INSPIRING INNOVATORS

HALFEN MOMENT GROUP HAS BEEN IN THE FOREFRONT OF BUILDING SINCE 1991, SUPPLYING MOMENT COUPLERS TO CONSTRUCTION SITES AS AN ALTERNATIVE TO TRADITIONAL SPLICING. PROJECTS SUCH AS THE ICONIC PETRONAS TWIN TOWERS WERE ONE OF THE COMPANY’S FIRST PROJECTS. HEADQUARTERED IN MALAYSIA AND WITH SUBSIDIARIES IN SINGAPORE, PHILIPPINES AND INDIA, WE OPERATE IN BOTH MATURED AS WELL AS EMERGING MARKETS.

Since 2012, the Halfen Moment Group has been part of CRH plc., a Global Fortune 500 company. With the access to a larger pool of resources and support from sister companies Halfen, Ancon and Plaka, we have positioned ourselves as an innovative solution provider for the building structure with an established network in Asia and Middle East.

SHAPING THE FUTURE OF CONSTRUCTIONS

We are the game changers. We believe we should not wait but drive the change. We believe in providing local solutions for local problems. Partnering with our customers, we strive to find the most economical and productive technologies through advanced technical advice, innovative design and most simplified interactions.

Research and development have always been playing a key role at Halfen Moment, we want to play a part in shaping the future of the industry, producing the next must-have building products. Halfen Moment product innovations have been and continue to be revolutionary for the construction industry. Our product range is used for infrastructure, high rise and low rise residential and commercial construction.

MILESTONES

1991
Incorporation of MOMENT


Expansion of MOMENT to Singapore
Expansion of MOMENT to Philippines
MOMENT goes Middle East
First patent of MOMENT BARBREAK coupler
Sole distributorship for FORTA reinforcement fibre in Malaysia & Singapore
Expansion of MOMENT to India
A RELIABLE PARTNER

Our relationship with our clients was developed for the long run with a combination of commitment, loyalty, trust and the capabilities of our team. Since its establishment, Halfen Moment has supplied products to thousands of sites across more than 20 countries. We know that the right technology and good service increases our customer’s productivity, and this is how we build a long-term relationship with our customers, a relationship that will benefit both parties in the long run.

QUALITY

Providing quality assurance & safe products through excellent service, is one of the top principles of Halfen Moment Group. Being part of CRH plc., we strive to adhere to the most stringent group quality policies. Our in house team is consumed daily with quality checks to ensure the highest quality is offered. Our quality management system is accorded by the ISO 9001 : 2015 accreditation.

OUTSTANDING SUPPORT

Halfen Moment Group offers several additional services to you from technical support by our qualified engineers, static calculation to product installation performed by specially trained staff.
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WHY COUPLERS?

Couplers or mechanical splices have been used as a method of splicing reinforcing bars for many decades. The reasons for using them are many and varied, but it is often localised congestion that is the biggest driver.

The traditional method that it replaces is that of lap splicing the reinforcing bar. However, the lap splice relies on the concrete around it to transfer the load.

Poor compaction of the concrete will then compromise the load carrying capacity and this has led to a number of "best practice" rules including:

- Do not use lap splices at areas of high moment
- Always stagger lap splices

However, the use of a mechanical splice is superior in its load transfer to lapped splicing as it creates a direct mechanical connection between the 2 bars that is similar in its behaviour to a continuous reinforcing bar.

This means that the rules put in place for lap splicing are not applicable to mechanical splices. This then frees up the contractor to use mechanical splices in areas that will improve buildability and programme times such as beam to column connections in jump-form core walls.

It also leads to reduced steel volumes that reduce the weight of the structure and lessens the amount of embodied CO₂.
COUPLER TESTING

To ensure fitness for purpose there are a number of tests that should be carried out and a wide variety of international standards that can be tested against.

The tests that are generally covered are for strength, slip, high stress/low cycle (seismic), medium stress/medium cycle and low stress/high cycle (vibration). However, impact toughness is an important part of seismic and blast resistant solutions, so Halfen Moment goes beyond the standards to ensure absolute suitability for applications by conducting Charpy impact tests on all its products.

Each engineer, should take care to ensure that the specification on the project is written in order to ensure that the correct coupler is selected.

The most widely accepted international standards are:

I)  ISO 15835
II)  AC133 (which defines test regimes for ACI318 compliance)

However, there are a number of other national standards that stipulate mechanical splice requirements, such as:

- IS 16172-2014
- BS 8110-1997
- NZS 3101-2006
- NF 35-020

Halfen Moment couplers are manufactured in accordance with the highest standards of quality and conformance to ensure their suitability regardless of the in service conditions.
MOMENT JOINTEC
The JoinTec range is our most comprehensive system with solutions for every possible application. Its main advantage over a taper thread system is that it does not require a torque wrench, making installation much simpler.

Made from a Quench and Tempered machined steel, it not only provides sufficient strength to resist an equivalent bar stress of more than 700MPa, but also provides excellent impact toughness to resist blast and earthquake loads.

We have carried out tests to comply with static, seismic and fatigue loads, but careful selection of reinforcing bar should always be carried out to ensure that the test are valid.

These tests have been carried out in many different countries and include demonstration of compliances shown in ISO 15835; IS 16172-2014, AC133, EN1992-1 and BS8110 amongst others.

The process to create the bar end is as follows:
- Saw cut the end of the bar if the bar is uneven
- Cold forged upset end using high pressure cylinders
- Cut a standard metric thread on the end of the reinforcing bar

MOMENT STANDARD JT

Dimensions and Availability

<table>
<thead>
<tr>
<th>Item</th>
<th>Product Code</th>
<th>Rebar</th>
<th>Length</th>
<th>OD*</th>
<th>Thread</th>
</tr>
</thead>
<tbody>
<tr>
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<td>JT 12</td>
<td>12 / 13</td>
<td>35</td>
<td>Ø24</td>
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<tr>
<td>5</td>
<td>JT 25</td>
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<tr>
<td>6</td>
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<tr>
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<td>113</td>
<td>Ø80</td>
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</tbody>
</table>

*Dimensions are minimum and might vary from time to time based on availability of raw material.
The thread on the end of the rebar can be created as Type A, B or C.

Type A has a single length thread on each of the bars to be coupled. This is ideal for starter bars or short lengths of straight bars where rotation of the second bar is possible.

Type B has a double thread on one of the bars to be coupled. This facilitates the installation of the system by allowing a coupler to be screwed fully on to one of the bars. When the second bar is ready for coupling, the coupler can now be rotated off one bar and on to the other. However, to ensure a tight connection, an additional part turn will be necessary. Therefore, this system is ideal for longer, straight, large diameter bars being installed on site.

Type C has an extended thread on one of the bars to accommodate a coupler and a lock nut. The lock nut is there to eliminate the need for a part turn of the bar. It is ideal for L Bars and prefabricated bar cages where the rotation of a bar is impossible.

**Moment Reducer JT**

**Dimensions and Availability**

<table>
<thead>
<tr>
<th>Item</th>
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<th>Rebar</th>
<th>Length</th>
<th>OD</th>
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<th>B</th>
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</tr>
<tr>
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</table>

In situations where 2 different sized bars are being connected, the Reducer JT will enable the connection to be done in a timely manner. The Reducer JT range uses the same threading principles as the JT Standard, but in this case, extended threads are only possible on the smaller diameter bar.

As a default, the coupler is normally pre-assembled on to the larger bar.
MOMENT TERMINATOR JT

**Dimensions and Availability**

<table>
<thead>
<tr>
<th>Item</th>
<th>Product Code</th>
<th>Rebar</th>
<th>Length</th>
<th>OD</th>
<th>Thread</th>
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<td>Ø100</td>
<td>M53 X P4.0</td>
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</table>

Whether you are trying to tie pile cages in to capping beams or curtail reinforcing bars at the end of beams, heavy congestion or other constraints can often mean that bending of bars is impossible, or at very least, incredibly time consuming. Therefore, the Terminator JT can be used to fully develop the bar immediately at the surface of the head (providing concrete cone capacity is not critical).

MOMENT WELDABLE JT

**Dimensions and Availability**

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<th>Rebar</th>
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<td>9</td>
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</table>

*Sizes are minimum dimension and subject to variation. Other sizes available upon request.

The Weldable JT coupler enables a connection between steel and concrete when the structure is composite in nature. A full weld specification is available on request from Halfen Moment’s engineering team if necessary.
**MOMENT RT**

**Dimensions and Availability**

<table>
<thead>
<tr>
<th>Item</th>
<th>Product Code</th>
<th>Rebar</th>
<th>Length</th>
<th>OD</th>
<th>Thread</th>
</tr>
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<td>Ø30</td>
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<td>Ø38</td>
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*The dimensions can change from time to time.*

The RT is an alternative threading technology where the thread is rolled as opposed to being cut. It can provide exceptional performance in high cycle elastic fatigue applications, whilst maintaining values in excess of the design strengths of the bar.

The Moment RT system, uses the RT coupler and a rolled parallel thread. It is a full strength system, capable of exceeding the nominal ultimate characteristic strength of the rebar.

**MOMENT RT PLUS**

The Moment RT Plus system, uses the RT coupler and a radially pressed & rolled parallel thread. It is a bar break system, capable of exceeding the actual ultimate characteristic strength of the rebar.

The bar is radially pressed prior to skimming and rolling to provide a bar break system with excellent fatigue properties that is capable of resisting an equivalent bar stress of more than 700 MPa and the coupler material provides excellent impact toughness.

The process to create the bar end for RT is as follows:
- Saw cut the end of the bar if the bar is uneven
- Skim the ribs to cut away the excess material and leave a smooth surface
- Roll a metric thread on the end of the reinforcing bar

The process to create the bar end for RT Plus is as follows:
- Saw cut the end of the bar if the bar is uneven
- **Cold forge the bar by radially pressing the bar to flatten the ribs**
- Skim the ribs to cut away the excess material and leave a smooth surface
- Roll a metric thread on the end of the reinforcing bar
The Moment MBC range of couplers provides a cost effective method of joining reinforcing bars, particularly when the fixed bar is already in place and there is insufficient space for a hydraulic swaging press. They are easy to install and achieve failure loads higher than 108% of the characteristic yield strength of grade 500 reinforcing bar. Neither bar end preparation to form threads, nor bar rotation are required. Moment MBC couplers can also be used to join imperial or metric, plain, round or deformed reinforcing bars, making it ideal for alteration or refurbishment projects.

The bar ends are supported within the coupler by reversed teeth inner wall, and as the lockshear bolts are tightened, the conical ends embed themselves into the bar. As this happens the reversed teeth bite into the bar. The lockshear bolts of couplers up to and including the 20mm bar can be tightened using a wrench. For larger couplers a nut runner is recommended. In all cases heavy duty sockets should be used.

When the pre-determined tightening torque for the bolts is reached, the heads shear off leaving the top of the installed bolt slightly proud of the coupler. This provides an instant visual check of correct installation.

Note: Nut runner (available upon request) is strongly recommended to tighten the bolts for higher precision and faster installation. Impact tools must not be used to tighten lockshear bolts.
MOMENT GROUT COUPLER

MOMENT HALF GROUT

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 Moment JT threaded system.
- RT and RT Plus system is also available on request.

The Moment Half Grout Coupler is a mechanical splicing system intended to be used to connect precast elements.

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 100 MPa grout, the system will be able to achieve bar break.

Dimensions and Availability

<table>
<thead>
<tr>
<th>Item</th>
<th>Product Code</th>
<th>Rebar</th>
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<th>B</th>
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<td>HGCJT 28</td>
<td>28 / 32</td>
<td>38</td>
<td>276</td>
<td>71</td>
<td>61</td>
<td>M33 X P3.5 / M36 X P4.0</td>
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<td>HGCJT 36</td>
<td>36 / 40</td>
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<td>86</td>
<td>73</td>
<td>M42 X P4.5 / M45 X P4.5</td>
<td>385</td>
<td>320</td>
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</tbody>
</table>
Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2015

This is to certify that
Halfen Moment Sdn Bhd
No. 28, Jalan Anggerik Mokara 31/59,
Kota Kemuning, Seksyen 31,
Shah Alam, Selangor
40460
Malaysia

Holds Certificate Number  FS 704304

and operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the following scope:

Design & Development, Production, Marketing and Trading Construction Accessories
Including Reinforcement Continuity System, Connecting/ Fixing, and Post Tensioning.

For and on behalf of BSI:
Poon Cheong Yuen, Managing Director

Originally Registered Date: 2009-03-10
Latest Revision Date: 2019-03-19
Effective Date: 2018-12-19
Expiry Date: 2021-03-09

Quality Management System CERTIFIED with ISO 9001:2015

www.halfen-moment.com
**PRODUCT CERTIFICATE OF CONFORMITY**

This certificate hereby certifies that the product as detailed in this certificate has satisfactorily complied with the requirements of the appropriate Standard(s) and the Certification Scheme Requirement of CREAM Certification Services (CCS).

**Name and Address of Certificate Holder**

Halfen Moment Sdn Bhd  
No. 29, Jalan Anggerik Mokfara 31/58,  
Kota Kuning, Sekayen 31,  
49450 Shah Alam

**Scope of Certification**

<table>
<thead>
<tr>
<th>Particulars of product</th>
<th>Product Standard(s)</th>
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<tbody>
<tr>
<td>Reinforcement Couplers for Mechanical Splices of Bars</td>
<td>ISO 15835-1:2009</td>
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**Product Descriptions**

Moment® Jointec Coupler  
*(For details please refer to the Schedule on the back page)*

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Country of Origin</th>
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<td>MALAYSIA</td>
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**Name and Address of Manufacturer**

<table>
<thead>
<tr>
<th>Certification Number</th>
<th>Date of initial Certification</th>
<th>Date of Renewal</th>
<th>Valid Until</th>
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<td>13 February 2019</td>
<td>-</td>
<td>12 February 2021</td>
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</table>

This certificate is awarded on the basis of an assessment against the standard(s) for conformity which includes the manufacturer’s production control system, production facilities, product conformity to standard coupled with assessment of the supporting quality management system. This Certificate remains the property of CCS and shall be returned upon request. The use of this certificate is subject to the terms and conditions of the Certification Agreement.

**Certificate is approved and issued by**

Dato’ Ir Rohazi bin Mohd Jusoh  
Chief Executive Officer

**CREAM CERTIFICATION**

*(Malaysian Certification Body that focus on quality certification for construction and structural integrity)*
HALFEN MOMENT
A CRH COMPANY

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www.halfen-moment.com

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Whilst every care has been exercised in the preparation of this document to ensure that any advice, recommendations or information is accurate, no liability or responsibility of any kind is accepted in respect of Halfen Moment Group.

With a policy of continuous product development Halfen Moment Group reserves the right to modify product design and specification without due notice.