ReidBar™
Grout Sleeve System

Specification & Installation Guide

ReidBar™ Components are QA tested at ramsetreid™'s in-house QA Facility.
Overview

ReidBar™ is a continuously threaded, hot rolled Grade 500E reinforcing bar that is manufactured in Australia and New Zealand following AS/NZS4671:2001. Its continuous thread feature allows ReidBar™ to be cut at any point along its length and screwed into one of the large variety of ReidBar™ Components.

ReidBar™ Grout Sleeve is a type of ReidBar™ Component that enable designers to create efficient horizontal construction joints between precast concrete elements.

What are the features of ReidBar™?

*Easy to install:* ReidBar™ is a user friendly continuously threaded reinforcing bar system that requires no special tools or processes to realise its full benefits.

*Efficient:* The use of ReidBar™ System generally reduces congestion whilst also reducing wastage of reinforcing.

*Available:* ReidBar™ is readily available, locally made and well established in the market.

Why use ReidBar™ Grout Sleeves?

*Quality Assured:* ReidBar™ Components are QA tested at ramsetreid™’s inhouse QA Facility

*Ticks The Boxes:* Tested to meet New Zealand Standards criteria*

*Minimise Lapping:* ReidBar™ Grout Sleeves require significantly shorter starter bar lengths than conventional lapped connections

*Easy Transportation:* Shorter starter bar lengths lead to easier transportation as the overall dimensions of concrete elements to be transported are reduced

*Easy Storage:* Shorter starter bar lengths lead to easier storage of concrete elements at the manufacturing facility before delivery

*Based on testing of RB12 (smallest), RB20 (medium) and RB32 (largest) Grout Sleeves towards NZS3101:2006 Clause 8.7.5.2 and Clause 8.9.1.3 using Ramset™ PoziFlo™ Grout HS. Test reports available upon request.

Genuine ReidBar™ are made by One Steel and Pacific Steel in Australia and New Zealand respectively.

Genuine ReidBar™ Components can only be purchased from ramsetreid™ or ramsetreid™ approved distributors.
Dimensions

<table>
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<th>Suits</th>
<th>Min Strength (kN)</th>
<th>Overall Length (mm)</th>
<th>Thread Depth (mm)</th>
<th>Body ID (mm)</th>
<th>Body OD (mm)</th>
<th>Nom Grout Vol (ml)</th>
<th>Bar Embedment (mm)</th>
<th>Grout Hole Dia. (mm)</th>
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<td>746</td>
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ReidBar™ Grout Sleeve Gallery

Pre assembled panel reinforcing with ReidBar™ Grout Sleeves before placement on precast manufacturing bed

Precast panel with ReidBar™ Grout Sleeve starter bars upon removal of top panel formwork/template
Installation Procedure

Installing Epcon™ C8 XTREM™ Filler

Recommendations and Notes:
- Set up to be completed outside the casting bed to avoid the possibility of epoxy dripping into the bed.
- Curing time – Install the Bar to the Grout Sleeve 24 Hours prior to the pour.

<table>
<thead>
<tr>
<th>Grout Sleeve</th>
<th>No of Pumps Epcon C8</th>
</tr>
</thead>
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<tr>
<td>RB12GS</td>
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<tr>
<td>RBA16GS</td>
<td>4</td>
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<td>RB20GS</td>
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<td>RB25GS</td>
<td>6</td>
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<tr>
<td>RB32GS</td>
<td>8</td>
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</table>

Sample – RBA16GS

Step 1
Screw the bar into the GS.

Step 2
Mark the location where the bar stops in the GS.

Step 3
Wind the bar out of the GS.

Step 4
Apply the Epcon™ C8 along the bar up to where the mark is.

Step 5
Screw the bar into the Grout Sleeve.

Step 6
Screw the bar out of the Grout Sleeve.
Installation Procedure

Installing Epcon™ C8 XTREM™ Filler Continued

Step 7
Redistribute the Epoxy along the bar and place access back in the Grout Sleeve thread

Step 8
Screw the bar back into the Grout Sleeve.

Step 9
Complete – Ready to Cure (24 Hours)

Notes
Installation Procedure

Installing ReidBar™ Grout Sleeve

Step 1
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.

Checklist for Step 1:
- 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

Step 2: Install ReidBar™ into Grout Sleeve
Screw the continuation ReidBar™ into the ReidBar™ Grout Sleeves, and tighten as required. It is recommended that the continuation ReidBar™ is tightened into the Grout Sleeve prior to setting the assembly in 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.

Checklist for Step 2:
- 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
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).

**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.

**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.

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.

**Checklist for Step 3:**
- Check if the set-up hardware is correctly placed and is firmly fixed to the formwork
Step 4: Install Grout Sleeves onto the installation hardware

Install the ReidBar™ Grout Sleeves 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 right after the screwed in part of 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 assembly.

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.

Checklist for Step 4:

- 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 is seeping 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.

Checklist for Step 5:

- 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
Step 6: Concrete Placement
Take a good care during concrete placement and vibrating to ensure that the Grout Sleeves are not displaced during the process.

Useful tips:
For accurate installation:
It is recommended to use ReidBar™ that are cut using band/abrasive saw, instead of those that are hydraulically cropped.

For onsite contractors/builders:
For the setting of Grout Sleeve starter bars, coordinate with the Precast Concrete Manufacturers and work based on their measurements and templates to ensure accuracy of starter bar locations.
# Installation Checklist

**ReidBar™ Grout Sleeve Installation Checklist**

*Print/photocopy this page for installation crew’s checklists:*

<table>
<thead>
<tr>
<th>Step</th>
<th>Task</th>
<th>Check (Yes/No)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1. Create a template</strong></td>
<td>Create templates as required and check if the marked &amp; drilled hole locations of the ReidBar™ Grout Sleeves and their continuation bars are accurate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Duplicate these templates and provide them to other parties as required</td>
<td></td>
</tr>
<tr>
<td><strong>Step 2. Install continuation bar on Grout Sleeve</strong></td>
<td>Check if the ReidBar™ has been installed correctly onto the Grout Sleeve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check if the ports of the ReidBar™ Grout Sleeves are facing the right direction</td>
<td></td>
</tr>
<tr>
<td><strong>Step 3. Install Grout Sleeve installation hardware to the formwork</strong></td>
<td>Check if the set-up hardware is correctly placed and is firmly fixed to the formwork</td>
<td></td>
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<tr>
<td><strong>Step 4. Install Grout Sleeves onto the installation hardware</strong></td>
<td>Check if the Grout Sleeves are stable, perpendicular to the formwork and are sufficiently supported</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check if the bottom of the Grout Sleeves are sufficiently sealed to stop concrete slurry ingress into the Grout Sleeves</td>
<td></td>
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<tr>
<td></td>
<td>Check if the protruding starter bars are straight and perpendicular to the formwork</td>
<td></td>
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<tr>
<td><strong>Step 5. Prepare and connect port tubes to the grout ports</strong></td>
<td>Prepare port tubes that are neither too long nor too short and connect them to the grout ports</td>
<td></td>
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<tr>
<td></td>
<td>Label the port tubes so that it is clear which are the inlet and outlet ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check if the grout ports are sufficiently sealed</td>
<td></td>
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ReidBar™ Grout Sleeve -
On Site Installation Process

Step 1
Starter Bars are checked and prepped.

Step 2
Foam compression tape is installed to dampen the panel.

Step 3
After checking the bar lengths vs the Grout Sleeve cavity depth, the panel is lowered over the starter bars.
ReidBar™ Grout Sleeve System

On Site Installation Process Continued

Step 4
After the panel is fully lowered onto the concrete base the panel is propped to secure.

Step 5
Mixing of Ramset Poziflo™ Grout for Dry packing of the joint cavity.
(Mix as per Ramset Poziflo™ recommendations on the bag)
ReidBar™ Grout Sleeve -

On Site Installation Process Continued

Step 6
Dry pack the joint cavity by hand (follow instruction on package recipe to achieve dry pack consistency), Set overnight before next step.

We advise:

The use of manual pump is suitable.
ReidBar™ Grout Sleeve -

On Site Installation Process Continued

Grout Sleeve Grouting Arrangement

Step 7
Flood the next day by pump (follow instruction on package on recipe to achieve flowable consistency). Manually pump the grout into the lower inlet hole of Grout Sleeve and continue to pump until the grout flows from the outlet hole. Once filled plug the holes with backing rod.

Step 8
Continue to grout by pump (follow instruction on package on recipe to achieve flowable consistency). Continue to fill sleeves and plug the holes with foam straight after leakage starts to occur. Ensure all hole have some leakage & are plugged.
Projects

ReidBar™ Grout Sleeve Project References

SugarTree Prima

Tenor Apartments

Queens Residences

UoA Building 906

Selwyn Heights Village

The projects and pictures illustrated herein are only possible through the following industry partners:


Precast Concrete Manufacturers: Concretec New Zealand, Nauhria Precast, Stresscrete, Wilco Precast, Wilson Precast.

### Related Products

#### ReidBar™ Grout Sleeve Set-Up hardware

<table>
<thead>
<tr>
<th>Part No.</th>
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<th>Thread dia.Ø</th>
<th>Rubber Plug OD</th>
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#### PF Rods

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#### Ramset™ PoziFlo™ Grout HS

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*Refer to the latest Reid™ Product Catalogue for other related products such as bar chairs, reinforcement accessories and other ReidBar™ Components.*