AT-HP® Blue High-Performance Methacrylate Anchoring Adhesive

AT-HP® Blue is a styrene free methacrylate resin for high performance fixing applications of threaded rod and rebar into concrete.

Features

- Fast cure Colour change technology — changes from blue to grey when cured
- All-weather
- Fire exposure rated
- Low odour
- Heavy Loads
- Each cartridge is supplied with 2 mixing nozzles

Applications

- Timber Bottom Plate and Holdown Fixing
- Threaded Rod Anchoring
- Rebar Dowelling
- Balconies
- Facade
- Structural Steel
- Dry and Wet Concrete

Base Material

- Normal and Lightweight Concrete
- Grout-filled and Hollow* Concrete Block
- Solid and Hollow* Brick

*When used in conjunction with screen tubes

Approvals

- Complies with AS5216
- ETA 14/0383 (Concrete);
- ETA 13/0416 (Masonry)
- CSTB Fire Test N° 26045738
- BRANZ Appraisal 983 (2018) for applications related to bottom plate fixings and holdown applications per NZS 3604 using AT-HP® Blue.
- Transport and Main Roads (QLD) product approval (Threaded rod)

Installation

Refer to page 53 for installation procedures.

Refer to page 56 for cartridge usage estimation guide.

Shelf Life

18 months from date of manufacture in unopened cartridge.

Storage Conditions

Store between 5–25°C. To store partially used cartridges, leave hardened nozzle in place. To re-use, attach new nozzle.

Colour

Resin — white, hardener — bright blue. When properly mixed, AT-HP® Blue adhesive will be a uniform teal-blue colour. Changes from teal-blue to grey when cured.

Note: Concerning the version of the mortar with changing colour proof, after the minimum curing time the blue coloured injection mortar changed into grey. The curing colour proof is available for standard version of the mortar only, and the curing colour proof is working above 5°C.

See colour indicator on page 55 for further information.

AT-HP280BLUE-AU
(Includes 2 mixing nozzles MN1)

European Technical Approval

CSTB FIRE TEST N°26045738

BRANZ Appraised
Appraisal No.983 [2018]

Scan this QR code to download the BRANZ Appraisal
http://www.strongtie.co.nz/pdf/codes/BRANZ-APPROVAL-983.pdf

AT-HP® Blue high performance, all-weather methacrylate anchoring adhesive for concrete and masonry with threaded rod and rebar, changes from teal-blue to grey when cured to give a visual representation when the chemical anchor is ready to load.

AT-HP® Blue High-Performance Methacrylate Anchoring Adhesive

Working and Curing Time Schedule

Mortar Temperature	Base Material Temperature	Gel Time (Working Time) in Dry/Wet* Concrete	Curing Time in Dry/Wet* Concrete
T_{mortar}	$T_{base\ material}$	t_{gel}	t_{cure}
+5°C	-5°C to -1°C	15 min	9 h
+5°C	0°C to 4°C	12 min	4 h
+5°C	5°C to 9°C	9 min	1.5 h
+10°C	10°C to 19°C	4 min	60 min
+20°C	20°C to 29°C	1 min	30 min
+30°C	30°C and above	< 1 min	20 min

Note: Concerning the version of the mortar with changing colour proof, after the minimum curing time the blue coloured injection mortar changed into grey. The curing colour proof is available for standard version of the mortar only, and the curing colour proof is working above 5°C.
*Installation in water-filled holes is not allowed.

In-Service Temperature*

Temperature Range I		Temperature Range II	
Maximum **Long** Term Temperature	Maximum **Short** Term Temperature	Maximum **Long** Term Temperature	Maximum **Short** Term Temperature
+24°C	+40°C	+50°C	+80°C

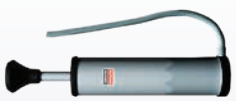
*See "Elevated In-Service Temperature" on page 13 for more information

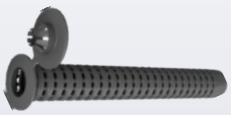
Cartridge Size and Accessories

Cartridge	Size	Box Qty	Model No.
	280 ml	12	**AT-HP280BLUE-AU**
	380 ml	12	**AT-HP380BLUE-AU**

Dispensing Tools	Description	Model No.
	Manual dispenser for **280 ml** cartridges	**DT300**
	Manual dispenser for **380 ml** cartridges	**DT380**

Mixing Nozzles		
	Mixing nozzle Pack of 10	**MN1-RP10**





Please see pages 58–60 for complementing items

AT-HP® Blue High-Performance Epoxy Adhesive — Gr 8.8 Threaded Rod

Installation Data

Description	Symbol	Units	Threaded Rod Size (mm)							
			M8	M10	M12	M16	M20	M24	M27	M30
Nominal Insert Diameter	d	mm	8	10	12	16	20	24	27	30
Drill Hole Diameter	d_o		10	12	14	18	22	28	30	35
Minimum Embedment Depth	$h_{ef,min}$		60	60	70	80	90	96	108	120
Maximum Embedment Depth	$h_{ef,max}$		160	200	240	320	400	480	540	600
Clearance Hole Diameter in Fixture	d_f		9	12	14	18	22	26	30	33
Installation Torque	$T_{inst, max}$	Nm	10	20	40	80	150	200	270	300

Concrete Thickness, Edge Distance and Spacing

Description	Symbol	Units	M8	M10	M12	M16	M20	M24	M27	M30
Minimum Concrete Thickness	h_{min}	mm	h_{ef} + 30mm (≥100mm)		$h_{ef} + 2_{do}$					
Minimum Edge Distance	c_{min}		40	50	60	80	100	120	135	150
Minimum Spacing	s_{min}		40	50	60	80	100	120	135	150
Critical Edge Distance	$c_{cr,N}$		$1.5 \times h_{ef}$							
Critical Spacing	$s_{cr,N}$		$3 \times h_{ef}$							

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

Description	Symbol	Units	M8	M10	M12	M16	M20	M24	M27	M30
Embedment Depth	h_{ef}	mm	70	80	110	140	180	220	240	260
Minimum Concrete Thickness			100	110	140	176	228	276	300	330
Uncracked Concrete										
TENSION	N_{Rd}	kN	**5.6**	**7.8**	**14.4**	**22.5**	**33.1**	**51.6**	**63.3**	**68.6**
SHEAR	V_{Rd}		**11.2**	**15.7**	**27.0**	**45.0**	**66.4**	**103**	**127**	**137**

1. Concrete strength is 30 MPa (cylinder) unreinforced, hole condition is "dry", and temperature range 24°C long-term/43°C short-term.
2. Tabulated loads are valid at critical spacing and critical edge distance only.
   For spacing and edge distance influence, use Simpson's Anchor Designer™ Software for analysis.
3. N_{Rd} and V_{Rd} is based on use of a Grade 8.8 threaded insert. Verify capacity if using a different steel grade.
4. All design resistances are derived from the product's ETA (European Technical Assessment).

Steel Design Resistance (Tension)

Description	Symbol	Units	M8	M10	M12	M16	M20	M24	M27	M30
Steel Grade 5.8	$N_{Rd,s}$	kN	12.2	19.3	28.0	52.7	82.0	118	153	187.0
Steel Grade 8.8			19.5	30.9	44.7	84.0	131	188	245	299.0
Stainless Steel A4			13.7	21.7	31.6	58.8	92.0	132	80.2	98.1

Steel Design Resistance (Shear)

Description	Symbol	Units	M8	M10	M12	M16	M20	M24	M27	M30
Steel Grade 5.8	$V_{Rd,s}$	kN	7.4	11.6	16.8	31.2	48.8	70.4	92.0	112
Steel Grade 8.8			11.8	18.6	27.0	50.4	78.4	113	147	150
Stainless Steel A4			8.2	13.0	19.2	35.3	55.1	79.5	48.3	58.9