

Structural Connections
Reinforcing Bar Couplers

Leviat®
A CRH COMPANY

Moment Grout Couplers



Imagine. Model. Make.



We imagine, model and make engineered products and innovative construction solutions that help turn architectural visions into reality and enable our construction partners to build better, safer, stronger and faster.

Leviat is a world leader in connecting, fixing, lifting and anchoring technology.

From the build of new schools, hospitals, homes and infrastructure, to the repair and maintenance of heritage structures, our engineering skills are making a difference around the world.

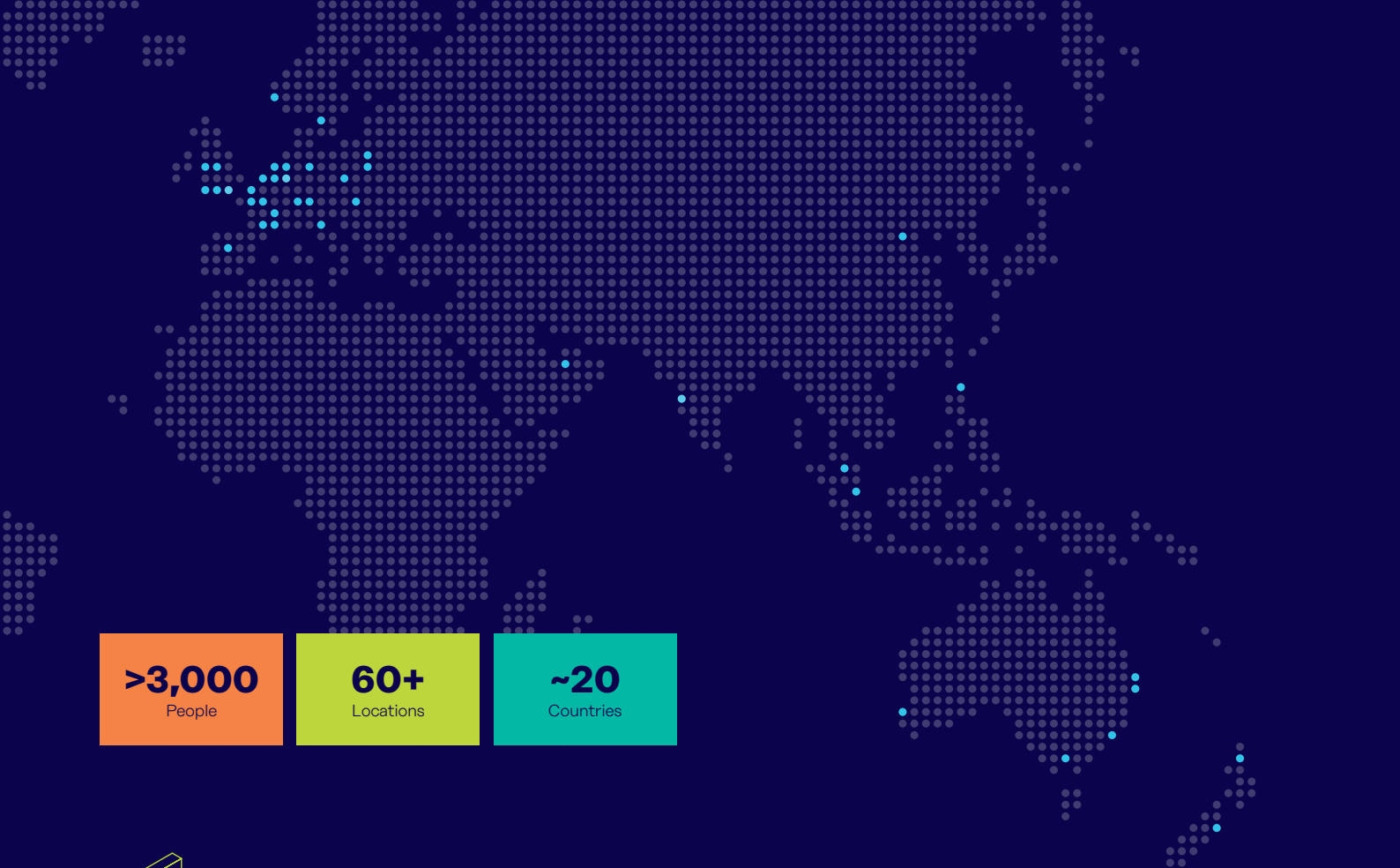
We provide technical design assistance at every stage of a project, from initial planning to installation and beyond.

Our technical support services range from simple product selection through to the development of a fully customised project-specific design solution.

Every promise we make locally, has the commitment and dedication of our global team behind it. We employ almost 3,000 people at 60 locations across North America, Europe and Asia-Pacific, providing an agile and responsive service worldwide.

Leviat, a CRH company, is part of the world's leading building materials business.

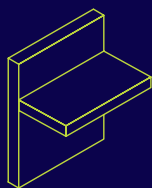




>3,000
People

60+
Locations

~20
Countries

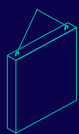


Structural Connections

Systems to form robust, efficient connections, and continuity of concrete reinforcement as necessary, between walls, slabs, columns, beams and balconies, providing structural integrity as well as enhanced thermal and acoustic performance.

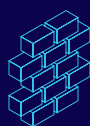
- Insulated balcony connectors
- Reinforcing bar couplers
- Concrete Connections
- Reinforcement continuity systems
- Punching shear reinforcement
- Shear load connectors
- Floor Joint Systems
- Precast / Reinforced Columns
- Infrastructure Products
- Precast Connections
- Acoustic dowels and bearings
- Prestress

Other areas of expertise:



Lifting & Bracing

Systems for the safe and efficient transportation, lifting and temporary bracing of cast concrete elements and tilt-up panels before permanent structural connections are made.



Façade Support & Restraint

Systems for the safe and thermally-efficient fixing of the external building envelope, including brick and natural stone, insulated sandwich panels, curtain walling and suspended concrete façades, and also the repair and strengthening of existing masonry installations.



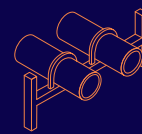
Anchoring & Fixing

Systems for fixing secondary fixtures to concrete, including anchor channels, bolts and inserts; also tension rod systems for roofs and canopies.



Formwork & Site Accessories

Non-structural accessories that complement our engineered solutions and help keep your construction environment operating safely and efficiently, including moulds for casting standard and special concrete elements and construction essentials such as reinforcing bar spacers.



Industrial Technology

Mounting channels, pipe clamps and other versatile framing systems that provide safe fixing in a wide range of industrial applications.

Leviat product ranges:

Ancon | Aschwanden | Connolly | Halfen | Helifix | Isedio | Meadow Burke | Modersohn | Moment | Plaka | Scaldex | Thermomass

Moment Grout Coupler

Specifically made for precast concrete connections.

The MOMENT Grout Coupler is used for joining together precast concrete elements. It consists of a sturdy one piece metal sleeve suitable for all construction applications, which is then filled with a high strength, flow-able, shrinkage equalized grout to provide a bond between the starter bar and the grout coupler sleeve. Different diameters, variants and thread systems are available to match the exact design conditions of the project. Each of which has a series of accessories to assist with the installation and make sure that no excessive grout leakage can occur.

- Robust one piece metal construction limits the number of interfaces that would require quality controls.
- Slender profile provides adequate tolerance for premium precasters whilst minimising the amount of grout required by the on-site assembly crew.

The on-site grouting of the columns can be achieved in two different ways:

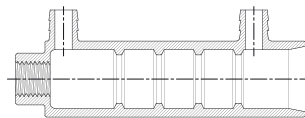
- Single component grouting to provide flexibility on the grout that is then used for filling the mortar bed underneath the column.
- Mass grouting of all the grout couplers and bed joint in one process and with the same grout, to reduce overall installation times and increase productivity.
- If used in combination with the precast shoe components in each corner, it can provide a cost effective hybrid column connection that does not require any temporary bracing. For more information about the hybrid system, please contact your local Leviat office.



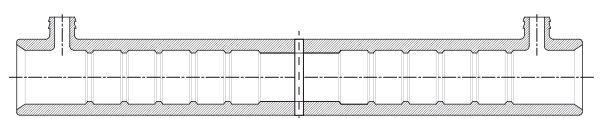
MOMENT Half Grout Coupler

MOMENT Full Grout Coupler

Cross section of MOMENT Half Grout Coupler



Cross section of MOMENT Full Grout Coupler



Moment Grout Coupler

Quality Performance

Efficiency

- Slender coupler body minimises grout use and helps with placement in areas of high steel congestion.

Quality

- Optimised alloy and grout strength to achieve bar-break system performance.

Geometry

- Chamfered opening to facilitate the installation of misaligned bars.

Installation

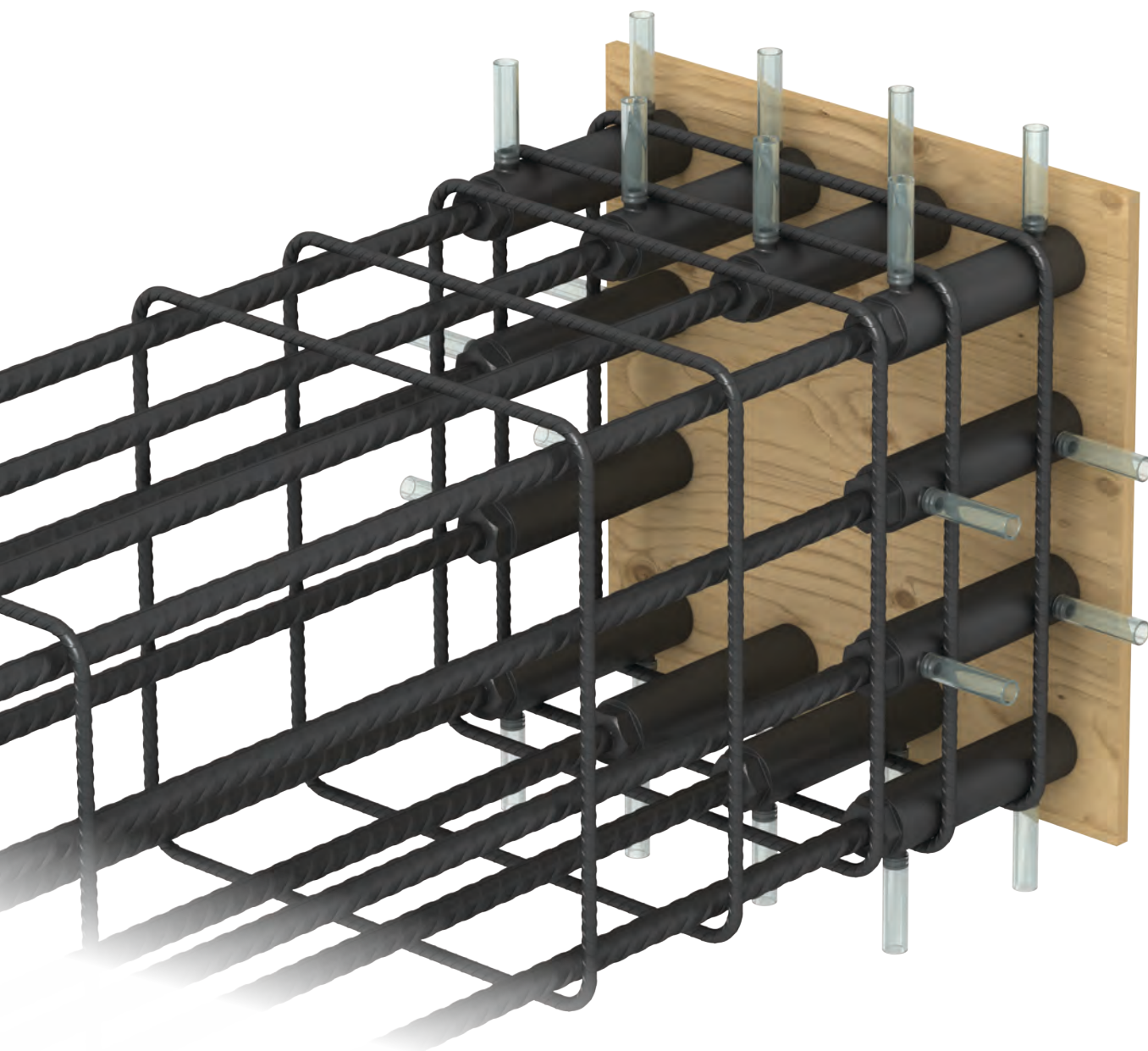
- Hexagon shaped threaded area to ensure secure fixing to the rebar for the half grout version.

Performance

- Tested to provide seismic resistance to ISO 15835.



Moment Grout Coupler



Advantages for the Design Engineer

- Full bar break system means that the design engineer does not need to make any special allowances for the placement or detailing of the grouted coupler.
- Tested to meet the seismic requirements of ISO15835 to give assurance on plastic hinge formations.
- Transition couplers are also available to step down the bar sizes between columns.

Advantages for the Assembly Crew on site

- Leviat's long standing experience in selling grouted couplers makes us the ideal partner to provide bespoke advice on the most efficient grouting process for you to use.
- Optimised grouting will not only reduce the manpower required on site but will also reduce the construction programme.
- A chamfered opening assists in the placement of rebars in case of small misalignments.

Advantages for the Precast Element Producer

- Full set of accessories to enable fast and secure connection of the grout coupler to the formwork.
- Hexagon profile at the threaded end of the half grout coupler helps to ensure that the bar can be easily and securely fixed to the coupler.
- Slender coupler body means that the grout coupler can still be easily installed in areas of heavy steel congestion.

Advantages for the Procurement Professional

- Leviat's broad range of specialist precast products means that all the necessary precast accessories can be acquired from a single source, significantly simplifying the logistics and paperwork.
- Alternative thread profiles for the half grout coupler are available making it possible to align the coupler with any Leviat threading machinery that is already on site.

Moment Half Grout Coupler

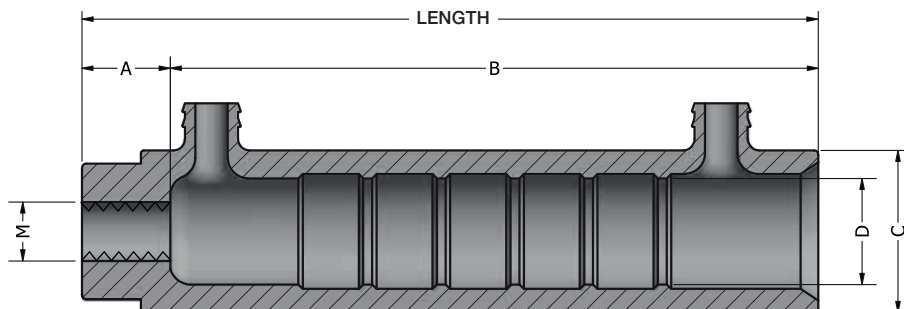


The MOMENT Half Grout Coupler is a splicing system primarily intended to be used to connect precast elements, but can also be used for insitu connections.

At one end, the coupler receives a threaded rebar, whereas the other end provides the flexibility of a grout system. It consists of a one piece design and the coupler is capable of resisting an equivalent bar stress of more than 700MPa.



When used in conjunction with MOMENT's proprietary grout, the system will be able to achieve bar break.



Applications

This coupler can be used for connecting precast elements either horizontally or vertically. The elements can consist of walls, columns, beams etc.

Benefits

- Grout cavity includes taper for easy installation.
- Hexagon shape feature for easy assembly onto rebar.
- Combines the use of the Ancon BT System as standard. Other thread profiles are available on request.



Dimensions and Availability

Product Code	Rebar	A (mm)	B (mm)	C (mm)	D (mm)	M	Length (mm)	Minimum Insertion (mm)
HGC 12	12	18	116	35	24	M14 x P2.0	134	96
HGC 16	16	20	148	40	26	M20 x P2.5	168	128
HGC 20	20	25	180	46	30	M24 x P3.0	205	160
HGC 25	24	30	220	55	35	M30 x P3.5	250	200
HGC 28	28	38	276	71	45	M33 x P3.5	314	256
HGC 32	32	38	276	71	45	M36 x P4.0	314	256
HGC 36	36	45	340	86	54	M42 x P4.5	385	320
HGC 40	40	45	340	86	54	M45 x P4.5	385	320

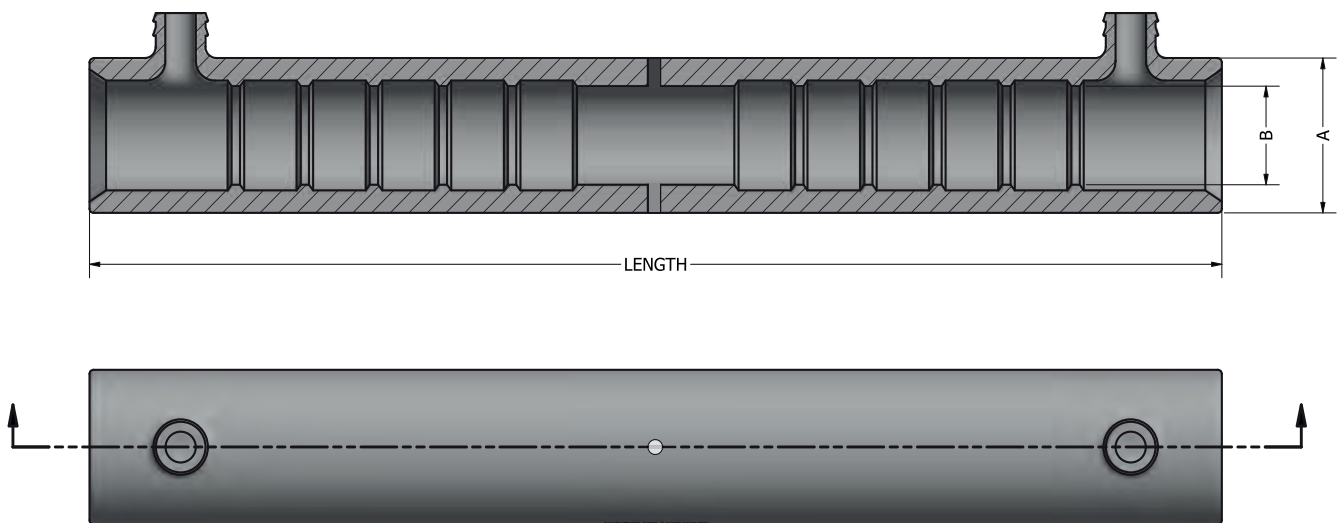
These dimensions are indicative and may be subject to change. Any variations will not affect the compliance to test requirements.

Moment Full Grout Coupler



Complementing the MOMENT Half Grout Coupler, the MOMENT Full Grout Coupler can be used either for precast or in-situ connections where additional tolerance is needed, or if the reinforcing bars cannot be threaded.

To ensure the correct engagement of the bars inside the coupler, the MOMENT Full Grout Coupler comes with a centre pin that acts as a bar stop. This pin can be removed if necessary for applications such as remedial replacement of corroded sections of rebar.



Dimensions and Availability

Product Code	Rebar	A (mm)	B (mm)	Length (mm)	Minimum Insertion (mm)
FGC 12	12	35	24	200	96
FGC 16	16	40	26	265	128
FGC 20	20	46	30	330	160
FGC 25	24	55	35	410	200
FGC 28/32	28/32	71	45	522	256
FGC 36/40	36/40	86	54	650	320

These dimensions are indicative and may be subject to change. Any variations will not affect the compliance to test requirements.

Accessories



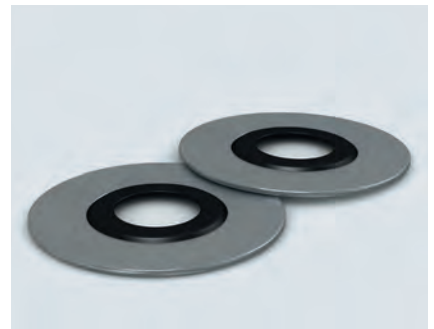
Position Plug (MGC PP)

Position plugs are used to secure MOMENT Full Grout Couplers and MOMENT Half Grout Couplers onto the formwork at the precast factory. This item is reusable and should be visually inspected before each use. This item is not supplied together with the grout coupler.



Spring (MGC SP)

The spring is used for both MOMENT Grout Coupler variations if the contractor opts for the individual grouting method. The purpose of the spring is to prevent grout egress on site. It can only be used once. This item is not supplied together with the grout coupler.



End Seal (MGC ES)

Used together with the spring, the end seal is used for both variations when the contractor opts for individual grouting method. The purpose of the end seal is to prevent grout egress on site. It can only be used once. This item is not supplied together with the grout coupler.



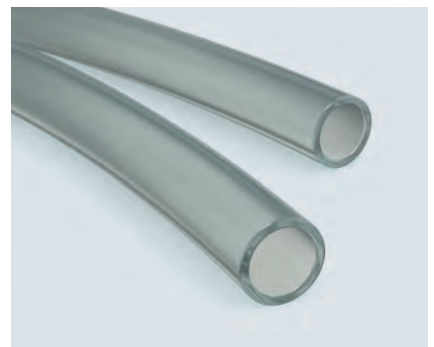
End Cap (MGC EC)

The end cap is specifically used for MOMENT Full Grout Coupler. This one-time use accessory will be supplied along with the MOMENT Full Grout Coupler. The end cap is designed to prevent concrete from entering the grout coupler during the casting phase at the precast factory.



Dust Cap (MGC DC)

Dust Cap is used in precast factory after demoulding to cover the end of the grout coupler and prevent dirt from entering before site installation. This single use item will be supplied along both MOMENT Full Grout Coupler and MOMENT Half Grout Coupler.



Clear Hose (MGC CH)

The clear hose with an internal diameter of 19mm is used to create a grouting channel from the outside of the precast element to the grout coupler. This will be done in the precast factory. The clear hose can only be used once together with both variants of the MOMENT Grout Coupler. This item is not supplied together with the grout coupler.



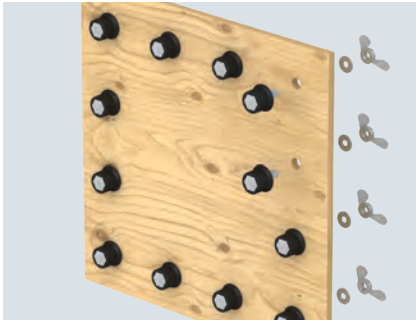
Hose Cap (MGC HC)

Hose cap is a stopper for the clear hose that is used to prevent grout from overflowing. This single-use item will be used on site for both variants of the MOMENT Grout Coupler. This item is not supplied together with the grout coupler.

Moment Grout Coupler

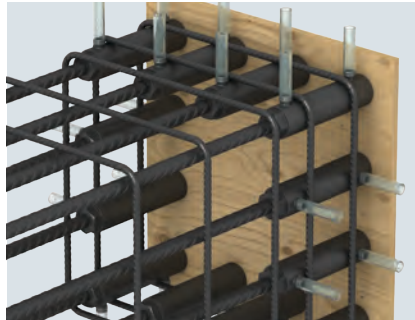
Installation Instruction

In the Precast Yard



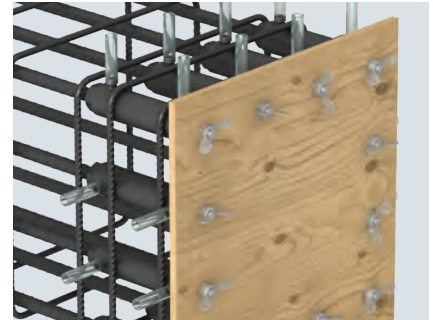
Step 1

Install the position plugs onto the formwork.



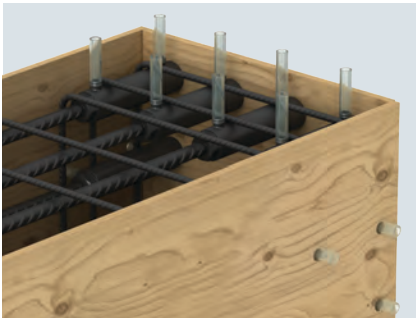
Step 2

Install the grout hoses on the MOMENT Grout Couplers. Then slide onto the position plug. Screw in the wing nut. For MOMENT Full Grout Coupler, additional accessories are required (end cap).



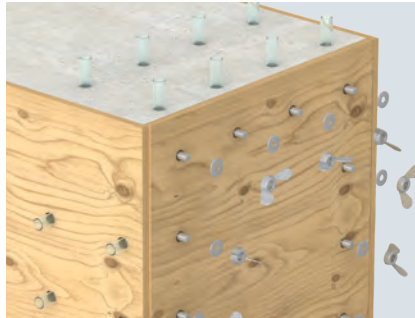
Step 3

Tighten the wing nuts.



Step 4

Attach the rest of the formwork. (Additional grouting hoses may be necessary for mass grouting method).



Step 5

After curing, remove the wing nuts and washers.



Step 6

Remove the side formwork.



Step 7

Remove the position plugs. This part is reusable.

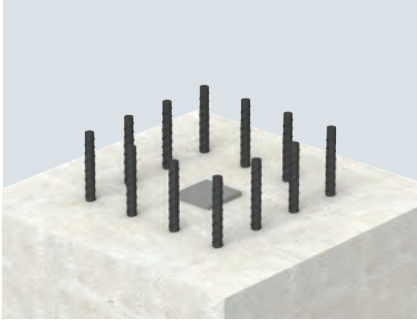


Step 8

Install the dust caps.

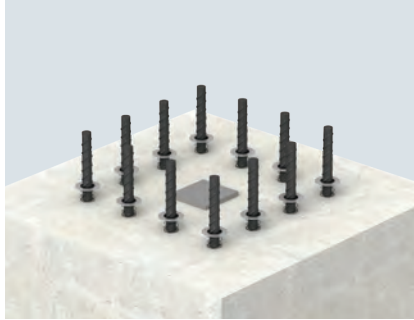
Installation Instruction

Option A: Individual grouting on the construction site



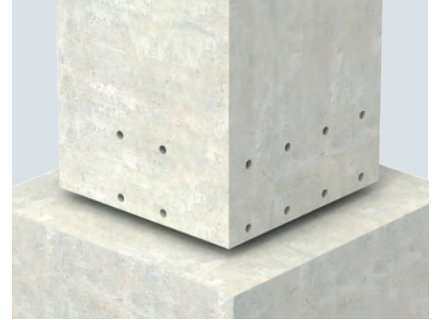
Step 9A

Cast starter bars into the foundation using a suitable template to ensure the location and verticality of the bars.



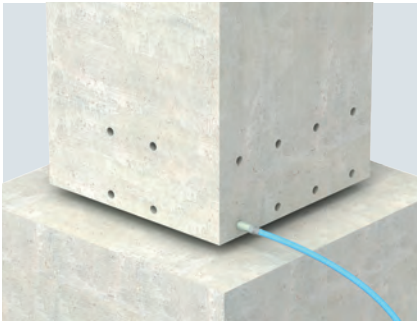
Step 10A

For individual coupler grouting method, insert the springs and end seals.



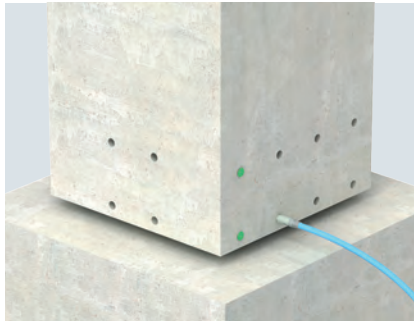
Step 11A

Remove the dust caps. Lower the column onto the starter bars, leaving a small gap to the foundation. Apply any temporary braces as necessary.



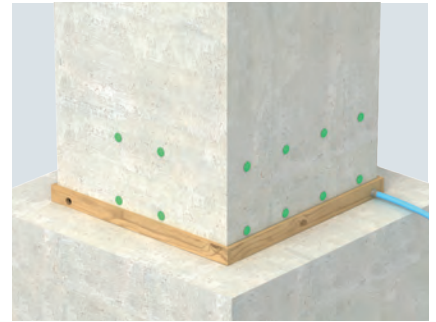
Step 12A

Pump the grout into the lower grouting hole of the coupler.



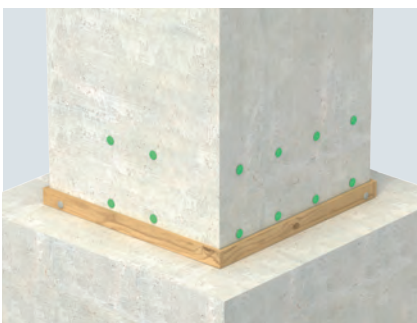
Step 13A

Once the grout overflows from the upper grouting hole of the coupler, close the upper and lower hole using a hose cap. Repeat steps 12 and 13 for the remaining couplers.



Step 14A

Once the grout is cured, attach the base formwork and start pumping the grout into the base.



Step 15A

Once the grout overflows from the formwork hole, close both holes using a suitable method.

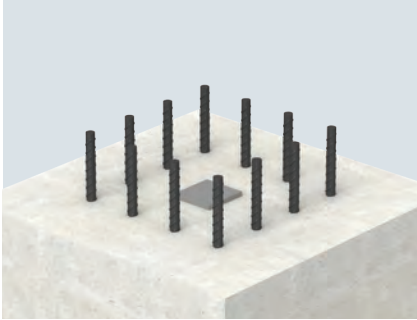


Step 16A

Once the grout has achieved sufficient strength, the formwork and braces can be removed.

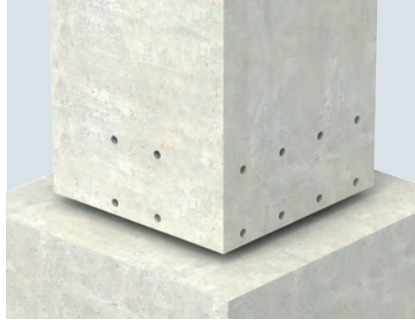
Installation Instruction

Option B: Mass grouting on the construction site



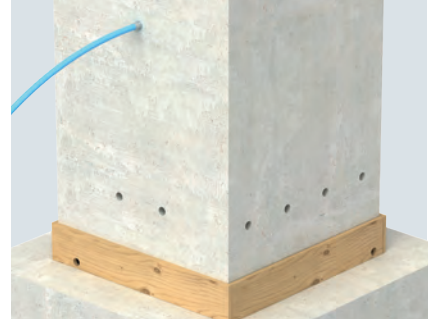
Step 9B

Cast the starter bars into the foundation using a suitable template to ensure the location and verticality of the bars.



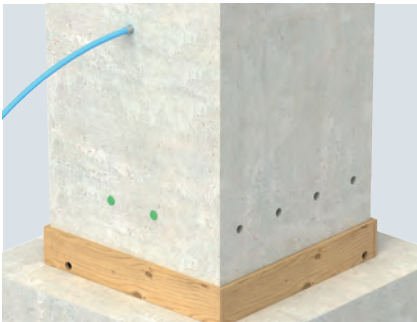
Step 10B

Remove the dust caps. Lower the column onto the starter bars, leaving a small gap to the foundation. Apply any temporary braces as necessary.



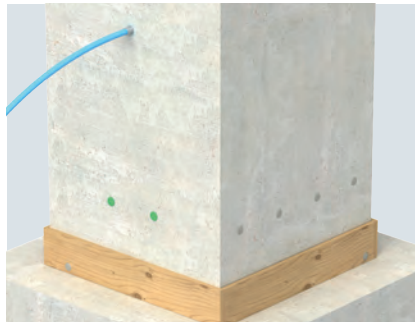
Step 11B

Attach the base formwork to cover the bottom grouting holes and start pumping the grout into the grouting hose. Additional venting holes in the corner of the grout pad may be required.



Step 12B

Once the grout overflows from the upper grouting holes of the couplers, close the hole using the hose cap.



Step 13B

Continue pumping until the grout overflows from the opposite side grouting hose. Then, close the grouting hose holes using a suitable method.



Step 14B

Once the grout has achieved sufficient strength, the formwork and braces can be removed.



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Innovative engineered products
and construction solutions that
allow the industry to build safer,
stronger and faster.



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