

Leviat®

Isedio ArmourJoint Floor Jointing Solutions





We are one team. We are Leviat.

Leviat is the new name of CRH's construction accessories companies worldwide.

Under the Leviat brand, we have united the expertise, skills and resources of Ancon and its sister companies to create a world leader in fixing, connecting and anchoring technology.

The products you know and trust will remain an integral part of Leviat's comprehensive brand and product portfolio. As Leviat, we can offer you an extended range of specialist products and services, greater technical expertise, a larger and more agile supply chain and better, faster innovation.

By bringing together CRH's construction accessories family as one global organisation, we are better equipped to meet the needs of our customers, and the demands of construction projects, of any scale, anywhere in the world.

This is an exciting change. Join us on our journey.

Read more about Leviat at Leviat.com



Our product brands include:







HELIFIX

GISEDIO PLAKA



60 locations

sales in countries

3000 people worldwide

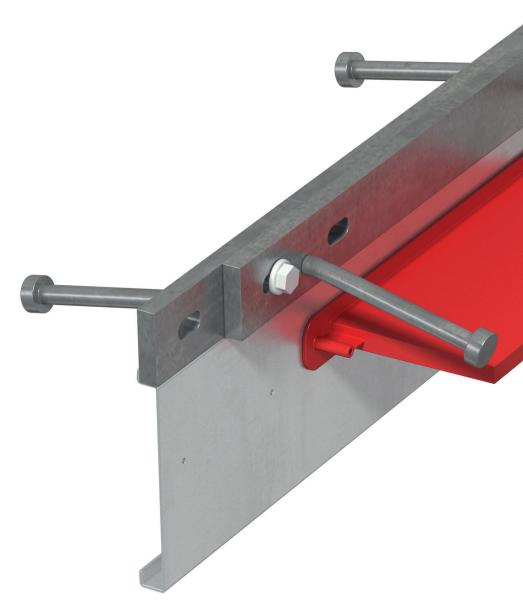
Isedio ArmourJoint is a leave-in-place formwork, load transfer and edge protection joint system suitable for heavy duty industrial concrete floors.

The joint system comprises two top strips, a divider plate, load transfer plate dowels and sleeves. The divider plate height fits the slab depth and, to ensure the plate dowel is always located at the mid-height of the slab, is manufactured to order.

The joint is designed such that, once cast, the two slab panels either side of the joint begin to shrink independently. One panel includes the dowel sleeve and one of the top strips. The other top strip, the divider plate and the dowel are included in the other part of the slab. The dowel bridges the joint and is embedded in both slab panels.

Formwork for casting a concrete slab is achieved by the vertical divider plates, which supports the top strip edge protection and load transfer plate dowels.

Slab arris protection is provided by way of cold drawn steel top strips with shear studs that anchor the top strips in the concrete.







Easy Installation



Based on TR34.4



Load Transfer Through Plate Dowels









Safe Installation

Minimise Joint Maintenance Costs



Material Specification

Component	Material
Top Strips	Cold drawn steel to BS EN 10277-2:2008 (can be supplied in stainless steel or hot-dip galvanised)
Hot-dip Galvanised	55μm – AS/NZS 4680:2006
Frangible Fastener	Nylon
Load Transfer Plate Dowel	6mm, 8mm & 12mm - AS/NZS 1594-Grade 350 (can be supplied in stainless steel or hot-dip galvanised)
Sleeve	6mm - ABS 8mm & 12mm - PP
Lateral Movement Allowance	20mm in each direction

Dimensions

Description	Dimension & Tolerance
Joint Length	3000mm, +/-2.0mm
Straightness	+/-1mm in 1000mm
General Dimensional Tolerance	Dimensions < 12mm +/- 0.5mm Dimensions > 12mm +/- 2.0mm

ArmourJoint Adjustable

ArmourJoint Adjustable utilises an adjustable divider plate to suit different slab heights.

The lower divider plate is attached to the upper divider plate using a bespoke fixing that requires no tools for adjustment.

This innovation is protected by a patent.

The adjustable divider plate enables contractors to keep one system size on site to suit various slab heights.

Contact the Leviat technical team for more information.

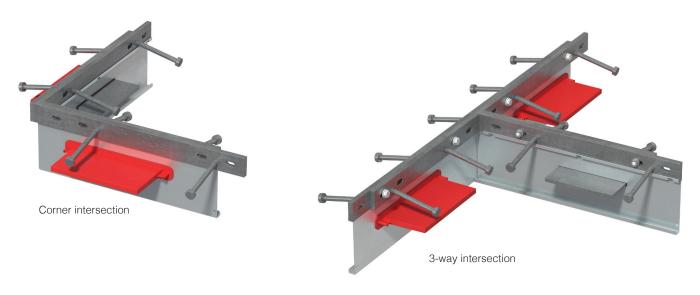
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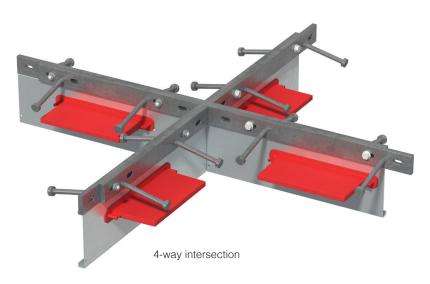


Isedio Accessories

Prefabricated Intersections

Corner, 3-way and 4-way intersections are available to simplify installation. These components will be manufactured with the same height and plate dowel specifications to suit the straight ArmourJoint and ArmourJoint Adjustable sections.





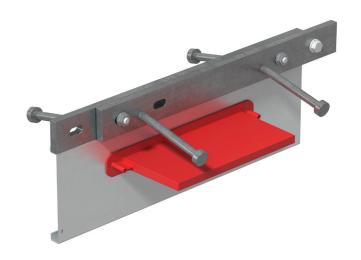
Installation Jacks

Installation Jacks are reusable items that facilitate speedy and accurate installation of ArmourJoint. Installation Jacks eliminate any risk associated with the conventional method of pinning and welding, especially the cracking risk due to the pins restraint against the joint opening.

Load Transfer Capacities

The use of Isedio ArmourJoint ensures that shear loads are safely transferred across the joint through dowels. We recommend referring to TR34 – Fourth Edition – Concrete Industrial Ground Floors to determine the dowel capacity.

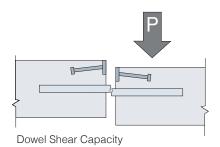
Section 6.5 of TR34 provides guidance on the calculation of dowel capacities for the following failure modes.



Dowel Shear Capacity

The shear capacities for the plate dowels provided in the table below have been calculated using equation 18 of TR34.

Dowel Type	Thickness (t) (mm)	Finish	Shear Area (0.9xA) (mm²)	Capacity (P _{sh plate}) (kN)		
150 x 150 x 6	6	Black/HDG	810	150.0		
150 x 170 x 8	8	Black/HDG	1080	200.0		
150 x 150 x 12	12	Black/HDG	1620	300.1		

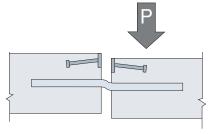


In most situations, at the point of ultimate load, the concrete would typically fail before the dowel.

Dowel Bearing/Bending Capacity

Bearing/Bending is a combined failure mode that checks the bending capacity of the dowel as well as the bearing capacity of the surrounding concrete. Equation 19 of TR34 defines the bearing/bending capacity of a dowel.

Please find the dowel bearing/bending capacities for different conditions in the combined capacity tables on page 9. For any other configurations, please contact Leviat.

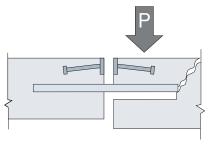


Dowel Bearing/Bending Capacity

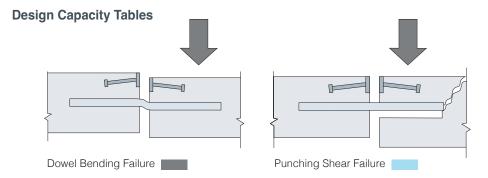
Punching Shear (Bursting Forces)

Section 6.5.3 of TR34 recommends calculating the bursting load of the concrete by adapting the EC2 approach for punching failure using an effective depth of 0.75 times the depth between the dowel and the surface of the concrete slab.

Please find the punching shear capacities for different conditions in the combined capacity tables on page 9.



Punching Shear (Bursting Forces)



Shear capacity of Isedio ArmourJoint in 40 MPa concrete with a dowel spacing of 430mm (kN/m)

Dowel Type	Joint Opening	Slab Depth (mm)										
	mm	150	160	170	180	190	200	210	220	250	300	350
150 x 150 x 6	10	48.0	53.2	58.8	64.6	70.7	75.1	78.8	82.5	93.8	112.4	131.4
150 x 150 x 6	20	48.0	53.2	58.8	64.6	70.7	75.1	78.8	82.6	84.2	84.2	84.2
150 x 170 x 8	20	48.2	53.5	59.1	65.0	71.1	76.1	79.9	83.6	94.9	113.7	132.3
150 x 170 x 8	30	46.6	51.9	57.4	57.4	69.1	74.0	77.8	81.5	92.7	102.3	102.3
150 x 150 x 12	20	44.8	50.0	55.4	61.0	67.0	72.8	76.6	80.3	91.6	110.2	128.8
150 x 150 x 12	30	44.6	49.7	55.1	60.8	66.7	72.5	76.3	80.0	91.2	109.8	128.4

Shear capacity of Isedio ArmourJoint in 40 MPa concrete with a dowel spacing of 500mm (kN/m)

Dowel Type	Joint Opening	Slab Depth (mm)										
	mm	150	160	170	180	190	200	210	220	250	300	350
150 x 150 x 6	10	41.2	45.8	50.5	55.6	60.8	66.2	71.9	77.8	93.8	112.4	113.2
150 x 150 x 6	20	41.2	45.8	50.5	55.6	60.8	66.2	71.9	72.4	72.4	72.4	72.4
150 x 170 x 8	20	41.4	46.0	50.9	55.9	61.2	66.6	72.4	78.3	94.9	113.7	118.8
150 x 170 x 8	30	40.1	44.6	49.3	54.3	59.4	64.8	70.4	76.3	88.0	88.0	88.0
150 x 150 x 12	20	38.6	43.0	47.7	52.5	57.6	62.9	68.5	74.2	91.6	110.2	128.8
150 x 150 x 12	30	38.4	42.8	47.4	52.3	57.4	62.7	68.2	73.9	91.2	109.8	128.4

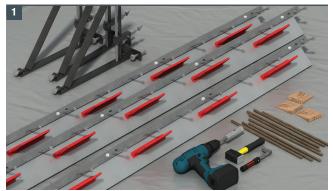
Shear capacity of Isedio ArmourJoint in 40 MPa concrete with a dowel spacing of 600mm (kN/m)

Dowel Type	Joint Opening	Slab Depth (mm)										
	mm	150	160	170	180	190	200	210	220	250	300	350
150 x 150 x 6	10	34.3	38.1	42.1	46.3	50.7	55.2	60.0	64.8	80.7	94.4	94.4
150 x 150 x 6	20	34.3	38.1	42.1	46.3	50.7	55.2	60.0	60.3	60.3	60.3	60.3
150 x 170 x 8	20	34.5	38.4	42.4	46.6	51.0	55.5	60.3	65.2	81.2	99.0	99.0
150 x 170 x 8	30	33.4	37.2	41.1	45.2	49.5	54.0	58.7	63.5	73.3	73.3	73.3
150 x 150 x 12	20	32.1	35.8	39.7	43.8	48.0	52.5	57.1	61.9	77.4	106.9	128.8
150 x 150 x 12	30	32.0	35.6	39.5	43.6	47.8	52.2	56.8	61.9	77.1	106.5	128.4

Note: For any other configurations and for Isedio ArmourJoint Adjustable capacities, please contact the Leviat technical team on 1300 304 320 or email technical.au@leviat.com



Installation



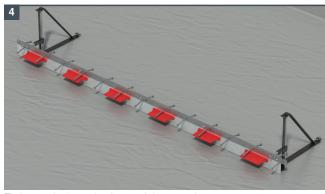
Set up the site. Laser dumpy level set up, finished floor level datum taken, membrane laid, hand tools avaliable.



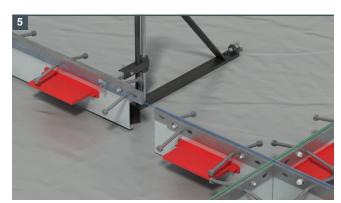
Measure the distances to the walls and edges. Set up the string line following the joint location.



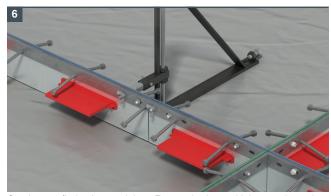
If required, place the intersection (4-way, tee or corner).



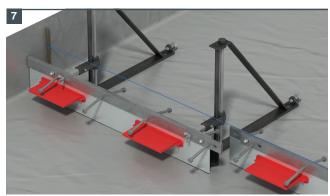
Fit ArmourJacks to the ArmourJoint top strips.



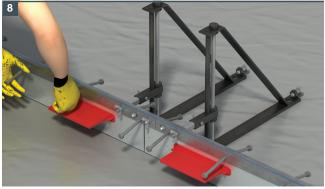
Position the Armour Joints (with the jacks fitted) and attach them to the intersection.



Continue to fit the Armour Joints. Ensure the lapped joints are butted end to end tightly. Fit the plastic bolt and wing nut at the lapped joint.



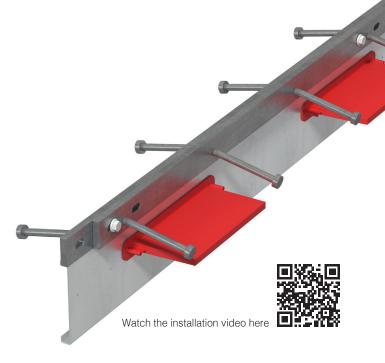
Measure final distance and cut ArmourJoint to suit, allow space for moithene between end joint and wall.

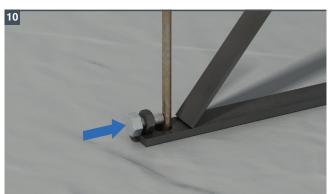


Manually position ArmourJoints in line with string lines.



Pin the ArmourJacks into place and drive the pins behind the ArmourJoint in between the jacks.

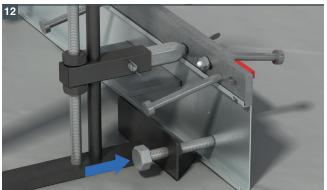




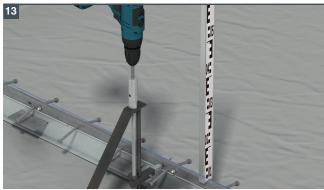
Tighten the bolts against the pin to secure the jack.



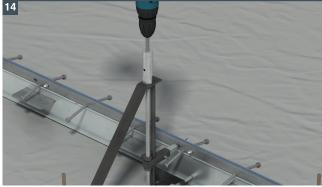
Fit the wooden wedges behind the pin to lock the joint in place.



Tighten the bolts against divider plate to adjust the alignment.



Check the height and adjust it using the screw on the jack.



Final visual inspection, adjust the position and height of the joint if required.



Pour the concrete while checking the height and direction.

Isedio Product Range

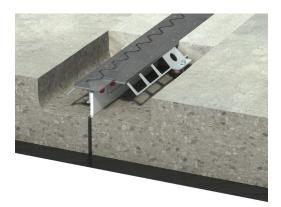
ShieldJoint®

ShieldJoint® is an innovative, leave-in-place joint system designed specifically to meet the demanding needs of today's industrial concrete floors. ShieldJoint® is a zero impact, sealant-free joint system.



ShieldJoint Arris Repair

ShieldJoint Arris Repair is specifically designed for the repair of construction joints where the concrete either side of the joint has become damaged through traffic impact.



SteelDeckJoint®

SteelDeckJoint® is a revolutionary floor joint solution, which solves many of the deficiencies and time consuming elements of forming a construction joint on a steel deck floor using timber formwork.





Worldwide contacts for Leviat:

Australia

Leviat

98 Kurrajong Avenue, Mount Druitt Sydney, NSW 2770 Tel: +61 - 2 8808 3100 Email: info.au@leviat.com

Austria

Leviat

Leonard-Bernstein-Str. 10 Saturn Tower, 1220 Wien Tel: +43 - 1 - 259 6770 Email: info.at@leviat.com

Belgium

Leviat

Industrielaan 2 1740 Ternat

Tel: +32 - 2 - 582 29 45 Email: info.be@leviat.com

China

Leviat

Room 601 Tower D, Vantone Centre No. A6 Chao Yang Men Wai Street Chaoyang District Beijing · P.R. China 100020 Tel: +86 - 10 5907 3200 Email: info.cn@leviat.com

Czech Republic

Leviat

Business Center Šafránkova Šafránkova 1238/1 155 00 Praha 5 Tel: +420 - 311 - 690 060 Email: info.cz@leviat.com

Finland

Leviat

Vädursgatan 5 412 50 Göteborg/Sweden Tel: +358 (0)10 6338781 Email: info.fi@leviat.com

France

Leviat

6, Rue de Cabanis FR 31240 L'Union Toulouse

Tel: +33 - 5 - 34 25 54 82 Email: info.fr@leviat.com

Germany

Leviat

Liebigstrasse 14 40764 Langenfeld Tel: +49 - 2173 - 970 - 0 Email: info.de@leviat.com

India

Leviat

309, 3rd Floor, Orion Business Park Ghodbunder Road, Kapurbawdi, Thane West, Thane, Maharashtra 400607 Tel: +91 - 22 2589 2032 Email: info.in@leviat.com

Italy

Leviat

Via F.Ili Bronzetti 28 24124 Bergamo Tel: +39 - 035 - 0760711 Email: info.it@leviat.com

Malaysia

Leviat

28 Jalan Anggerik Mokara 31/59 Kota Kemuning, 40460 Shah Alam Selangor Tel: +603 - 5122 4182 Email: info.my@leviat.com

Netherlands

Leviat
Oostermaat 3
7623 CS Borne

Tel: +31 - 74 - 267 14 49 Email: info.nl@leviat.com

New Zealand

Leviat

2/19 Nuttall Drive, Hillsborough, Christchurch 8022 Tel: +64 - 3 376 5205 Email: info.nz@leviat.com

Norway

Leviat

Vestre Svanholmen 5 4313 Sandnes Tel: +47 - 51 82 34 00 Email: info.no@leviat.com

Philippines

Leviat

2933 Regus, Joy Nostalg, ADB Avenue Ortigas Center Pasig City

Tel: +63 - 2 7957 6381 Email: info.ph@leviat.com

Poland

Leviat

UI. Obornicka 287 60-691 Poznan Tel: +48 - 61 - 622 14 14 Email: info.pl@leviat.com

Singapore

Leviat

14 Benoi Crescent Singapore 629977 Tel: +65 - 6266 6802 Email: info.sg@leviat.com

Spain

Leviat

Polígono Industrial Santa Ana c/ Ignacio Zuloaga, 20 28522 Rivas-Vaciamadrid Tel: +34 - 91 632 18 40 Email: info.es@leviat.com

Sweden

Leviat

Vädursgatan 5 412 50 Göteborg Tel: +46 - 31 - 98 58 00 Email: info.se@leviat.com

Switzerland

Leviat

Grenzstrasse 24 3250 Lyss Tel: +41 - 31 750 3030

Tel: +41 - 31 750 3030 Email: info.ch@leviat.com

United Kingdom

Leviat

President Way, President Park, Sheffield, S4 7UR Tel: +44 - 114 275 5224 Email: info.uk@leviat.com

United States of America

Leviat

6467 S Falkenburg Rd. Riverview, FL 33578 Tel: (800) 423-9140 Email: info.us@leviat.us

For countries not listed

Email: info@leviat.com

Leviat.com

Notes regarding this catalogue

For more information on the following products, please contact:

Masonry, Structural and Precast Concrete products:

1300 304 320 info.ancon.au@leviat.com Ancon.com.au Concrete Floor Jointing products:

1800 335 215 info.connolly.au@leviat.com Connollykeyjoint.com info.isedio.au@leviat.com Isedio.com.au Remedial Masonry products:

1300 667 071 info.helifix.au@leviat.com Helifix.com.au

General Enquiries

1300 304 320 Leviat.com

Sales Offices and Production

New South Wales, Sydney

98 Kurrajong Avenue Mount Druitt | Sydney NSW 2770

Queensland

4/15 Terrace Place Murarrie | Brisbane QLD 4172 **New South Wales, Casino**

10 Irving Drive Casino NSW 2470

Western Australia

18 Tennant Street Welshpool | Perth WA 6106

Victoria

9/63-69 Pipe Road Laverton North | Melbourne VIC 3026

Leviat.com

