Technical Data Sheet

BluCem RMX EA55

LOW THERMAL RESISTIVITY GROUT

BluCem RMX EA55 is a one component powder additive, forming part of a specified mix design at an approved batch plant to create a heat-dissipating, highly fluid, cable grout.

BluCem RMX EA55 is a deep pour grout, suitable for the dissipation of heat from high voltage cables through a process known as conduit encasement. As BluCem RMX EA55 is a pumpable grout and is also suitable for long-distance grouting applications and bulk grouting where heat dissipation is required.

Application Advantages

- Highly flowable and pumpable grout
- Low heat generation during hydration
- Batching in agitators allows for continuous delivery
- Allows designers greater selection of cable sizes and voltage loads

Lifecycle Advantages

- Very high thermal resistivity (low TR rating)
- Unique additives to minimise bleed
- Low porosity and chloride free ensures a long performance life
- Heat dissipation allows higher loads to be placed on the cables
- Reduced carbon emissions

About the Product

BluCem RMX EA55 generates low exothermic heat during mixing through the inclusion of slower reacting cements and specially selected thermally conductive additives. The additive allows the grout to be applied in bulk ready mix applications and allows the grout to remain cool during the placement of large pours and effectively transmit heat during its service life. BluCem RMX EA55 is suitable for a range of deep pour applications where low heat is necessary to protect surrounding services and minimise thermal shrinkage.

Application Solutions

- Encasement of conduit casings
- Long-distance pumping applications
- Bulk grouting where heat dissipation is required
- High voltage cable grouting

Project Specification Clause

LOW THERMAL RESISTIVITY GROUT - The deep pour grout used for this project shall comprise of cement powder and powder additive which requires only the addition of water to form a durable deep pour product. It shall be a pre-blended additive added to a specific blend of cements and aggregates that has independent testing to validate the performance outlined in the technical data table on the following pages. BluCem RMX EA55 manufactured by Bluey Technologies or equivalent shall be accepted.

Project Examples

Grouting of high voltage electrical conduits in trenches, underbores under roads, rail and other critical infrastructure.

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Application Specification

FORMWORK STOP-ENDS

1.1 Each end of the main case must be sealed water tight prior to grouting. The stop-end may be constructed using a combination of timber plywood supporting appropriate cementitious or polyurethane foam plugs sufficient to resist the depth of grout pouring.

1.2 The timber plywood shall then be cut to shape to tightly fit the conduit configuration and secured using timber supports. Polyurethane foam may be used to fill remaining holes and defects prior to and during grouting operations. It is recommended that the case is filled with water to test for leakage prior to grouting.

PUMPING AND PLACEMENT

2.1 Install multiple grouting lines at the top (obvert) of the bore from the high end to ensure grouting from bottom up of the under bore if on a gradient. The grout lines should be installed at the following intervals to allow for easy grouting of if any grout lines get blocked.
Minimum Intervals: 90%, 75%, 50% and 25% (More intervals can be added but we recommend the previous as a minimum).
Breather tube to be placed at the top of the under bore, once consistant grout return has occurred through the breather tube stop grouting and cap off.

2.2 It is recommended that grouting operations progress slowly and careful observation for leaks is made continuously. Grouting operations must cease immediately if a leak is observed. The leak shall be plugged with suitable plugging products.

2.3 At the completion of grouting, the end of the breather tube shall be secured at least 1m above the conduit obvert. The breather tube shall be monitored until the grout reaches initial set for falls in grout level. If the grout level falls 1m, then the leak shall be identified and stopped. The breather tube shall be continuously topped up until the grout reaches initial set. Where grouting operations are not continuous, then multiple breather tubes for grout placement may be required.

MIXING

3.1 Ensure all grouting materials are preconditioned to an ambient temperature below 25°C.

3.2 Measure and place approximately 80% of the desired water into the approved mixing vessel.

3.3 Add BluCem RMX EA55 dissolvable bags into the water as per the mix design and mix for approximately 1 minute. Slowly add the cement and aggregates as per the mix design.

3.4 Mix for a further 3 - 4 minutes to adequately dissolve the BluCem RMX EA55 additive and achieve the desired consistency.

3.5 Following addition of all powder, mix for 1 - 2 minutes or until uniform consistency then add final 20% of potable water if required.

CURING

4.1 No special curing techniques are required.

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Product Data

Please refer to Important Notice on following page

Supply	Wet mix per m^3 delivered to site
Pump Life	>180 minutes @ 20°C
Maximum Exotherm	70°C
Maximum Particle Size	1mm

		SYD - METRO	MELB - METRO	BRIS - METRO
TESTED CHARACTERISTIC	**STANDARD**	**RESULT**		
Thermal Resistivity	IEEE Standard 442	0.66Km/W (Dry) @ 7 days 0.52Km/W (Dry) @ 28 days	0.72Km/W (Dry) @ 7 days 0.62Km/W (Dry) @ 28 days 0.66Km/W (Dry) @ 56 days	0.83Km/W (Dry) @ 7 days 0.75Km/W (Dry) @ 28 days
Compressive Strength	AS1478.2 Appendix A	10MPa @ 24 hours 25MPa @ 7 days 30MPa @ 28 days		
Flow Through	AS1478.2 APP-D	>500mm		
Bleeding		Zero @ 13%w/r		
Setting Time		Initial set - 6 hours Final set - 10 hours		
Separation		Nil		
Slump Flow @ 13%	ASTM C1611	700mm	>690mm	>690mm

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