

AT-HP BLUE — High-Performance Anchoring Adhesive

Material

Vinylester

Features & Benefits

- Styrene free, low odour for safe use in confined spaces
- New improved formulation and foil cartridge design provides more durability and temperature resistance
- New cartridge size and design allow for 35% easier dispensing
- Improved nozzle means less purging and less waste
- Improved colour curing; the cured colour is much closer to the real colour of concrete
- Usable in drinking water
- High Bond strength for Medium to Heavy loads
- Suitable for use in cracked and non-cracked concrete
- Use 300ml standard caulking gun, easy to dispense

Applications

- Post-installed rebar applications
- Threaded Rod Anchoring
- Balconies
- Facade
- Structural Steel
- Dry and Wet Concrete

Base Material

- Normal and Lightweight Concrete¹
- Grout-filled and Hollow² Concrete Block
- Solid and Hollow² Brick

¹ Cracked and non-cracked concrete

² When used in conjunction with screen tubes

Approvals

- ETA-19/0265 (Rods Concrete)
- ETA-19/0418 (Rebar Concrete)
- Fire Rated R180
- Australia: National Construction Code 2019 Compliant: Meets testing requirements of AS5216.2018
- New Zealand: BRANZ APPRAISAL No. 983 (2018)

Specifications

AT-HP Anchoring Adhesive - Gr 8.8 Threaded Rod

Installation Data	Symbol	Units	Threaded Rod Size (mm)					
			M8	M10	M12	M16	M20	M24
Nominal Insert Diameter	d	mm	8	10	12	16	20	24
Drill Hole Diameter	d _o		10	12	14	18	24	28
Minimum Embedment Depth	h _{ef,min}		60	60	70	80	90	100
Maximum Embedment Depth	h _{ef,max}		160	200	240	320	400	480
Nominal Anchorage Depth	h _{nom}		80	90	110	125	170	210
Clearance Hole Diameter in Fixture	d _f		9	12	14	18	22	26
Installation Torque	T _{inst,max}	Nm	10	20	30	60	90	140

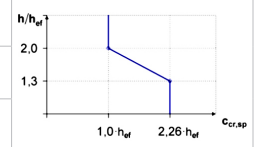


AT-HP Blue

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Concrete Thickness, Edge Distance and Spacing

Threaded Rod Size	Symbol	Units	M8	M10	M12	M16	M20	M24	
Minimum Concrete Thickness	h_{min}	mm	$h_{ef} + 30\text{mm} (\geq 100\text{mm})$				$h_{ef} + 2d_o$		
Minimum Edge Distance	C_{min}		40	50	60	80	100	120	
Minimum Spacing	S_{min}		40	50	60	80	100	120	
Critical Edge Distance for concrete cone failure	$C_{cr,N}$		$1.5 \times h_{ef}$						
Critical Spacing for concrete cone failure	$S_{cr,N}$		$3 \times h_{ef}$						
Critical Edge Distance for splitting failure	$C_{cr,sp}$		$h/h_{ef} \geq 2.0$	$1.0 h_{ef}$					
			$2.0 > h/h_{ef} > 1.3$	$4.6h_{ef} - 1.8h$					
		$h/h_{ef} \leq 1.3$	$2.26 h_{ef}$						
Critical Spacing for splitting failure	$S_{cr,sp}$	$2c_{cr,sp}$							



Design Resistance — Single Anchor, No Concrete Edge or Spacing Influence

Threaded Rod Size	Symbol	Units	M8	M10	M12	M16	M20	M24
Embedment Depth	h_{ef}	mm	70	80	110	140	180	220
Minimum Concrete Thickness	h_{min}		100	110	140	176	228	276
Non-Cracked Concrete								
TENSION	N_{Rd}	kN	9.97	14.33	24.88	37.53	56.55	77.41
SheAR	V_{Rd}		12	18.4	27.2	50.4	78.4	112.8

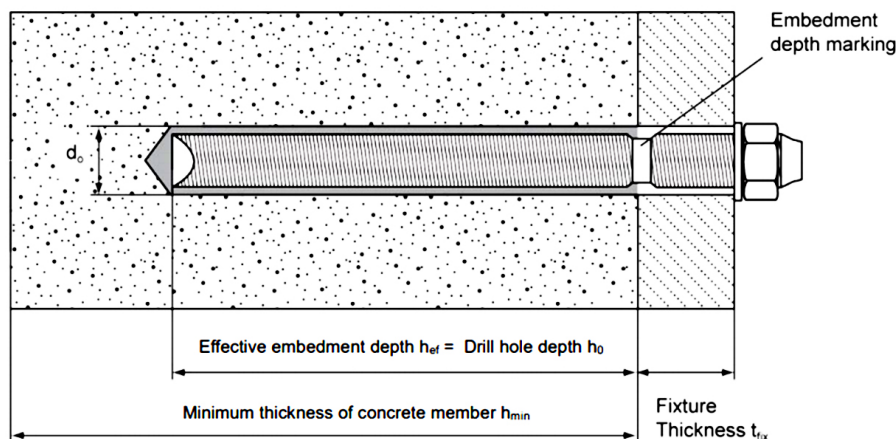
- Concrete strength is C20/25, $f_{ck,cube} = 25 \text{ N/mm}^2$ unreinforced, hole condition is "dry", and temperature range 24°C long-term/40°C short-term.
- Tabulated loads are valid at critical spacing and critical edge distance only.
- N_{Rd} and V_{Rd} is based on use of a Grade 8.8 threaded insert. Verify capacity if using a different steel grade.
- All design resistances are derived from the product's ETA (European Technical Assessment ETA-19/0265 of 09/07/2019).
For combined tension and shear loads or anchor groups, spacing and edge distance influence, a calculation per EAD 330499 shall be done.
Simpson Strong-Tie® Anchor Designer™ Software used for analysis.

Steel Design Resistance (Tension)

Threaded Rod Size	Symbol	Units	M8	M10	M12	M16	M20	M24
Steel Grade 5.8	$N_{Rd,s}$	kN	12.0	19.3	28.0	52.7	82.0	118.0
Steel Grade 8.8			19.3	30.7	44.7	84.0	130.7	188.0
Stainless Steel A4-70			13.9	21.9	31.6	58.8	92.0	132.1

Steel Design Resistance (Shear without lever arm)

Threaded Rod Size	Symbol	Units	M8	M10	M12	M16	M20	M24
Steel Grade 5.8	$V_{Rd,s}$	kN	7.2	12.0	16.8	31.2	48.8	70.4
Steel Grade 8.8			12.0	18.4	27.2	50.4	78.4	112.8
Stainless Steel A4-70			8.3	12.8	19.2	35.3	55.1	79.5



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Specifications

AT-HP Anchoring Adhesive - REBAR Grade B500B (DIN 488)

Installation Data	Symbol	Units	REBAR Size (mm)						
			Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25
Drill Hole Diameter	d_o	mm	12	14	16	18	20	25	32
Minimum Effective Embedment Depth	$h_{ef,min}$		60	60	70	75	80	90	100
Maximum Effective Embedment Depth	$h_{ef,max}$		160	200	240	280	320	400	500

Concrete Thickness, Edge Distance and Spacing

REBAR Size	Symbol	Units	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	
Minimum Concrete Thickness	h_{min}	mm	$h_{ef} + 30mm (\geq 100mm)$				$h_{ef} + 2d_o$			
Minimum Edge Distance	c_{min}		40	50	60	70	80	100	125	
Minimum Spacing	s_{min}		40	50	60	70	80	100	125	
Critical Edge Distance	$c_{cr,sp}$	mm	$h/h_{ef} \geq 2.0$		$1.0 h_{ef}$					
			$2.0 > h/h_{ef} > 1.3$		$4.6 h_{ef} - 1.8h$					
			$h/h_{ef} \leq 1.3$		$2.26 h_{ef}$					
Critical Spacing	$s_{cr,sp}$		$2c_{cr,sp}$							

Design Resistance — Single Rebar, No Concrete Edge or Spacing Influence

REBAR Size	Symbol	Units	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25
Embedment Depth	h_{ef}	mm	80	90	110	130	160	180	220
Minimum Concrete Thickness	h_{min}		110	120	140	166	200	230	284
Non-Cracked Concrete									
TENSION	N_{Rd}	kN	7.0	11.2	16.1	22.2	29.0	40.8	57.6
Shear	V_{Rd}		9.3	14.7	20.7	28.0	36.7	57.3	90.0

Rebar Design Resistance (Tension)

REBAR Size	Symbol	Units	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25
Design Resistance	$N_{Rd,s}$	kN	20.0	30.7	44.3	61	79	123.6	192.9
Nominal Yield Strength	f_{yk}		25.1	39.3	56.6	77.0	100.6	157.1	245.5
Nominal Tensile Strength	f_{uk}		27.6	43.2	62.2	84.7	110.6	172.8	270.0

Rebar Design Resistance (Shear)

REBAR Size	Symbol	Units	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25
Design Resistance	$V_{Rd,s}$	kN	9.3	14.7	20.7	28	36.7	57.3	90.0

- Concrete strength is C20/25, $f_{ck,cube} = 25 N/mm^2$ unreinforced, hole condition is "dry", and temperature range 24°C long-term/40°C short-term.
- Tabulated loads are valid at critical spacing and critical edge distance only.
- All design resistances are derived from the product's ETA (European Technical Assessment ETA-19/0265 of 09/07/2019).
- Nominal yield strength (f_{yk}) for Gr 500B Rebar is determined by the equation: $f_{yk} = 500 MPa \times A_{nom}$
Nominal tensile strength (f_{uk}) for Gr 500B Rebar is determined by the equation: $f_{uk} = 550 MPa \times A_{nom}$
For combined tension and shear loads or anchor groups, spacing and edge distance influence, a calculation per EAD 330499 shall be done.
Simpson Strong-Tie® Anchor Designer™ Software used for analysis.

