



Stair Landing Connections

RVK Telescopic Connectors

Combining precast concrete stairs and landings with core walls which are poured in situ is increasingly common. Precast slabs such as stair landings are traditionally supported by rolled steel angles (RSAs) bolted to the wall. Installation is slow, requires high degrees of accuracy, ties up the crane with costly hook-time and can realistically only be used on straight walls.

To address these issues and provide an aesthetic alternative to unsightly bracketry, the RVK range of telescopic connectors was developed.

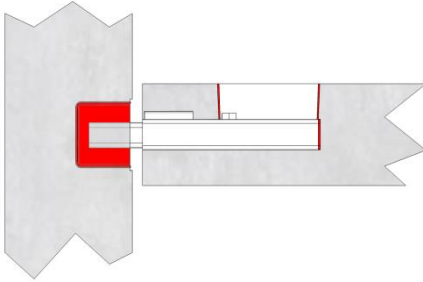
Owing to simplicity of installation and superior fixing tolerance, RVK connectors offer key benefits over RSA or corbel connection methods, such as:

- Significantly improved health and safety
- Inherent robustness compliance and fire resistance
- Demonstrable cost efficiency

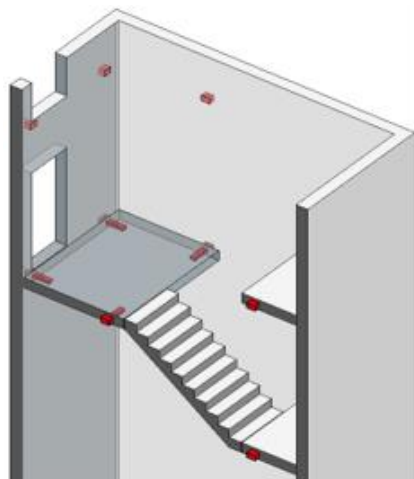
A **study** found that using telescopic connectors instead of RSAs reduced direct costs by 33% and man hours by 80%.

Product range

RVK Telescopic Connectors



Application



Robustness

UK regulations require that all precast floor and stair elements are anchored to the main structure to provide robustness in the event of an incident. Traditional dowels or similar connections into walls result in more work and additional costs on site. With appropriate positioning of RVK telescopic connectors, anchorage is inherent. Where layout allows, robustness requirements are met with no additional measures or expenditure.

Stair landing applications

Different configurations according to precast element shape and loadings are possible. To help you select the most appropriate stair landing connector, **technical enquiry forms** are available to download:

- Landing with connectors on three sides
- Landing with connectors at both ends
- Integral flight and landing with connectors on side and end
- Integral flight and landing with connectors on end
- Integral flight and two landings with connectors on sides and ends
- Integral flight and two landings with connectors at both ends

For other applications, please contact us for free technical and practical advice on product selection and installation.

Product features

- Sliding inner tube is deployed by a bolt mechanism, accessible via PVC hopper at landing surface
- Supplied 'black' as standard (also available galvanised on request)
- Cost-effective, rugged solution, typically for screeded landings
- Cold rolled grade S355 (minimum) steel is used for its high stress capacity
- Available in 3 variants to satisfy all common application conditions

Capacity

Standard capacity is up to 100 kN, limited to 80 kN in a 200mm thick slab. These are ultimate capacities. Connectors may be used in pairs where there is a higher load requirement. All telescopic connectors incorporate integral bearing blocks for correct seating of local reinforcement to avoid localised crushing or cracking.

Fire resistance

Grouting around the connector (in the airgap between the landing and wall) provides equivalent cover as concrete, therefore 40mm grout cover will give 2 hours fire resistance.

About Invisible Connections

We supply the concrete construction industry with 'unseen' telescopic connection systems for stairs, landings, beams and columns. We are also specialist manufacturers of the FERBOX® reinforcement continuity system, to application requirements.

All our products meet industry demands for improved safety, construction efficiency and cost competitiveness.

Our telescopic connection systems are endorsed by European Technical Approvals (ETAs). They comply with relevant Eurocode standards and are individually CE marked.

Our team provides free technical and practical advice on product selection and installation. Our technical specialism, innovative approach and manufacturing agility means we're often approached to help solve a specific issue. As a result, our product range continuously evolves to meet our customers' construction challenges.

Invisible Connections is the registered trademark of Norwegian company Invisible Connections AS. In 30 years, countless telescopic connectors have been used in construction projects around the world.

Invisible Connections Ltd

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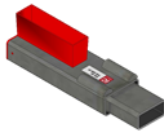
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Stair Landing Connections

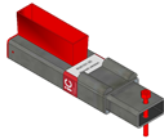
RVK Telescopic Connectors

RVK product range



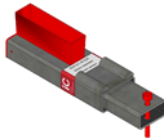
RVK 101 (standard version)

Popular and default choice for most stair landing applications. Connector capacity up to 80 kN in a 200mm thick (min.) landing, increasing to 100 kN in a 265mm thick landing. Use in conjunction with REDiBOX PRF-STD.



RVK 101-30 (pinned version)

Robustness requirements achieved where only 2 walls off landing are available for connection. Pinned connector provides axial capacity ≤ 30 kN. Use in conjunction with REDiBOX PRF-PIN.



RVK 101-30-E20 (pinned version)

Spans large air gap between landing and wall, whilst maintaining secure embedment (in wall). Longer inner tube section suitable where design requires a large air gap ≤ 40 mm between landing and wall. Capacity ≤ 60 kN. Use in conjunction with REDiBOX PRF-PIN.

REDiBOX Permanent Recess Formers

All RVK telescopic connectors are designed to work in conjunction with a REDiBOX permanent recess former - a 'left in' component used to create recesses in precast or in situ walls to flexibly accommodate the RVK sliding connector.



REDiBOX PRF-STD (standard version)

Provides generous tolerance for installation of stair landings. Eliminates traditional digging-out of polystyrene or timber. Used in conjunction with RVK 101.



REDiBOX PRF-PIN (pinned version)

Has an integral reinforced pocket (pin supplied) for tying landings to walls so robustness requirements can be met where only 2 walls available. Used in conjunction with RVK 101-30 and RVK 101-E30.

Resources

Further information is available at invisibleconnections.co.uk and includes:

- Technical literature
- BIM / CAD files
- NBS Plus specification links
- Case studies
- Cost comparison study: telescopic connectors v rolled steel angles
- 30 reasons why telescopic connectors are more efficient than rolled steel angles

Standards

Design is in accordance with the following standards:

- Eurocode 2: Design of concrete structures Part 1-1 General rules and rules for buildings
- Eurocode 3: Design of steel structures Part 1-1 General rules and rules for buildings
- Eurocode 3: Design of steel structures Part 1-8 Design of joints

All RVK products are covered by appropriate **European Technical Approvals** (ETAs).

For technical and practical advice call
+44 (0)1844 266000