> = S <sub>min,I</sub>
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	100	235	115	100	235	115	120	235	115
Brick N° 2	100	240	113	100	240	113	120	240	113
Brick N° 3	100	250	237	100	250	237	120	250	237
Brick N° 4	128	255	255	128	255	255	128	255	255
Brick N° 5	128	255	255	128	255	255	128	255	255
Brick N° 6	100	250	240	100	250	240	120	250	240
Brick N° 7	100	250	248	100	250	248	-	-	-
Brick N° 8	100	250	248	100	250	248	120	250	248
Brick N° 9	100	370	238	100	370	238	120	370	238

Base material <sup>1)</sup>	Internal threaded socket								
	M			M1			M1		
	C <sub>cr</sub> = C <sub>min</sub>	S <sub>cr,II</sub> = S <sub>min,II</sub>	S <sub>cr,I</sub> = S <sub>min,I</sub>	C <sub>cr</sub> = C <sub>min</sub>	S <sub>cr,II</sub> = S <sub>min,II</sub>	S <sub>cr,I</sub> = S <sub>min,I</sub>	C <sub>cr</sub> = C <sub>min</sub>	S <sub>cr,II</sub> = S <sub>min,II</sub>	S <sub>cr,I</sub> = S <sub>min,I</sub>
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
Brick N° 1	100	235	115	120	235	115	120	235	115
Brick N° 2	100	240	113	120	240	113	120	240	113
Brick N° 3	-	-	-	120	250	237	120	250	237
Brick N° 4	128	255	255	128	255	255	128	255	255
Brick N° 5	128	255	255	128	255	255	128	255	255
Brick N° 6	100	250	240	120	250	240	120	250	240
Brick N° 7	100	250	248	120	250	248	120	250	248
Brick N° 8	-	-	-	120	250	248	120	250	248
Brick N° 9	100	370	238	120	370	238	120	370	238

2) Brick N° according to Annex B 2 and B 3

**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
 use in masonry  
 38701859  
 2017.08 , ver. 1  
 1138

**Table B5: Minimum curing time Sika AnchorFix® -1**

Resin cartridge temperature [°C]	T Work [mins]	Base material Temperature [°C]	T Load [mins]
min +5	18	min +5	145
+5 to +10	10	+5 to +10	
+10 to +20	6	+10 to +20	85
+20 to +25	5	+20 to +25	50
+25 to +30	4	+25 to +30	40
+30		+30	35

T work is typical gel time at highest temperature

T load is set at the lowest temperature

**Table C1: Characteristic resistance under tension and shear loading**

Base material	Anchor rods NRk = VRk [kN] <sup>1)</sup>			Internal threaded sockets NRk = VRk [kN] <sup>1)</sup>		
	M8	M10	M12	M8	M10	M12
Brick N° 1	2,5	2,0	2,0	1,5	2,5	2,5
Brick N° 2	0,75	1,2	0,5	0,6	0,75	0,9
Brick N° 3	0,75	1,2	0,5	-	0,75	0,4
Brick N° 4	1,5	1,5	3,0	2,0	3,0	4,0
Brick N° 5	0,75	0,9	1,5	2,0	1,5	0,9
Brick N° 6	1,2	1,2	0,9	0,9	1,5	0,6
Brick N° 7	0,6	0,3	-	0,5	0,3	0,75
Brick N° 8	0,6	1,5	1,2	-	0,4	0,6
Brick N° 9	2,5	1,5	2,5	0,6	1,2	0,9

<sup>1)</sup> For design according ETAG 029, Annex C: NRk = NRk,p = NRk,b = NRk,s; NRk,pb according to ETAG 029, Annex C For VRk,s see Annex C1, Table C2; Calculation of VRk,pb and VRk,c according to ETAG 029, Annex C

**Table C2: Characteristic bending moment**

Size		M8	M10	M12
Steel grade 5.8	MRk,s [N.m]	19	37	66
Steel grade 8.8	MRk,s [N.m]	30	60	105
Steel grade 10.9	MRk,s [N.m]	37	75	131
Stainless steel grade A2-70, A4-70	MRk,s [N.m]	26	52	92
Stainless steel grade A4-80	MRk,s [N.m]	30	60	105
Stainless steel grade 1.4529 strength class 70	MRk,s [N.m]	26	52	92
Stainless steel grade 1.4565 strength class 70	MRk,s [N.m]	26	52	92

**Table C3: Displacements under tension and shear load**

Base material	F [kN]	δN0 [mm]	δN∞ [mm]	δV0 [mm]	δV∞ [mm]
Solid bricks	NRk / (1,4 · γM)	0,6	1,2	1,0 <sup>1)</sup>	1,5 <sup>1)</sup>
Perforated and hollow bricks		0,14	0,28	1,0 <sup>1)</sup>	1,5 <sup>1)</sup>

<sup>1)</sup> the hole gap between bolt and fixture shall be considered additionally

**Table C4: β - factors for job site tests according to ETAG 029, Annex B**


Brick N°	N° 1	N° 2	N° 3	N° 4	N° 5	N° 6	N° 7	N° 8	N° 9
β - factor	0,62	0,28	0,22	0,48	0,26	0,43	0,42	0,36	0,60

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**Declaration of Performance**

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138

## CE MARKING TO BE PLACED ON THE LABEL

 17
Sika Services AG, Zurich, Switzerland
DoP No. 38701859
ETAG 029
Notified Body 1020
Injection anchors for use in masonry
For declared characteristics details see accompanying documents
<a href="http://dop.sika.com">http://dop.sika.com</a>

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### ECOLOGY, HEALTH AND SAFETY INFORMATION (REACH)

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent Safety Data Sheet (SDS) containing physical, ecological, toxicological and other safety related data.

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### Declaration of Performance

Sika AnchorFix®-1 Injection anchors for  
use in masonry  
38701859  
2017.08 , ver. 1  
1138