

# **SECTION 3 - APPENDIX**

## **3.1 FIXING SPECIFICATIONS**



# Ramset™

## Concrete Results™

### CHEMSET® INJECTION 101

**zChemset Injection 101 is a chemical anchor system based on a polyester mortar. The two parts are dispensed and mixed in one action through a static mixing nozzle, which allows accurate mixing with no mess.**

Chemset 101 is a cost effective solution to anchoring jobs close to edges where there is a need to avoid bursting stress on the surrounding substrate.

Chemset 101 is suitable for normal loads in benign environments. Chemset 101 mortar can be used to fix starter bars, wall ties, threaded studs, bolts and large screws into concrete, brickwork, masonry and stone. Fixtures can be installed into hollow blockwork using Chemset 101 in conjunction with the appropriate sleeve or sieve.

Chemset 101 is designed to provide rapid cure with adequate working time in temperate climates.

#### For fixing to

Concrete, solid brick, hollow brick, hollow block stone

#### Features

- ~ Stress free anchoring with good durability-ideal for a variety of materials and hollow sections with the use of accessories.
- ~ Can be used close to the edge.
- ~ Close anchor spacing.
- ~ Chemical bonding-highly resistant to dynamic loading.
- ~ Portable delivery system – no need for power tool adaptors to set the anchors.
- ~ Suitable for immersion when cured.

#### Applications

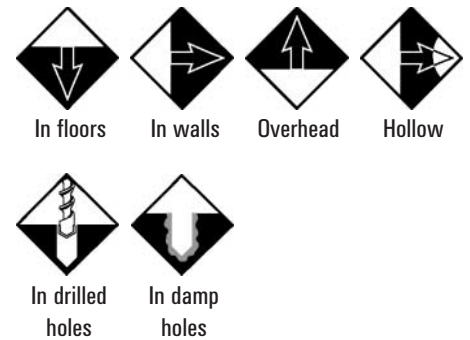
Chemset Injection is ideal suited for; structured fixings, holding down fixings, fixings into moderate corrosive environment, anchors under cyclic loadings, adhering remedial anchors and into hollow material with use of accessories.

#### Storage

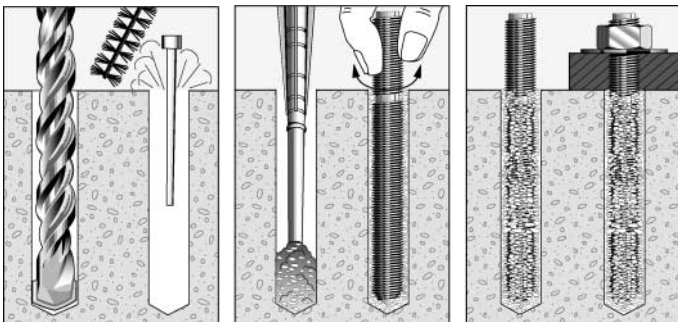
Store in a cool dry place between 5°C and 25°C. Keep out of direct sunlight.

#### Materials

Polyester Mortar

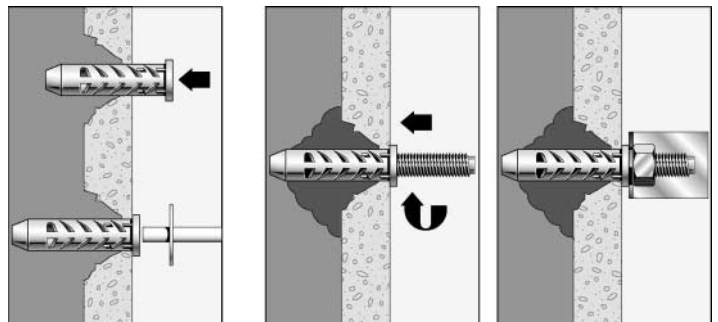


#### INSTALLATION



1. Drill correct diameter hole to recommended depth. Clean hole thoroughly with a nylon brush. Remove debris by way of vacuum pump, compressed air, hand pump etc.
2. Insert Mixer Nozzle and inject mixture into hole. Insert the stud into the bottom of the hole using a slow twisting motion.
3. Allow resin to cure as per recommendations. Attach fixture.

#### INSTALLATION INTO HOLLOW BLOCK



1. Drill hole and insert correct sleeve. Insert mixer nozzle into sleeve and inject resin to form a solid body of mortar behind the block.
2. Push stud into sleeve with a twisting motion.
3. Allow time to cure and attach fixture.

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### CHEMSET® INJECTION 101

#### INSTALLATION AND PERFORMANCE DETAILS

Anchor Size	Thread Size	Hole Ø (mm)	Embedded Depth (mm)	Installation		Tight Torque (Nm)	Structural Limits			Hollow concrete block 10MPa		Perforated bricks 20MPa		Solid concrete block 30MPa	
				Fixture Clearance Ø (mm)	Fixture thickness (mm)		Minimum Edge Distance (mm)	Minimum Anchor Spacing (mm)	Minimum Structural Thickness (mm)	Tensile	*Shear	Tensile	*Shear	Tensile	*Shear
8	M8	10	80	11	15	8	30	50	100	0.4	0.4	2.5	3.0	4.3	4.4
10	M10	12	90	13	25	15	40	60	120	0.4	0.4	3.0	4.0	5.9	7.1
12	M12	14	110	15	30	30	50	70	140	0.4	0.4	3.0	5.0	8.4	10.5
16	M16	18	125	19	40	70	65	100	160	-	-	-	-	12.2	19.8
20	M20	24	150	25	75	140	80	120	190	-	-	-	-	19.5	30.0
	M20	24	**170	25	55	140	80	120	220	-	-	-	-	22.1	30.0
24	M24	26	160	30	105	230	95	145	200	-	-	-	-	22.6	43.4
	M24	26	**210	30	55	230	95	145	270	-	-	-	-	29.6	43.4

• For shear loads acting toward the edge(s) of the concrete, the above edge distances and spacings are not applicable, please consult Ramset Technical Consultant.

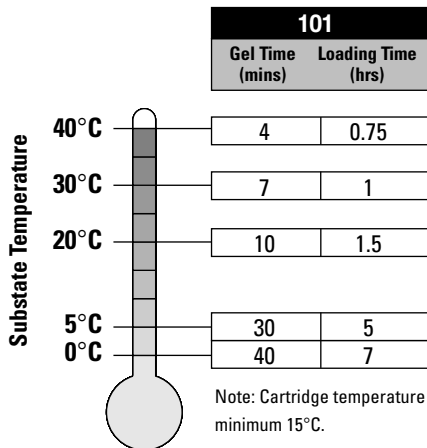
#### FIXINGS PER CARTRIDGE

Anchor Size	Nominal Hole Ø (mm)	Nominal Hole Depth (mm)	Number of Fixings*			Trigger Pulls per Hole†	
			150ml	380ml	750ml	380ml	750ml
8	10	80	37	96	195	1	1
10	12	90	26	66	133	1	1
12	14	110	17	43	87	1.5	1.5
16	18	125	11	27	55	2.5	2
20	24	150	6	11	22	6	5
24	26	160	4	12	24	6	5

Note: \*Approximately based on continuous installation without interruptions or nozzle changes.

†Trigger Pulls using Chemset Universal Applicator (CUA). Provided as a guide and will vary with temperature.

#### SETTING TIMES



#### PACK SIZES AND ORDER NO'S

Pack Size	Order No.
150ml Mini	C101M
380ml Cartridge	C101C
750ml Jumbo	C101J

\*All packs supplied with x1 Static Mixing Nozzle



#### FACTOR OF SAFETY

In this document, recommended working loads are the characteristic ultimate load carrying capacity divided by a factor of safety which varies according to the direction of the load and the material.

The factor of safety applied for steel is 2.2 in tension and 2.5 in shear.

The factor of safety applied for concrete tension is 3.0.



# Ramset™

## Concrete Results™

### DYNASET® DROP-IN ANCHORS

Dynaset is an internally threaded socket Anchor for use with bolts or threaded rod of any length.

Dynaset may be set at any depth or flush to the surface. The correct setting tool for each size should be used to guarantee full expansion of the anchor body.

#### For fixing to

Concrete, solid brickwork.

#### Features

- ~ Thin walled-smaller drill sizes used.
- ~ Flush fitting-no protrusions when not in use.
- ~ Shallow embedment - less chance of drilling into rebar, and faster drilling.
- ~ Permanent anchorage - removal of fixture leaves anchor undisturbed.

#### Application

Suspended services stadium seating, holding down machinery, racking, light to medium duty.

#### Materials

Carbon Steel

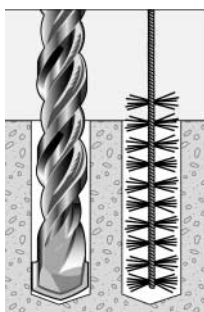
Stainless Steel: AISI 316.

#### Surface Finish

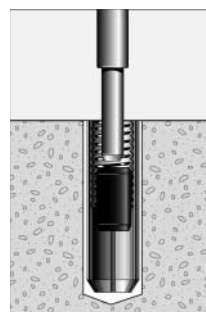
Zinc electro-plated with chromate conversion coating.



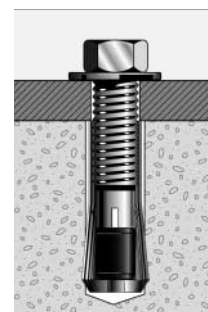
#### INSTALLATION



1. Drill hole at recommended diameter, to at least the anchor length in depth. Clean hole thoroughly with a brush. Remove debris by way of a vacuum pump, compressed air, hand pump etc.



2. Insert anchor and push to required depth. Using the special setting tool, drive the expander plug down until shoulder of the setting punch meets top of the anchor.



3. Position fixture then insert the bolt and tighten with spanner. The Dynaset anchor remains set in position if the bolt is removed.



#### INSTALLATION AND PERFORMANCE DETAILS

Anchor Size	Thread Size	Hole Ø mm	Installation Embedded Depth (mm)	Tight Torque (Nm)	Edge Dist. Min. (mm)	Structural Limits		Rec. Working load (kN)					
						Anchor Spacing Dist. Min. (mm)	Structural Thick. Min (mm)	20MPa		30MPa		40MPa	
								Tensile	•Shear	Tensile	•Shear	Tensile	•Shear
6	M6	8	30	3	95	70	60	2.9	2.0	3.5	2.0	3.9	2.0
8	M8	10	35	6	100	70	70	3.1	2.6	3.8	2.6	4.4	2.6
10	M10	12	45	12	135	95	80	4.8	3.3	5.9	3.3	6.3	3.3
12	M12	16	55	21	175	125	100	7.0	8.1	8.6	8.1	9.9	8.1
16	M16	20	75	51	230	165	130	10.6	10.4	13.0	10.4	15.1	10.4
20	M20	25	90	98	285	205	160	14.8	13.1	18.1	13.1	20.9	13.1

\* For shear loads acting toward the edge(s) of the concrete, the above edge distances and spacings are not applicable, please consult Ramset Technical Consultant. This table should be read in conjunction with the Ramset Engineers Design Manual.