



Isedio ArmourJoint

Floor jointing solutions for industrial floors



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Isedio ArmourJoint

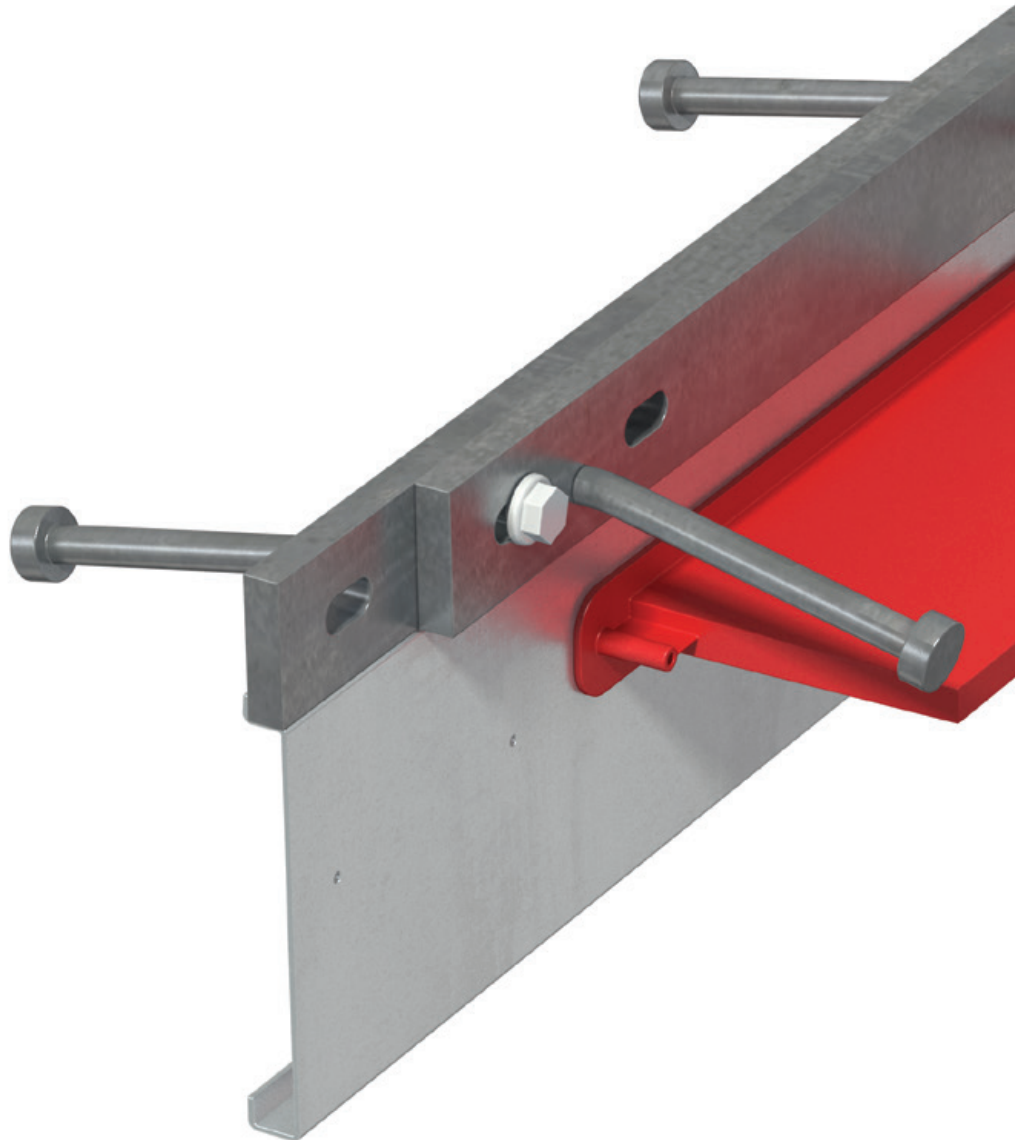
Isedio ArmourJoint is a leave-in-place formwork, load transfer and edge protection joint system suitable for heavy duty industrial concrete floors.

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.

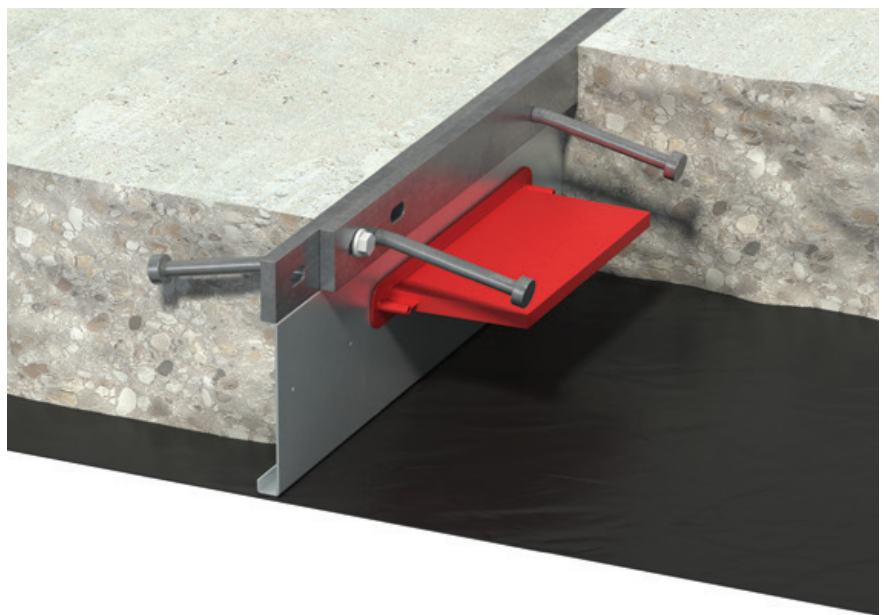
Formwork for casting a concrete slab is achieved by the vertical divider plates, which supports the top strip edge protection and load transfer plate dowels.

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





Load transfer across the joint is achieved by asymmetrically installed plate dowels and sleeves. The plate dowels are attached to the vertical divider plate and the sleeves are held in place under friction. The sleeves allow movement as the joint expands and contracts. Prefabricated corner, 3-way and 4-way intersections are available.



Easy Installation



Based on
TR34.4



Load Transfer Through
Plate Dowels



Arris Protection



Engineering
Support



Safe Installation



Minimise Joint
Maintenance Costs

Isedio ArmourJoint

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

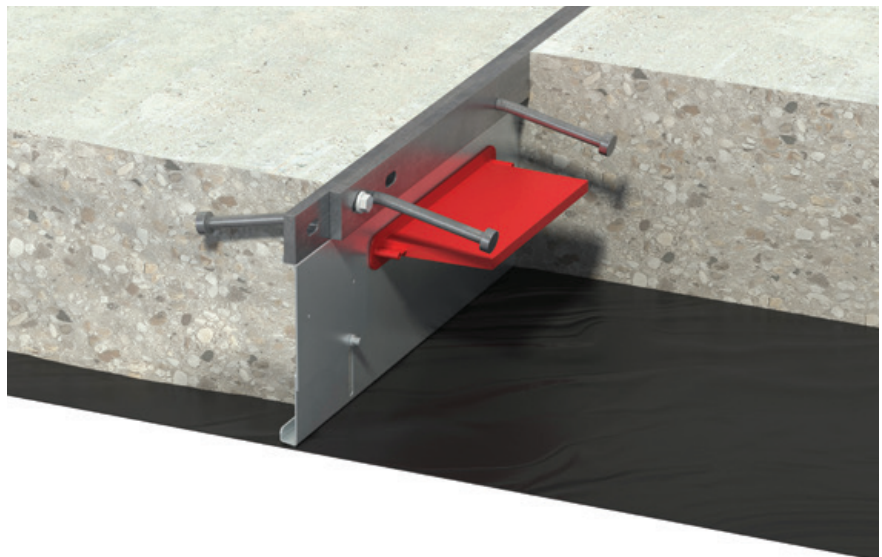
ArmourJoint Adjustable

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.

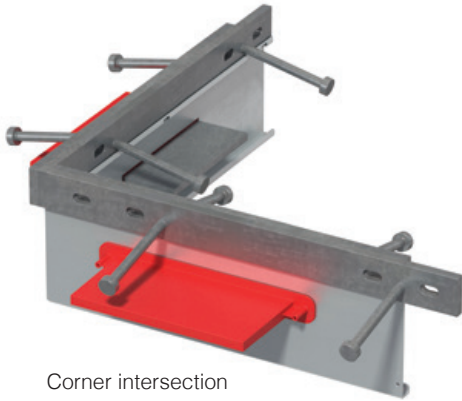
Contact the Leviat technical team for more information.



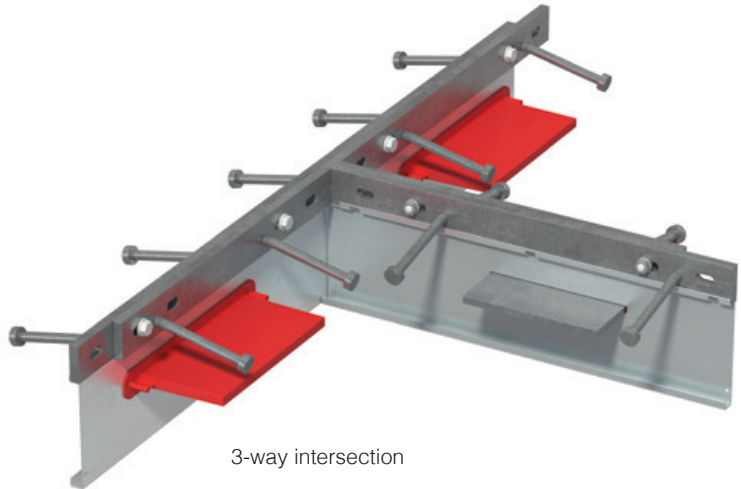
Isedio Accessories

Prefabricated Intersections

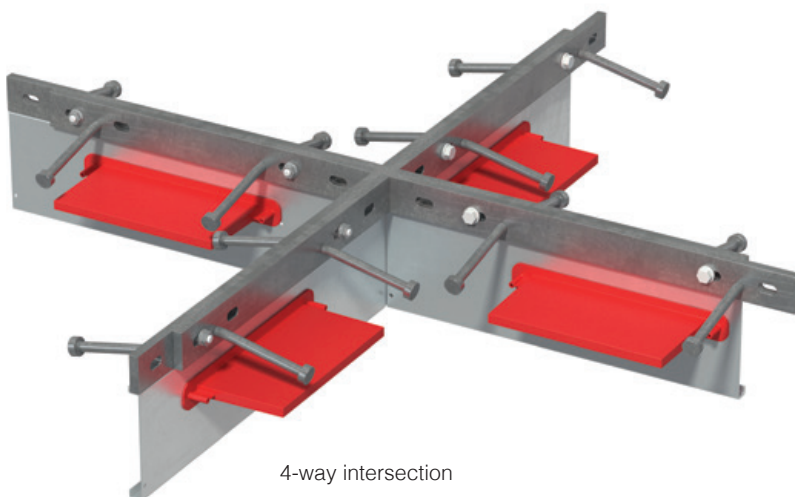
Corner, 3-way and 4-way intersections are available to simplify installation. These components will be manufactured with the same height and plate dowel specifications to suit the straight ArmourJoint and ArmourJoint Adjustable sections.



Corner intersection



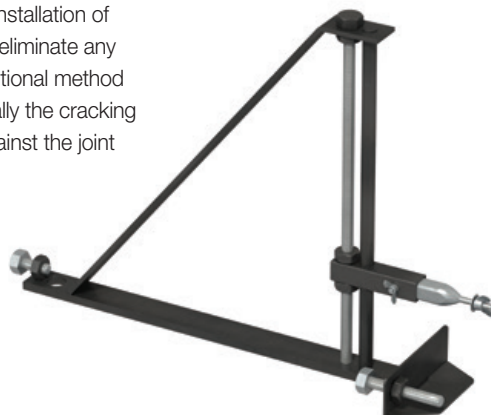
3-way intersection



4-way intersection

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.

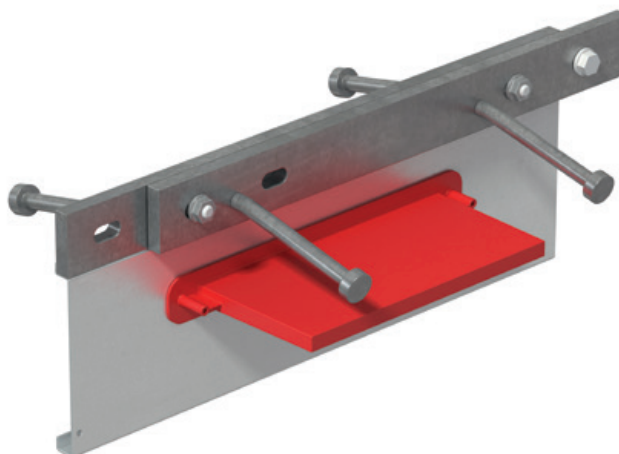


Isedio ArmourJoint

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.

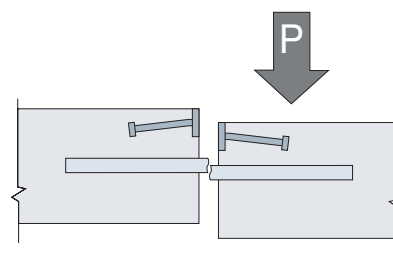


Dowel Shear Capacity

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) (mm ²)	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.

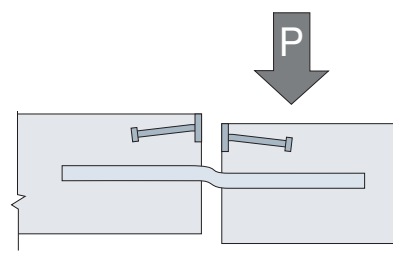


Dowel Shear Capacity

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.

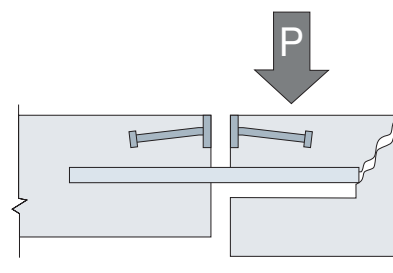


Dowel Bearing/Bending Capacity

Punching Shear (Bursting Forces)

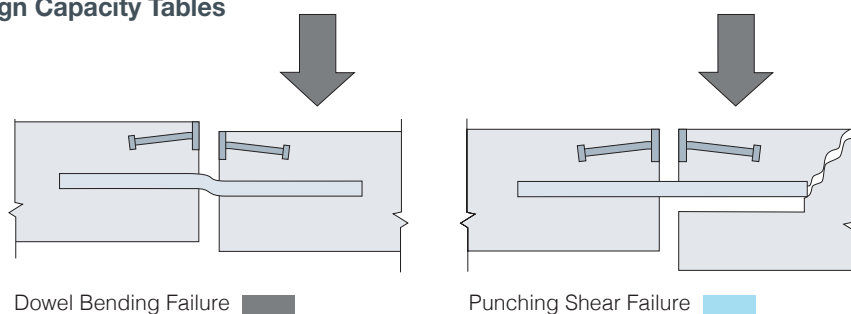
Section 6.5.3 of TR34 recommends calculating the bursting load of the concrete by adapting the EC2 approach for punching failure using an effective depth of 0.75 times the depth between the dowel and the surface of the concrete slab.

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



Punching Shear (Bursting Forces)

Design Capacity Tables



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

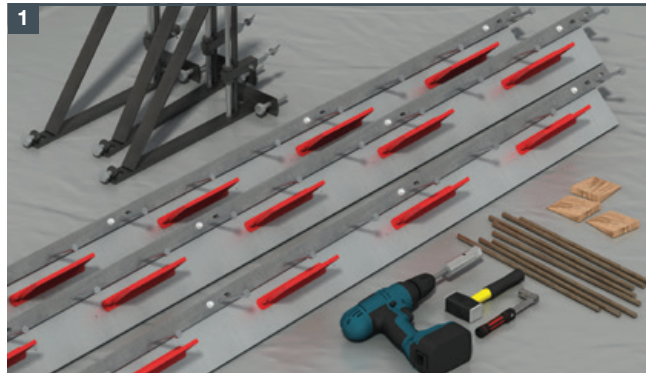
Shear capacity of Isedio ArmourJoint in 40 MPa concrete with a dowel spacing of 600mm (kN/m)

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

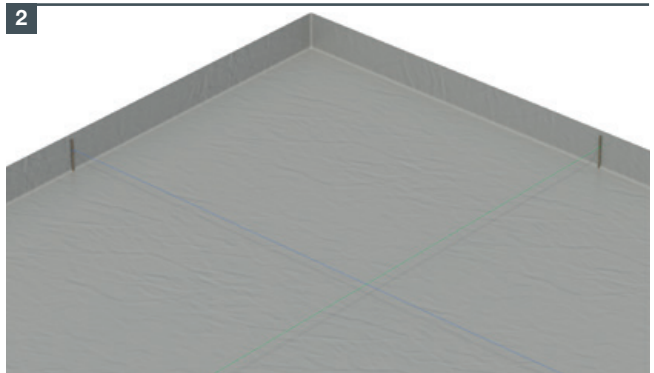
Note: For any other configurations and for Isedio ArmourJoint Adjustable capacities, please contact the Leviat technical team on 1300 304 320 or email technical.au@leviat.com

Isedio ArmourJoint

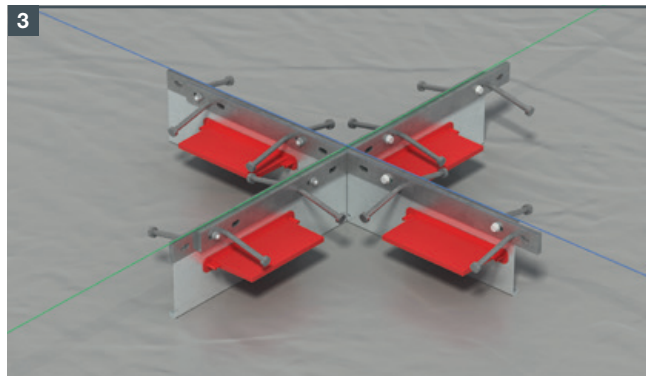
Installation



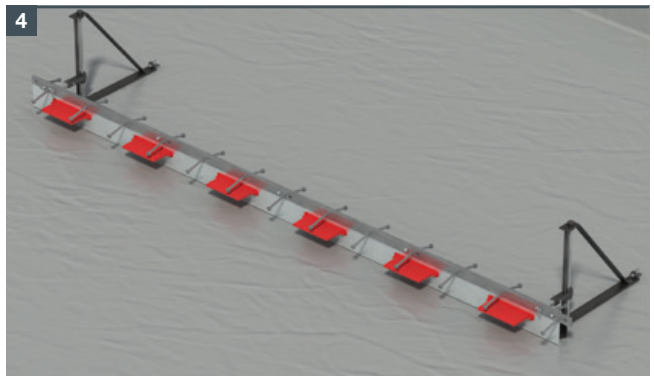
Set up the site. Laser dumpy level set up, finished floor level datum taken, membrane laid, hand tools available



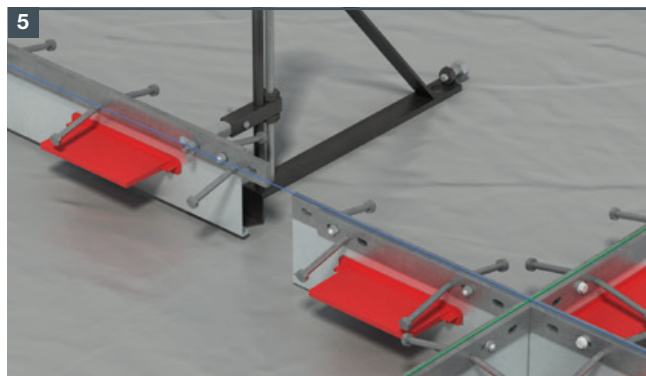
Measure the distances to the walls and edges. Set up the string line following the joint location.



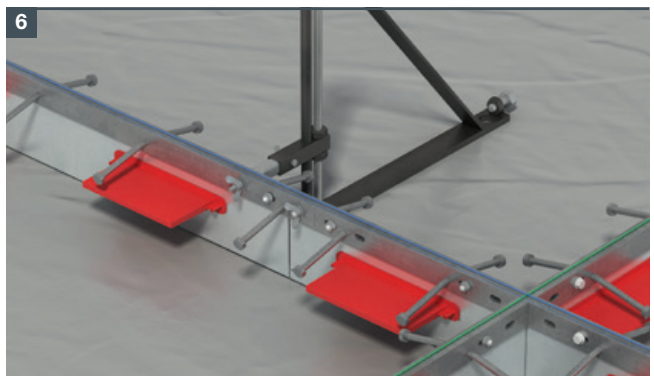
If required, place the intersection (4-way, tee or corner).



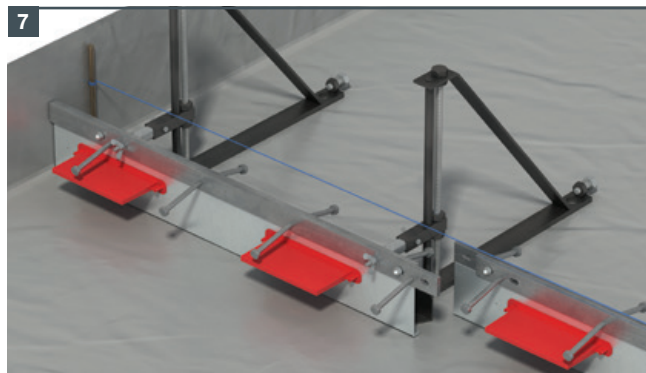
Fit ArmourJacks to the ArmourJoint top strips.



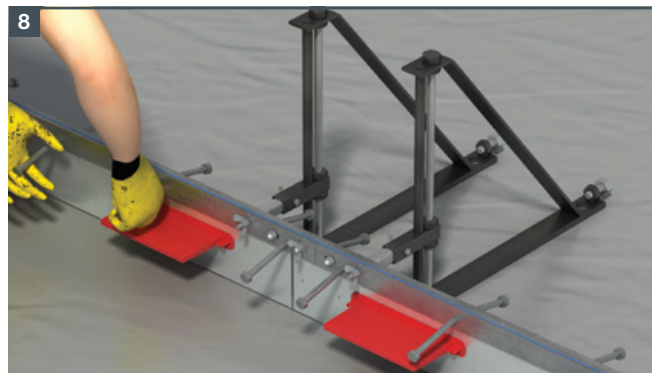
Position the ArmourJoints (with the jacks fitted) and attach them to the intersection.



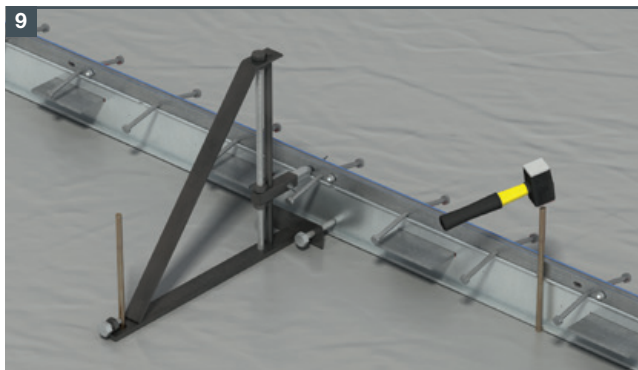
Continue to fit the ArmourJoints. Ensure the lapped joints are butted end to end tightly. Fit the plastic bolt and wing nut at the lapped joint.



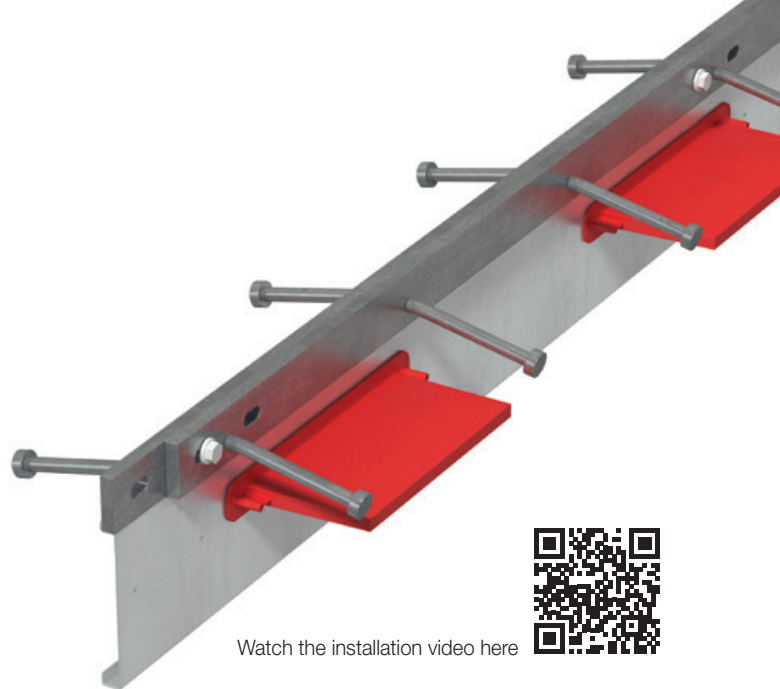
Measure final distance and cut ArmourJoint to suit, allow space for moithene between end joint and wall.



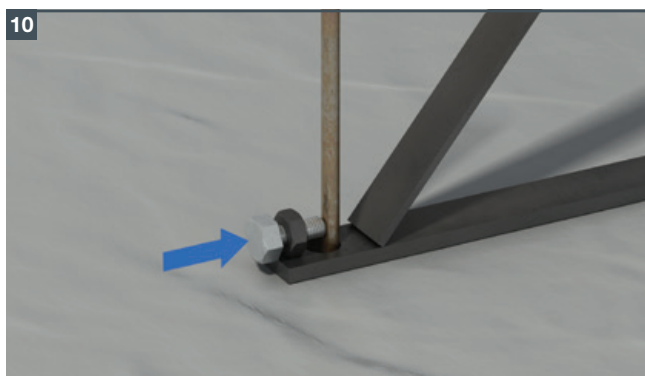
Manually position ArmourJoints in line with string lines.



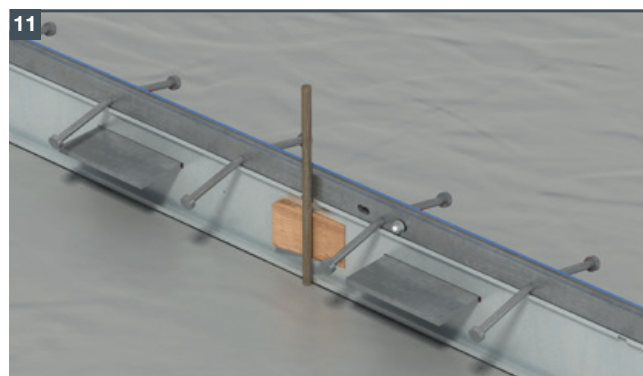
Pin the ArmourJacks into place and drive the pins behind the ArmourJoint in between the jacks.



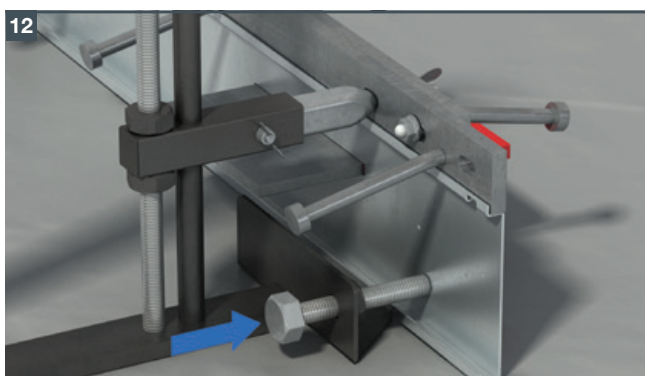
Watch the installation video here



Tighten the bolts against the pin to secure the jack.



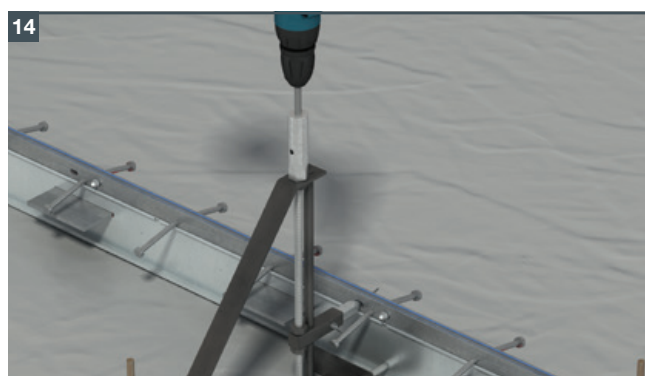
Fit the wooden wedges behind the pin to lock the joint in place.



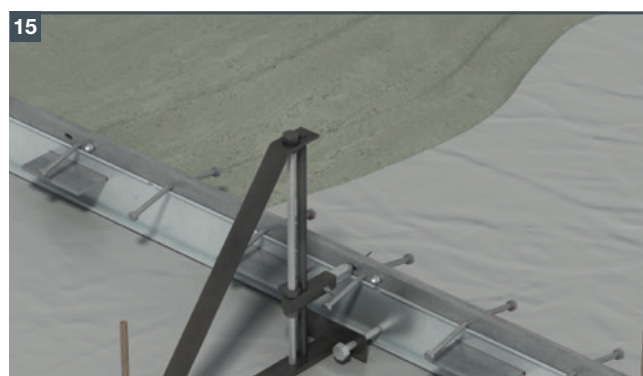
Tighten the bolts against divider plate to adjust the alignment.



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.

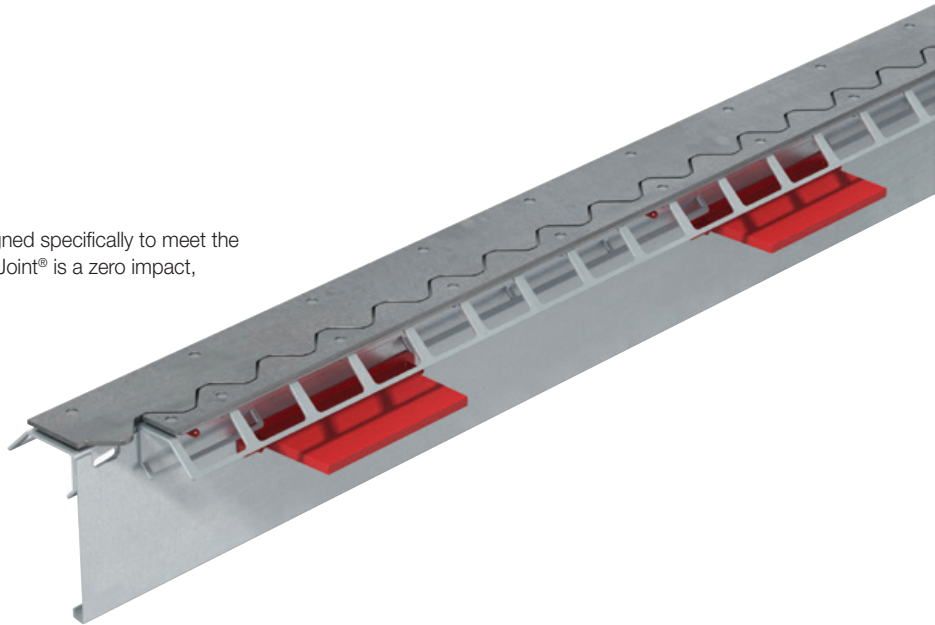
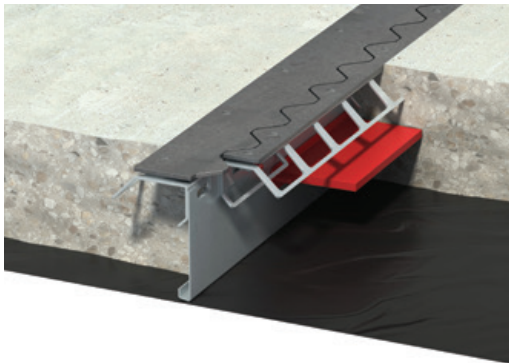


Pour the concrete while checking the height and direction.

Isedio Product Range

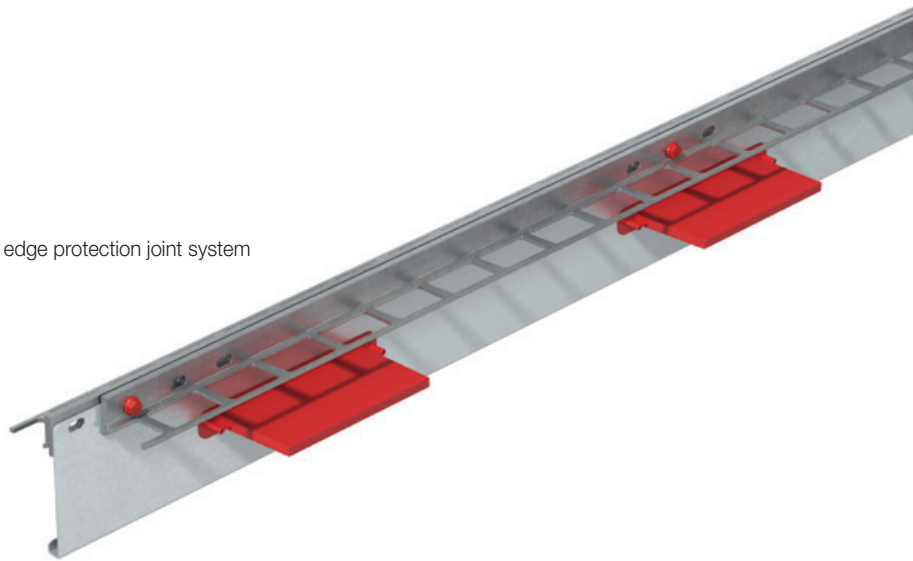
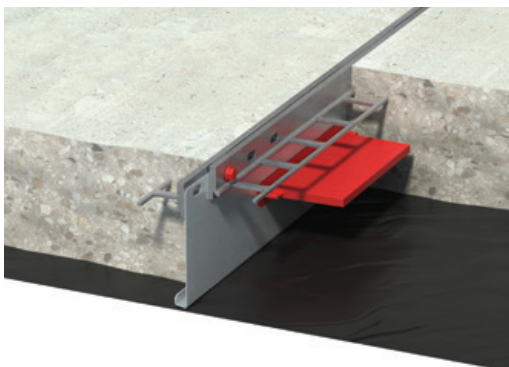
ShieldJoint®

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.



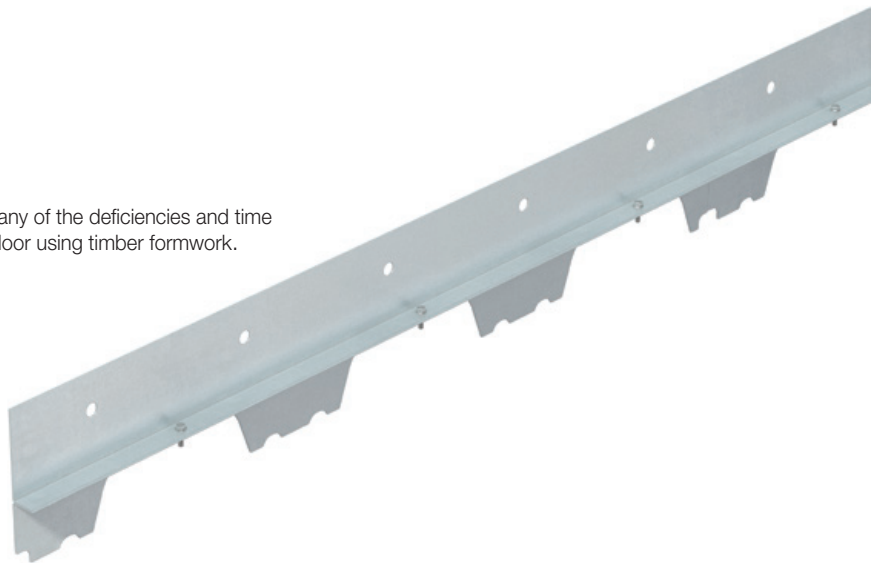
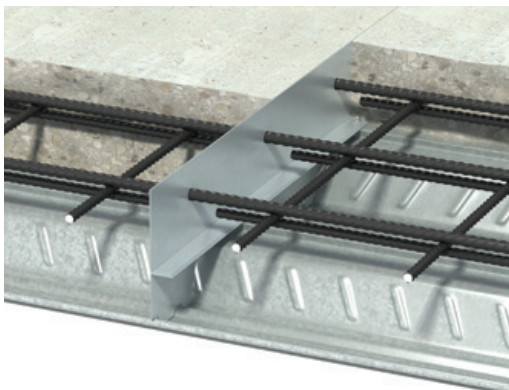
ArmourJoint-Pro

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



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.





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