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## Heavy Duty, Rapid Cure Acrylic Anchoring Adhesive



**CHEMSET MAXIMA is a rapid setting Acrylic adhesive contained in a glass capsule for fast, heavy duty anchoring of threaded studs and solid substrates**

### Overview

ChemSet™ Maxima™ is a heavy duty load Acrylic anchoring adhesive, suitable for core drilled and carbide drilled holes in solid substrates.

Maxima™ capsules are mixed in the hole by rotating the threaded fixing. No measuring. No mess. No waste. The coarse aggregate and glass scour the walls of boreholes to create a firm, reliable high load fixing, even underwater.

Maxima™ capsules are ideal for applications requiring rapid installation.

The rapid hardening and coarse consistency of Maxima™ capsules make them ideal for overhead applications.

### Applications

- Structural Steel Connections
- Rakers, Column Hold Down, Shelf Angles
- Public Seating, Hand Rails
- Fence and Balustrade posts
- Timber frame hold down
- Close to Edge
- Safety Barriers
- Machinery hold down
- Cable trays, pipe fixings, mechanical services

### Product Advantages

- |   |   |
|---|---|
| ○ Rapid Cure  | – 20 minutes at 20°C for improved productivity        |
| ○ High bond strength  | – Suitable for core drilled and carbide drilled holes |
| ○ One capsule per fixing  | – No waste  |
| ○ Suitable underwater   | – Versatile   |
| ○ European Technical Approval   | – Certified High Performance                          |
| ○ Glass disintegrates during mixing allowing the resin 100% contact with the concrete | – Reliable fixing                                     |

### Substrates

- Solid Concrete
- Solid brick
- Solid stone



### Applicable Standards

- ETAG 001, Part 5, Option 7
- ETA 03/0008
- ETA 03/0009

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**Installation Properties**

Temperature (°C)	Cure / Loading Dry Substrate	Cure / Loading Time Wet Substrate
≥ 20	20 min	40 min
10 - 20	30 min	60 min
0 - 10	60 min	120 min
-5 - 0	5 hours	10 hours

 Table 1. Working and Setting Times *ChemSet Maxima*

Table 2. Installation Temperature Limits

	Minimum	Maximum
Substrate	-5°C	35°C
Adhesive	-5°C	35°C

 Table 3. Suitable Hole Conditions for Installation of *ChemSet Maxima*

Hole Condition	Suitable
Dry	✓
Damp (Water Removed)	✓
Flooded / Underwater	✓
Drill Bit Type	
Carbide	✓
Diamond Core	✓
Hole Orientation	
Vertical Down	✓
Horizontal	✓
Vertical Up (Overhead)	✓

**Post-Installation Properties**

Table 4. Post-installation Temperature Limits

	Service Temperature
Minimum	- 23°C
Maximum	+ 60°C

**Material:**

*ChemSet Maxima* consists of 2 parts enclosed in a glass capsule: Part A is a mixture of acrylic polymer, acrylic monomer and inorganic filler. Part B is a Benzoyl Peroxide catalyst.

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**Installation – Solid Materials**

1. For the specified anchor size, select carbide or core drill bit with nominal diameter listed in table 5
2. Drill hole to depth listed in table 5
3. **ESSENTIAL:** Clean holes with brush and blower
4. Remove debris with hole cleaning pump or compressed air (4 pumps)
5. With a twisting / rotating motion, insert brush to the bottom of the hole and remove (3 brushes)
6. Repeat steps 4 & 5 then finish with 4 pumps of hole blower or compressed air
7. If holes are wet or flooded, clean hole with brush
8. Insert capsule into hole
9. Insert socket driver (included with Ramset™ ChemSet™ Anchor Studs) into drill chuck. Set drill to 'rotate' – not hammer
10. Insert ChemSet™ Anchor Stud into hole and fit socket driver to hex head of anchor stud
11. Apply firm pressure to drill and rotate stud to mix contents. Stop when depth set mark is level with the concrete surface
12. Allow adhesive to cure for the time specified in table 1
13. When cured, tighten nut and apply torque listed in table 5

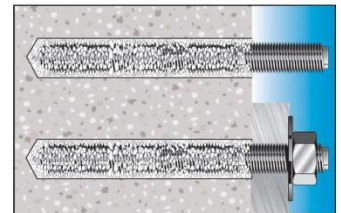
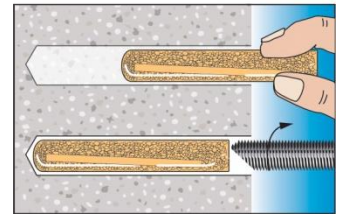
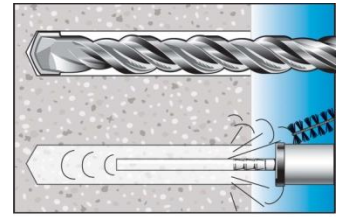

**Installation Details – Threaded Studs in Solid Materials**

 Table 5. Installation Details – Threaded Studs in Solid Materials with *ChemSet Maxima*

Thread Size	Drill Size, $d_h$ (mm)	Hole Depth in Substrate (mm)	Maximum Fixture Clearance $\varnothing$ (mm)	Maximum Fixture Thickness (mm)	Tightening Torque, $T_r$ (Nm)	Minimum Edge Distance, $e_c$ (mm)	Minimum Anchor Spacing, $a_c$ (mm)	Minimum Structural Thickness, $b_m$ (mm)
M8	10	80	10	15	10	35	50	100
M10	12	90	12	25	20	40	60	120
M12	14	110	15	30	40	50	70	140
M16	18	125	20	40	95	65	100	160
M20	24	150	24	75	180	80	120	190
		170*						220
		160						200
M24	26	210*	28	105	315	100	145	270

\*Use a combination of CHEM08 and CHEM2024 Maxima™ Capsules for these embedment depths

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**Load Capacity – Threaded Studs in Solid Materials**

Table 6. Recommended Working Loads for *ChemSet Maxima* with Grade 5.8 Chemset™ Anchor Studs

Anchor Size	Thread Size	Hole Depth	Working Load Capacity (kN)		
			Shear*		Tension <sup>+</sup>
			Grade 5.8	A4 - 316 SS	f'c ≥ 20MPa
8	M8	80	4.4	5.9	<b>6.5</b>
10	M10	90	7.1	9.3	<b>10.3</b>
12	M12	110	10.5	13.6	15.3
16	M16	125	19.9	25.3	22.3
20	M20	150	29.9	39.5	35.7
		170			40.5
24	M24	160	43.3	56.9	41.3
		210			54.2

\*For shear loads acting towards an edge(s) of concrete the above capacities are not applicable. Contact a Ramset technical consultant for advice.

Tensile working loads in **bold** are limited by steel capacity

<sup>+</sup>Tension loads include a safety factor of 3



Installation details in Table 5 above apply.

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**Chemical Resistance**

Chemical Environment	Concentration	Resistant	Non-Resistant
Acetone	100%		NR
Ammonia	100%	R	
Aniline	100%		NR
Benzene	100%		NR
Butyl Lactic Acid	100		NR
Carbon Monoxide	100%	R	
Caustic Potash	100%	R	
Cement in Suspension	100%	R	
Ethanol	≤15%	R	
Ethanol	>15%		NR
Ethyl Acetate	100%		NR
Ethylene Glycol	100%	R	
Heptane	100%	R	
Hexane	100%	R	
Hydrogen Fluoride	≤ 20%	R	
Hydrogen Peroxide	≤40%	R	
Methanol	≤15%	R	
Methanol	>15%		NR
Nitric Acid	< 20%	R	
Nitric Acid	20 – 70%	R	
Perchloroethylene	100%	R	
Petroleum Fuel with Benzene	100%		NR
Petroleum Fuel	100%	R	
Phosphoric Acid	< 10%	R	
Potassium Hydroxide	100%	R	
Sulphuric Acid	≤ 30%	R	
Sulphurous Acid	100%	R	
Toluene	100%		NR
Washing Powder	100%	R	
Xylene	100%		NR

**Key:**

- R** Retains 80% of properties when exposed up to 75°C
- C** Occasional contact up to 25°C

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### Storage and Shelf Life

Shelf life is 12 months from date of manufacture stored in a cool, dry place less than 25°C and not exposed to light. See USE BY date on package.

### Transport and Storage

Class 3 (Flammable), Packaging Group III according to Australian Dangerous Goods code.

### Occupational Health and Safety

- ◆ Avoid contact with skin and eyes
- ◆ Wear protective gloves and safety goggles when mixing or using.
- ◆ Keep away from sparks, flames or other sources of ignition
- ◆ If skin contact occurs, remove contaminated clothing and wash skin thoroughly.
- ◆ If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.
- ◆ **Do not** use in poorly ventilated or confined space.

For more detailed information refer to the Material Safety Data Sheet available from Ramset or the website.

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**Product Range – ChemSet™ Maxima™ Anchoring Adhesive**

Description	Part No	Order Quantity
M8 Capsule	CHEM08	10
M10 Capsule	CHEM10	10
M12 Capsule	CHEM12	10
M16 Capsule	CHEM16	10
M20 / M24 Capsule	CHEM2024	6

**Product Range – Chemset™ Anchor Studs – Zinc Plated**


Anchor Size	Overall Length (mm)	Max Fixture Thickness (mm)	Drill Bit Diameter (mm)	Min Hole Depth (mm)	Part No	Order Quantity
M8	110	15	10	80	CS08110	10
M10	130	25	12	90	CS10130	10
M12	160	30	14	110	CS12160	10
M12	180	50	14	110	CS12180	20
M16	190	40	18	125	CS16190	10
M20	260	80	24	150	CS20260	6
M24	300	105	26	160	CS24300	6

**Product Range – Chemset™ Anchor Studs – Hot Dip Galvanised**


Minimum Coating Thickness: 42 micron

Anchor Size	Overall Length (mm)	Max Fixture Thickness (mm)	Drill Bit Diameter (mm)	Min Hole Depth (mm)	Part No	Order Quantity
M8	110	15	10	80	CS08110GH	10
M10	130	25	12	90	CS10130GH	10
M12	160	30	14	110	CS12160GH	10
M16	190	40	18	125	CS16190GH	10
M20	260	80	24	150	CS20260GH	6
M24	300	105	26	160	CS24300GH	6

**Product Range – Chemset™ Anchor Studs – AISI316 (A4) Stainless Steel**



Anchor Size	Overall Length (mm)	Max Fixture Thickness (mm)	Drill Bit Diameter (mm)	Min Hole Depth (mm)	Part No	Order Quantity
M8	110	15	10	80	CS08110SS	10
M10	130	25	12	90	CS10130SS	10
M12	160	30	14	110	CS12160SS	10
M16	190	40	18	125	CS16190SS	10
M20	260	80	24	150	CS20260SS	6
M24	300	105	26	160	CS24300SS	6



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**Product Range – Hole Cleaning Accessories**

Hole Diameter (mm)	Description	Part No	Order Quantity
10-14	Wire Brush 13 mm	HCBT13	1
18-22	Wire Brush 20 mm	HCBT20	1
22-26	Wire Brush 26 mm	HCBT26	1
10- 50	Hole Blower	HCP	1
10-100	Hole Blower High Volume	HCPHV	1



To purchase or obtain further information contact *Ramset* or your nearest *Ramset* distributor

PHONE: 1300 780 063

WEB: [www.ramset.com.au](http://www.ramset.com.au)

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