reid™

August | 2020

NZ

ReidBar™ Grout Sleeve System

Installation Guide

The engineered, full strength splicing solution for reinforcing bars.

CodeMark

reids.co.nz | 0800 88 22 12

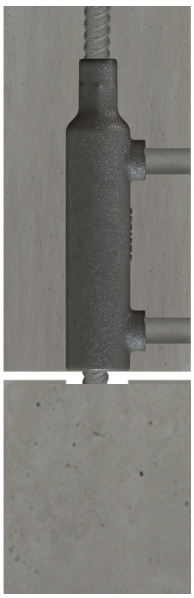
ReidBar™ Grout Sleeve System

The ReidBar Grout Sleeve System provides a full strength splicing solution for reinforcing bars allowing reinforcing continuity between load-bearing precast concrete elements.

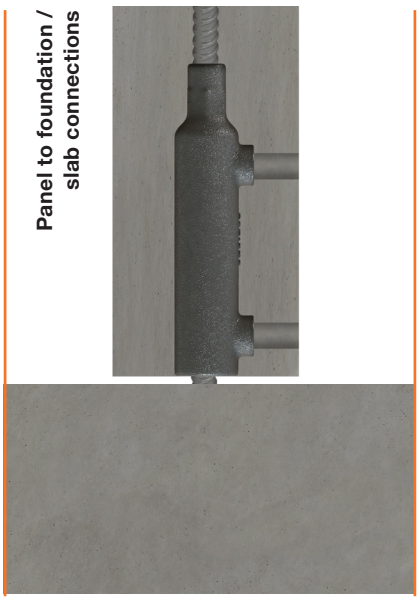
The ReidBar Grout Sleeve System is engineered for the task, and unlike drossbach ducts, require no modification, reducing production and installation costs, and eliminating error. The system is supported by technical assistance at every stage, face-face-training, procedures and checklists that take the guesswork out of construction. Backed by third-party accredited quality, the ReidBar Grout Sleeve system can be depended on, whether you're manufacturing precast concrete panels or installing on-site. Being independently certified, they enable designers to create efficient construction joints between precast concrete elements with confidence.

Applications

Panel to panel connections



Panel to foundation / slab connections



CodeMark's Scheme Mark of Conformity

The ReidBar Grout Sleeve System is marked with CodeMark's Scheme Mark of Conformity. This indicates the conformity of our product is based upon technical documentation and review of our manufacturing and quality control processes to monitor our ability to consistently produce the product in compliance with the clauses of the NZBC stated on the CodeMark certificate (refer to the Compliance section for a listing of the NZBC clauses this system is compliant to and the CodeMark certificate link).

CODEMARK

Features & Benefits

Meets the specification.

Tested to meet the clauses of the New Zealand Building Code (as stated on the CodeMark certificate)

Supports quality workmanship.

Engineered for the task and fully supported with face-to-face training, procedures and checklists that take the guesswork out of construction.

Keeps the team safe

through reducing on-site hazards caused by long protruding starter bars, allowing flush construction and shorter embedment depths

Technical support at every stage.

Reid products are backed with technical support from design to construction.

Minimises panel congestion and thickness

when compared to drossbach ducts, which must be fully confined (Source: SESOC Interim Design Guidance (Version No. 10-September 2019)

Saves on project costs

by utilising less materials and less labour time on site compared to drossbach ducts. Save on lapping and confinement requirements, assembly labour, grout volume and grouting labour.

Simplifies panel transport & storage

by eliminating or reducing starter bar lengths.

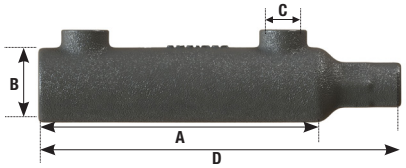
Products that won't let you down.

ReidBar™ system components are quality assured and won't let you down when you're on site and timeframes are tight.

ReidBar™ Grout Sleeve

CODEMARK

System Components



ReidBar™ & ReidBar™ Grout Sleeves

Part No.	Suits ReidBar	Min Strength (kN)	(A) Max Internal Embedment	(B) Body ID (mm)	(C) Internal Grout Hole Diam (mm)	(D) Tube Length (mm)
RB12GS	RB12	>78.0	150	28-40	21	200
RBA16GS	RB16	>138.8	190	32	21	240
RB20GS	RB20	>216.7	224	40	21	290
RB25GS	RB25	>338.8	274	48	21	360
RB32GS	RB32	>554.8	320	55	26	445

Ramset™ Epcon C8 Xtrem™

Part No.	Description	Pack Qty
C8-450	Epcon™ C8 Xtrem™ 450ml	12

ReidBar™ Grout Sleeve Set-Up hardware

Part No.	Bung Only	Length	Thread dia.ø	Rubber Plug OD	Qty
RB12GSSET	RB12BUN6	80mm	M8	36-48mm	1
RB16GSSET	RB16BUN6	80mm	M8	32mm	1
RB20GSSET	RB20BUN6	80mm	M8	40mm	1
RB25GSSET	RB25BUN6	80mm	M8	48mm	1
RB32GSSET	RB32BUN6	80mm	M8	55mm	1

Polyethylene Closed Cell Foam Backer Rod

Part No.	Colour	Diameter (mm)	Length (m)
PFROD06	White	6	250
PFROD10	White	10	250
PFROD13	White	13	50
PFROD15	White	15	50
PFROD20	White	20	50
PFROD25	White	25	50
PFROD30	White	30	50
PFROD40	White	40	2
PFROD50	White	50	2

Cementitious Grout

Part No.	Description	Pack Qty
RPGHS	PoziFlo Grout High Strength	20kg Bag

Refer to the Reid Precast Solutions Product Guide for related products. Available from www.reids.co.nz

Compliance Details

Product applicability

The products applicable to the compliance statement are defined in Table 1.

Table 1: Product applicability

System	ReidBar Grout Sleeve System			
System Components	**ReidBar Grout Sleeve**	**Reid Bar**	**EPCON™ C8 XTREM™**	**PoziFlo HS™**
Part Numbers	RB12GS	RB12	C8-450	RPGHS
	RBA16GS	RB16		
	RB20GS	RB20		
	RB25GS	RB25		
	RB32GS	RB32		
Conditions	Compliance and CodeMark certification applies to the system in its entirety. Substitution, omission and/or modification of components is not permitted and will void the compliance statement and CodeMark certification of the system.			

Compliance statement

The system defined in Table 1 complies with the New Zealand Building Code clauses identified in Table 2.

Table 2: Compliance details NZS 3101:2006

NZS3101:2006 A3 Clause	Criteria	Compliance Status
B1.3.1	'Buildings, building elements and sitework shall have a low probability of rupturing, becoming unstable, losing equilibrium, or collapsing during construction or alteration and throughout their lives.'	**Compliant – refer to CodeMark certificate of Conformity***
B1.3.2	'Buildings, building elements and sitework shall have a low probability of causing loss of amenity through undue deformation, vibratory response, degradation, or other physical characteristics throughout their lives, or during construction or alteration when the building is in use.'	
B1.3.3 (a), (b), (d), (e), (f), (g), (h), (j), (l), (m)	'Account shall be taken of all physical conditions likely to affect the stability of buildings, building elements and sitework, including: (a) Self weight, (b) Imposed gravity loads arising from use . . . (d) Earth pressure, (e) Water and other liquids, (f) Earthquake, (g) Snow, (h) Wind . . . (j) Impact . . . (l) Reversing or fluctuating effects, (m) Differential movement.'	
B1.3.4	'Due allowance shall be made for: (a) The consequences of failure, (b) The intended use of the building, (c) Effects of uncertainties resulting from construction activities, or the sequence in which construction activities occur, (d) Variation in the properties of materials and the characteristics of the site, and (e) Accuracy limitations inherent in the methods used to predict the stability of buildings.'	
B2.3.1 (a)	'Building elements must, with only normal maintenance, continue to satisfy the performance requirements of this code for the lesser of the specified intended life of the building, if stated, or: (a) The life of the building, being not less than 50 years, if (i) Those building elements . . . Provide structural stability to the building, or (ii) Those building elements are difficult to access or replace, or (iii) Failure of those building elements to comply with the building code would go undetected during both normal use and maintenance of the building.'	
F2.3.1	'The quantities of gas, liquid, radiation or solid particles emitted by materials used in the construction of buildings, shall not give rise to harmful concentrations at the surface of the material where the material is exposed, or in the atmosphere of any space.'	

CODEMARK

* The ReidBar Grout Sleeve System is marked with CodeMark's Scheme Mark of Conformity. This indicates the conformity of our product is based upon technical documentation and review of our manufacturing and quality control processes to monitor our ability to consistently produce the product in compliance with the clauses of the NZBC stated on the CodeMark certificate. The ReidBar Grout Sleeves CodeMark certificate is available on the JAS-ANZ website, located by entering the certificate number. https://www.jas-anz.org/our-directory/codemark-certified-organisations

Issued: August 2020

General Requirements

Please read the contents of this publication in its entirety before commencing your project.

Ramsetreid™ can provide technical assistance and training. Contact ramsetreid using the details provided at the end of this publication.

System Requirements

The ReidBar™ Grout Sleeves system is an engineered system comprising of ReidBar™ Grout Sleeves, Ramset Epcon™ C8, Ramset PoziFlo™ Grout HS and ReidBar™.

Substitution, omission and/or modification of components is not permitted by ramsetreid and will void the CodeMark certification of the system.

Substitution, omission and/or modification of components will affect the performance of the system and thus the structural performance of the building.

Deviation from the technical literature, (eg. including but not limited to prescribed installation methods, operating conditions, measures, shelf life, storage and safety precautions) will affect the performance of the system, the structural performance of the building and/or the safety of workers.

Products shall only be used as in applications described in ramsetreid publications at or below the published capacities.

Manufacture, installation and grouting competence

The professional manufacture, installation and grouting of precast panels is integral to the structural performance of the building.

Precast panel manufacture, installation and grouting shall only be performed by competent workers.

For advice and training on the products referred to in this publication, please contact ramsetreid using the details provided at the end of this publication.

Workplace Health and Safety

The Precast industry has been identified as high risk construction work by government authorities. Ensure your team is familiar with current legislation and compliance codes for your jurisdiction.

Whilst on site:

- Observe the workplace health and safety procedures of the site.
- Ensure that workers are not exposed to workplace health and safety risks whilst accessing the work area and conducting the work, through the provision of adequate training, procedures and PPE to perform the work safely in accordance with WHS advice for your jurisdiction.
- Allocate workers to the job who are adequately trained to carry out the task safely.

Scope

The scope of this publication is limited to the following processes specifically in relation to the correct application of the ReidBar Grout Sleeve system, namely:

- **Grout sleeve assembly**
- **Grout sleeve installation**
- **On-site installation** (excluding cranage and propping procedures)

Reference Material

Please refer to the following supporting literature available from www.reids.co.nz.

- **ReidBar™ Grout Sleeve System Specification guide**
- **Ramset™ Epcon™ C8 Xtrem™ TDS & MSDS**
- **Ramset™ Poziflo™ Grout HS TDS & MSDS**
- **Reid™ Precast Solutions Product Guide**

Ramsetreid™ reserves the right to amend this and referenced documentation from time to time.

Please ensure current literature is being referred to by accessing the website.

Panel Manufacturing Preparation

During the panel design process:

- [ ] Work with the structural engineer to refine the panel design and installation method
- [ ] If the intended panel design or components deviate from the structural engineering specification, then approval shall be sought from the structural engineer.
- [ ] Allocate workers to the job who are deemed competent to carry out the task safely, to the structural engineering specifications.

Preparing for panel manufacture:

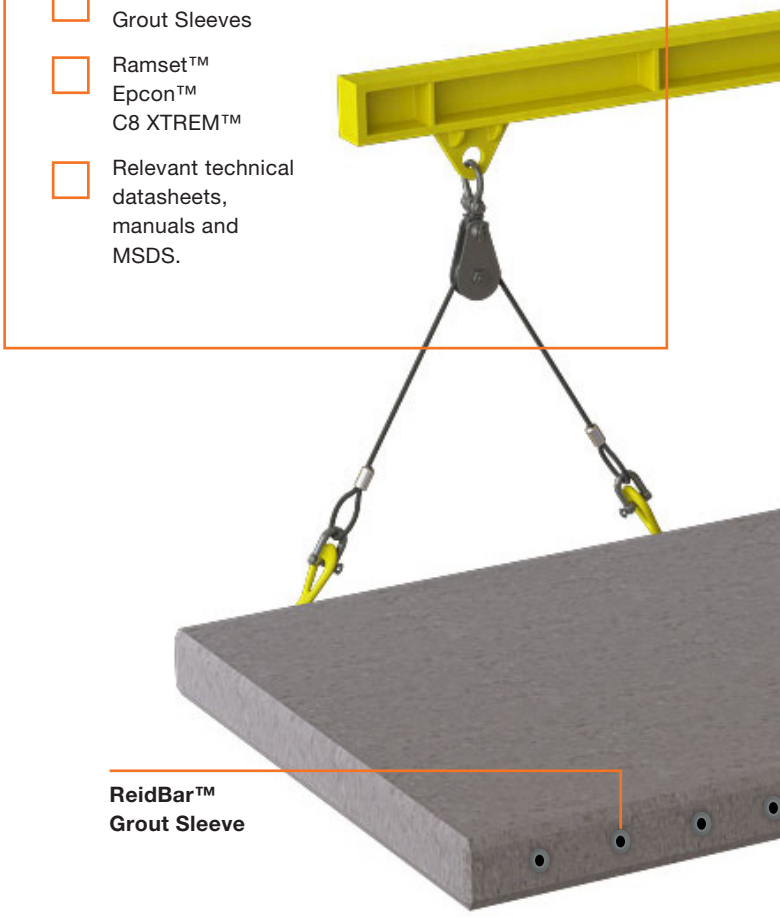
- [ ] Ensure workers are given the required tools, equipment and materials to carry out the work efficiently and accurately to the structural engineering specifications.
- [ ] Ensure tools and equipment are in correct working order.
- [ ] Ensure materials are to the correct specifications and are within their use by date (where applicable).
- [ ] Ensure workers are familiar with the requirements of the job and are provided with necessary documentation to do the job accurately to the structural engineering specifications.

Whilst manufacturing the panels:

- [ ] Ensure workers are given access to the required tools, equipment and materials to carry out the work efficiently and accurately to the structural engineering specifications.
- [ ] Ensure workers do not deviate from the structural engineering specifications. If manufacturing constraints force a deviation, stop and seek approval from the structural engineer before proceeding.

Tools and equipment:

- [ ] Appropriate Safety Equipment (PPE)
- [ ] Checklists (see end of this publication)
- [ ] Genuine ReidBar™
- [ ] ReidBar™ Grout Sleeves
- [ ] Ramset™ Epcon™ C8 XTREM™
- [ ] Relevant technical datasheets, manuals and MSDS.



Assembly Procedure

Please note:

- This process is to be completed outside of the casting bed to ensure no Epcon™ C8 Extreme drips into the bed during assembly.
- Ensure the following process is completed 24 hours prior to the pour to allow for curing time.
- Ensure the following process is not conducted at temperatures below 5°C.

Grout Sleeve Filler Requirements				
RB12GS x3 pumps required	**RBA16GS** x4 pumps required	**RB20GS** x4 pumps required	**RB25GS** x6 pumps required	**RB32GS** x8 pumps required

1

Assemble the ReidBar™ with the Grout Sleeve

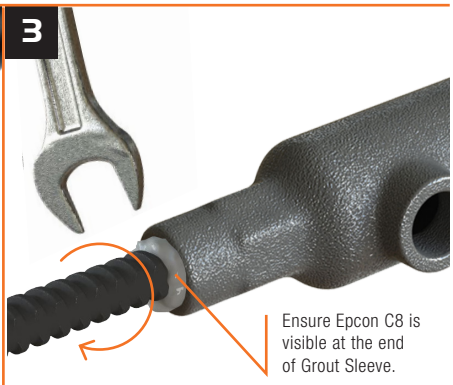
Once fully screwed in, mark the location of where the Grout Sleeve ends on the ReidBar. Disassemble the Grout Sleeve from the ReidBar.

2

Apply Epcon C8 Extreme

Apply in a uniform line along the ReidBar from the end of the bar up to the mark. Ensure the specified number of pumps.

3



Assemble the ReidBar™ with the Grout Sleeve

Assemble until the ReidBar is fully screwed into the Grout Sleeve.

4

Disassemble the ReidBar from the Grout Sleeve

Distribute the Epcon C8 Extreme along the ReidBar

Evenly distribute the Epcon C8 Extreme along the ReidBar and place excess inside the thread of the Grout Sleeve.

5

Assemble the ReidBar™ with the Grout Sleeve

Assemble until the ReidBar is fully screwed into the Grout Sleeve.

- Allow the assembly to cure for 24 hours before proceeding.

Ensure the appropriate PPE is worn when working with Ramset products. Refer to www.ramset.co.nz for Epcon C8 Extreme MSDS Sheet.

Installation Procedure

Installing ReidBar™ Grout Sleeve

STEP 1 Create templates

A template is the most accurate way to ensure that ReidBar™ Grout Sleeves and their starter bars are located at the correct positions for repetitive casting. Templates can be easily fabricated using steel or timber. Timber templates tend to be more popular amongst precast concrete manufacturers given that most already have fully operational timber workshops.

Measure and mark on the template the centre locations of the ReidBar™ Grout Sleeves and their starter bars. For the starter bar template (and if timber is used), drill holes of sufficient diameter to pass the bars. When the construction of the concrete elements involve two or more parties, copies of the templates shall be provided to these parties so that all parties are working of the same measurement benchmark.

Step 1 Checklist:

- ☐ Create templates as required and check if the marked & drilled hole locations of the ReidBar™ Grout Sleeves and their continuation bars are accurate.
- ☐ Duplicate these templates and provide them to other parties as required.

Example of timber template for ReidBar™ Grout Sleeve starter bars

Example of timber template for ReidBar™ Grout Sleeve locations

STEP 2 Set the Grout Sleeve Assembly into the Formwork

Ensure the Epcon C8 Extreme is allowed to cure for 24 hours before setting the assembly into the formwork.

Determine the surface (or side) that the grout ports are expected to come out from, and orientate the Grout Sleeve correctly such that the grout ports are facing the right direction. This is typically towards the near face of precast elements or on multiple sides of precast columns.

Step 2 Checklist:

- ☐ Check if the ReidBar™ has been installed correctly onto the Grout Sleeve.
- ☐ Check if the ports of the ReidBar™ Grout Sleeves are facing the right direction.

Installation Procedure

Installing ReidBar™ Grout Sleeve

STEP 3 Install Grout Sleeve installation hardware to the formwork.

Option 1: Using Grout Sleeve Set-Up Hardware

Find the marked centre locations of the ReidBar™ Grout Sleeves on the template, drill 9mm diameter holes through the marked locations, and then insert the Grout Sleeve Set-Up Hardware through the drilled hole.

The Grout Sleeve Set-Up Hardware shall be oriented such that the rubber bung and stud washer are located inside the formwork.

Finger-tighten the supplied nut and loose washer along the stud, resting on the outside of the form (washer located between the nut and the form).

ReidBar™ Grout Sleeve Set-Up Hardware

Option 2: Using the Grout Sleeve Rubber Bung (ideal if penetrations through the formwork are undesirable)

Find the marked centre locations of the ReidBar™ Grout Sleeves. Insert a screw through the middle of the Grout Sleeve Rubber Bung, tap it onto the marked locations and screw so that it is fixed firmly onto the formwork. Afterwards, it is recommended to use two extra screws on the right and left sides of the Rubber Bung to further fix it onto position.

ReidBar™ Grout Sleeve Rubber Bung

Option 3: Using Timber Discs (ideal if penetrations through the formwork are undesirable)

Find the marked centre locations of the ReidBar™ Grout Sleeves. Cut timber discs to suit the inside diameter of the corresponding ReidBar™ Grout Sleeve size.

A circular drop saw is commonly used to create the timber discs.

Drill an appropriately sized hole and insert a screw through the middle of the timber disc. Tap the screw onto the marked locations and screw so that the timber disc is fixed firmly onto the formwork.

Afterwards, it is recommended to use two extra screws on the right and left sides of the timber disc to further fix it onto position.

Step 3 Checklist:

- ☐ Check if the set-up hardware is correctly placed and is firmly fixed to the formwork.

Timber discs screwed onto timber formwork

Installation Procedure

Installing ReidBar™ Grout Sleeve

STEP 4 Install Grout Sleeves onto the installation hardware

Install the ReidBar™ Grout Sleeve assemblies onto the installation hardware. If Step 3 Option 1 is selected, tighten the nut on the Grout Sleeve Set-Up Hardware to expand the Rubber Bung, so that the Grout Sleeves are firmly set in place. Install bar chairs underneath the Grout Sleeve continuation bar in close proximity to the Grout Sleeve.

Seal the bottom of the Grout Sleeve using a duct tape or similar means, to ensure that there is no concrete slurry seeping into the Grout Sleeve.

To further support the Grout Sleeve and maintain its rigidity upon reinforcement and concrete placing, more bar chairs may be required to support larger-sized ReidBar™ Grout Sleeve assemblies.

Install the timber or steel template to the top side of the precast panel to properly locate the protruding ReidBar™ Grout Sleeve starter bars. Ensure that the protruding starter bars are straight and perpendicular to the formwork.

Timber templates used to ensure that ReidBar™ Grout Sleeve starter bars are straight

Step 4 Checklist:

- ☐ Check if the Grout Sleeves are stable, perpendicular to the formwork and are sufficiently supported
- ☐ Check if the bottom of the Grout Sleeves are sufficiently sealed to stop concrete slurry ingress into the Grout Sleeves
- ☐ Check if the protruding starter bars are straight and perpendicular to the formwork

STEP 5 Prepare and connect port tubes to the grout ports

Prepare the port tubes such that they are neither too long nor too short, and then connect them to the ReidBar™ Grout Sleeves.

PF Rods, PVC tubes or plumbing hose can be used as port tubes. Connect port tubes into grout ports, and tape them to ensure that no concrete slurry seeps into the Grout Sleeve.

Label the port tubes where they come out of the precast unit – particularly when there is more than one layer of Grout Sleeves, such as in precast columns. This is to ensure that the grouting contractor onsite is aware of which are the inlet and outlet ports.

Step 5 Checklist:

- ☐ Prepare port tubes that are neither too long nor too short and connect them to the grout ports
- ☐ Label the port tubes so that it is clear which are the inlet and outlet ports
- ☐ Check if the grout ports are sufficiently sealed

ReidBar™ Grout Sleeves with plumbing hose port tubes

ReidBar™ Grout Sleeves with PVC port tubes

ReidBar™ Grout Sleeves with PF Rod port tubes

Installation Procedure

Installing ReidBar™ Grout Sleeve

STEP 6 Take a good care during concrete placement and vibration to ensure that the Grout Sleeves are not displaced during the process.

Useful Install tips

For accurate installation:

It is recommended to use ReidBar™ that are cut using band/abrasive saw, instead of those that are hydraulically cropped.

Hydraulically cropped ReidBar™

ReidBar™ properly cut using band/abrasive saw

For onsite contractors/builders:

For the setting of Grout Sleeve starter bars, coordinate with the precast concrete anufacturers and work based on their measurements and templates to ensure accuracy of starter bar locations.

Precisely measured starter bar locations

On-site Installation Procedure

During the installation planning process:

- [ ] Work with the structural engineer to refine the installation method

  Verify the installation method against the structural engineering specification to confirm:

  - [ ] If shims and foam tape can be used and their location and size
  - [ ] Dry packing location and maximum coverage
  - [ ] Grout minimum coverage within the panel joint

- [ ] If the intended installation method deviates from the structural engineering specification, then approval shall be sought from the structural engineer.
- [ ] Allocate workers to the job who are deemed competent to carry out the task safely, to the structural engineering specifications.

Preparing for site:

- [ ] Ensure workers are given the required tools, equipment and materials to carry out the work efficiently and accurately to the structural engineering specification.
- [ ] Ensure tools and equipment are in correct working order.
- [ ] Ensure materials are to the correct specifications and are within their use by date (where applicable).
- [ ] Ensure workers are familiar with the requirements of the job and are provided with necessary documentation to do the job accurately to the structural engineering specification.

Whilst on-site:

- [ ] Ensure workers are given access to the required tools, equipment and materials to carry out the work efficiently and accurately to the structural engineering specification.
- [ ] Ensure workers do not deviate from the intended installation method and structural engineering specification. If site constraints force a deviation, stop and seek approval from the structural engineer before proceeding.

Tools and equipment:

- [ ] Appropriate Safety Equipment (PPE)
- [ ] Checklists (see end of this publication)
- [ ] Measuring tape
- [ ] Foam tape (as required)
- [ ] Reid Shims
- [ ] Approved dry packing grout (with 28 day compressive strength 10MPa in excess of the connected elements - panels, floor or column)
- [ ] Measuring cup
- [ ] Clean water
- [ ] Electric mixer with paddle attachment
- [ ] Transparent tubing (to fit joint cavity and Grout Sleeve port)
- [ ] Ramset PoziFlo™ HS Grout
- [ ] Manual or electric pump
- [ ] Foam or backing rod
- [ ] Relevant technical datasheets, instruction manuals and MSDS

Installation Procedure

On-site Installation

STEP 1 Inspect & prepare starter bars

Verify to the structural engineering specification:

- ☐ The number of starter bars
- ☐ Starter bar size
- ☐ Starter bar position

Perform a visual inspection of the starter bars:

- ☐ Check for damage
- ☐ Check the ends show no signs of deformation and the bars are straight (if not, this will prevent the panel from sliding down)

Measure the length of the starter bars:

- ☐ Ensure the length of the bar (minus the packer height) matches the stated embedment depth (see ReidBar Grout Sleeve Dimensions in the References section)
- ⚠ Starter bars may be slightly chamfered to aid in insertion.
- ⚠ Do not place caps on the end of starter bars as an insertion aid.

STEP 2 Install foam tape to base (as required)

- ☐ Verify the placement of the foam tape to the structural engineering specification. Only use foam tape where approved by the structural engineering specification as incorrect placement may affect the structural performance of the building.
- ⚠ Where foam tape is positioned on the only accessible faces, ensure transparent plastic inlet/outlet tubes are positioned within the foam tape, at each end of the panel and at intermediate points, to allow for adequate joint flooding and visual inspection.

STEP 3 Position the panel over the base (via crane)

- ⚠ Never work under a moving panel.

Installation Procedure

On-site Installation

STEP 4 Lower the panel and whilst supported inspect the grout sleeve cavity

Inspect the ReidBar Grout Sleeve cavities:

- ☐ Verify the number of cavities.
- ☐ Check that all cavities are free of obstructions
- ⚠ Verify the cavity depths match the ReidBar Grout Sleeve dimensional starter bar length measured in Step 1

STEP 5 Lower the panel over the starter bars

This may require raising and lowering the panel several times if the starter bars are getting caught or are misaligned. Adjust where required.

⚠ Never work under an unsupported panel.

STEP 6 Level the panel with Reid Shims (if required)

Verify the placement of the Reid Shims to the structural engineering specification.

- ☐ This may require raising and lowering the panel several times to achieve. Adjust shims heights where required.
- ⚠ Never work under a moving or unsupported panel.
- ⚠ Only use rated plastic shims (Reid Shims). Never use metal shims.
- ⚠ Only use shims where approved by the structural engineering specification. Adhere to locations specified.

Reid Shims

STEP 7 After the panel is fully lowered onto the concrete base, prop the panel to secure

⚠ Never work under or near an unsupported panel

Installation Procedure

On-site Installation

STEP 8

Where dry packing is specified, dry pack the joint cavity with an approved dry packing grout.

Prepare the surfaces according to the manufacturer's instructions.

Mix grout to dry pack consistency according to the manufacturer's instructions.

- ☐ Verify the correct water volume is used.
- ☐ Verify the consistency of the grout is homogenous.
- ⚠ Ensure all instructions are complied to (refer to the manufacturer's instructions).

Dry pack the panel joint by hand in the timeframe shown on the instructions as indicated by the structural engineering detailing.

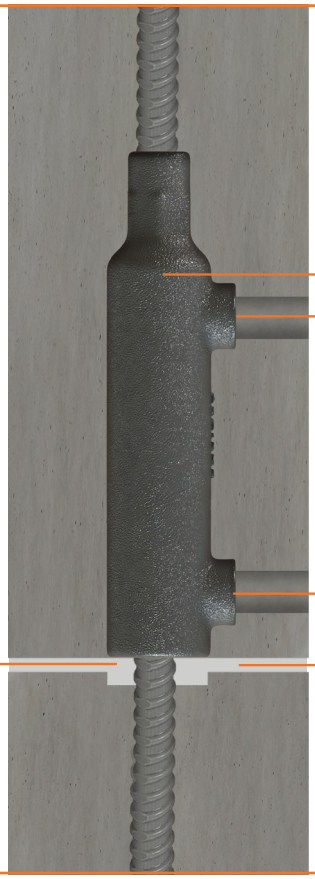
Ensure transparent plastic inlet/outlet tubes are positioned within the dry packed joint, at each end of the panel and at intermediate points, o allow for adequate joint flooding and visual inspection.

- ⚠ Ensure the exposed ends of the inlet and outlet tubes are long enough to create a head of grout just above the panel joint to ensure each grout sleeve is sealed at the flooding stage.
- ☐ Verify the position of the dry packing to the structural engineering specification.
- ☐ Verify the grout inlet and outlet tubes are present and clear of grout.
- ☐ Note the time of completion to ensure recommended setting times are observed (refer to the manufacturer's instructions).

Allow the dry packed grout to set according to the manufacturer's instructions before proceeding.

- ⚠ This step is intended to seal the joint cavity and provide support to the pressure exerted by grouting and may be done in conjunction with the use of foam tape (where specified).

Typical panel to panel grout sleeve connection detail



Installation Procedure

On-site Installation

STEP 9 Flood the joint cavity with Ramset™ PoziFlo HS Grout

- [ ] Verify setting time for the dry packing (where specified) has been met.

Mix Ramset PoziFlo HS Grout to flowable consistency according to the manufacturer's instructions.

- [ ] Verify the correct water volume is used.
- [ ] Verify the consistency of the grout is homogenous.
- ⚠ Ensure all instructions are complied to (refer to the manufacturer's instructions).

Working from one end of the panel to the other, and with a pump, flood the panel joint in the timeframe shown on the manufacturer's instructions.

Flood until a head of grout is observed above the level of the panel joint for each inlet/outlet tube positioned within the dry packed joint.

Working from one side of the panel to the other, plug the tubes.

- [ ] Verify the grout inlet and outlet tubes are filled above the level of the panel joint.
- [ ] Note the time and temperature at completion to ensure recommended setting times are observed (refer to the manufacturer's instructions).

Allow the flooded grout to set according to the manufacturer's instructions before proceeding.

- ⚠ This step is intended to seal the joint cavity and also seal the base of each grout sleeve so they can be individually grouted.
- ⚠ Working from one side of the panel to the other ensures that voids are not formed during the flooding process.
- ⚠ Flooding may be done with either a manual or electric pump.
- ⚠ Foam or backing rod can be used to plug tubes.

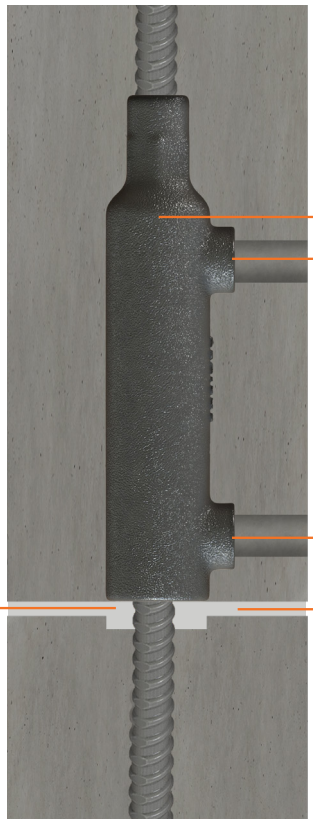
STEP 10 Prepare the Grout Sleeves for grouting

- [ ] Verify setting time for the flooded grout has been met.

Attach a transparent plastic tube to each of the upper grout sleeve ports.

- ⚠ Ensure the end of the transparent tubes are pointing upwards and are long enough to create a head of grout just above the level of the top of the grout sleeve cavity to ensure each grout sleeve is fully filled with grout.

Typical panel to panel grout sleeve connection detail



Installation Procedure

On-site Installation

STEP II Grout the grout sleeve cavity with Ramset™ PoziFlo™HS Grout

Mix Ramset PoziFlo HS Grout to flowable consistency according to the manufacturer's instructions.

- ☐ Verify the correct water volume is used.
- ☐ Verify the consistency of the grout is homogenous.
- ⚠ Ensure all instructions are complied to (refer to the manufacturer's instructions).
- ⚠ Use the entire contents of the Ramset PoziFlo HS Grout bag each time grout is required.

Working from one side of the panel, grout each grout sleeve individually via the grout inlet (lower port) within the timeframe shown on the manufacturer's instructions.

Grout until a head of grout is observed above the level of the top of the grout sleeve cavity in each outlet. Plug the grout inlet immediately after removing the pump, then plug the grout outlet tube.

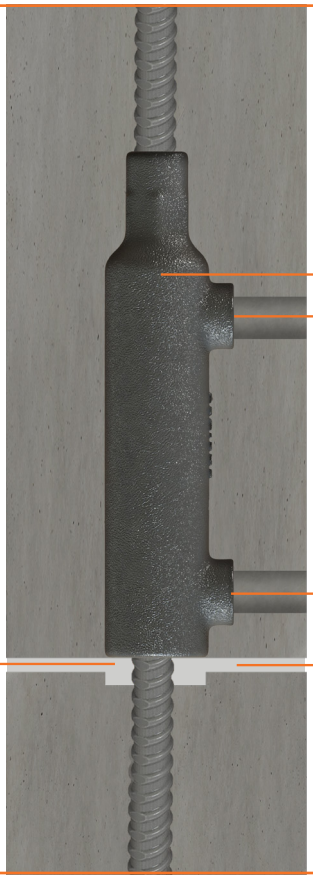
Continue across the panel until all grout sleeves are grouted.

- ☐ Verify the grout inlet and outlet tubes are filled above the level of the top of the grout sleeve cavity.
- ☐ Note the time and temperature at completion to ensure recommended setting times are observed (refer to the manufacturer's instructions).

Allow the grout to set according to the manufacturer's instructions.

- ⚠ Working from the grout inlet (the lower Grout Sleeve port) ensures that voids are not formed during the grouting process.
- ⚠ Foam or backing rod can be used to plug the ports.
- ⚠ During this step the grout path to some or all Grout Sleeves may not have been sealed if under-flooded previously, thus multiple grouting of some/all grout sleeves may be required. If this is the case work from one side of the panel to the other to avoid the formation of voids.
- ⚠ Grouting may be done with either a manual or electric pump.
- ⚠ Once fully set, plugs and tubes can be removed and the surfaces treated as required.

Typical panel to panel grout sleeve connection detail



Grout Sleeve

Installation Checklist

This checklist is to be used where the ReidBar™ Grout Sleeve System is being cast into a precast concrete panel. It is to be used in conjunction with the ReidBar™ Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

A.1 Project Details

Project	
Project address	
Building/Level	

A.2 Panel Identification

	Panel 1	Panel 2	Panel 3
Panel name/number/ID			

A.3 Panel Manufacturer Details

	Panel 1	Panel 2	Panel 3
Manufacture date			
Project Lead			
Quality Inspector			

A.4 Pre-Pour Inspection

	Panel 1		Panel 2		Panel 3	
Continuation bar template check to structural engineering drawings	OK	Not OK	OK	Not OK	OK	Not OK
Position	☐	☐	☐	☐	☐	☐
Size	☐	☐	☐	☐	☐	☐
Number of continuation bars	☐	☐	☐	☐	☐	☐
Grout Sleeve Assembly check	OK	Not OK	OK	Not OK	OK	Not OK
Reidbar installed per the instructions	☐	☐	☐	☐	☐	☐
Assembly cured for a minimum 24 hours	☐	☐	☐	☐	☐	☐
Grout Sleeve Installation check	OK	Not OK	OK	Not OK	OK	Not OK
Setup hardware positioned correctly & firmly fixed	☐	☐	☐	☐	☐	☐
Grout sleeve grout ports oriented correctly	☐	☐	☐	☐	☐	☐
Grout sleeves are stable & supported	☐	☐	☐	☐	☐	☐
Grout sleeves are perpendicular to the formwork	☐	☐	☐	☐	☐	☐
Base of the grout sleeves are sealed	☐	☐	☐	☐	☐	☐
Starter bars are straight and perpendicular to the formwork	☐	☐	☐	☐	☐	☐
Port tubes inserted into each grout port	☐	☐	☐	☐	☐	☐
Grout ports are labelled	☐	☐	☐	☐	☐	☐
Grout ports are sealed	☐	☐	☐	☐	☐	☐

Continued >

Grout Sleeve

Installation Checklist

This checklist is to be used where the ReidBar™ Grout Sleeve System is being cast into a precast concrete panel. It is to be used in conjunction with the ReidBar™ Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

A.5 Pre-Storage Inspection

	Panel 1		Panel 2		Panel 3	
	OK	Not OK	OK	Not OK	OK	Not OK
Grout sleeve cavities free of obstructions	☐	☐	☐	☐	☐	☐
Grout ports free of obstructions	☐	☐	☐	☐	☐	☐

A.6 Grout Sleeve Installation Sign-Off

All items have been marked by the Project Lead and checked by the Quality Inspector

	Panel 1	Panel 2	Panel 3
Project Lead (sign)			
Quality Inspector (sign)			
Approval date			

Any deviations have been accepted by the Structural Engineer for the project

Deviation

	Panel 1	Panel 2	Panel 3
Structural Engineer			
Approval date			

Notes

Precast Concrete Panel

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation.The completed document may be requested from the Structural Engineer at any time.

1.1 Project Details

Project	
Project address	
Building/Level	

1.2 Panel Identification

	Panel 1	Panel 2	Panel 3
Panel name/number/ID			

1.3 Panel Installation Details

Panel Installation Contractor	

	Panel 1	Panel 2	Panel 3
Installation date			
Lead Installer From the panel installation contractor			
Quality Inspector			

1.4 Starter Bar Inspection

	Panel 1		Panel 2		Panel 3	
Number of starter bars [a]						
	OK	Not OK	OK	Not OK	OK	Not OK
Number of starter bars check structural engineering drawings	☐	☐	☐	☐	☐	☐
ReidBar size (circle)	RB 12 16 20 25 32		RB 12 16 20 25 32		RB 12 16 20 25 32	
	↓ ↓ ↓ ↓ ↓		↓ ↓ ↓ ↓ ↓		↓ ↓ ↓ ↓ ↓	
ReidBar length (mm) (circle) minus packer height [b]	150 / 190 / 224 / 274 / 320		150 / 190 / 224 / 274 / 320		150 / 190 / 224 / 274 / 320	
	OK	Not OK	OK	Not OK	OK	Not OK
ReidBar size check to structural engineering drawings	☐	☐	☐	☐	☐	☐
ReidBar length check	☐	☐	☐	☐	☐	☐
Starter bar checks	OK	Not OK	OK	Not OK	OK	Not OK
Position to structural engineering drawings	☐	☐	☐	☐	☐	☐
No bar damage	☐	☐	☐	☐	☐	☐
Bar straightness	☐	☐	☐	☐	☐	☐
Bar end condition	☐	☐	☐	☐	☐	☐
Foam tape position to structural engineering drawings	☐	☐	☐	☐	☐	☐

Continued >

Precast Concrete Panel

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation.The completed document may be requested from the Structural Engineer at any time.

1.5 Panel Grout Sleeve Cavity Inspection

	Panel 1		Panel 2		Panel 3	
	OK	Not OK	OK	Not OK	OK	Not OK
Number of cavities compare to [a]	☐	☐	☐	☐	☐	☐
Cavity depth (mm) copy from [b]	150 / 190 / 224 / 274 / 320		150 / 190 / 224 / 274 / 320		150 / 190 / 224 / 274 / 320	
	OK	Not OK	OK	Not OK	OK	Not OK
Cavity depth check	☐	☐	☐	☐	☐	☐
Cavities free of obstructions	☐	☐	☐	☐	☐	☐

1.6 ReidBar Shim Position

	Panel 1		Panel 2		Panel 3	
	OK	Not OK	OK	Not OK	OK	Not OK
Shim position	☐	☐	☐	☐	☐	☐
Reid Plastic Shims used	☐	☐	☐	☐	☐	☐

1.7 Panel Installation Sign-Off

All items have been marked by the Project Lead and checked by the Quality Inspector

	Panel 1	Panel 2	Panel 3
Lead Installer (sign)			
Quality Inspector (sign)			
Approval date			

Any deviations have been accepted by the Structural Engineer for the project

Deviation

	Panel 1	Panel 2	Panel 3
Structural Engineer			
Approval date			

Proceed to Grouting (refer to ReidBar Grout Sleeves System Installation Instructions and Checklist)

Dry Packing

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

2.1 Project Details

Project	
Project address	
Building/Level	

2.2 Panel Identification

	Panel 1	Panel 2	Panel 3
Panel name/number/ID			

2.3 Dry Packing Details

Grouting Contractor	

	Panel 1	Panel 2	Panel 3
Grouting date			
Lead Grouter From the grouting contractor			
Quality Inspector			

2.4 Start Up Checks

Equipment check	OK	Not OK
Mixing bucket and paddle clean	☐	☐
Mixing drill in good condition	☐	☐

	Panel 1		Panel 2		Panel 3	
Panel Setup	OK	Not OK	OK	Not OK	OK	Not OK
Shim position under panel to structural engineering drawings	☐	☐	☐	☐	☐	☐
Plastic (not metal) shims used	☐	☐	☐	☐	☐	☐
Foam tape position to structural engineering drawings	☐	☐	☐	☐	☐	☐

Continued >

Notes

Dry Packing

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

2.5 Grout Mixing

Grout used?	Expiry date check		Confirm correct water volume by Quality Inspector		Confirm flowable homogenous mix by Quality Inspector	
	OK	Not OK	OK	Not OK	OK	Not OK
Bag 1	☐	☐	☐	☐	☐	☐
Bag 2	☐	☐	☐	☐	☐	☐
Bag 3	☐	☐	☐	☐	☐	☐
Bag 4	☐	☐	☐	☐	☐	☐
Bag 5	☐	☐	☐	☐	☐	☐
Bag 6	☐	☐	☐	☐	☐	☐
Bag 7	☐	☐	☐	☐	☐	☐
Bag 8	☐	☐	☐	☐	☐	☐

2.6 Dry Packing Inspection

	Panel 1		Panel 2		Panel 3	
Dry packing checks	OK	Not OK	OK	Not OK	OK	Not OK
Dry packing position to structural engineering drawings	☐	☐	☐	☐	☐	☐
Grout inlet tube present & clear of grout	☐	☐	☐	☐	☐	☐
Grout outlet tube present & clear of grout	☐	☐	☐	☐	☐	☐

2.7 Dry Packing Sign-Off

All items have been marked by the Project Lead and checked by the Quality Inspector

	Panel 1	Panel 2	Panel 3
Lead Grouter (sign)			
Time of completion			
Quality Inspector (sign)			
Approval date			

Any deviations have been accepted by the Structural Engineer for the project

Deviation

	Panel 1	Panel 2	Panel 3
Structural Engineer			
Approval date			

Proceed to Flooding (refer to ReidBar Grout Sleeves System Installation Instructions and Checklist)

Panel Flooding

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

3.1 Project Details

Project	
Project address	
Building/Level	

3.2 Panel Identification

	Panel 1	Panel 2	Panel 3
Panel name/number/ID			

3.3 Flooding Details

Grouting Contractor	

	Panel 1	Panel 2	Panel 3
Grouting date			
Lead Grouter From the grouting contractor			
Quality Inspector			

3.4 Start Up Checks

Dry Packing	OK	Not OK
Setting time met	☐	☐

3.5 Grout Mixing

	Panel 1		Panel 2		Panel 3	
Bag 1	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	☐
Bag 2	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mixby quality inspector"	☐	☐	☐	☐	☐	☐
Bag 3	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	☐

Continued >

Panel Flooding

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

3.5 Grout Mixing

	Panel 1		Panel 2		Panel 3	
Bag 4	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	☐
Bag 5	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mixby quality inspector"	☐	☐	☐	☐	☐	☐
Bag 6	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	☐

3.6 Flooding Inspection

	Panel 1		Panel 2		Panel 3	
Flooding checks	OK	Not OK	OK	Not OK	OK	Not OK
Dry packing position to structural engineering drawings	☐	☐	☐	☐	☐	☐
Head of grout observed from grout outlets	☐	☐	☐	☐	☐	☐

3.7 Flooding Sign-Off

All items have been marked by the Project Lead and checked by the Quality Inspector

	Panel 1	Panel 2	Panel 3
Lead Grouter (sign)			
Time of completion			
Quality Inspector (sign)			
Approval date			

Any deviations have been accepted by the Structural Engineer for the project

Deviation

	Panel 1	Panel 2	Panel 3
Structural Engineer			
Approval date			

Proceed to Grouting (refer to ReidBar Grout Sleeves System Installation Instructions and Checklist)

Grouting

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

4.1 Project Details

Project	
Project address	
Building/Level	

4.2 Panel Identification

	Panel 1	Panel 2	Panel 3
Panel name/number/ID			

4.3 Grouting Details

Grouting Contractor	

	Panel 1	Panel 2	Panel 3
Grouting date			
Lead Grouter From the grouting contractor			
Quality Inspector			

4.4 Start Up Checks

Flooding	OK	Not OK
Setting time met	☐	☐

4.5 Grout Mixing

	Panel 1		Panel 2		Panel 3	
Bag 1	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	☐
Bag 2	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mixby quality inspector"	☐	☐	☐	☐	☐	☐
Bag 3	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	☐
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	☐
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	☐

Continued >

Grouting

Installation Checklist

This checklist is to be used where the ReidBar Grout Sleeve System has been cast into a precast concrete panel. It is to be used in conjunction with the ReidBar Grout Sleeves System Installation Instructions. Items marked 'Not OK' are to be rectified by the contractor or referred to the structural engineer for the project for approval to proceed. Retain the completed document as a record of the installation. The completed document may be requested from the Structural Engineer at any time.

4.5 Grout Mixing

	Panel 1		Panel 2		Panel 3	
Bag 4	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	
Bag 5	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	
Confirm flowable homogenous mixby quality inspector"	☐	☐	☐	☐	☐	
Bag 6	OK	Not OK	OK	Not OK	OK	Not OK
PoziFlo HS Grout used	☐	☐	☐	☐	☐	
Confirm correct water volume by quality inspector	☐	☐	☐	☐	☐	
Confirm flowable homogenous mix by quality inspector	☐	☐	☐	☐	☐	

4.6 Grouting Inspection

	Panel 1		Panel 2		Panel 3	
Grouting checks	OK	Not OK	OK	Not OK	OK	Not OK
Dry packing position to structural engineering drawings	☐	☐	☐	☐	☐	
Head of grout observed from grout outlets	☐	☐	☐	☐	☐	☐
Number of grout sleeves grouted (write number)						

4.7 Grouting Sign-Off

All items have been marked by the Project Lead and checked by the Quality Inspector

	Panel 1	Panel 2	Panel 3
Lead Grouter (sign)			
Time of completion			
Quality Inspector (sign)			
Approval date			

Any deviations have been accepted by the Structural Engineer for the project

Deviation

	Panel 1	Panel 2	Panel 3
Structural Engineer			
Approval date			

Notes

customer service

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