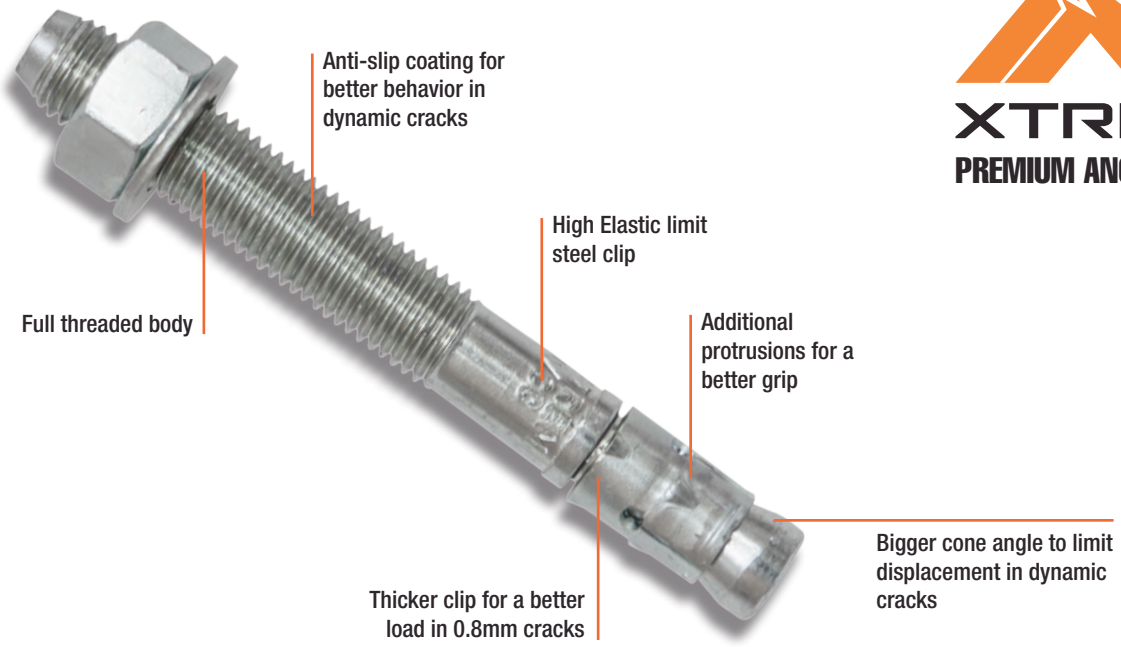
Technical Data Sheet

Ramset™

TruBolt™ Xtrem™

XTREM
PREMIUM ANCHORING



Materials

Zn
ZINC
Electroplated

Description

A seismic certified heavy duty, torque controlled expansion anchor for permanent anchoring into concrete. Certified for seismic C1 & C2 applications – refer report number ETA-15/0893

Specification

Material - Bolt	Cold formed Carbon Steel
Corrosion Protection	Zinc Plating 5µm
Head Styles	Hex Nut
Fixing Method	Through Fixture
Setting Method	Torque Controlled
Anchoring Method	Expansion
Thread Diameters	M8, M10, M12, M16, M20
Drilled Hole Diameters	8mm, 10mm, 12mm, 16mm, 20mm
Anchor Lengths	75mm, 85mm, 90mm, 100mm, 105mm, 115mm, 120mm, 135mm, 140mm, 145mm, 170mm, 180mm, 200mm
Maximum Fixture Thickness'	5mm, 10mm, 15mm, 20mm, 25mm, 30mm, 40mm, 60mm, 85mm,
Substrates	Concrete

Approvals

Certification	Approval Number / Report
European Technical Assessement (ETA) to ETAG 001 Part 1, Option 1	ETA - 15/0893
European Technical Assessment (ETA) ETAG 001 Part 1, Annex E, C1 & C2	ETA - 15/0893

Features & Benefits

- The TruBolt™ diameter equals the required hole diameter providing maximum shear capacity for hole size and making drill bit selection simple. Its cold forged construction ensures superior strength and reliability.
- The anchor design ensures maximum expansion of the sleeve and pull-down on the fixture. These actions are both further assisted by the application of load.
- The anti-rotation expansion sleeve is designed to grip the sides of the hole, preventing anchor rotation during installation.
- Assessed as per ETA001 Annex E
- Certified Seismic C1 & C2.
- Certified Option 1 Cracked Concrete.
- TR020 Fire tested - Fire rated performance up to 2 hours.
- Highest Performance in floor, wall & overhead applications.

SA TS101:2015 Tested

Cracked concrete

Seismic

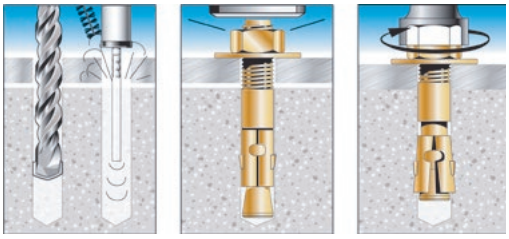
AUSTRALIA
1300 780 063
www.ramset.com.au

NEW ZEALAND
0800 RAMSET (726738)
www.ramset.co.nz

Technical Data Sheet

Ramset™

TruBolt™ Xtrem™



Installation

1. Drill or core a hole to the recommended diameter (same as the TruBolt™) and depth using the fixture as a template.
   Clean the hole thoroughly with a hole cleaning brush. Remove the debris with a hand pump, compressed air, or vacuum.
2. Insert the anchor through the fixture and drive with a hammer until the washer contacts the fixture.
3. Tighten the nut with a torque wrench to the specified assembly torque.

TruBolt™ Xtrem™ Stud Anchor - Hex Nut - Zinc Plated

Part Number	Description	Thread Diameter	Total anchor length (mm)	Maximium fixture thickness (mm)	Drilling Diameter (mm)	Minimum hole depth (mm)	Maximum tightening torque (Nm)	Fixture clearence hole diameter (mm)	Pack Qty
T08075X	TruBolt™ Xtrem™ M8x75/15	M8	75	15	8	60	20Nm	9	100
T08090X	TruBolt™ Xtrem™ M8x90/30	M8	90	30	8	60	20Nm	9	50
T08120X	TruBolt™ Xtrem™ M8x120/60	M8	120	60	8	60	20Nm	9	50
T10085X	TruBolt™ Xtrem™M10x85/5	M10	85	5	10	80	45Nm	12	50
T10100X	TruBolt™ Xtrem™ M10x100/20	M10	100	20	10	80	45Nm	12	25
T10120X	TruBolt™ Xtrem™ M10x120/40	M10	120	40	10	80	45Nm	12	25
T10140X	TruBolt™ Xtrem™ M10x140/60	M10	140	60	10	80	45Nm	12	25
T12105X	TruBolt™ Xtrem™ M12x105/10	M12	105	10	12	95	60Nm	14	25
T12115X	TruBolt™ Xtrem™ M12x115/20	M12	115	20	12	95	60Nm	14	25
T12135X	TruBolt™ Xtrem™ M12x135/40	M12	135	40	12	95	60Nm	14	25
T12180X	TruBolt™ Xtrem™ M12x180/85	M12	180	85	12	95	60Nm	14	20
T16145X	TruBolt™ Xtrem™ M16x145/25	M16	145	25	16	120	110Nm	18	10
T16170X	TruBolt™ Xtrem™ M16x170/50	M16	170	50	16	120	110Nm	18	10
T20170X	TruBolt™ Xtrem™ M20x170/30	M20	170	30	20	140	160Nm	22	10
T20200X	TruBolt™ Xtrem™ M20x200/60	M20	200	60	20	140	160Nm	22	10

TruBolt™ Xtrem™ Installation and Performance details in 32 MPa Concrete - Limit State Design (LSD)

Anchor size, d_b (mm)	Installation details					Optimum dimensions*		Reduced Characteristic Capacity**	
	Drilled hole diameter, d_h (mm)	Fixture hole diameter, d_f (mm)	Anchor effective depth, h (mm)	Drill hole depth, h_1 (mm)	Tightening torque, T_r (Nm)	Edge distance, e_c (mm)	Anchor spacing, a_c (mm)	Steel	Concrete
								Shear, ϕV_{us} (kN)	Tension, ϕN_{uc} (kN)
M8	8	9	46	65	20	70	140	9.1	7.3
M10	10	12	60	80	45	90	180	12.6	14.4
M12	12	14	70	95	60	105	210	18.1	21.6
M16	16	18	85	120	110	130	255	36.0	30.7
M20	20	22	100	140	160	150	300	40.7	41.5

* Note: Applicable for single anchors only in Limit State Design (LSD) format. For group anchor performance and shear loads acting towards an edge or where these optimum dimensions are not achievable, use Ramset i-Expert Software for detailed anchor design.
Reduced Characteristic Capacities meet the requirements of SA TS101:2015
**Note: Indicative Performance Conversion Factors

Concrete Tension
For conversion to **Non-Cracked Concrete Working Load Limit MULTIPLY Nuc x 0.5**
For conversion to **Cracked Concrete Performance (LSD) MULTIPLY ϕNuc x 0.45**
For conversion to **Seismic Category 1 Performance (LSD) MULTIPLY For M8, M12, M16 and M20 Nuc x 0.43**
For conversion to **Seismic Category 1 Performance (LSD) MULTIPLY For M10 ϕNuc x 0.34**

For greater design flexibility refer to Ramset™ iExpert™ Design Software or contact your local Ramset™ engineer via Engineering Solutions at www ramset.co.nz or www ramset.com.au

ramsetreid
innovative construction solutions