

Injection Resin – Thixotropic Polyurea-Silicate Grout

DESCRIPTION

TamPur RBG E (Rock Bolt Grout) is an injectable, two-component, solvent-free, polyurea-silicate grout. TamPur RBG E has been formulated for securing and sealing rock bolts in mining and tunnelling applications. It is designed to instantly thicken after injection retaining a thixotropic nature within the rock bolt hole to avoid reflux and allow sufficient time for installing solid rock bolts. It is especially effective in vertical bolting applications and can also be injected through SDA's (Self-Drilling Anchors). Low in peak exotherm reaction and heat development compared to polyurethane.

There are three versions of TamPur RBG E available, Slow, Standard and Fast set, in order to meet the requirement for different application conditions and processes.

ADVANTAGES



Increased safety



Reducing mining cycles



Used in fractured ground



Used when water is present

KEY BENEFITS

- › Easy installation and fixation of rock bolts
- › Full encapsulation of rock bolts even in broken, fractured ground, also enabling excellent corrosion protection
- › Non-foaming even in contact with water and will not absorb water
- › Thixotropic properties provides easy, secure and precise injection
- › Good adhesion to wet and damp substrates
- › Can penetrate small rock fractures and voids
- › Fast reaction even underwater
- › Fire resistant
- › Low odour
- › Environmentally friendly
- › User friendly – may be injected either manually or automatically

TYPICAL APPLICATIONS

- › Rock bolting applications
- › Cable bolt grouting
- › Sealing of large rock fissures
- › Consolidation of broken ground

PERFORMANCE REFERENCES

TamPur RBG

- › 8 m R32 SDB pull tested > 40 t after 2 hour (Tunnel Project, France)
- › 4 m R32 SDB tensioned to 5 t after 2 minutes and pull tested > 27 t after 1 hour (Mine, Canada)
- › 8 m Cable bolt (bulbed) pull tested > 27 t after 2 hour (Mine, Mongolia)
- › 6 m Cable bolt (bulbed) pull tested > 25 t after 2 hour (Mine, Australia)
- › Cable bolt (bulbed) with 1 m embedment length pull tested >20 t after 1 hour (Internal tests, Australia)
- › 2.4 m Ø 22 mm Rebar pull tested > 11 t after 24 hour (Mine, Chile)
- › 1.5 m Ø 19 mm Rebar pull tested > 16 t after 1 hour (Mine, Brazil)
- › TamPur RBG successfully tested for dynamic impact together with Normet Bolt range

For more references, please contact your local Normet sales representative.

APPLICATION GUIDELINES

Components A and B of TamPur RBG E are delivered ready-to-use. They are injected in the ratio of 1:1 by volume using a two-component injection pump equipped with a suitable in-line static mixer.

Note:

- › The curing reaction time will vary depending on the temperature of the TamPur RBG E resin, the strata and the ground water. Both components should be stored and conditioned to 15°C or above prior to application.
- › The mixing effect will significantly affect the speed of thickening and the reaction. The pump pressure and output will also affect the reaction rate. Therefore, the length of the mixer and the rate of the delivery should be tuned properly prior to application.

For full application details, please contact your local Normet sales representative.

If voids and cavities must be filled, we advise using our TamPur 117. TamPur 117 is designed for economic filling of voids and cavities. Void filling should be undertaken in stage/lifts, this will reduce the exothermic heat generated during the reaction stage. Polyurethane grout can't be used as void/cavity filling material. Please contact your local Normet representative first, if void/cavity filling is the planned application.

TECHNICAL DATA

TamPur RBG E Slow	Component A	Component B	
Colour	Clear-light straw liquid	Brown liquid	
Density at 25°C	1.35 - 1.62 g/cm ³	1.17 - 1.38 g/cm ³	
Viscosity at 25°C	350±150 mPa.s	350±100 mPa.s	
TamPur RBG E Standard	Component A	Component B	
Colour	Clear-light straw liquid	Brown liquid	
Density at 25°C	1.30 - 1.57 g/cm ³	1.15 - 1.35 g/cm ³	
Viscosity at 25°C	400±150 mPa.s	400±100 mPa.s	
TamPur RBG E Fast	Component A	Component B	
Colour	Clear-light straw liquid	Brown liquid	
Density at 25°C	1.35 - 1.62 g/cm ³	1.17 - 1.38 g/cm ³	
Viscosity at 25°C	325±150 mPa.s	300±100 mPa.s	
Reaction Properties			
	TamPur RBG E Slow	TamPur RBG E Standard	TamPur RBG E Fast
Open time at 20°C	~1 - 15 minutes*		
Set time at 20°C	~2 - 30 minutes*		
Expansion factor	1		

* Tested in laboratory conditions, on-site test required prior to application. Mixing tube length + different injection pump systems have an influence on open and set times.

SLOW	STANDARD	FAST
<ul style="list-style-type: none"> › Slow reacting TamPur RBG › Used for applications and conditions whenever hot ambient temperatures are encountered or slow reaction is required › Can be used when early tensioning of bolt is not required › Typically used in temperatures >25°C** 	<ul style="list-style-type: none"> › Normal reacting TamPur RBG › Used for applications and conditions whenever normal reaction is sufficient › Can be used when early tensioning of bolt is not required › Typically used in temperatures 15°C -25°C** 	<ul style="list-style-type: none"> › Fast reacting TamPur RBG › Used for applications and conditions whenever fast reaction time is required › When early tensioning of bolt is required (mainly primary support) › Can also be used in colder temperatures, if other RBG grades react too slow**

** Trials to be conducted to choose the right grade. Please contact your local Normet representative for support.

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PACKAGING

The standard packaging for TamPur RBG E is:

20 Litre Canister	
Component A	20 Litre / 30 kg
Component B	20 Litre / 23 kg
200 Litre Drum	
Component A	200 Litre / 300 kg
Component B	200 Litre / 230 kg
1000 Litre IBC	
Component A	1000 Litre / 1450 kg
Component B	1000 Litre / 1190 kg

Packaging size may vary subject to local regulations and requirements.

STORAGE

Resins must not be subjected to freezing conditions during transportation and storage. Keep out of direct sunlight, in a well-ventilated area where the average temperature is between 5°C and 35°C, then a shelf life of 12 months can be expected. The product can withstand temperature spikes of up to 55°C for up to 24 hours. When stored at constant high temperature above 35°C, a shelf life of six months can be expected.

HEALTH & SAFETY

TamPur RBG E should only be used as directed. We always recommend that the Safety Data Sheet (SDS) is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The Health & Safety data sheet is available upon request from your local Normet representative.