

# High performance anchor FH II

2006 and 2009 IBC compliant high-performing heavy-duty sleeve anchor

## OVERVIEW



High performance anchor **FH II-S**, zinc plated steel



High performance anchor **FH II-SK**, zinc plated steel



High performance anchor **FH II-H**, zinc plated steel



High performance anchor **FH II-B**, zinc plated steel

**Especially suited for seismic and cracked concrete application**

### Code listed

ICC-ES ESR 2691 supports ACI 318 design

### Test criteria

Acceptance criteria for Mechanical Anchor in concrete AC 193 and ACI 355.2

### Load combinations including seismic

Seismic design categories C - F

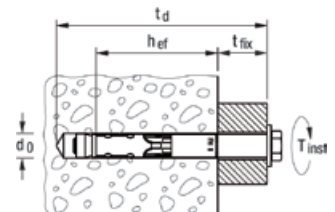


## TECHNICAL DATA



High performance anchor **FH II-S** with hexagon head screw - zinc plated steel

Type	Art.-No.	approvals	drill	min. drill-hole depth for through fixings	effect. anchoring depth	total length	max. usable length	thread	width across nut	Washer (outer diameter x thickness)	Qty. per box
		ETA ▼ ICC-ES	$d_o$	$t_d$	$h_{ef}$	$l$	$t_{fix}$	M	SW	[mm]	pcs.
			[mm]	[mm]	[mm]	[mm]	[mm]				
FH II 10/10 S	503133	■	10	65	40	70	10	M 6	10	12 x 2	50
FH II 10/25 S	503134	■	10	80	40	85	25	M 6	10	12 x 2	50
FH II 10/50 S	503135	■	10	105	40	110	50	M 6	10	12 x 2	50
FH II 12/10 S	044884	■ ▼	12	90	60	90	10	M 8	13	22 x 2,5	50
FH II 12/25 S	044885	■ ▼	12	105	60	105	25	M 8	13	22 x 2,5	50
FH II 15/10 S	044887	■ ▼	15	100	70	106	10	M 10	17	25 x 3	25
FH II 15/25 S	044888	■ ▼	15	115	70	121	25	M 10	17	25 x 3	25
FH II 18/10 S	046847	■ ▼	18	115	80	118	10	M 12	19	30 x 3	20
FH II 18/25 S	044894	■ ▼	18	130	80	132	25	M 12	19	30 x 3	20
FH II 24/25 S	044898	■ ▼	24	150	100	160	25	M 16	24	40 x 5	10
FH II 28/30 S	044901	■ ▼	28	185	125	192	30	M 20	30	44 x 4,5	4
FH II 32/30 S	044903	■ ▼	32	210	150	215	30	M 24	36	50 x 5	4



## LOADS

**FH II S, B, H and SK Carbon steel - Allowable Seismic Tension (ASD), Normal-weight cracked concrete, Condition B**<sup>1,2,3</sup>

Nominal Anchor Diameter	Embedment Depth $h_{ef}$		Concrete Compressive Strength							
			$f'_c = 2500$ psi		$f'_c = 3000$ psi		$f'_c = 4000$ psi		$f'_c = 6000$ psi	
	mm	in	kN	pounds	kN	pounds	kN	pounds	kN	pounds
M8	60	2.36	5.2	1161	5.7	1272	6.5	1468	8.0	1642
M10	70	2.76	8.1	1814	8.8	1987	10.2	2294	12.5	2565
M12	80	3.15	9.8	2211	10.8	2422	12.5	2797	15.3	3127
M16	100	3.94	15.6	3535	17.2	3873	19.8	4472	24.3	5000
M20	125	4.92	21.9	4933	24.0	5404	27.7	6240	33.9	6977
M24	150	5.91	28.7	6495	31.5	7115	36.4	8215	44.6	9185

**FH II Carbon - Allowable Seismic Shear load (ASD)<sup>4</sup>, Normal-weight cracked concrete, Condition B**<sup>1,2,3</sup>

concrete, Condition B <sup>1,2,3</sup>					
Nominal Anchor Diameter	Allowable capacity, Seismic shear (includes				
	S and SK		B and H		
	kN	pounds	kN	pounds	
M8	5.6	1250	5.6	1250	
M10	17.4	3906	15.6	3500	
M12	21.2	4763	21.2	4763	
M16	33.7	7614	33.7	7614	
M20	47.1	10625	47.1	10625	
M24	61.9	13989	61.9	13989	

<sup>1</sup> Values are for single anchors with no edge distance or spacing reduction. For other cases, calculation of allowable seismic tension as per ACI 318-08 and conversion to ASD in accordance with section 4.2.1 Eq. (5) and letter from January 20th 2009 „Clarification on the Use of the Conversion Factor “a” to Convert Strength Design (SD) to Allowable Stress Design (ASD)” is required. Conversion factor  $a = 1.29$  with the assumption that the basic load case combination is controlled by 50% D and 50% E is included.

<sup>2</sup> Values are for normal-weight concrete. For sand-lightweight concrete, multiply values by 0.60.

<sup>3</sup> Condition B applies where supplementary reinforcement in conformance with ACI 318-08 Section D 4.4 is not provided, or where pullout or pryout strength governs. For cases where the presence of supplementary reinforcement can be verified, the strength reduction factors associated with Condition A may be used.

<sup>4</sup> Values are for single anchors with no edge distance or spacing reduction due to concrete failure.