ICC-ES Evaluation Report

ESR-2948

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This report also contains:

- **City of LA Supplement**
- **CA Supplement**
- **FL Supplement w/ HVHZ**

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DIVISION: 03 00 00—CONCRETE **Section: 03 16 00—Concrete Anchors** **DIVISION: 05 00 00—METALS** **Section: 05 05 19—Post-Installed Concrete Anchors**	**REPORT HOLDER:** **fischerwerke GmbH & CO. KG**	**EVALUATION SUBJECT:** **fischer FAZ II, FAZ II R, FAZ II HCR AND FAZ II PLUS, FAZ II PLUS R AND FAZ II PLUS HCR METRIC WEDGE ANCHOR FOR ANCHORING IN CRACKED AND UNCRACKED CONCRETE**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021, 2018, 2015, and 2012 *International Building Code*® (IBC)
- 2024, 2021, 2018, 2015, and 2012 *International Residential Code*® (IRC)

Main references of this report are for the 2024 IBC and IRC. See Table 7 and Table 8 for applicable sections of the code for previous IBC and IRC editions.

- 2013 *Abu Dhabi International building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Property evaluated:

- Structural

2.0 USES

The fischer FAZ II and FAZ II Plus metric wedge anchor is used to resist static, wind and seismic tension and shear loads in cracked and uncracked normal-weight and lightweight concrete having a specified compressive strength, f'_c, of 2,500 psi to 8,500 psi (17.2 MPa to 58.6 MPa) [minimum of 24 MPa is required under ADIBC Appendix L, Section 5.1.1].

The fischer FAZ II and FAZ II Plus anchor complies with anchors installed in hardened concrete as described in Section 1901.3 of 2024 IBC. The anchors may also be used where an engineered design is submitted in accordance with Section R301.1.3 of the IRC.

3.0 DESCRIPTION

3.1 fischer FAZ II and FAZ II Plus:

3.1.1 General: The fischer FAZ II wedge anchor is a torque-controlled, mechanical expansion anchor as shown in Figure 1 of this report. The FAZ II consists of four components as shown in Figure 2. The anchor may be manufactured from carbon steel (FAZ II), and stainless steels (FAZ II R and FAZ II HCR). The FAZ II Plus (and FAZ II Plus R and FAZ II Plus HCR) have the same geometry and coatings as the FAZ II but have a higher steel strength compared to the FAZ II.

All carbon steel parts have a minimum 5 µm (0.0002 inch) zinc plating according to ISO 4042. Dimensions

and installation criteria are set forth in Tables 1 and 2 of this report.

Application of torque at the hexagon nut of the anchor causes the cone part to be drawn into the expansion clip. This in turn causes the clip to expand against the wall of the drilled hole. Application of the specified installation torque induces a tension force in the bolt that is equilibrated by a precompression force in the concrete acting through the component being fastened. Application of tension loads that exceed the precompression force in the bolt will cause the cone to displace further into the expansion clip (follow-up expansion), generating additional expansion force.

3.1.2 FAZ II and FAZ II Plus: The anchor consists of a bolt with cone, steel washer, steel hexagon nut and steel expansion clip. The anchor FAZ II and FAZ II Plus are available in diameters from M8 through M24. The material specifications are as follows:

- Cone bolt: Carbon steel
- Washer: Carbon steel
- Expansion clip: Carbon steel
- Hexagon nut: Carbon steel, complying with ISO 898-2, Grade 8.

3.1.3 FAZ II R and FAZ II Plus R: The anchor FAZ II R and FAZ II Plus R are available in diameters from M8 through M24.The FAZ II R and FAZ II Plus R have the same geometry and comparable functional coatings to the FAZ II and FAZ II Plus, respectively; with the exception of the material specifications, which are as follows:

- Cone bolt: Stainless steel complying with EN 10088.
- Washer: Stainless steel complying with EN 10088.
- Expansion clip: Stainless steel complying with EN 10088.
- Hexagon nut: Stainless steel complying with ISO 3506-2, Grade 70.

3.1.4 FAZ II HCR and FAZ II Plus HCR: The anchors FAZ II HCR and FAZ II Plus HCR are available in diameters from M8 through M16. The FAZ II HCR and FAZ II Plus HCR have an improved corrosion resistance compared to the FAZ II R and FAZ II Plus R and the same geometry and comparable functional coatings to the FAZ II and FAZ II Plus, with the exception of the material specifications, which are as follows:

- Cone bolt: Stainless steel complying with EN 10088.
- Washer: Stainless steel complying with EN 10088.
- Expansion clip: Stainless steel complying with EN 10088.
- Hexagon nut: Stainless steel complying with ISO 3506-2, Grade 70.

3.2 Concrete:

Normal-weight and lightweight concrete must comply with Sections 1903 and 1905 of the 2024 IBC.

4.0 DESIGN AND INSTALLATION

4.1 Strength Design:

4.1.1 General: Design strength of anchors complying with the 2024 IBC, as well as Section R301.1.3 of the IRC must be determined in accordance with ACI 318-19 Chapter 17 and this report.

Design parameters are based on the 2024 IBC (ACI 318-19), unless noted otherwise in Sections 4.1.1 through 4.1.12 of this report. The strength design of anchors must comply with ACI 318-19 Section 17.5.1.2, except as required in ACI 318-19 Section 17.10.

Strength reduction factors, ϕ, as given in ACI 318-19 Section 17.5.3, must be used for load combinations calculated in accordance with Section 1605.1 of the 2024 IBC and Section 5.3 of ACI 318-19.

The value of f'_c used in the calculations must be limited to 8,000 psi (55.2 MPa), maximum, in accordance with ACI 318-19 Section 17.3.1. Strength reduction factors, ϕ, corresponding to ductile steel elements may be used except for the FAZ II and FAZ II Plus M20 and M24 carbon steel anchors in tension and shear, which have a strength reduction factor corresponding to brittle steel elements.

4.1.2 Requirements for Static Steel Strength in Tension, N_{sa}: The nominal steel strength of a single anchor in tension must be calculated in accordance with ACI 318-19 Section 17.6.1.2. The values for N_{sa} are given in Tables 3, 4, and 5 of this report. Strength reduction factors, ϕ, corresponding to ductile elements may be used except for the FAZ II and FAZ II Plus M20 and M24 carbon steel anchors, which have a strength reduction factor corresponding to brittle steel elements.

4.1.3 Requirements for Static Concrete Breakout Strength in Tension, N_{cb} and N_{cbg}: The nominal concrete breakout strength of a single anchor or group of anchors in tension, N_{cb} and N_{cbg}, respectively, must

be calculated in accordance with ACI 318-19 Section 17.6.2 with modifications as described in this section. The basic concrete breakout strength of a single anchor in tension, N_b, must be calculated in accordance with ACI 318-19 Section 17.6.2.2, using the values of $h_{ef,min}$ and k_{cr} as given in Tables 3, 4, and 5 of this report in lieu of h_{ef} and k_c, respectively. The nominal concrete breakout strength in tension in regions where analysis indicates no cracking in accordance with ACI 318-19 Section 17.6.2.5.1, must be calculated with Ψ_{cN} = 1.0 and using the value of k_{uncr} as given in Tables 3, 4, and 5 of this report.

4.1.4 Requirements for Critical Edge Distance: In applications where $c < c_{ac}$ and supplemental reinforcement to control splitting of the concrete is not present, the concrete breakout strength in tension for uncracked concrete, calculated according to ACI 318-19 Section 17.6.2, must be further multiplied by the factor $\Psi_{cp,N}$ as given by the following equation:

$$\Psi_{cp,N} = \frac{c}{c_{ac}} \qquad \text{(Eq-1)}$$

whereby the factor $\Psi_{cp,N}$ need not to be taken as less than $\frac{1.5h_{ef}}{c_{ac}}$. For all other cases $\Psi_{cp,N}$ = 1.0. In lieu of ACI 318-19 Section 17.9.5, values for the critical edge distance c_{ac} provided in Table 2 of this report must be used.

4.1.5 Requirements for Static Pullout Strength in Tension, N_{pn}: The nominal pullout strength of a single anchor in tension in accordance with ACI 318-19 Sections 17.6.3.1 and 17.6.3.2.1 in cracked concrete, $N_{p,cr}$ is given in Tables 3, 4, and 5 of this report. Where values for $N_{p,cr}$ are not provided in Tables 3, 4, and 5, the pullout strength does not need to be calculated. The static pullout strength in uncracked concrete $N_{p,uncr}$ does not govern and does not need to be calculated. For all design cases $\Psi_{c,P}$ = 1.0. The nominal pullout strength may be adjusted for concrete strengths according to Eq-2.

$$N_{p,f'_c} = N_{p,cr}\sqrt{\frac{f'_c}{2{,}500}} \qquad \text{(lb, psi)} \qquad \text{(Eq-2)}$$

$$N_{p,f'_c} = N_{p,cr}\sqrt{\frac{f'_c}{17.2}} \qquad \text{(N, MPa)}$$

4.1.6 Requirements for Static Steel Strength in Shear, V_{sa}: The values of V_{sa} for a single anchor given in Tables 3, 4, and 5 of this report must be used in lieu of the values of V_{sa} as derived by calculation in ACI 318-19 Eq. 17.7.1.2b in shear. Strength reduction factors, ϕ, corresponding to ductile elements must be used except for the FAZ II and FAZ II Plus M20 and M24 carbon steel anchors, which have a strength reduction factor corresponding to brittle steel elements.

4.1.7 Requirements for Static Concrete Breakout Strength in Shear, V_{cb} or V_{cbg}: The nominal concrete breakout strength of a single anchor or group of anchors in shear, V_{cb} or V_{cbg}, respectively, must be calculated in accordance with ACI 318-19 Section 17.7.2 with modifications as described in this section. The basic concrete breakout strength of a single anchor in shear, V_b, must be calculated in accordance with ACI 318-19 Section 17.7.2.2.1, using the value of l_e and d_o (d_a) given in Tables 3, 4, and 5. The value of l_e used in ACI 318-19 Eq. 17.7.2.2.1a must be taken as no greater than the lesser of h_{ef} or $8d_a$.

4.1.8 Requirements for Static Concrete Pryout Strength in Shear, V_{cp} or V_{cpg}: The nominal concrete pryout strength of a single anchor or group of anchors in shear, V_{cp} or V_{cpg}, must be calculated in accordance with ACI 318-19 Section 17.7.3 modified by using the value of k_{cp} provided in Tables 3, 4, and 5 and the value of N_{cb} or N_{cbg} as calculated in accordance with Section 4.1.3 of this report.

4.1.9 Requirements for Minimum Member Thickness, Minimum Anchor Spacing and Minimum Edge Distance: In lieu of ACI 318-19 Section 17.9.4, minimum member thickness, $h_{a,min}$, must comply with Table 2 of this report. In lieu of ACI 318-19 Section 17.9.2, minimum spacing and minimum edge distance, s_{min} and c_{min}, must comply with Table 2 of this report. Intermediate values between s_{min} and c_{min} may be calculated by linear interpolation.

4.1.10 Requirements for Seismic Design:

4.1.10.1 General: For load combinations including seismic, the design must be performed according to ACI 318-19 Section 17.10. Modification to ACI 318-19 Section 17.10 must be applied under Section 1905.7 of the 2024 IBC.

The anchors comply with ACI 318-19 Section 2.3 as ductile steel elements, and must be designed in accordance with ACI 318-19 Sections 17.10.4, 17.10.5, 17.10.6, and 17.10.7, except for the FAZ II and FAZ II Plus M20 and M24 carbon-steel anchors, which must be designed in accordance with ACI 318-19 Section 17.10.5 as brittle steel elements. The anchors may be installed in Seismic Design Categories A through F of the IBC.

4.1.10.2 Seismic Tension: The nominal steel strength and nominal concrete breakout strength for anchors in tension must be calculated according to ACI 318-19 Sections 17.6.1 and 17.6.2, respectively, as described

in Sections 4.1.2 and 4.1.3 of this report. In accordance with ACI 318-19 Section 17.6.3.2.1, the value for pullout strength in tension for seismic loads, N_{eg}, described in Tables 3, 4, and 5 of this report, must be used in lieu of N_p. The values of N_{eq} may be adjusted for concrete strength as follows:

$$N_{eq,f'_c}=N_{eq}\sqrt{\frac{f'_c}{2{,}500}} \quad \text{(IMP units)} \qquad \text{(Eq-3)}$$

$$N_{eq,f'_c}=N_{eq}\sqrt{\frac{f'_c}{17.2}} \quad \text{(SI units)}$$

If no values of N_{eq} are given in Tables 3, 4, and 5, the static design strength values for pullout failure govern. (See Section 4.1.5 of this report.)

4.1.10.3 Seismic Shear: The nominal concrete breakout strength and pryout strength for anchors in shear must be calculated according to ACI 318-19 Sections 17.7.2 and 17.7.3, respectively, as described in Sections 4.1.7 and 4.1.8 of this report. In accordance with ACI 318-19 Section 17.7.1.2, the appropriate value for nominal steel strength in shear for seismic loads, V_{eq}, described in Tables 3, 4, and 5 of this report, must be used in lieu of V_{sa}. Strength reduction factors, ϕ, corresponding to ductile elements must be used except for the FAZ II and FAZ II Plus M20 and M24 carbon steel anchors, which have a strength reduction factor corresponding to brittle steel elements.

4.1.11 Requirements for Interaction of Tensile und Shear Forces: For loadings that include combined tension and shear, the design must be performed in accordance with ACI 318-19 Section 17.8.

4.1.12 Lightweight Concrete: For the use of anchors in lightweight concrete, the modification factor λ_a equal to 0.8λ is applied to all values of $\sqrt{f'_c}$ affecting N_n and V_n.

The value of λ must be determined in accordance with ACI 318-19.

4.2 Allowable Stress Design (ASD):

4.2.1 General: Design values for use with allowable stress design load combinations calculated in accordance with Section 1605.1 of the 2024 IBC must be established using Eq-4 and Eq-5:

$$T_{allowable,ASD}=\frac{\phi N_n}{\alpha} \qquad \text{(Eq-4)}$$

and

$$V_{allowable,ASD}=\frac{\phi V_n}{\alpha} \qquad \text{(Eq-5)}$$

where:

$T_{allowable,ASD}$ = Allowable tension load [lbf or kN]

$V_{allowable,ASD}$ = Allowable shear load [lbf or kN]

ϕN_n = Lowest design strength of an anchor or anchor group in tension as determined in accordance with ACI 318-19 Chapter 17 and 2024 IBC Section 1905.7, and Section 4.1 of this report, as applicable (lbf or kN).

ϕV_n = Lowest design strength of an anchor or anchor group in shear as determined in accordance with ACI 318-19 Chapter 17 and 2024 IBC Section 1905.7, and Section 4.1 of this report, as applicable (lbf or kN).

α = Conversion factor calculated as a weighted average of the load factors for the controlling load combination. In addition, α must include all applicable factors to account for nonductile failure modes and required over-strength.

An example of allowable stress design values for illustrative purposes is shown in Table 6.

4.2.2 Interaction of Tensile and Shear Forces: The interaction must be calculated in accordance and consistent with ACI 318-19 Section 17.8, as follows:

For shear loads $V_{applied} \le 0.2\ V_{allowable,ASD}$, the full allowable load in tension $T_{allowable,ASD}$ must be permitted.

For tension loads $T_{applied} \le 0.2\ T_{allowable,ASD}$, the full allowable load in shear $V_{allowable,ASD}$ must be permitted.

For all other cases, Eq-6 applies:

$$\frac{T_{applied}}{T_{allowable,\ ASD}}+\frac{VV_{applied}}{V_{allowable,ASD}} \le 1.2 \qquad \text{(Eq-6)}$$

4.3 Installation:

Installation parameters are provided in Table 2 and in Figure 1 and 3 of this report. Anchor locations must be in accordance with this report and the plans and specifications approved by the code official. The FAZ II and

FAZ II Plus anchors must be installed according to the manufacturer's published instructions and this report. Anchors must be installed in holes drilled into the concrete using carbide-tipped masonry drill bits complying with the requirements of Table 2 of this report. The minimum drilled hole depth, embedment, spacing and edge distances, and member thickness are given in Table 2. The predrilled hole must be cleaned free of dust and debris using a hand pump, compressed air or a vacuum. The anchor must be hammered into the predrilled hole until the proper nominal embedment depth is achieved. The nut must be tightened against the washer until the torque values T_{inst} specified in Table 2 of this report are achieved.

4.4 Special Inspection:

Periodic special inspection is required, in accordance with Section 1705.1.1 and Table 1705.3 of the 2024 IBC. The special inspector must make periodic inspections during anchor installation to verify anchor type, anchor dimensions, concrete type, concrete compressive strength, hole dimensions, hole cleaning procedures, anchor spacing(s), edge distance(s), concrete member thickness, anchor embedment depth, tightening torque and adherence to the manufacturer's printed installation instructions. The special inspector must be present as often as required in accordance with the "statement of special inspection." Under the IBC, additional requirements as set forth in Sections 1705, 1706 and 1707 must be observed, where applicable.

5.0 CONDITIONS OF USE:

The FAZ II and FAZ II Plus anchors described in this report comply with, or are suitable alternatives to what is specified in the codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Anchor sizes, dimensions and installation parameters are as set forth in this report.

5.2 The anchors must be installed in accordance with the manufacturer's printed installation instructions and this report. In case of a conflict, this report governs.

5.3 Anchors must be installed in cracked and uncracked normal-weight or lightweight concrete having a specified compressive strength, f'_c of 2,500 psi to 8,500 psi (17.2 MPa to 58.6 MPa) [minimum of 24 MPa is required under ADIBC Appendix L, Section 5.1.1].

5.4 The values of f'_c used for calculation purposes must not exceed 8,000 psi (55.2 MPa).

5.5 Strength design values must be established in accordance with Section 4.1 of this report.

5.6 Allowable stress design values must be established in accordance with Section 4.2.

5.7 Anchor spacing(s) and edge distance(s) as well as minimum member thickness must comply with Table 2.

5.8 Prior to installation, calculations and details demonstrating compliance with this report must be submitted to the code official. The calculations and details must be prepared by a registered design professional where required by the statues of the jurisdiction in which the project is to be constructed.

5.9 Since an ICC-ES acceptance criteria for evaluating data to determine the performance of expansion anchors subjected to fatigue or shock loading is unavailable at this time, the use of these anchors under such conditions is beyond the scope of this report.

5.10 Anchors may be installed in regions of concrete where cracking has occurred or where analysis indicates cracking may occur ($f_t > f_r$), subject to the conditions of this report.

5.11 Anchors may be used to resist short-term loading due to wind or seismic forces in locations designated as Seismic Design Categories A through F of the IBC, subject to the conditions of this report.

5.12 Where not otherwise prohibited in the code, FAZ II and FAZ II Plus anchors are permitted for use with fire-resistance-rated construction provided that at least one of the following conditions is fulfilled:

- Anchors are used to resist wind or seismic forces only.
- Anchors that support a fire-resistance-rated envelope or a fire-resistance-rated membrane are protected by approved fire-resistance-rated materials or have been evaluated for resistance to fire exposure in accordance with recognized standards.
- Anchors are used to support nonstructural elements.

5.13 Use of zinc-coated carbon steel anchors is limited to dry, interior locations.

5.14 Special inspection must be provided in accordance with Section 4.4 of this report.

5.15 Anchors are manufactured by fischerwerke in Waldachtal, Germany, or in Ivanovice na Hane, Czech Republic, under an approved quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Mechanical Anchors in Concrete Elements AC193 (24a), published April 2025, for use in cracked and uncracked concrete; and quality-control documentation.

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-2948) along with the name, registered trademark, or registered logo of the report holder must be included in the product label.

7.2 In addition, the anchors can be identified on the packaging label with the manufacturer's address, anchor name, and anchor size. The "fish" symbol, the letters FAZ II or FAZ II +, the material (blank, R or HCR), the anchor diameter and the maximum fixing thickness are stamped on each anchor.

7.3 The report holder's contact information is the following:

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TABLE 1—LENGTH LETTER-CODE ON THE DOG POINT OF THE CONE BOLT AND MAXIMUM THICKNESS OF FIXTURE t_{fix}: FAZ II AND FAZ II PLUS M8-M24

marking		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(K)	(L)	(M)
max t_{fix}	[mm]	5	10	15	20	25	30	35	40	45	50	60	70
max t_{fix}	[in.]	0.20	0.39	0.59	0.79	0.98	1.18	1.38	1.57	1.77	1.97	2.36	2.76

marking		(N)	(O)	(P)	(R)	(S)	(T)	(U)	(V)	(W)	(X)	(Y)	(Z)
max t_{fix}	[mm]	80	90	100	120	140	160	180	200	250	300	350	400
max t_{fix}	[in.]	3.15	3.54	3.94	4.72	5.51	6.30	7.09	7.87	9.84	11.81	13.78	15.75

TABLE 2—INSTALLATION INFORMATION[1]

Characteristic	Symbol		Unit	FAZ II, FAZ II R, FAZ II HCR, FAZ II PLUS, FAZ II PLUS R, FAZ II PLUS HCR					
				M8	M10	M12	M16	M20	M24
Nominal drill bit diameter[2]	d_{bit}		mm	8	10	12	16	20	24
Cutting diameter of drill bit	$d_{bit,min}$		mm	8.05	10.05	12.10	16.10	20.10	24.10
	$d_{bit,max}$		mm	8.45	10.45	12.50	16.50	20.55	24.55
Minimum drill hole depth	h_{hole}		mm	55	75	90	110	125	155
			in.	2.17	2.95	3.54	4.33	4.92	6.10
Minimum diameter of clearance hole in the fixture	d_f		mm	9	12	14	18	22	26
			in.	0.35	0.47	0.55	0.71	0.87	1.02
Required installation torque	T_{inst}		Nm	20	45	60	110	200	270
			ft-lbf	15	33	44	81	148	199
Minimum effective anchorage depth	$h_{ef} \geq$		mm	45	60	70	85	100	125
			in.	1.77	2.36	2.76	3.35	3.94	4.92
Minimum concrete member thickness	$h_{a,min}$		mm	80	100	120	140	160	200
			in.	3.15	3.94	4.72	5.51	6.30	7.87
Minimum nominal embedment depth [5]	$h_{nom} \leq$		mm	55	75	90	110	125	155
			in.	2.17	2.95	3.54	4.33	4.92	6.10
Wrench socket size	-		mm	13	17	19	24	30	36
Washer diameter	$d_w \geq$		mm	15	19	23	29	36	43
			in.	0.59	0.75	0.91	1.14	1.42	1.69
Minimum spacing for concrete strength f'_c of ≥ 2,900 psi to 8,500 psi (20 MPa to 58.6 MPa)[3]	s_{min}		mm	35	40	50	80	125	150
			in.	1.38	1.57	1.97	3.15	4.92	5.91
	For $c_a \geq$		mm	70	100	90	130	220	230
			in.	2.76	3.94	3.54	5.12	8.66	9.06
Minimum edge distance for concrete strength f'_c of ≥ 2,900 psi to 8,500 psi (20 MPa to 58.6 MPa)[3]	c_{min}		mm	40	60	60	65	125	135
			in.	1.57	2.36	2.36	2.56	4.92	5.32
	For $s_a \geq$		mm	100	90	120	180	230	235
			in.	3.94	3.54	4.72	7.09	9.06	9.25
Minimum spacing for concrete strength f'_c of 2,500 psi to 2,900 psi (17 MPa to 20 MPa)[3]	s_{min}		mm	39	44	55	88	138	165
			in.	1.52	1.73	2.17	3.47	5.41	6.50
	for $c_a \geq$		mm	77	110	90	143	242	253
			in.	3.04	4.33	3.89	5.63	9.53	9.67
Minimum edge distance for concrete strength f'_c of 2,500 psi to 2,900 psi (17 MPa to 20 MPa)[3]	c_{min}		mm	44	66	66	72	138	149
			in.	1.73	2.60	2.60	2.82	5.41	5.85
	for $s_a \geq$		mm	110	99	132	198	253	259
			in.	4.33	3.90	5.20	7.80	9.96	10.20
Critical edge distance	c_{ac}		mm	120	160	165	180	220	260
			in.	4.72	6.30	6.50	7.09	8.66	10.24
Maximum thickness of fixture[4]	t_{fix}	≥	mm in.	0	0	0	0	0	0
		≤	mm	200	250	300	400	500	600
			in.	7.87	9.84	11.81	15.75	19.69	23.62
Length of anchor[4]	L_{min}		mm	67	85	100	125	140	174
			in.	2.64	3.35	3.94	4.92	5.51	6.85
	L_{max}		mm	267	335	400	525	640	774
			in.	10.51	13.19	15.75	20.67	25.20	30.47

For pound-inch units: 1 mm = 0.03937 inches, 1 Nm = 0.7376 ft-lbf.

[1]All specifications excluding manufacturing tolerances.
[2]Use metric bits only.
[3]Intermediate values for s_{min} and c_{min} can be calculated by linear interpolation.
[4]Use of the two lines only in conjunction, intermediate values can be calculated $L = L_{min} + t_{fix}$
[5]h_{nom} given is before anchor tightening.

TABLE 3—DESIGN INFORMATION FAZ II

Design parameter	SYMBOL	Units	FAZ II					
			M8	M10	M12	M16	M20	M24
Outside diameter of anchor	d_a	mm	7.8	9.8	11.8	15.7	19.7	23.5
		in.	0.31	0.39	0.47	0.62	0.78	0.93
Effective min. embedment depth[1]	$h_{ef,min}$	mm	45	60	70	85	100	125
		in.	1.77	2.36	2.76	3.35	3.94	4.92
Anchor category[2]	1,2 or 3	-	1					
Strength reduction factor for tension, steel failure modes	ϕ	-	0.75[3]				0.65[4]	
Strength reduction factor for shear, steel failure modes	ϕ	-	0.65[3]				0.60[4]	
Strength reduction factor for tension, concrete failure modes[5,6]	ϕ	Cond.A	0.75					
		Cond.B	0.65					
Strength reduction factor for shear, concrete failure modes[5,6]	ϕ	Cond.A	0.75					
		Cond.B	0.70					
Yield strength of anchor steel, neck and thread	f_{ya}	N/mm²	560				520	544
		lbf/in.²	80,287				74,552	77,993
Ultimate strength of anchor steel, neck and thread	f_{uta}	N/mm²	700				650	680
		lbf/in.²	100,358				93,190	97,491
Tensile stress area	$A_{se,\ N}$	mm²	19.6	34.2	52.8	85.0	147.4	219.0
		in.²	0.030	0.053	0.082	0.132	0.228	0.340
Steel strength in tension[3,4]	N_{sa}	kN	13.7	23.9	37.0	59.5	95.8	148.9
		lbf	3,080	5,373	8,317	13,376	21,536	33,474
Effectiveness factor cracked concrete	k_{cr}	SI	7.1	7.1	7.1	10.0	8.8	8.8
		Imp	17	17	17	24	21	21
Effectiveness factor uncracked concrete	k_{uncr}	SI	10.0	10.0	11.3	11.3	11,3	11.3
		Imp	24	24	27	27	27	27
Modification factor for uncracked concrete[7]	$\Psi_{c,N}$	-	1.0	1.0	1.0	1.0	1.0	1.0
Pullout strength uncracked concrete[8]	$N_{p,uncr}$	not decisive						
Pullout strength cracked concrete[8]	$N_{p,cr}$	kN	5.7	11.8	not decisive	23.7	30.2	not decisive
		lbf	1,281	2,653		5,327	6,789	
Tension pullout strength seismic[8]	N_{eq}	kN	5.7	11.0	not decisive			
		lbf	1,281	2,675				
Shear stress area	$A_{se,V}$	mm²	36.6	58.0	84.3	156.7	244.8	352.5
		in.²	0.057	0.090	0.131	0.243	0.379	0.546
Steel strength in shear, static	V_{sa}	kN	11	19	31	61	70	86
		lbf	2,473	4,271	6,969	13,714	15,737	19,334
Steel strength in shear, seismic	V_{eq}	kN	10	17	28	52	62	68
		lb	2,248	3,822	6,295	11,690	13,938	15,286
Coefficient for pryout strength	k_{cp}	[-]	1		2			
Effective length of anchor in shear loading	l_e	mm	45	60	70	85	100	125
		inch	1.77	2.36	2.76	3.35	3.94	4.92
Axial stiffness in service load range cracked concrete	$\beta_{m,cr}$	kN/mm	5	7	14	18	20	29
		10³lbf/in	29	40	79	97	109	159
Axial stiffness in service load range uncracked concrete	$\beta_{m,uncr}$	kN/mm	15	21	29	42	45	46
		10³lbf/in	80	113	159	228	242	248

[1]Figure 2 illustrates the location of $h_{ef,min}$.
[2]See Section 4.1.1 of this report.
[3]The FAZ II anchors M8-M16 carbon steel are considered a ductile steel element as defined by ACI 318-19 Section 2.3.
[4]The FAZ II anchors M20-M24 carbon-steel are considered a brittle steel element as defined by ACI 318-19 Section 2.3.
[5]The strength reduction factor applies when the load combinations from the IBC or ACI 318-19 are used and the requirements of ACI 318-19 Section 17.5.3 are met.
[6]Anchors are permitted to be used in lightweight concrete provided that the provisions in accordance with Section 4.1.12 of this report are taken into account.
[7]The value $\Psi_{c,N}$ = 1.0 for all design cases.
[8]As described in Section 4.1.5 of this report, pullout resistance is only critical for the sizes M8, M10, M16 and M20 in cracked concrete.

TABLE 4— DESIGN INFORMATION FAZ II R AND FAZ II HCR

Design parameter	SYMBOL	Units	FAZ II R, FAZ II HCR					
			M8	M10	M12	M16	M20	M24
Outside diameter of anchor	d_a	mm	7.8	9.8	11.8	15.7	19.7	23.5
		in.	0.31	0.39	0.47	0.62	0.78	0.93
Effective min. embedment depth[1]	$h_{ef,min}$	mm	45	60	70	85	100	125
		in.	1.77	2.36	2.76	3.35	3.94	4.92
Anchor category[2]	1,2 or 3	-	1					
Strength reduction factor for tension, steel failure modes[4]	ϕ	-	0.75[3]					
Strength reduction factor for shear, steel failure modes[4]	ϕ	-	0.65[3]					
Strength reduction factor for tension, concrete failure modes[4]	ϕ	Cond.A	0.75					
		Cond.B	0.65					
Strength reduction factor for shear, concrete failure modes[4]	ϕ	Cond.A	0.75					
		Cond.B	0.70					
Yield strength of anchor steel, neck and thread	f_{ya}	N/mm²	560					544
		lbf/in.²	80,287					77,993
Ultimate strength of anchor steel, neck and thread	f_{uta}	N/mm²	700					680
		lbf/in.²	100,358					97,491
Tensile stress area	$A_{se,\ N}$	mm²	19.6	34.2	52.8	85.0	147.4	219.0
		in.²	0.030	0.053	0.082	0.132	0.228	0.340
Steel strength in tension[3]	N_{sa}	kN	13.7	23.9	37.0	59.5	102.9	148.9
		lbf	3,080	5,373	8,317	13,376	23,132	33,474
Effectiveness factor cracked concrete	k_{cr}	SI	7.1	7.1	7.1	10.0	8.8	8.8
		Imp	17	17	17	24	21	21
Effectiveness factor uncracked concrete	k_{uncr}	SI	10.0	10.0	11.3	11.3	11,3	11.3
		Imp	24	24	27	27	27	27
Modification factor for uncracked concrete[5]	$\Psi_{c,N}$	-	1.0	1.0	1.0	1.0	1.0	1.0
Pullout strength uncracked concrete[6]	$N_{p,uncr}$	not decisive						
Pullout strength cracked concrete[6]	$N_{p,cr}$	kN	5.7	11.8	not decisive	23.7	30.2	not decisive
		lbf	1,281	2,653		5,327	6,789	
Tension pullout strength seismic[8]	N_{eq}	kN	5.7	11.0	not decisive			
		lbf	1,281	2,675				
Shear stress area	$A_{se,V}$	mm²	36.6	58.0	84.3	156.7	244.8	352.5
		in.²	0.057	0.090	0.131	0.243	0.379	0.546
Steel strength in shear, static	V_{sa}	kN	13	21	36	72	105	130
		lbf	2,922	47,208	80,928	16,186	23,604	29,224
Steel strength in shear, seismic	V_{eq}	kN	10	17	28	60	80	80
		lb	2,248	3,822	6,294	13,488	17,984	17,984
Coefficient for pryout strength	k_{cp}	[-]	1		2			
Effective length of anchor in shear loading	l_e	mm	45	60	70	85	100	125
		inch	1.77	2.36	2.76	3.35	3.94	4.92
Axial stiffness in service load range cracked concrete	$\beta_{m,cr}$	kN/mm	5	7	14	18	20	29
		10^3lbf/in	29	40	79	97	109	159
Axial stiffness in service load range uncracked concrete	$\beta_{m,uncr}$	kN/mm	15	21	29	42	45	46
		10^3lbf/in	80	113	159	228	242	248

[1]Figure 2 illustrates the location of $h_{ef,min}$.
[2]See Section 4.1.1 of this report.
[3]The FAZ II anchors M8-M24 stainless steel (R) and M8-M16 stainless steel (HCR) are considered a ductile steel element as defined by ACI 318-19 Section 2.3.
[4]The strength reduction factor applies when the load combinations from the IBC or ACI 318-19 are used and the requirements of ACI 318-19 Section 17.5.3 are met..
[4]Anchors are permitted to be used in lightweight concrete provided that the provisions in accordance with Section 4.1.12 of this report are taken into account.
[5]The value $\Psi_{c,N}$ = 1.0 for all design cases.
[6]As described in Section 4.1.5 of this report, pullout resistance is only critical for the sizes M8, M10, M16 and M20 in cracked concrete.

TABLE 5—DESIGN INFORMATION FAZ II PLUS, FAZ II PLUS R, AND FAZ II PLUS HCR

Design parameter	SYMBOL	Units	FAZ II Plus, FAZ II Plus R, FAZ II Plus HCR					
			M8	M10	M12	M16	M20	M24
Outside diameter of anchor	d_a	mm	7.8	9.8	11.8	15.7	19.7	23.5
		in.	0.31	0.39	0.47	0.62	0.78	0.93
Effective min. embedment depth[1]	$h_{ef,min}$	mm	45	60	70	85	100	125
		in.	1.77	2.36	2.76	3.35	3.94	4.92
Anchor category[2]	1,2 or 3	-	1					
Strength reduction factor for tension, steel failure modes	ϕ	-	0.75[3]				0.65[4]	
							0.75[3]	
Strength reduction factor for shear, steel failure modes	ϕ	-	0.65[3]				0.60[4]	
							0.65[3]	
Strength reduction factor for tension, concrete failure modes[5,6]	ϕ	Cond.A	0.75					
		Cond.B	0.65					
Strength reduction factor for shear, concrete failure modes[5,6]	ϕ	Cond.A	0.75					
		Cond.B	0.70					
Yield strength of anchor steel, neck and thread	f_{ya}	N/mm²	624	632	608	616	520	616
		lbf/in.²	89,462	90,609	87,168	88,315	75,420	88,315
Ultimate strength of anchor steel, neck and thread	f_{uta}	N/mm²	780	790	760	770	650	770
		lbf/in.²	111,828	113,261	108,960	110,394	94,275	110,394
Tensile stress area	$A_{se,\ N}$	mm²	19.6	34.2	52.8	85.0	147.4	219.0
		in.²	0.030	0.053	0.082	0.132	0.228	0.340
Steel strength in tension[3,4]	N_{sa}	kN	15.3	27.0	40.1	65.5	95.8	168.6
		lbf	3,437	6,074	9,021	14,714	21,539	37,910
Effectiveness factor cracked concrete	k_{cr}	SI	7.1	7.1	7.1	10.0	8.8	8.8
		Imp	17	17	17	24	21	21
Effectiveness factor uncracked concrete	k_{uncr}	SI	10.0	10.0	11.3	11.3	11,3	11.3
		Imp	24	24	27	27	27	27
Modification factor for uncracked concrete[7]	$\Psi_{c,N}$	-	1.0	1.0	1.0	1.0	1.0	1.0
Pullout strength uncracked concrete[8]	$N_{p,uncr}$	not decisive						
Pullout strength cracked concrete[8]	$N_{p,cr}$	kN	5.7	11.8	not decisive	23.7	30.2	not decisive
		lbf	1,281	2,653		5,327	6,789	
Tension pullout strength seismic[8]	N_{eq}	kN	5.7	11.0	not decisive			
		lbf	1,281	2,675				
Shear stress area	$A_{se,V}$	mm²	36.6	58.0	84.3	156.7	244.8	352.5
		in.²	0.057	0.090	0.131	0.243	0.379	0.546
FAZ II Plus Steel strength in shear, static	V_{sa}	kN	12	20	32	65	70	94
		lbf	2,698	4,496	7,194	14,612	15,737	21,132
FAZ II Plus Steel strength in shear, seismic	V_{eq}	kN	11	18	28	57	62	74
		lbf	2,473	4,046	6,294	12,814	13,938	16,636
FAZ II Plus R and FAZ II Plus HCR Steel strength in shear, static	V_{sa}	kN	15	24	37	78	97	130
		lbf	3,372	5,395	8,318	17,534	21,806	29,225
FAZ II Plus R and FAZ II Plus HCR Steel strength in shear, seismic	V_{eq}	kN	10	18	26	62	62	70
		lb	2,248	4,047	5,845	13,938	13,938	15,737
Coefficient for pryout strength	k_{cp}	[-]	1		2			
Effective length of anchor in shear loading	l_e	mm	45	60	70	85	100	125
		inch	1.77	2.36	2.76	3.35	3.94	4.92
Axial stiffness in service load range cracked concrete	$\beta_{m,cr}$	kN/mm	5	7	14	18	20	29
		10³lbf/in	29	40	79	97	109	159
Axial stiffness in service load range uncracked concrete	$\beta_{m,uncr}$	kN/mm	15	21	29	42	45	46
		10³lbf/in	80	113	159	228	242	248

[1]Figure 2 illustrates the location of $h_{ef,min}$.
[2]See Section 4.1.1 of this report.
[3]The FAZ II Plus anchors M8-M16 and FAZ II Plus anchors M8-M24 stainless steel (R) and M8-M16 stainless steel (HCR) are considered a ductile steel element as defined by ACI 318-19 Section 2.3.
[4]The FAZ II Plus anchors M20-M24 carbon-steel are considered a brittle steel element as defined by ACI 318-19 Section 2.3.
[5]The strength reduction factor applies when the load combinations from the IBC or ACI 318-19 are used and the requirements of ACI 318-19 Section 17.5.3 are met.
[6]Anchors are permitted to be used in lightweight concrete provided that the provisions in accordance with Section 4.1.12 of this report are taken into account.
[7]The value $\Psi_{c,N}$ = 1.0 for all design cases.
[8]As described in Section 4.1.5 of this report, pullout resistance is only critical for the sizes M8, M10, M16 and M20 in cracked concrete.

TABLE 6—EXAMPLE ALLOWABLE STRESS DESIGN VALUES FOR ILLUSTRATIVE PURPOSES

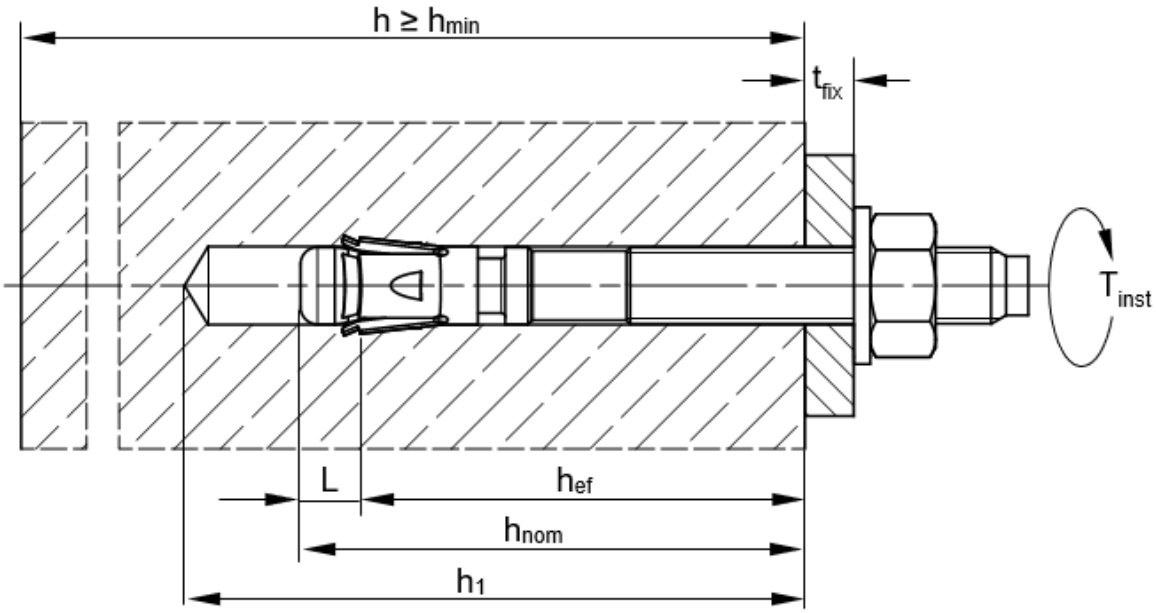
Anchor type FAZ II, FAZ II R, FAZ II HCR FAZ II PLUS, FAZ II PLUS R, FAZ II PLUS HCR	Effective Embedment depth h_{ef}, inch (mm)	Allowable Tension Load Lbf (kN)
M8	1.77	1,236
	(45)	(5.50)
M10	2.36	1,904
	(60)	(8.47)
M12	2.76	2,713
	(70)	(12.07)
M16	3.35	3,631
	(85)	(16.15)
M20	3.94	4,631
	(100)	(20.60)
M24	4.92	6,473
	(125)	(28.79)

For **SI:** 1 inch = 25.4 mm, 1 lbf = 4.45 N

Design Assumptions:
[1]Single anchor with static tension load only
[2]Concrete determined to remain uncracked for the life of the anchorage
[3]Load combinations from ACI 318-19 Section 5.3 (no seismic loading)
[4]30% dead load and 70% live load, controlling load combination 1.2 D + 1.6 L
[5]Calculation of weighted average for α = 0.3 x 1.2 + 0.7 x 1.6 = 1.48
[6]f'_c = 2,500 psi (17.2 MPa) (normal weight concrete)

[7]$h \geq h_{min}$
[8] No supplementary reinforcement is present (Condition B) according to ACI 318-19 Section 17.5.3

[9]$c_{a1} = c_{a2} \geq c_{ac}$



h_{ef} = Effective embedment depth
t_{fix} = Thickness of the fixture
h_1 = Depth of drill hole to deepest point
h = Thickness of the concrete member
h_{min} = Minimum thickness of concrete member
h_{nom} = Overall fastener embedment depth in the concrete
L = Length from h_{ef} to end of cone bolt

FIGURE 1—INSTALLED ANCHOR FAZ II AND FAZ II PLUS

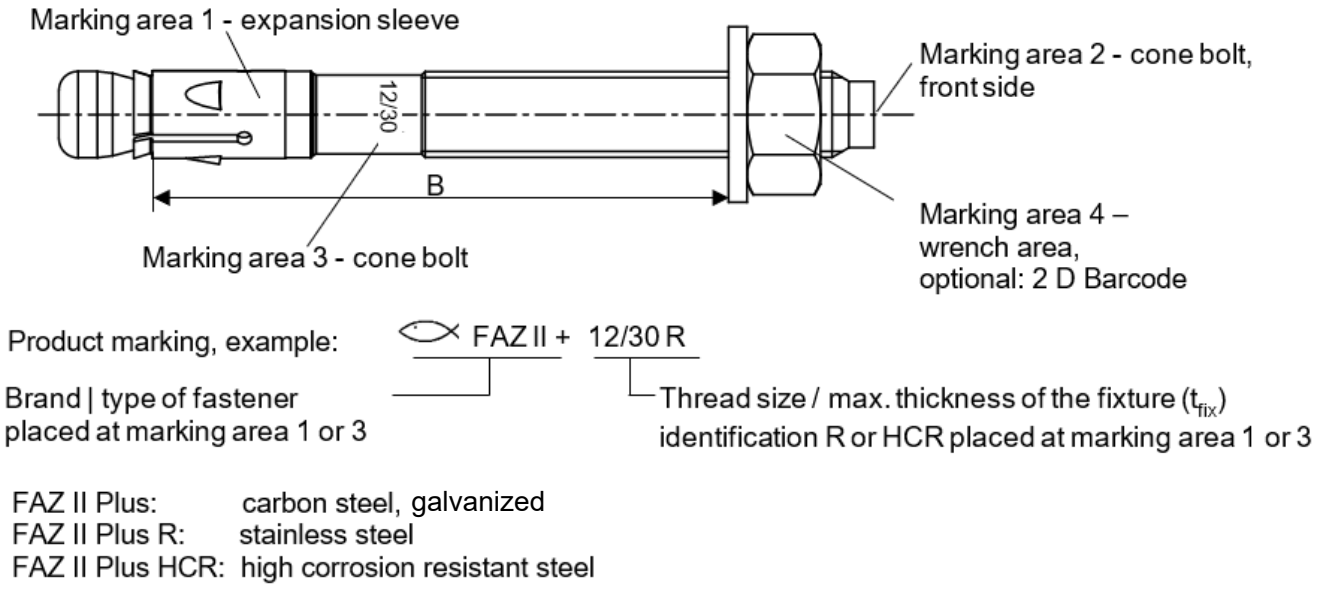


FIGURE 2—MARKING AND COMPONENTS OF THE FAZ II AND FAZ II PLUS

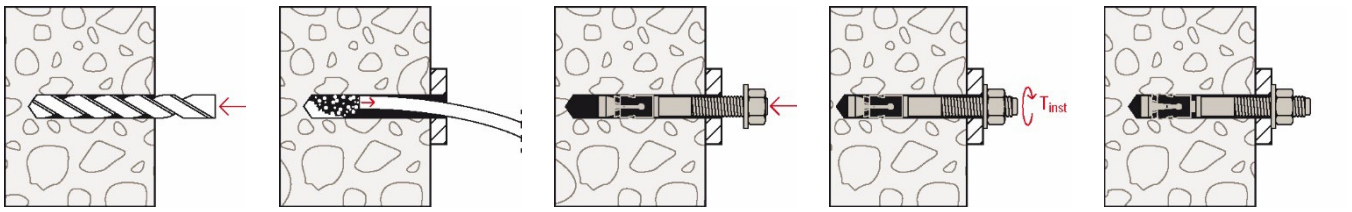


FIGURE 3—INSTALLATION OF THE FAZ II AND FAZ II PLUS

Step 1: Drill the hole by using the correct metric bit diameter **(see Table 2),** drill hole to minimum required hole depth h_{hole} **(see Table 2)** or deeper
Step 2: Remove drilling debris with a blowout bulb, compressed air, or by vacuum.
Step 3: Using a hammer, tap the anchor through the part being fastened into the drilled hole until the washer is in contact with the fastened part. Make sure that the minimum required effective anchorage depth (h_{ef}) is kept and that the maximum thickness of fixture (t_{fix}) is not exceeded.
Step 4: Using a torque wrench, apply the specified installation torque T_{inst} **(see Table 2)**

TABLE 7— APPLICABLE SECTIONS OF THE IBC UNDER EACH EDITION OF THE IBC

2024 IBC	2021 IBC	2018 IBC	2015 IBC	2012 IBC
Section 1605.1		Section 1605.2 or 1605.3		
Section 1705.1.1 and Table 1705.3				
Section 1901.3				Sections 1908 and 1909
Sections 1903 and 1905				
Section 1905.7	Section 1905.1.8			Section 1905.1.9

TABLE 8— APPLICABLE SECTIONS OF ACI 318 UNDER EACH EDITION OF THE IBC

2024 IBC	2021 IBC	2018 IBC	2015 IBC	2012 IBC
ACI 318-19		**ACI 318-14**		**ACI 318-11**
2.3		2.3		D.1
5.3		5.3		9.2
Chapter 17		Chapter 17		Appendix D
17.3.1		17.2.7		D.3.7
17.5.1.2		17.3.1		D.4.1
17.5.3		17.3.3		D.4.3
17.6.1		17.4.1		D.5.1
17.6.1.2		17.4.1.2		D.5.1.2
17.6.2		17.4.2		D.5.2
17.6.2.2		17.4.2.2		D.5.2.2
17.6.2.5.1		17.4.2.6		D.5.2.6
17.6.3.1		17.4.3.1		D.5.3.1
17.6.3.2.1		17.4.3.2		D.5.3.2
17.7.1.2		17.5.1.2		D.6.1.2
Eq. 17.7.1.2b		Eq. 17.5.1.2b		Eq. D-29
17.7.2		17.5.2		D.6.2
17.7.2.2.1		17.5.2.2		D.6.2.2
Eq. 17.7.2.2.1a		Eq. 17.5.2.2a		Eq. D-33
17.7.3		17.5.3		D.6.3
17.8		17.6		D.7
17.9.2		17.7.1 and 17.7.3		D.8.1 and D.8.3
17.9.4		17.7.5		D.8.5
17.9.5		17.7.6		D.8.6
17.10		17.2.3		D.3.3
17.10.4, 17.10.5, 17.10.6, 17.10.7		17.2.3.4, 17.2.3.5, 17.2.3.6, 17.2.3.7		D.3.3.4, D.3.3.5, D.3.3.6, D.3.3.7

DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
Section: 05 05 19—Post-Installed Concrete Anchors

REPORT HOLDER:

fischerwerke GmbH & Co. KG

EVALUATION SUBJECT:

fischer FAZ II, FAZ II R, FAZ II HCR AND FAZ II PLUS, FAZ II PLUS R AND FAZ II PLUS HCR METRIC WEDGE ANCHOR FOR ANCHORING IN CRACKED AND UNCRACKED CONCRETE

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the fischer FAZ II, FAZ II R, FAZ II HCR, and FAZ II Plus, FAZ II Plus R and FAZ II Plus HCR metric wedge anchors in cracked and uncracked concrete, described in ICC-ES evaluation report ESR-2948, have also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The the fischer FAZ II, FAZ II R, FAZ II HCR, and FAZ II Plus, FAZ II Plus R and FAZ II Plus HCR metric wedge anchors in cracked and uncracked concrete, described in Sections 2.0 through 7.0 of the evaluation report ESR-2948, comply with the LABC Chapter 19, and the LARC, and are subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The the fischer FAZ II, FAZ II R, FAZ II HCR, and FAZ II Plus, FAZ II Plus R and FAZ II Plus HCR metric wedge anchors in cracked and uncracked concrete described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the evaluation report ESR-2948.
- The design, installation, conditions of use and identification of the anchors are in accordance with the 2021 *International Building Code®* (IBC) provisions noted in the evaluation report ESR-2948.
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16, 17, and the City of Los Angeles Information Bulletin P/BC 2023-092, as applicable.
- Under the LARC, an engineered design in accordance with LARC Section R301.1.3 must be submitted.
- The allowable and strength design values listed in the evaluation report and tables are for the connection of the anchors to the concrete. The connection between the anchors and the connected members shall be checked for capacity (which may govern).
- For use in wall anchorage assemblies to flexible diaphragm applications, anchors shall be designed per the requirements of City of Los Angeles Information Bulletin P/BC 2023-071.

This supplement expires concurrently with the evaluation report, reissued January 2026.

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DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
Section: 05 05 19—Post-installed Concrete Anchors

REPORT HOLDER:

fischerwerke GmbH & CO. KG

EVALUATION SUBJECT:

fischer FAZ II, FAZ II R, FAZ II HCR AND FAZ II PLUS, FAZ II PLUS R AND FAZ II PLUS HCR METRIC WEDGE ANCHOR FOR ANCHORING IN CRACKED AND UNCRACKED CONCRETE

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the fischer FAZ II, FAZ II R, FAZ II HCR, and FAZ II Plus, FAZ II Plus R and FAZ II Plus HCR metric wedge anchors, described in ICC-ES evaluation report ESR-2948, have also been evaluated for compliance with the codes noted below.

Applicable code edition*(s)*:

- 2022 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI), and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 *California Residential Code* (CRC)

2.0 CONCLUSIONS

2.1 CBC:

The fischer FAZ II, FAZ II R, FAZ II HCR, and FAZ II Plus, FAZ II Plus R and FAZ II Plus HCR metric wedge anchors, described in Sections 2.0 through 7.0 of the evaluation report ESR-2948, complies with CBC Chapter 19, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16, 17 and 19, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

2.2 CRC:

The fischer FAZ II, FAZ II R, FAZ II HCR, and FAZ II Plus, FAZ II Plus R and FAZ II Plus HCR metric wedge anchors, described in Sections 2.0 through 7.0 of the evaluation report ESR-2948, comply with CRC Section R301.1.3, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 16, 17 and 19, as applicable.

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DIVISION: 03 00 00—CONCRETE
Section: 03 16 00—Concrete Anchors

DIVISION: 05 00 00—METALS
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fischerwerke GmbH & Co. KG

EVALUATION SUBJECT:

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1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that fischer FAZ II, FAZ II R, FAZ II HCR metric wedge anchors in cracked and uncracked concrete, described in ICC-ES evaluation report ESR-2948, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 *Florida Building Code—Building*
- 2023 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The fischer FAZ II, FAZ II R, FAZ II HCR metric wedge anchors in cracked and uncracked concrete, described in Sections 2.0 through 7.0 of the evaluation report ESR-2948, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential,* as applicable. The installation requirements noted in ICC-ES evaluation report ESR-2948 for the 2021 *International Building Code®* meet the requirements of the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable.

Use of the fischer FAZ II, FAZ II R, FAZ II HCR metric wedge anchors in cracked and uncracked concrete has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* with the following condition:

a) For connections subject to uplift, the connection must be designed for no less than 700 pounds (3114 N).

For products falling under Florida Rule 61G20-3, verification that the report holder's quality-assurance program is audited by a quality-assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission). Florida Rule 61G20-3 is applicable to products and/or systems which comprise the building envelope and structural frame for compliance with the structural requirements of the Florida Building Code.

This supplement expires concurrently with the evaluation report, reissued January 2026.

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