

# ChemSet™ Reo 502™ Xtrem™

## FIRE RATED CHEMICAL ANCHOR - ANCHOR STUDS

AVAILABLE IN AUSTRALIA ONLY

(New Zealand refer to EPCON™ G5 Xtrem™ range)

### GENERAL INFORMATION

Performance Related	Material Specification	Installation Related

### Product

ChemSet™ Reo 502™ Xtrem™ is a heavy duty pure Epoxy for anchoring threaded studs and reinforcing bar into cracked and uncracked concrete.

### Compliance

European Technical Assessment ETA-25/0648

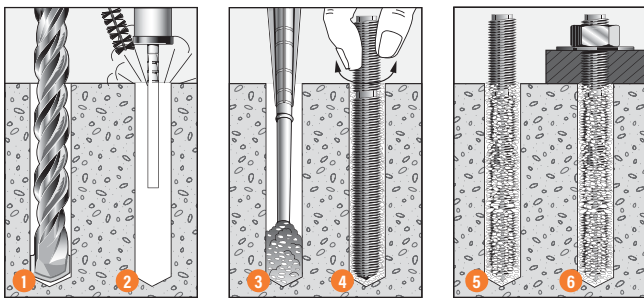
Design according to:

- AS 5216 (formerly TS101)
- EN 1992-4 (formerly ETAG001 Annex C, E & TR045)
- Fire Design according to fire performance data published in ETA-25/0648
- Use enclosed data for simplified calculation method
- Use Ramset™ iExpert Anchor Software for optimised calculation or where a greater range of anchor layout detail is needed.

### Benefits, Advantages and Features

- 100 year working life
- Greater productivity:**
  - Anchors in dry, damp, wet or flooded holes
- Greater security:**
  - Strong bond
  - Rated for sustained loading
- Versatile:**
  - Anchors in carbide drilled and diamond drilled holes
  - Cold and temperate climates
- Greater safety:**
  - Low odour
  - VOC Compliant
  - Suitable for contact with drinking water

### Installation



- Drill recommended diameter and depth hole.
- Important:** For hammer drilling technique clean dust and debris from hole with stiff wire brush and blower in the following sequence: blow x 2, brush x 2, blow x 2, brush x 2, blow x 2.
- Screw mixing nozzle onto cartridge and dispense adhesive to waste until colour is orange. Insert mixing nozzle to bottom of hole. Fill hole to 2/3 the hole depth slowly, ensuring no air pockets form.
- Insert Ramset™ ChemSet™ Anchor Stud/rebar to bottom of hole while turning.
- Allow ChemSet™ Reo 502™ Xtrem™ to cure as per setting times.
- Attach fixture.



### Principal Applications

- Threaded Studs
- Starter Bars
- Threaded Inserts
- Over-head installation
- Steel Columns
- Hand Rails
- Road Stitching

### Installation & Substrate Temperature Range

Minimum	Maximum
5°C	40°C

### Service Temperature Limits

T1: -40°C to +40°C
T2: -40°C to +60°C

### Setting Times

Temperature of base material	Gel Time	Curing time in dry concrete	Curing time in wet and flooded concrete
5°C	75 min	30h	60 h
10°C	45 min	22h	44 h
15°C	35 min	14h	28 h
20°C	22 min	7h	14 h
25°C	14 min	5h	10 h
30°C	8 min	4h	8 h
35°C	6 min	3h	6h
40°C	4 min	2h 45min	5h 30min

# ChemSet™ Reo 502™ Xtrem™

## FIRE RATED CHEMICAL ANCHOR - ANCHOR STUDS

Fire Rated Anchoring Systems

### Installation and fire performance details: ChemSet™ Reo502™ Xtrem™ and Gr 5.8 ChemSet™ Anchor Studs

Anchor size, d <sub>b</sub> (mm)	Installation Details				Optimum dimensions		Characteristic values of resistance to tension loads in 20 MPa to 50 MPa concrete strength - N <sub>Rk,fi</sub> (kN) per anchor *			
	Drilled hole diameter, d <sub>h</sub> (mm)	Fixture hole diameter, d <sub>f</sub> (mm)	Anchor effective depth, h (mm)	Tightening torque, T <sub>r</sub> (Nm)	Edge distance, e <sub>c</sub> (mm)	Anchor spacing, a <sub>c</sub> (mm)	Fire resistance duration = 30 Min.	Fire resistance duration = 60 Min.	Fire resistance duration = 90 Min.	Fire resistance duration = 120 Min.
M10	12	12	90	20	135	270	0.87	0.27	0.01	N/A
M12	14	14	110	30	165	330	2.56	1.01	0.46	0.08
M16	18	18	125	60	187	375	4.25	1.71	0.82	0.23
M20	25	22	150	120	225	450	8.18	3.49	1.93	1.07
			170		255	510	12.92	5.77	3.46	2.25
M24	28	26	160	150	240	480	9.92	4.23	2.29	1.23
			210		315	630	26.77	12.53	7.73	5.44
M30	35	33	280	180	420	840	68.59	35.06	22.79	15.48#

\*Note:

Data is valid for Grade 5.8 ChemSet™ Anchor Studs

Data applies to uncracked and cracked reinforced concrete

Data applies to a one-sided fire exposure of the structural elements. For conditions of fire load on several sides, please contact your local Ramset™ engineer

Data is based on concrete cylinder strength between 20 MPa to 50 MPa.

Data is based on a minimum concrete substrate thickness of 2 x h (2 x effective depth).

Data is based on service temperature limit T1: -40°C to +40°C. For performance data on other service temperature limits, please contact your local Ramset™ engineer.

#Note:

M30 data for 120min is based on steel failure of the ChemSet™ Anchor Stud.

### DESCRIPTION AND PART NUMBERS

Description	Cartridge Size	Part No.
ChemSet™ Reo 502™ Xtrem™	600 ml	CRE0502X

### ENGINEERING PROPERTIES

#### ChemSet™ Anchor Studs

Anchor Size, d <sub>b</sub>	Grade 5.8 ChemSet™ Anchor Studs			
	Shank diameter, d <sub>s</sub> (mm)	Stressed Area (mm <sup>2</sup> )	Yield Strength f <sub>y</sub> MPa	UTS f <sub>u</sub> MPa
M10	8.2	52.8	430	540
M12	10.0	78.5	430	540
M16	14.0	153.9	420	520
M20	17.2	232.4	420	520
M24	20.7	336.5	420	520
M30	-	-	-	-