HBI Heavy duty expansion anchor

	Anchor version	Benefits
	HBI Panel Anchor	- big head Φ30mm - high load capacity - only for tilt-up temporary application


Concrete

Basic loading data (for a single anchor)

All data in this section applies to
- AS3850.1.2015 and AS3850.2.2015
- Correct setting (See setting instruction)
- No edge distance and spacing influence
- Only for un-cracked concrete, temporary use for tilt-up application, $f_{ck,cylinder}$=20 MPa

Characteristic Ultimate Strength

		Un-cracked concrete
Anchor size		**M14**
Tensile $R_{u,N}$	[kN]	39
Shear $R_{u,v}$	[kN]	80.5

Working load limit

		Un-cracked concrete
Anchor size		**M14**
Tensile WLL _ N	[kN]	17.3
Shear WLL _ V	[kN]	35.8

a) With overall partial safety factor for brace inserts **FoS** = 2,25. The partial safety factor is according to AS3850.1 Table2.1.

Materials

Mechanical properties of HBI

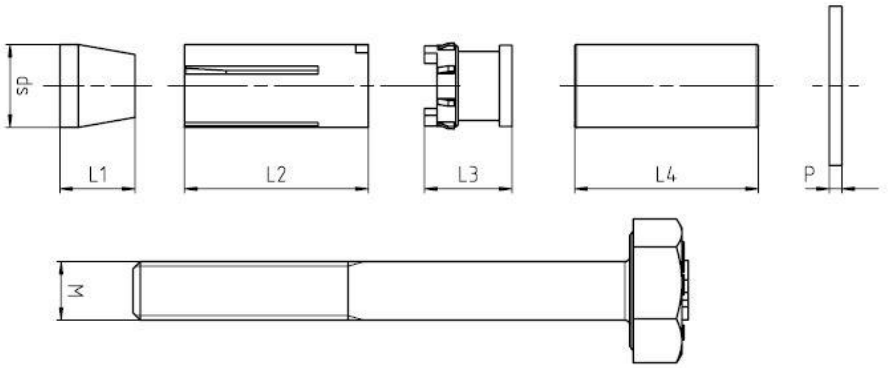
Anchor size		M14
Nominal tensile strength f_{uk}	[N/mm²]	800
Yield strength f_{yk}	[N/mm²]	640
Stressed cross-section A_s	[mm²]	115
Moment of resistance W	[mm³]	173.9
Char. bending resistance without sleeve $M^0_{Rk,s}$	[Nm]	166.9

Material quality

Part	Material
Bolt	Steel strength 8.8, galvanized to min. 5µm

Anchor dimensions

Anchor version	Thread size	d_s [mm]	ℓ_1 [mm]	ℓ_2 [mm]	ℓ_3 [mm]	ℓ_4 [mm]		p [mm]
						min	max	
HBI	M14	19.8	18	44	21	43.6	44.4	3

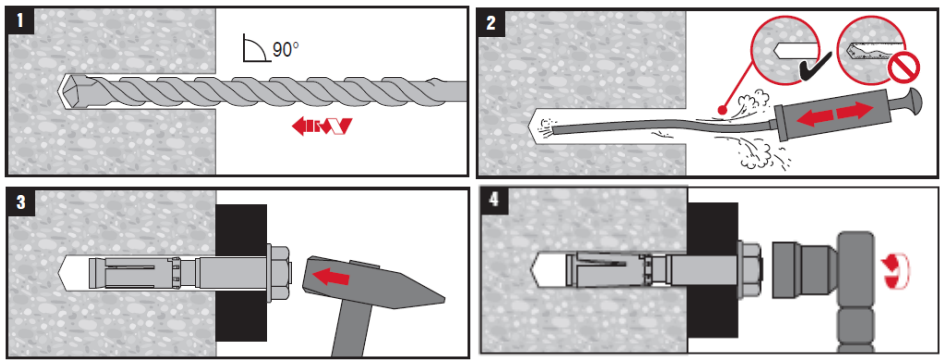


Setting

installation equipment

Anchor size	M14
Rotary hammer	TE40-TE70
Other tools	hammer, torque wrench, blow out pump

Setting instruction



For detailed information on installation see instruction for use given with the package of the product.

Setting details: depth of drill hole h_1 and effective anchorage depth h_{ef}

Setting details			M14
Nominal diameter of drill bit	d_o	[mm]	20
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	20.4
Depth of drill hole	$h_1 \geq$	[mm]	110
Diameter of clearance hole in the fixture	$d_f \leq$	[mm]	22
Thickness of fixture	tfix	[mm]	20
Effective anchorage depth	h_{ef}	[mm]	85
Nominal embedment depth	h_{nom}	[mm]	95
Torque moment	T_{inst}	[Nm]	150
Width across	SW	[mm]	30

Base material thickness, anchor spacing and edge distance

Anchor size			M14
Minimum base material thickness	h_{min}	[mm]	150
Minimum spacing	s_{min}	[mm]	250
Minimum edge distance	c_{min}	[mm]	300