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Institute of Building Materials, Concrete Construction and Fire Safety
Braunschweig Civil Engineering Materials Testing Institute

Statement on Fire Safety

– Translation –

Document number:	MPABS-2600810 - CM – rev1 dated 03/07/2026
Client:	fischerwerke GmbH & Co. KG Klaus-Fischer-Straße 1 72178 Waldachtal Germany
Order date:	13/04/2026
Order ref.:	Peter.Schillinger/20251111
Order received:	Assessment with regard to fire safety of loaded fischer Highbond anchors FHB / FHB dyn / FDA installed in solid structural elements (reinforced concrete) under one-side exposure to fire in accordance with DIN EN 1363-1
Basis for assessment:	See Section 1

This statement on fire safety comprises 6 pages including cover sheet, and 8 annexes.

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Niedersachsen

1 General

With letter of 13/04/2026, fischerwerke GmbH & Co. KG, 72178 Waldachtal, commissioned the preparation of a statement on fire safety for the assessment of fischer Highbond anchors FHB / FHB dyn / FDA in conjunction with solid structural elements (reinforced concrete) under exposure to fire on one side.

The documents serving as basis for the statement on fire safety for the constructions to be assessed are listed below:

[1] DIN EN 1363-1 : 2012-10, Fire resistance tests - Part 1: General Requirements;

[2] Test Report No. 3038/8141 dated 02/05/2001 issued by MPA Braunschweig;

[3] Technical data sheets for fischer Highbond anchors FHB / FHB dyn / FDA (e.g., ETA-06/0171 of 10/07/2024 and installation instructions), from fischerwerke GmbH & Co. KG, 72178 Waldachtal.

The assessment for the fischer Highbond anchors FHB / FHB dyn / FDA was conducted on the basis of the fire tests carried out with the anchors installed in solid structural elements (reinforced concrete) in accordance with DIN EN 1363-1. According to fischerwerke GmbH & Co. KG, 72178 Waldachtal, there is currently no complete building authority certificate for the bonded expansion fasteners in conjunction with reinforced concrete that lays down the regulations to be met in accordance with DIN EN 1363-1 by the execution described here in the event of fire.

2 Description of the constructions

The anchor rods and the fastening elements according to [3] are mainly made of steel. The related fischer Highbond anchor is set into the base material (reinforced concrete of strength class ≥ C20/25 ≤ C50/60) together with the injection mortar FIS HB. The loads applied are transferred into the anchoring base via the anchor rods and the mortar.

The following executions are distinguished:

1. fischer Highbond anchor FHB with anchor rod FHB-A and the related fastening elements (e.g., washer, nut, … according to [3]) and injection mortar FIS HB.
2. fischer Highbond anchor dynamic FHB dyn with anchor rod FHB-A dyn and the related fastening elements (e.g., centring sleeve, conical washer, spherical washer, nut, … according to [3]) and injection mortar FIS HB.

3. fischer dynamic anchor FDA with anchor rod FDA-A and the related fastening elements (e.g., centring sleeve, washer, nut, … according to [3]) and injection mortar FIS HB.

For the normal intended use, the related technical information for the fischer Highbond anchors can be taken from [3].

This fire-safety assessment is restricted to predominantly static loads combined with reinforced concrete members which also have to be proved for a fire load in accordance with DIN EN 1363-1.

The tables below and the annexes summarize the technical data (manufacturer's data) of the fischer Highbond anchors FHB / FHB dyn / FDA. Further information can be taken from the technical data sheets [3] from fischerwerke GmbH & Co. KG, 72178 Waldachtal.

Table 1: fischer Highbond anchor FHB

fischer Highbond anchor FHB		**Sizes**					**Base Material**
Effective embedment depth h_{ef}	[mm]	≥ 60	≥ 80	≥ 125	≥ 170	≥ 220	
FIS HB with FHB-A /-A N[1)] and fastening elements acc.to [3]		M10	M12	M16	M20	M24	Reinforced concrete (strength class ≥ C20/25 ≤ C50/60)
FIS HB with FHB-A R/-A N R[1)] and fastening elements acc.to [3]. - stainless steel -		M10	M12	M16	M20	M24	
FIS HB with FHB-A HCR /-A N HCR[1)] and fastening elements acc.to [3] - highly corrosion-resistant steel -		M10	M12	M16	M20	M24	

[1)] The structural design of anchor rods FHB-A-N / FHB-A-N R / FHB-A-N HCR corresponds to the related structural design of anchor rods FHB-A / FHB-A R / FHB-A HCR.

Table 2: fischer Highbond anchor FHB dyn

fischer Highbond anchor FHB dyn		**Size**				**Base material**
Effective embedment depth h_{ef}	[mm]	≥ 100	≥ 125	≥ 170	≥ 220	
FIS HB with FHB-A dyn and fastening elements acc.to [3]		M12	M16	M20	M24	Reinforced concrete (strength class ≥ C20/25 ≤ C50/60)
FIS HB with FHB-A dyn HCR and fastening elements acc.to [3] - highly corrosion-resistant steel -		M12	M16	-	-	

Table 3: fischer Highbond anchor FDA

fischer dynamic anchor FDA		**Size**		**Base material**
Effective embedment depth h_{ef}	[mm]	≥ 100	≥ 125	
FIS HB with FDA-A and fastening elements acc.to [3]		M12	M16	Reinforced concrete (strength class ≥ C20/25 ≤ C50/60)

For a more detailed description of the constructions, reference is made to the annexes and to the technical data sheets [3] for bonded expansion fasteners.

3 Assessment of the bonded expansion fasteners in conjunction with solid structural elements

The subject matter of this fire-safety-related assessment is the loadbearing behaviour of the fischer Highbond anchors FHB / FHB dyn / FDA in conjunction with base materials made of reinforced concrete (strength class ≥ C20/25 ≤ C50/60) under exposure to fire in accordance with DIN EN 1363-1.

If for the normal intended use, smaller loads apply according to [3], these shall be binding. Irrespective of the fire-safety-related assessment, the suitability of the anchors for the anchoring base and the application must also be proved for the cold as-installed condition.

With regard to the loadbearing behaviour under exposure to fire, it can be distinguished between steel failure and failure of the base material/anchoring base.

For the anchors assessed here, the failure of the bonded expansion fasteners was decisive (steel failure and extraction from the base material (pullout). In terms of fire safety, it may be assumed with sufficient reliability that a failure of the base material examined here in the event of fire will not be decisive.

The spacing to be applied under one-side exposure to fire of the fischer Highbond anchors FHB / FHB dyn / FDA is the distance that excludes a failure of the base material, which means steel failure of the fastening system will be decisive. In addition, the necessary spacing for the normal intended use ("cold installation condition") are to be observed in any case (see also [3]). Further parameters (geometry, moisture, spalling, eccentricity, position in the structural element, and further influencing variables) possibly have to be considered separately.

The load-bearing capacity (steel failure) under exposure to fire of the systems described above was determined on the basis of the fire tests performed when installed in solid structural elements (reinforced concrete).

$F_{fire}(t)$ ⇒ Maximum load under one-side exposure to fire in accordance with DIN EN 1363-1

The load on the bonded expansion fasteners can be applied as centric tensile load (N), shear load (V), or as a combination of both (oblique tension).

The design proposals for fischer Highbond anchors FHB / FHB dyn / FDA under tensile load and one-side exposure to fire in accordance with DIN EN 1363-1 can be taken from Annexes 6 to 8.

4 Special notes

4.1 This Statement on Fire Safety is not subject to notification and is no substitute for a classification report.

4.2 This Statement on Fire Safety is no certificate of suitability for use in a building control procedure. It can be used, for example, for general preliminary planning or to support in the assessment of the principles of execution / the construction. The manufacturer/erector of the construction is obliged to furnish the respective proof.

4.3 When applying for a project-related design approval (vBG), the preparation of a project-related expert opinion will be required, taking the individually prevailing boundary conditions for planning into account.

4.4 This Statement on Fire Safety applies only in conjunction with the documents and basics specified in Section 2 and cannot be transferred to other constructions without further verification.

4.5 This Statement on Fire Safety applies only in terms of fire protection. Further requirements may result from the applicable technical building regulations for fastening elements and the individual state building code and regulations for special constructions, e.g., with regard to building physics, statics, electrical engineering, ventilation engineering, and similar.

4.6 The above assessment applies only to fischer Highbond anchors FHB / FHB dyn / FDA taking the boundary conditions from the technical data sheets [3] from fischerwerke GmbH & Co. KG, 72178 Waldachtal, into account.

4.7 The above assessment applies to fischer Highbond anchors FHB / FHB dyn / FDA fastened in reinforced concrete elements, under one-side exposure to fire in accordance with DIN EN 1363-1. The base material must have a corresponding fire resistance under a fire load in accordance with DIN EN 1363-1.

4.8 Modifications and supplements of structural details (derived from this Statement on Fire Safety) may only be made after prior consultation with MPA Braunschweig.

4.9 The proper execution is exclusively within the responsibility of the executing companies.

4.10 The structural details as shown in the annexes shall be binding for the above assessment. Only those details were verified that are relevant for the fire safety assessment.

4.11 The validity of this Statement on Fire Safety No. MPABS-2600810 - CM - rev1 dated 03/07/2026 ends on 02/07/2031 at the latest. The validity can be extended as a function of the state of the art.

This document is the translated version of Statement On Fire Safety No. MPABS-2600810 - CM - rev1 dated 03/07/2026. The legally binding text is the aforementioned German Brandschutztechnische Aussage.

signiert/signed
Schmieder, Sven
31.08.2026

i. A.
Dipl.-Ing. Sven Schmieder
Depity Head of Section

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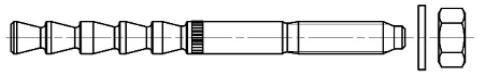
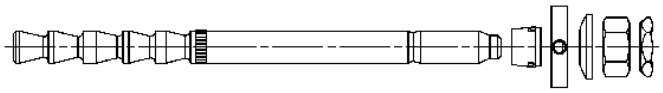
Documents without stamp and signature bear a verifiable, qualified electronic signature.

Technical data of the Highbond anchors FHB / FHB dyn / FDA (manufacturer data)

Example FHB- anchor rod



Example FHB dyn- anchor rod



Example FDA- anchor rod

Table 4: Material data of the fischer Highbond anchors FHB / FHB dyn / FDA

Execution	Size	Material
Anchor rod FHB-A /-A-N with fastening elements acc.to [3]	M10 - M16	Galvanized steel Strength class 8.8 (DIN EN ISO 898-1)
Anchor rod FHB-A /-A-N with fastening elements acc.to [3]	M20 - M24	Galvanized steel f_{uk} = 550 N/mm² / f_{yk} = 440 N/mm² (DIN EN ISO 898-1)
Anchor rod FHB-A R/-A-N R with fastening elements acc.to [3]	M10 - M16	Stainless steel f_{uk} = 800 N/mm² / f_{yk} = 640 N/mm² (EN ISO 3506) Material nos. 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362, 1.4062, 1.4662, 1.4462 (DIN EN 10088-21) (DIN EN 10088-21)
Anchor rod FHB-A R/-A-N R with fastening elements acc.to [3]	M20 - M24	Stainless steel f_{uk} = 700 N/mm² / f_{yk} = 560 N/mm² (EN ISO 3506) Material nos. 1.4401, 1.4404, 1.4578, 1.4571, 1.4439, 1.4362, 1.4062, 1.4662, 1.4462 (DIN EN 10088-21)
Anchor rod FHB-A HCR /-A-N HCR with fastening elements acc.to [3]	M10 - M24	Highly corrosion-resistant steel f_{uk} = 700 N/mm² / f_{yk} = 560 N/mm² (EN ISO 3506) Material no. 1.4529 (DIN EN 10088-21)
Anchor rod FHB-A dyn with fastening elements acc.to [3]	M12 - M24	Galvanized steel Strength class 8.8 (DIN EN ISO 898-1)
Anchor rod FHB-A dyn HCR with fastening elements acc.to emäß [3]	M12 – M16	Highly corrosion-resistant steel f_{uk} ≥ 700 N/mm² (EN ISO 3506) Material nos. 14529 (DIN EN 10088-21)
Anchor rod FDA-A with fastening elements acc.to [3]	M12 – M16	Galvanized steel Strength class 8.8 (DIN EN ISO 898-1)
Injection mortar FIS HB	-	Two-component mortar

1) Manufacturer data (see also Section 2 and [3])

Technical data of fischer Highbond anchors FHB (manufacturer data)

Installation conditions:

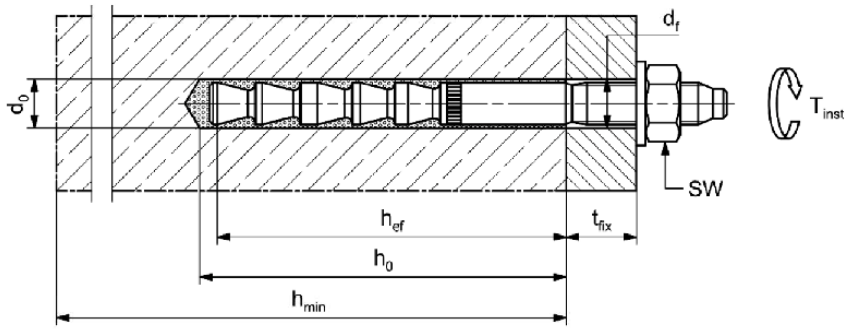


Table 5: Installation parameters of the fischer Highbond anchor FHB

Installation parameters			**Base material: reinforced concrete (strength class ≥ C20/25 ≤ C50/60)**					
fischer Highbond-Anker FHB			Anchor rod[2)]					
			FHB-A / FHB-A-N					
			FHB-A R / FHB-A-N R					
			FHB-A HCR / FHB-A-N HCR					
			10x60	12x80	12x100	16x125	20x170	24x220
Wrench size	SW	[mm]	17	19		24	30	36
Nominal drill diameter	d_0		12	14		18	24	28
Drill hole depth	h_0		65	85	105	130	175	225
Effective embedment depth	h_{ef}		60	80	100	125	170	220
Minimum spacing and edge distance	s_{min} = c_{min}		The necessary spacing and edge distances must be determined according to [3] taking the additional requirements for the case of fire into account.					
Diameter of clearance hole of the fixture	d_f		Execution according to [3]					
Minimum thickness of concrete component	h_{min}		The component must be selected according to [3], taking the fire-safety-related design of the component into account.					
Maximum torque of installation	$T_{inst,max}$	[Nm]	20	40		60	100	120
Related steel brush	d_b	[mm]	13	16		20	26	30

[2)] The allocation of the related anchor rod to the injection system is to be taken from Table 1.

Technical data of fischer Highbond anchors FHB dyn (manufacturer data)

Installation conditions: (picture without centering sleeve; pre-positioned installation)

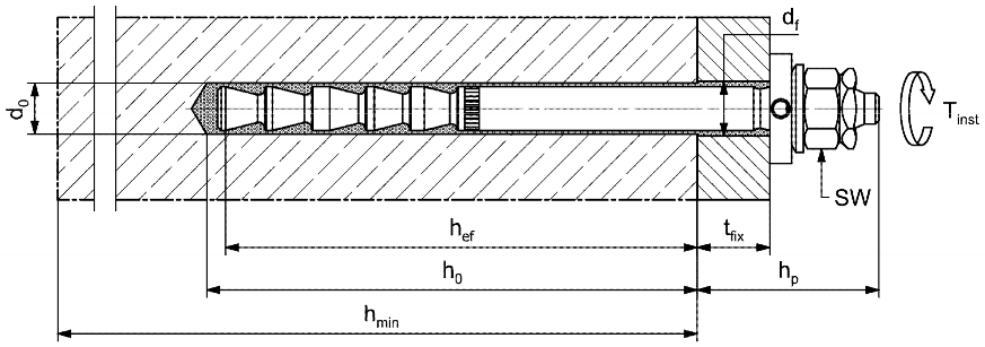


Table 6: Installation parameters of the fischer Highbond anchor FHB dyn

Installation parameters			**Base material: reinforced concrete (strength class ≥ C20/25 ≤ C50/60)**			
fischer Highbond anchor FHB dyn			Anchor rod[2)]			
			FHB-A dyn			
			FHB-A dyn HCR			
			-	12x100	16x125	20x170	24x220
Wrench size	SW	[mm]		19	24	30	36
Nominal drill diameter	d_0			14	18	24	28
Drill hole depth	h_0			105	130	175	225
Effective embedment depth	h_{ef}			100	125	170	220
Minimum spacing and edge distance	s_{min} = c_{min}		The necessary spacing and edge distances must be determined according to [3] taking the additional requirements for the case of fire into account.				
Diameter of clearance hole in mounting part	d_f		Execution according to [3]				
Minimum thickness of concrete component	h_{min}		The component must be selected according to [3], taking the fire-safety-related design of the component into account.				
Maximum torque of installation	$T_{inst,max}$	[Nm]	-	40	60	100	120
Related steel brush	d_b	[mm]		16	20	26	30

[2)] The allocation of the related anchor rod to the injection system is to be taken from Table 1.

Technical data of fischer Highbond anchors FDA (manufacturer data)

Installation conditions:

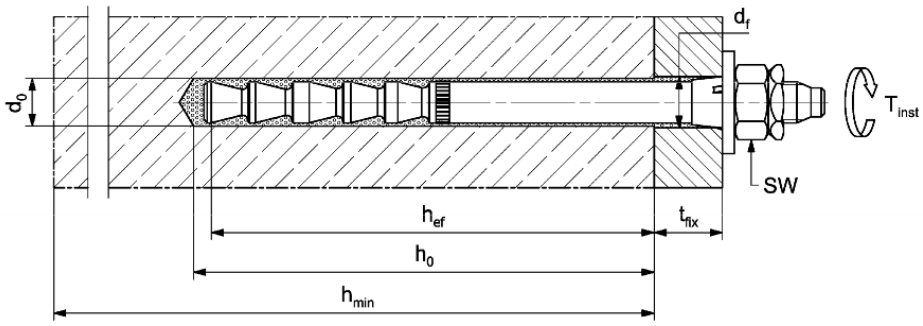


Table 7: Installation parameters of the fischer Highbond anchor FDA

Installation parameters			**Base material: reinforced concrete (strength class ≥ C20/25 ≤ C50/60)**			
fischer Highbond anchor FDA			Anchor rod			
			FDA-A			
			-	12x100	16x125	-
Wrench size	SW	[mm]		19	24	
Nominal drill diameter	d_0			14	18	
Drill hole depth	h_0			105	130	
Effective embedment depth	h_{ef}			100	125	
Minimum spacing and edge distance	s_{min} = c_{min}		The necessary spacing and edge distances must be determined according to [3] taking the additional requirements for the case of fire into account.			
Diameter of clearance hole in mounting part	d_f		Execution according to [3]			
Minimum thickness of concrete component	h_{min}		The component must be selected according to [3], taking the fire-safety-related design of the component into account.			
Maximum torque of installation	$T_{inst,max}$	[Nm]	-	40	60	-
Related steel brush	d_b	[mm]		16	20	

Mounting instruction for fischer Highbond anchor FHB / FHB dyn / FDA (manufacturer data)

The drill hole is cleaned in accordance with [3] using the admissible BS steel brushes and by blowing out the drill hole:

Drilling
2x blowing out
2x brushing
2x blowing out

The drill hole is filled in accordance with [3] using fischer injection mortar FIS HB.

Table 8: Curing times of fischer injection mortarl FIS HB

Temperature in the anchoring base [1)]	Maximum processing time t_{work}	Minimum curing time [2)] t_{cure}
-5 to 0 [3)]	-	6 h
> 0 to 5 [3)]	-	3 h
> 5 to 10	15 min	90 min
> 10 to 20	6 min	35 min
> 20 to 30	4 min	20 min
> 30 to 40	2 min	12 min

1) The temperature in the anchoring base must not be lower than -5°C during curing
2) The curing time must be doubled in case of wet concrete or water-filled drill holes
3) Minimum cartridge temperature +5°C

For further data, see Section 2 and [3] (Installation instruction).

Design values for the fischer Highbond anchor FHB under one-side exposure to fire in accordance with DIN EN 1363-1

Table 9: Maximum load under exposure to fire in accordance with DIN EN 1363-1 for fischer Highbond anchor FHB in base materials made of reinforced concrete (strength class ≥ C20/25 ≤ C50/60)

fischer Highbond anchor FHB combined with reinforced concrete (strength class ≥ C20/25 ≤ C50/60)					
Maximum load max. $F_{fire(t)}$ [1) 2)] [kN] as a function of fire resistance time, the dimensions of the anchor rod, and the effective embedment depth					
Fire resistance time	**M10 (gvz)**	**M12 (gvz)**	**M16 (gvz)**	**M20 (gvz)**	**M24 (gvz)**
	Strength class 8.8 (DIN EN ISO 898-1)			f_{uk} = 550 N/mm² / f_{yk} = 440 N/mm² (DIN EN ISO 898-1)	
	Effective embedment depth			**Effective embedment depth**	
[min]	**≥ 60 mm**	**≥ 80 mm**	**≥ 125 mm**	**≥ 170 mm**	**≥ 220 mm**
30	2.95	4.50	9.25	7.50	10.90
60	1.65	3.50	7.10	5.70	8.20
90	0.35	2.50	5.00	3.90	5.60
120	-	2.00	3.90	3.00	4.30

1) If for the normal purpose of use, smaller loads apply (see also [3]), these shall be binding. Irrespective of the fire-safety-related assessment, the suitability of the anchors for the base material and the application must also be proved for the normal intended use ("cold installation condition").

2) The load onto the anchors can be applied as centric tensile load (N), shear load (V), or as a combination of both (oblique tension).

Design values for the fischer Highbond anchor FHB dyn under one-side exposure to fire in accordance with DIN EN 1363-1

Table 10: Maximum load under exposure to fire in accordance with DIN EN 1363-1 for fischer Highbond anchor FHB dyn in base materials made of reinforced concrete (strength class ≥ C20/25 ≤ C50/60)

fischer Highbond anchor FHB dyn combined with reinforced concrete (strength class ≥ C20/25 ≤ C50/60)				
Maximum load max. $F_{fire(t)}$ [1) 2)] [kN] as a function of fire resistance time, the dimensions of the anchor rod, and the effective embedment depth				
Fire resistance time	**M12 (gvz) M12 HCR**	**M16 (gvz) M16 HCR**	**M20 (gvz)**	**M24 (gvz)**
	Effective embedment depth			
[min]	**≥ 100 mm**	**≥ 125 mm**	**≥ 170 mm**	**≥ 220 mm**
30	4.50	9.25	13.00	18.75
60	3.50	7.10	10.00	14.40
90	2.50	5.00	7.00	10.05
120	2.00	3.90	5.50	7.90

1) If for the normal purpose of use, smaller loads apply (see also [3]), these shall be binding. Irrespective of the fire-safety-related assessment, the suitability of the anchors for the base material and the application must also be proved for the normal intended use ("cold installation condition").

2) The load onto the anchors can be applied as centric tensile load (N), shear load (V), or as a combination of both (oblique tension).

Design values for the fischer Highbond anchor FDA under one-side exposure to fire in accordance with DIN EN 1363-1

Table 11: Maximum load under exposure to fire in accordance with DIN EN 1363-1 for fischer Highbond anchor FDA in base materials made of reinforced concrete (strength class ≥ C20/25 ≤ C50/60)

fischer Highbond anchor FDA combined with reinforced concrete (strength class ≥ C20/25 ≤ C50/60)		
Maximum load max. $F_{fire(t)}$ [1) 2)] [kN] as a function of fire resistance time, the dimensions of the anchor rod, and the effective embedment depth		
Fire resistance time	**M12 (gvz)**	**M16 (gvz)**
	Effective embedment depth	
[min]	**≥ 100 mm**	**≥ 125 mm**
30	4.50	9.25
60	3.50	7.10
90	2.50	5.00
120	2.00	3.90

1) If for the normal purpose of use, smaller loads apply (see also [3]), these shall be binding. Irrespective of the fire-safety-related assessment, the suitability of the anchors for the base material and the application must also be proved for the normal intended use ("cold installation condition").

2) The load onto the anchors can be applied as centric tensile load (N), shear load (V), or as a combination of both (oblique tension).