

EPCON G5 High Strength Epoxy Adhesive

EPCON G5 High Strength Epoxy

A high performance chemical epoxy adhesive. Fast cure with extended working time for use in tropical climate. Works well in dry, damp, wet and flooded holes.



Specification

EPCON G5 is a heavy duty, pure epoxy injection chemical anchor. Setting characteristics at 27°C:

- Working time: 12 minutes
- Full cure time: 2 hours



Substrates

- Concrete • Solid block • Solid brick • Natural stone

Setting Time

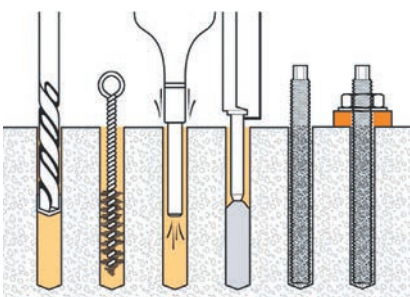
Base Material Temperature (F°/C°)	Working Time	Full Cure Time
90° / 32°	8.5 minutes	2 hours
80° / 27°	12 minutes	2 hours
70° / 20°	15 minutes	2 hours
60° / 16°	18 minutes	3 hours
50° / 10°	21 minutes	6 hours

Installation temperature

- ~ Substrate: 5°C to 40°C
- Load should not be applied to anchor until the chemical has sufficiently cured as specified
- Warming of cartridge required if mortar temperature is below 20°C

Service temperature

-10°C to 80°C



Product Range - EPCON G5 High Strength Epoxy Adhesive



G5



E55



E102



E202

Part No.	Description	Order Qty
G5	EPCON G5 (650ml)	6
E55	E55 Nozzle	24
E102	E102 Dispensing Tool	1
E202	E202 Pneumatic Dispenser Tool	1

Product Advantages

- High strength epoxy
- Fire rated: tested up to 4 hours FRP
- Shorter curing time with extended working time
- Works in damp holes and underwater applications
- Low shrinkage, suitable for cored and oversized holes
- Virtually odorless, can be used indoors
- Re-sealable tip
- Approved for cracked concrete and all seismic zones

Applications

- Reinforcing and starter bars
- Underwater fixings
- Diaphragm wall fixings
- Guard rail fixings
- Parapet wall fixings
- Tunnel fixings
- Floor slabs

Approvals / Listings

- ASTM C881-99, Type IV, Grade 3, Class A, B and C
- ICC Evaluation Service, Inc.
- 2009 IBC
- DOT Approval
- Florida Building Code FL# 14419 Approval
- Warrington Fire Resistance Tests with Rebars BS 476 Part 20 - 1987
- HDB Prefabrication Technology Centre tested
- SETSCO Tests
- NSF/ANSI Standard 61 - Drinking water system components

Installation

1. Drill correct diameter hole to recommended depth.
2. Clean hole thoroughly with brush and air pump 3~4 times.
3. Assemble nozzle onto cartridge. Dispense and discard enough chemical until uniform mix is achieved. Inject from the bottom of the hole gradually, filling in until 40% full.
4. Insert the rod/stud by hand to full depth, using slow rotating movement.
5. Allow EPCON G5 to cure for specified period before loading.

EPCON G5 (Anchor Studs)



EPCON G5 - Recommended Working Loads in 40N/mm² non-cracked Concrete - Anchor Studs

Thread Ø	Hole Ø (mm)	Fixture Hole Ø (mm)	Embedment Depth (mm)	Hole Depth (mm)	Torque (Nm)	Estimated consumption (ml)	Shear Load (kN)	Tensile Load (kN)
M8	10	10	80	80	10	2.3	6.0	6.3
M8	10	10	100	100	10	2.8	6.0	8.0
M10	12	12	90	90	20	3.1	9.6	13.1
M10	12	12	110	110	20	3.8	9.6	16.0
M12	14	15	110	110	30	4.5	14.0	19.1
M12	14	15	150	150	30	6.1	14.0	26.0
M16	18	19	125	125	60	6.7	26.0	30.4
M16	18	19	190	190	60	10.1	26.0	46.2
M20	24	24	170	170	120	23.5	40.5	43.1
M20	24	24	250	250	120	34.6	40.5	63.3
M24	28	28	210	210	200	34.3	58.3	56.9
M24	28	28	280	280	200	45.7	58.3	75.9
M30	35	35	280	280	400	71.5	92.8	84.6
M30	35	35	380	380	400	97.0	92.8	114.8

* Safety factor for all loads = 3

* This table does not consider edge distance and anchor spacing effects. Please refer to Ramset Design Guide for more information.

* Recommended shear load is limited by anchor stud grade 8.8.

EPCON G5 (Rebar Grouting)



Technical Data

EPCON G5		Y10	Y12	Y16	Y20	Y25	Y32	Y40	Y50
Rebar depth (mm)	h_{ef}	100	120	160	200	250	320	400	500
Ø bar (mm)	d	10	12	16	20	25	32	40	50
Ø drill bit / Hole Dia (mm)	d_o	12	16	20	25	30	40	48	62
Characteristic Ultimate Tensile Load (kN)	N_u	46.8	57.8	103.7	167.9	255.4	431.5	630.5	950.0

- It is based on non-cracked concrete with strength 30Mpa.
- Please apply appropriate factor of safety to get the design working load.
- Pull out tests per BS5080:part1 are performed on dowel bars grouted using Epcon G5.
- Minimum base material thickness is 1.25 x embedment depth.
- All the spacing & edge distance requirement for reinforced concrete design shall make reference to BS8110 / Euro Code (whichever applicable).

Mechanical Properties

Rebar FE460	Y10	Y12	Y16	Y20	Y25	Y32	Y40	Y50
f_{yk} (N/mm ²) Yield strength	460	460	460	460	460	460	460	460
A_s (mm ²) Stressed cross-section	78.6	113.1	201.1	314.2	490.9	804.2	1,256.6	1,963.5
$N_{Rk,s}$ (kN) Characteristic Yield	36.1	52.0	92.5	144.5	225.8	369.9	578.0	903.2

Consumption Table

	Y10	Y12	Y16	Y20	Y25	Y32	Y40	Y50
Hole Dia (mm)	d_o	12	16	20	25	30	40	62
Hole Depth (mm)	h_o	100	120	160	200	250	320	500
Vol to be filled with G5 (ml)		3.46	10.56	18.10	35.34	54.00	144.76	527.79