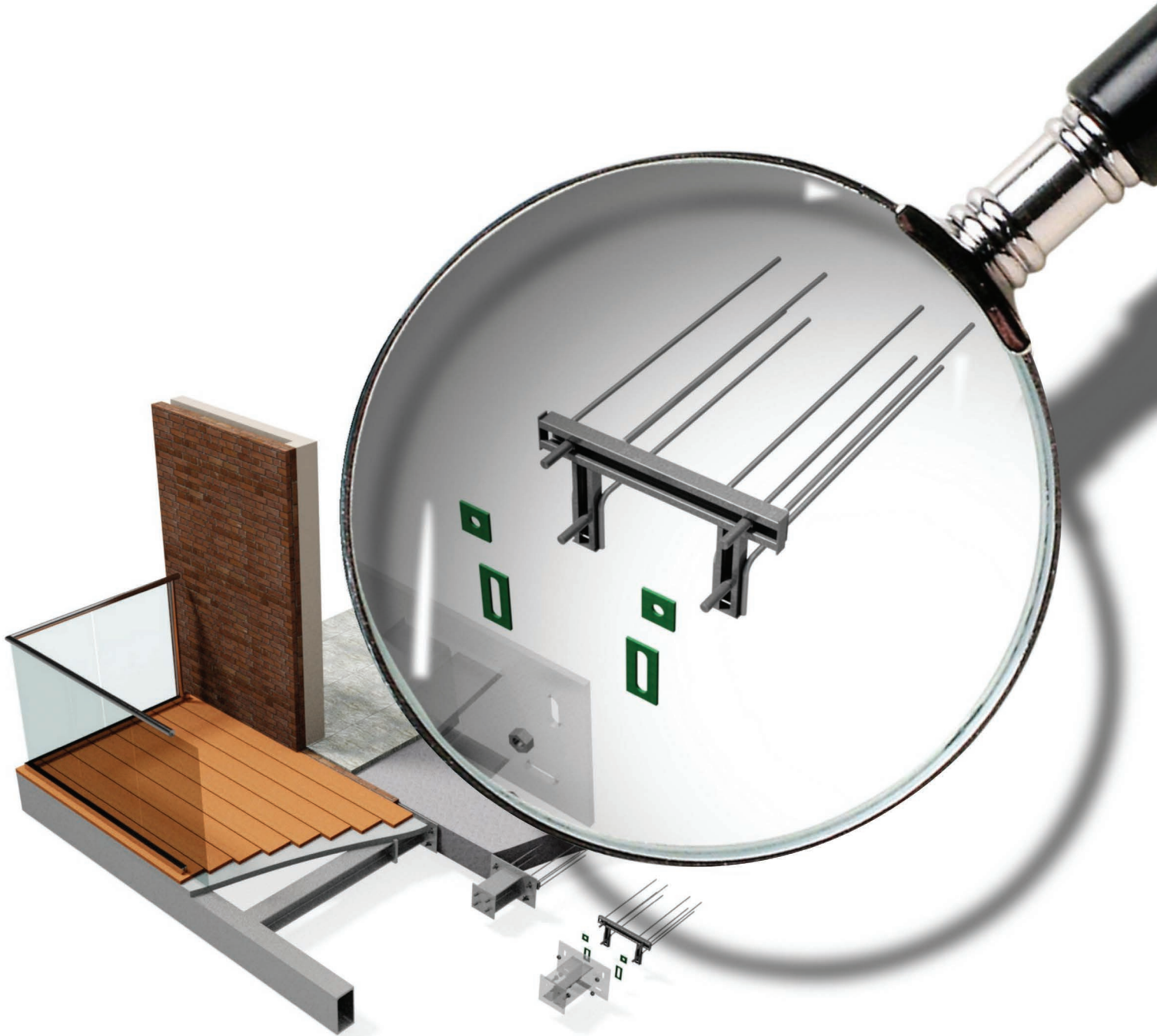


BALCON™

STEEL BALCONY CONNECTION SYSTEM



The BALCON offers a versatile connection system for attaching steel balconies to a reinforced concrete frame.

The BALCON is crafted to meet the needs of our customers who want to connect steel balconies to a concrete frame. The BALCON offers a versatile connection system that meets a range of tolerances, from the frame contractor down to the balcony specialist. It is based around JORHDAL® anchor channel technology that is over 100 years proven use in service. BALCON is an engineered product that provides a robust solution that will meet the demanding needs of the construction market, whether it is for its strength, tolerance or thermal characteristics – all of which have been independently validated.

Architectural

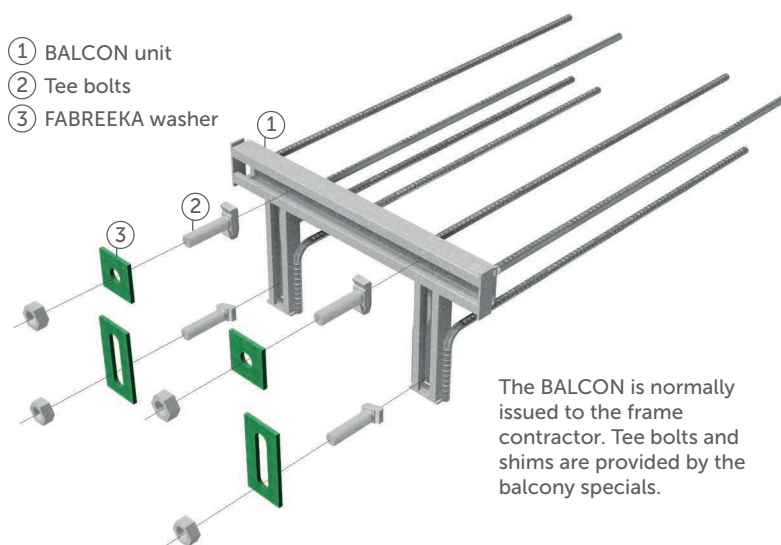
Increases in the thermal performance requirements over the past decade have meant the designer has to understand the impact that any connection has on the building envelope. The BALCON is well suited to meet thermal

bridging requirements. At J&P we understand the importance of this aspect of the design, therefore the BALCON has been validated by an independent thermal assessor to establish accurate thermal data for use by the design team. The process was documented on a number of thermal simulations, adopting a standard façade in conjunction with various balcony stub configurations. This provided a sensitivity analysis for a wide range of balcony configurations for the BALCON. The derived Chi values presented in chart 1 (overleaf), offer the designer optimised thermal performance data that can be used to understand the impact of the BALCON on a façade design.

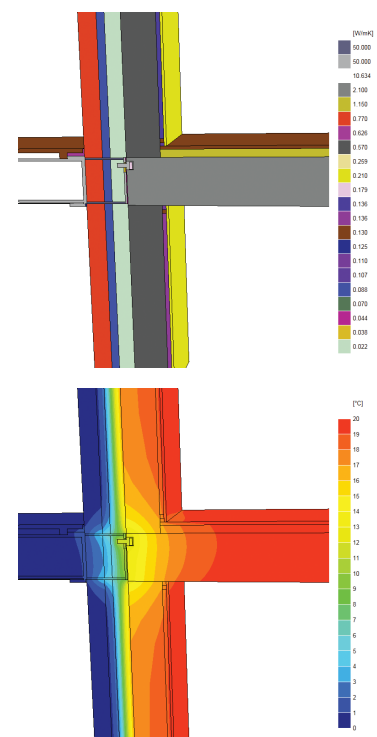
Thermal Break

Point thermal break data presented here is based on a standard 6mm thick FABREEKA shim and provides the optimal thermal performance of the BALCON.

Typical BALCON parts



Thermal data



Images courtesy of C4Ci

Durability

Durability of the standard BALCON is derived through its galvanised finish 50microns (μ) and is suitable for the design life of the building. Stainless steel channel is also available. Depending on the degree of exposure, there is a range of stainless grades available should the BALCON be subjected to an aggressive environment. Note: for special grades of stainless steel please refer to J&P technical department.

Design

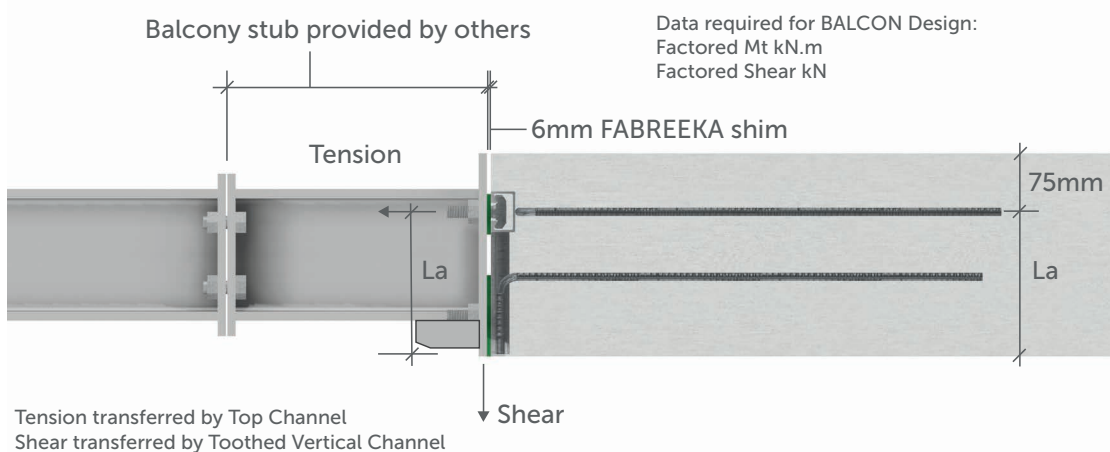
As the BALCON is a derived product it is made to suit designer's project specific loading data. Through the domestic market structural slabs are typically 250mm thick and for this reason

we have crafted the BALCON-9000. This is based on the BALCON-2 and has a moment resistance of 15kN.m and shear capacity of 32kN. The BALCON-9000 is the only type available from stock held in warehouse in Thame.

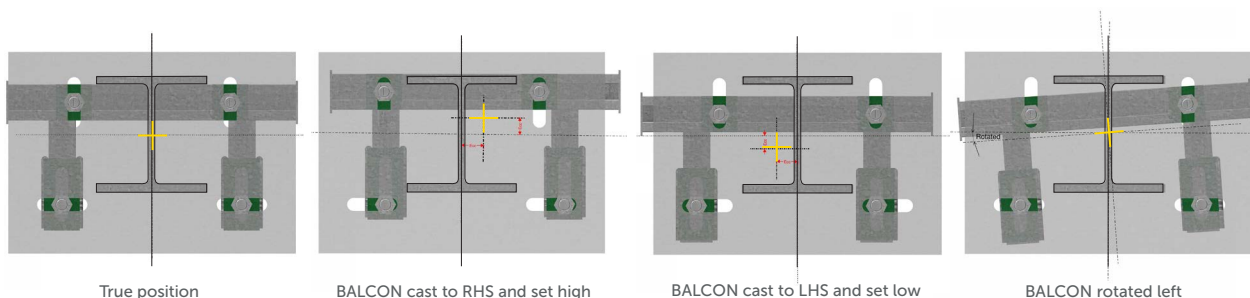
Tolerance

The BALCON can accommodate a wide range of tolerance from normal frame tolerances to the finer tolerance required by the balcony specialist who is working to steel tolerances. Site works are virtually eliminated through the unique range of tolerance characteristic of the BALCON, requiring less site work between all parties.

Typical cross section



Typical tolerance scenario



BALCON Sizing Data

From this data a number of proofs are derived that utilise the full potential of the BALCON connection system. For preliminary design, Chart 2 is provided, assisting the designer to obtain a BALCON type.

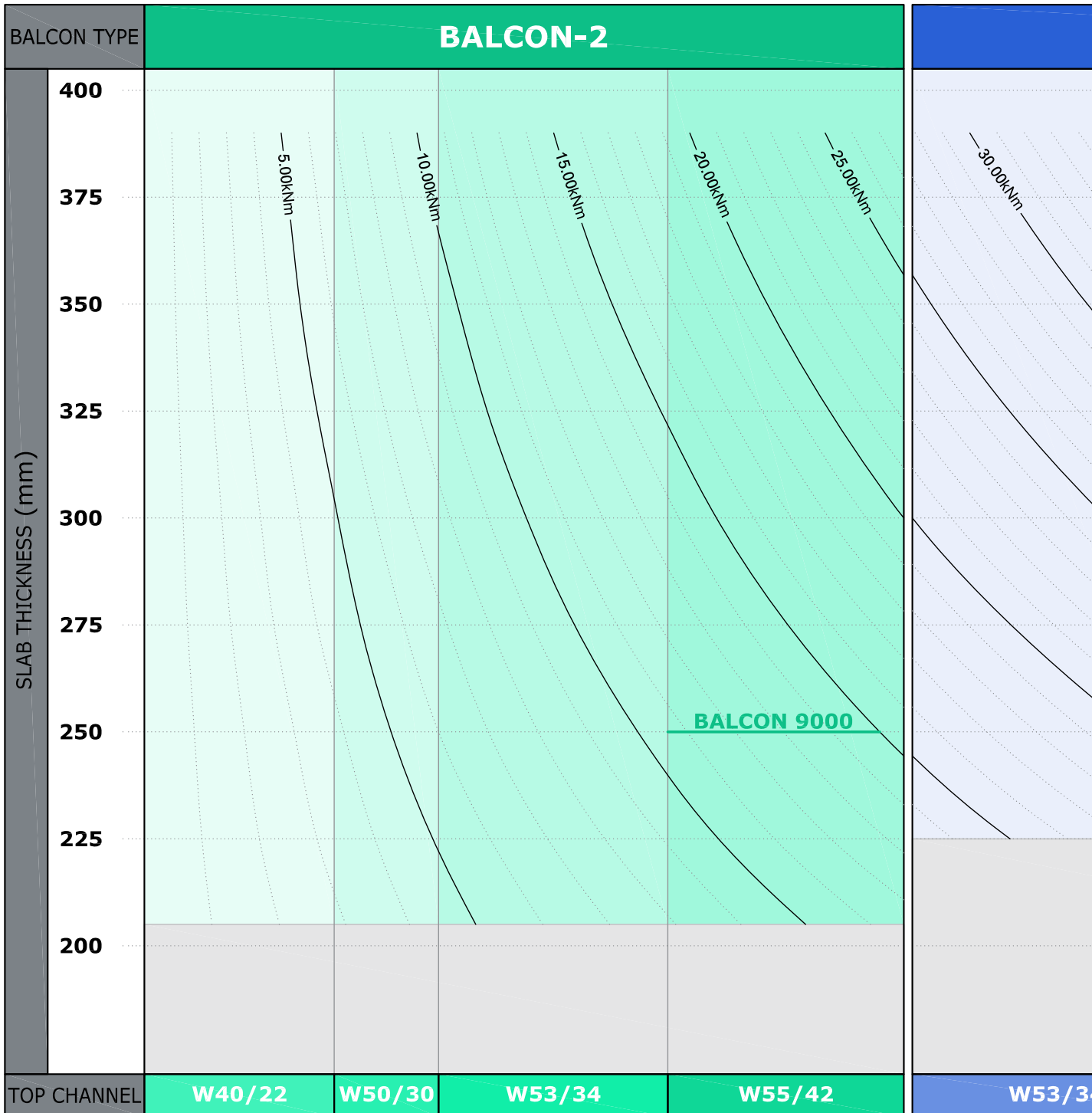
The following data is required:

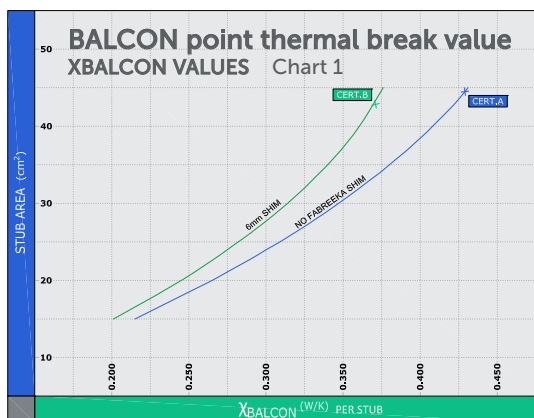
- The slab thickness,
- Factored bending moment and shear force.

On Chart 2 identify the slab thickness, project a line across to the appropriate moment curve, where this crosses the moment curve, project a vertical line down to select the appropriate BALCON.

The shear value is taken from the load table on this chart.

BALCON (standard) TYPE 2 & TYPE 4 PRELIMINARY SIZING CHART Chart 2





- 1 Thermal information and data supplied by C4Ci Ltd.
- 2 Chi value certificates are available on request for the upper end of the thermal range.
- 3 All data is per stub.

BALCON-4		BALCON TYPE	
	400	SLAB THICKNESS (mm)	
	375		
	350		
	325		
	300		
	275		
	250		
225	For special design contact J&P Building Systems Ltd		
200	SHEAR MAX per assembly (2 vertical channels) 38 x 23 JXA = 32kN 53 x 34 JXA = 60kN For higher shear loads refer to J&P Building Systems Ltd		
4	W55/42	W72/48	TOP CHANNEL

FAQ

Q Will the thermal performance increase if the thickness of the thermal shim is doubled?

A Doubling the shim does not double the performance of the unit. Through thermal modelling it has been established that the optimal thickness of thermal shim is 6mm.

Q Is there a standard off the shelf BALCON available?

A Yes, the BALCON 9000 is designed to fit in a 250mm slab, refer to the design graph for capacity of the BALCON.

Q Do J&P provide balcony stubs?

A We have found that the balcony specialist prefers to supply the stub as part of the balcony system.

Q Does the BALCON have a CE mark?

A Yes, all derived metal products produced by J&P Building systems have a CE mark and an appropriate DoP. The BALCON has a DoP for each type and is a means to track the product and ensure that it is appropriate for the application.

Q Can the BALCON be used with precast construction?

A Yes, the BALCON can be incorporated into precast construction, please refer to the J&P technical department.

Q Can the BALCON be used in other application other than for balconies?

A Yes, the BALCON can be adapted to suit many applications, please refer to J&P technical department for special cases.

Q What is the stiffness of the BALCON connection and will it contribute to the overall deflection of the balcony?

A The BALCON system provides a rigid connection at the slab edge.

Q Can the BALCON take up lift loads?

A Yes the BALCON can take load reversal, this should be advised at the enquiry stage.

Q I have a higher shear capacity than shown in the tables.

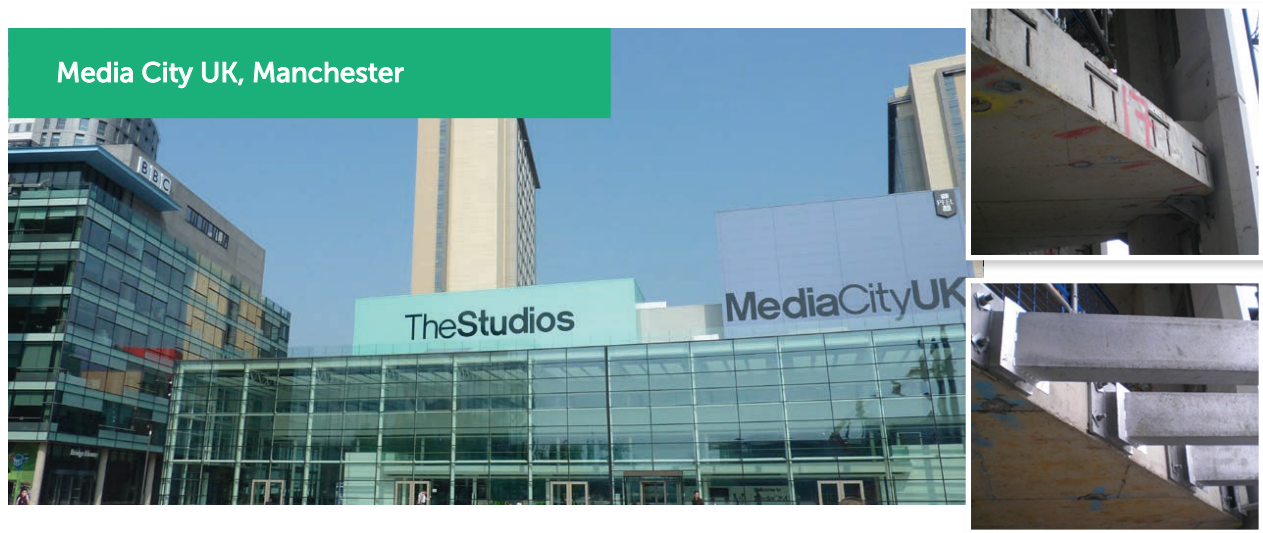
A High shear loads can be accommodated, please refer to the J&P technical Team.

Q If we used 8.8 bolts why is the capacity not taken as the bolt capacity?

A The capacity of the BALCON is derived from the lip capacity of the specified top channel.

BALCON™ project examples

BALCON has been successfully used on numerous keynote projects throughout the UK. Here are just a few examples.



Focused on construction solutions for keynote projects in the UK and Worldwide.

J-UK



BALCON™

Adjustable and thermally broken balcony connectors

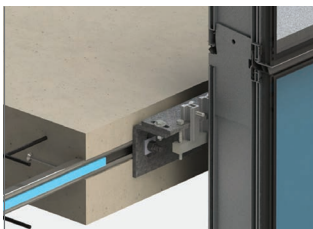
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Isopro®

Insulated concrete balcony connections

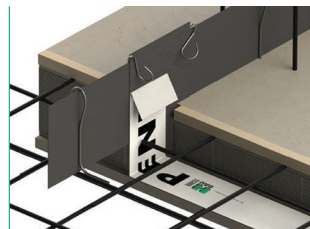
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JTA Anchor Channel

For adjustable curtain wall connections

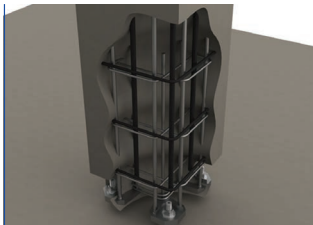
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Pentaflex®

Concrete joint sealing systems

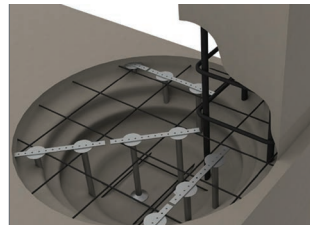
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New Column Shoes

High-load connections for precast columns

S



JDA

Punching shear reinforcement for concrete columns

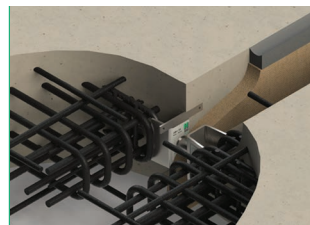
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Rapidobat®

Seamless column formwork for quality architectural concrete

H



JSD+

Shear dowels for concrete movement joints