

<b>0192P ANCON STRUCTURAL COMPONENTS</b>
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**Branded worksection**

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**Worksection abstract**

This branded worksection *Template* is applicable to ANCON structural steel components manufactured by Ancon Building Products consisting of proprietary suites supplied as complete systems, and including the following:

- Masonry support, windposts and lintels.
- Wall ties and restraint fixings.
- Channel and bolt fixings.
- Tension and compression systems.
- Flooring and formed sections.
- Shear load connectors.
- Stainless steel reinforcement.
- Reinforcing bar couplers.
- Reinforcement continuity systems.
- Punching shear reinforcement.
- Steelwork fixings for structural and secondary steelwork.
- Cavity fixings for fixings to hollow section steel.
- Support systems for building services suspension.

**Guidance text**

All text within these boxes is provided as guidance for developing this worksection and should not form part of the final specification. This *Guidance* text may be hidden or deleted from the document using the NATSPEC Toolbar or the hidden text *Hide* and *Delete* functions of your word processing system. For additional information visit FAQs at [www.natspec.com.au](http://www.natspec.com.au).

**Optional style text**

Text in this font (blue with a grey background) covers items specified less frequently. It is provided for incorporation into *Normal* style text where it is applicable to a project.

**Related material located elsewhere in NATSPEC**

If a listed worksection is not part of your package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- *0310 Concrete – combined* for shear connectors and standard reinforcement.
- *0312 Concrete reinforcement* for standard reinforcement.
- *0314 Concrete in situ* for shear connectors
- *0316 Precast concrete* for fixings.
- *0331 Brick and block construction* for lintels and wall ties.
- *0332 Stone masonry* for lintels and wall ties.
- *0341 Structural steel* for connectors.
- *0342 Light steel framing* for cold formed sections in flooring.
- *0343 Tensioned membrane structures* for tension systems.
- *0382 Light timber framing* for veneer ties.
- *0531 Suspended ceilings – combined* for support of suspension systems.

**Documenting this and related work**

Document this and related work as follows:

- Note the individual components on the drawings as part of the structural/services design and documentation process.

The *Normal* style text of this worksection may refer to items as being documented elsewhere in the contract documentation.

Make sure they are documented.

**Specifying ESD**

The following may be specified by including additional text:

- Recycled material content.
- High strength steel to reduce the amount of steel required to achieve the same performance.
- Use of recycled water by the steel manufacturing plant.

Refer to the NATSPEC TECHreport TR 01 on specifying ESD.

## 1 GENERAL

**Ancon Building Products** designs and manufactures high integrity steel products for use in masonry and concrete construction and has earned a reputation for quality and technical expertise. The company operates from advanced manufacturing facilities and supplies projects worldwide ranging from small-scale residential developments to major infrastructure projects.

### 1.1 RESPONSIBILITIES

#### General

Requirement: Provide ANCON steel and stainless steel components that are integrated into the building construction, as documented.

*Documented* is defined in *0171 General requirements* as meaning contained in the contract documents.

### 1.2 COMPANY CONTACTS

#### Ancon technical contacts

Website: [www.ancon.com.au/contacts](http://www.ancon.com.au/contacts)

### 1.3 CROSS REFERENCES

#### General

Requirement: Conform to the following:

- *0171 General requirements*.

*0171 General requirements* contains umbrella requirements for all building and services worksections.

List the worksections cross referenced by this worksection. *0171 General requirements* references the *018 Common requirements* subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

### 1.4 STANDARDS

#### General

Built-in components for masonry construction: To AS/NZS 2699.1, AS/NZS 2699.2 and AS/NZS 2699.3.

Stainless steel: To ASTM A240/A240M.

Cold-formed stainless steel: AS/NZS 4673.

Steel reinforcement: AS/NZS 4671.

Structural steel materials and design: To AS 4100.

### 1.5 MANUFACTURER'S DOCUMENTS

#### Product literature

Availability: Ancon literature is available to download at [www.ancon.com.au](http://www.ancon.com.au).

Hard copies are available on request from Ancon on 1300 304 320.

### 1.6 INSPECTION

#### Notice

Inspection: Give notice so that inspection may be made of the following:

- Installed components before building in.

Amend to suit the project adding critical stage or mandatory inspections required by legislation or regulation.

**Hold points**, if required, should be inserted here.

## 2 PRODUCTS

### 2.1 GENERAL

#### Product substitution

Other products: Conform to **PRODUCTS, GENERAL, Substitutions** in *0171 General requirements*.

The *0171 General requirements* clause sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

### 2.2 COMPONENTS

#### General

Fixing and connection components: Provide Ancon components appropriate for the Ancon system being adopted.

Corrosion resistance: Provide components as follows:

- **Stainless steel grade:** [complete/delete]

For normal conditions (e.g. R0 – R3 corrosion classification for built in components) specify Grade 304.

For particularly corrosive environments (e.g. R4) specify Grade 316.

- Galvanized steel: To AS/NZS 4680.

## 3 EXECUTION

### 3.1 MASONRY SUPPORT SYSTEMS

Masonry cladding on concrete or steel framed structures is normally supported by shelf angle support systems. Frame type, differential movement, type of cladding, masonry load and cavity width all need to be considered when designing the appropriate fixing solution.

#### Bracket angle support system

General: If support of either straight masonry runs or special masonry features is documented, provide Ancon MDC Bracket Angle Support Systems.

These can be designed to carry over 8 m of brickwork and accommodate any width of cavity from 40 mm in its standard form.

#### Continuous angle support system

General: If cavity closure at the support positions is documented, provide Ancon CFA Systems.

#### Individual bracket support system

General: If support of non-linear brickwork is documented, provide Ancon Individual Brackets.

#### Stonework support

General: If natural stone cladding is a combination of large individually-sized stones, provide Ancon CFA/S or MDC/SC Stonework Supports designed in a configuration to suit the particular application.

#### Tolerances

Select a system that accommodates the building tolerance requirements. Ancon brackets have a slot at the back to provide vertical adjustment. A serrated surface prevents slip. Longitudinal adjustment is provided by an Ancon cast-in channel in concrete structures or horizontally slotted holes in steel framed structures.

Shimming: Accommodate variations in the structural edge beam by adding shims between the system and the structure, or by increasing the bearing of the brickwork.

Maximum thickness of shims: The outside diameter of the fixing or 16 mm whichever is less.

Differential movement: Restrict the size of a masonry panel to limit the effects of differential movement.

This is particularly important where clay brickwork is used with concrete blockwork or a concrete frame.

The joint location is best dealt with on the drawings.

### 3.2 WINDPOSTS AND PARAPET POSTS

Ancon Windposts span vertically between floors to provide additional lateral support for large panels with openings. Parapet posts are used as vertical support for brickwork in either parapet or spandrel panels.

Large panels of masonry or panels with openings can often be difficult to justify structurally. The traditional solutions have been to either increase the thickness or introduce an additional column. Ancon Windposts fit within the wall allowing the existing thickness to be maintained.

**General**

Windposts: If bracing of wall panels is documented, provide Ancon Windposts.

Parapet posts: If parapet bracing is documented, provide Ancon Parapet Posts.

**3.3 LINTELS**

The Ancon Housing and Unilintel ranges are designed to suit the loading conditions found in the majority of residential and commercial buildings. Custom lintels can also be manufactured to suit heavy duty situations, special shapes and wall constructions not covered by the standard range.

**General**

Lintels: If lintels over openings are documented, provide Ancon Lintels.

Propping: Prop all long spanning and single leaf lintels until supported masonry has gained the design strength.

**3.4 WALL TIES AND RESTRAINT SYSTEMS**

Ancon manufactures fixings in a variety of lengths and types for restraining brickwork, blockwork and stonework. Restraints can be fixed to concrete and structural steelwork as well as any type of masonry. The range of standard ties provides a solution for all types of wall construction.

**General**

Wall ties: If wall ties are documented for masonry veneer or stonework construction, provide Ancon Wall ties.

Ancon has many variations available in addition to the standard ties. Wall ties for special applications may be specified and ordered with ease by using a reference letter for the tail, shank and head of the tie.

Vertical control joints: At vertical control joints, provide Ancon masonry-to-masonry ties or Ancon Frame Cramps, with debonding sleeves where masonry expansion is to be accommodated at the joint.

Cavity masonry construction using dissimilar masonry units or delayed cavity masonry construction: If one leaf of a cavity wall is built of masonry units different from the other or if one leaf is built in advance of the other, provide Ancon Fastrack Ties with the first leaf.

Wide cavity masonry: If cavities exceed 150 mm, use Ancon Two-Part Ties.

New masonry abutting existing masonry or concrete: If new masonry is to be constructed against existing masonry or concrete elements, provide Ancon Wall Starter Systems.

Stone cladding or their facings: If stone cladding or their facings are documented, provide Ancon Wall Ties.

Head restraint: For restraint of top of masonry walls at the underside of concrete slabs or steel beams, provide Ancon Head Restraints.

Remedial wall ties: If replacement or augmentation of existing wall ties in existing cavity masonry construction is documented, provide Ancon Remedial Wall Ties.

Masonry reinforcement: To increase the structural performance of masonry and reduce the risk of cracking, provide Ancon Masonry Reinforcement.

Insulation retainers: If insulation retaining clips or retainers are documented, provide Ancon products.

**3.5 CHANNEL AND BOLT FIXINGS**

There are various methods of fixing stainless steel masonry supports, restraints and windposts to either concrete or steel frames. The selection of the most appropriate method will depend on many factors including fixing centres, edge distances, type of fixture, loading and the site adjustment required.

**General**

Cast-in channels: If cast-in channels are documented for masonry supports, restraints or windposts for fixing to concrete elements, provide Ancon Cast-in Channels.

Surface-Fixed channels: If surface fixed channels are documented for masonry supports, restraints or windposts for fixing to concrete elements or steel members, provide Ancon Surface-Fixed Channels.

Bolt fixings: For cast-in or surface-fixed channels, provide Ancon bolts and fasteners.

### 3.6 TENSION AND COMPRESSION SYSTEMS

Tie bars are increasingly being used in structures and buildings as an architectural as well as a structural element. In addition to providing a high load capacity, the Ancon 500 Tension System meets the demanding aesthetic requirements of today's applications. To complement the Tension System range, Ancon manufactures compression systems.

#### General

Tension systems: If tension systems are documented, provide an Ancon Tension System.

- Type: [complete/delete]

Options include:

- Ancon 500 System: This is a high performance tension system. It is available in various sizes from 8 mm to 42 mm in both carbon steel and stainless steel. All components of the system can be supplied in a variety of finishes to provide corrosion resistance and to meet the demanding aesthetic requirements of many architectural applications. The bar used in this system has a minimum yield of 500 MPa.
- Ancon 500 System Carbon Steel: The carbon steel Ancon 500 System is suitable for most applications requiring a cost-effective solution.
- Ancon 360 System Carbon Steel: The Ancon 360 System is available in two sizes for applications requiring a bar diameter above 42 mm.
- Ancon 500 System Stainless Steel: The stainless steel Ancon 500 System is recommended for applications that demand corrosion resistance and a maintenance-free life, or where an attractive, polished finish is required.
- Compression systems: These systems use the same fork connectors and locking nuts as the Tension System, but use high strength tubes instead of bars.

Components: Provide only Ancon Components for use with Ancon Tension Systems.

Components include Fork connectors and locking nuts, Pins, Anchor discs, Tie bars and Couplers.

### 3.7 SHEAR LOAD CONNECTORS

Concrete structures are designed with expansion and contraction joints at appropriate places to allow movement to take place. The design of the joint is important for the overall design to function correctly. Ancon shear load connectors offer significant advantages over conventional single dowels, or key joints. Solutions are available for suspended and ground bearing concrete slabs. Consider documenting Ancon shear load connectors on the drawing.

#### General

Shear load connectors: If shear load connectors are documented, provide the appropriate Ancon components.

### 3.8 REINFORCING BAR COUPLERS

For many years the use of mechanical couplers to join reinforcing bars has been regarded as a means of reducing the use of long bars. Engineers and contractors now recognise the benefits of using couplers to accelerate the speed of construction, increase productivity and simplify design details.

#### General

Reinforcing bar couplers: If reinforcing bar couplers are documented, provide them from the Ancon range.

Proposal: If reinforcing bar couplers are proposed where not documented, submit a proposal incorporating Ancon couplers.

### 3.9 REINFORCEMENT CONTINUITY SYSTEMS

The use of reinforcement continuity systems is a widely accepted means of providing continuity of reinforcement across construction joints in concrete.

#### General

Reinforcement continuity: If reinforcement continuity systems are documented, provide Ancon Keybox or KSN Anchors to an appropriate configuration.

### 3.10 PUNCHING SHEAR REINFORCEMENT

Used within a slab to provide additional reinforcement around columns, Ancon Shearfix is the ideal solution to the design and construction problems associated with punching shear. The system consists of double headed studs welded to flat rails, positioned around the column head or base.

**General**

Slab shear reinforcement: If shear reinforcement is documented in slabs around column heads or bases, submit proposals for use of Ancon Shearfix system.

**3.11 SPECIAL FABRICATIONS**

Ancon Building Products is an ASSDA accredited specialist fabricator and has experience in working with a range of types and grades of stainless steel. High integrity steel components can be designed and manufactured for a wide range of industries including Civil Engineering, Building, Infrastructure, Water Treatment, Nuclear and Mining.

**General**

Special fabrications: If special stainless steel fabrications are documented, provide Ancon fabrications.

Proposal: If special steel fabrications with complex protective coatings for high corrosivity environments are documented, submit a proposal incorporating stainless steel fabrications from Ancon Building Products.

**3.12 FLOORING**

Ancon Staigrig is a cost-effective alternative to galvanized and aluminium grid floors and is manufactured in standard sized panels for ease of site handling.

**General**

Flooring: If stainless steel flooring is documented, provide Ancon flooring.

Proposal: If flooring in aluminium or with complex protective coatings for high corrosivity environments are documented, submit a proposal incorporating Ancon flooring.

**3.13 COLD FORMED SECTIONS**

Ancon Building Products' advanced manufacturing facilities produce a diverse range of cold formed sections to suit customer's requirements.

**General**

Cold formed: If stainless steel cold formed sections are documented, provide Ancon sections.

Proposal: If cold formed sections in aluminium or with complex protective coatings for high corrosivity environments are documented, submit a proposal incorporating Ancon stainless steel sections.

**3.14 STAINLESS STEEL REINFORCEMENT**

Reinforcing bar is available direct from stock and can be supplied bent and threaded to suit the application.

Tying wire of 1.2 mm diameter is available from stock.

**General**

Reinforcement: If special stainless steel reinforcement is documented, provide Ancon reinforcement.

Proposal: If reinforcement with complex protective coatings for high corrosivity environments is documented, submit a proposal incorporating Ancon stainless steel reinforcement.

Tie wire: Provide Ancon stainless steel tie wire for use with Ancon reinforcement.

**3.15 STEEL CONNECTIONS****Steelwork fixings**

The Lindapter method of fixing to or from steelwork is an extremely adaptable system. Steelwork fixings are purpose-made malleable iron hook-bolt adapters that can securely grip the flange of most standard steel sections. With no need to drill or weld onsite because standard components can be assembled simply with the use of spanners. Predominantly for secondary steelwork, the fixings enable beam-to-beam connections to be made quickly and easily on site.

Girder Clamp: If it is documented to secure secondary steelwork to structural members, provide Lindapter Girder Clamps.

These are manufactured specially to order and can be supplied to accommodate any size or type of steelwork. Variations in height and /or angular displacement between the two steel members can also be catered for.

A complete Girder Clamp assembly consists of:

- Standard Grade 8 Hex Nut.
- Standard hardened washer.
- Lindapter clamp (Depends on the type of application).
- Packing piece.
- Location Plate.

- Lindapter clamp similar as above.
- Standard Grade 8.8 Hex Bolt.

### Cavity fixings

General: If fixings are documented to hollow section steel, or to steelwork where access is available from one side only, provide Lindapter cavity fixings.

Lindapter Hollo-Bolt: If fixings are required to secure hollow section steel, or conventional steelwork.

Lindapter Hollo-Bolt applications include the connection or suspension of: Primary steelwork, secondary steelwork, wall ties, blast walling, cladding, fire protection systems, mechanical handling equipment, HVAC equipment and electrical equipment.

Lindibolt: If there is a limitation on the size of the hole to be drilled.

This is a self heading bolt suitable for making connections to cavity steel structures in similar applications to the Hollo-Bolt.

### Floor fixings

General: For chequerplate or open grate flooring, provide Lindapter Floor Fixings.

### Support fixings

Lindapter Support Systems: If fixing to or suspension from structural steelwork is documented, provide Lindapter support systems.

Lindapter Support Systems are ideal solutions for suspension of HVAC equipment, pipework, fire protection systems, electrical equipment, cable trays and also suspended ceilings.

## 4 SELECTIONS

**Schedules** are a way of documenting a selection of proprietary or generic products or systems by their properties. Indicate their locations here and/or on the drawings. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

### 4.1 MASONRY SUPPORT SYSTEMS

#### Masonry support system schedule

Type	Reference number	Cavity size	Location
Bracket angle support system			
Continuous angle support system			
Individual bracket support system			
Stonework support			

Ancon Systems are tailored to suit each job, and are based on the cavity size at the support and the masonry load to be carried. Ancon designs an economical configuration of channel, bracket and angle.

**Bracket angle support system:** Select references from Ancon:

MDC – Standard system.

MDC/R – System with reversed angle.

MDC/I – Inverted system.

MDC/P – Projection (when support leg is below the soffit of the structure).

For further details see [www.ancon.com.au/products/masonry-support/bracket-angle-support](http://www.ancon.com.au/products/masonry-support/bracket-angle-support)

**Continuous angle support system:** Select references from Ancon:

CFA – Standard system.

CFA/I - Inverted system.

CFA/P – Projection (when support leg is below the soffit of the structure).

For further details see [www.ancon.com.au/products/masonry-support/continuous-angle-support](http://www.ancon.com.au/products/masonry-support/continuous-angle-support)

**Individual bracket support system:** Select references from Ancon:

LDB – Standard bracket with stiffener.

LDA – Bracket with angle.

LDB/S – Bracket with stirrup.

LDB/IS - Bracket with stirrup and the stiffener below.

MDB – Standard bracket with stiffener.

MDA - Bracket with angle.

AMK – Standard bracket.

For further details see [www.ancon.com.au/products/masonry-support/individual-brackets](http://www.ancon.com.au/products/masonry-support/individual-brackets)

**Stonework support:** Select references from:

Ancon CFA/S Stonework supports:

CFA/S – Standard corbel angle.

CFA/SC – Corbel with angle leg inclined 15°.

CFA/SD – Corbel angle with dowels.

CFA/SL – Corbel angle with lip.

Ancon MDC/S Stonework supports are based on the MDC masonry support system:

MDC/S – Standard MDC Stonework Bracket.

MDC/SC - Bracket with angle leg inclined 15°.

MDC/SD - Bracket with dowels.

MDC/SL - Bracket with lip.

For further details see [www.ancon.com.au/products/masonry-support/stonework-support](http://www.ancon.com.au/products/masonry-support/stonework-support)

## 4.2 WINDPOSTS AND PARAPET POSTS

### Windposts and parapet posts schedule

Type	Reference number	Location

Ancon Windposts are designed and manufactured to suit each project. Allow sufficient time for design, approval and manufacturing process when placing orders.

Windposts and Parapet post: Select from Ancon WP2 Windposts or Ancon WP4 Windposts and from Ancon WP2 Parapet post or Ancon WP2 Spandrel post.

For further details see [www.ancon.com.au/products/windposts](http://www.ancon.com.au/products/windposts)

For details on connection and ties see [www.ancon.com.au/products/windposts/connections-and-ties](http://www.ancon.com.au/products/windposts/connections-and-ties)

## 4.3 LINTELS

### Lintels schedule

Type	Reference number	Location

Ancon's comprehensive standard range of lintels consists of:

- Housing lintels: Select from Ancon SH Cavity wall lintel.
- Unilintels: Select from Ancon SU Cavity wall lintel.
- Channel lintels: Select from Ancon SC Single leaf wall lintel.
- Solid wall lintels: Select from Ancon SS Single leaf wall lintel.
- Single leaf lintels/Angle lintels: Select from Ancon SL Single leaf wall lintel.

For further details see [www.ancon.com.au/products/lintels](http://www.ancon.com.au/products/lintels)



#### 4.4 WALL TIES AND RESTRAINT SYSTEMS

##### Wall ties and restraint systems schedule

Type	Reference number	Location

Ancon Wall ties: Select from:

- ST1, Staifix AMD Cavity Tie (medium duty), Staifix AMD Veneer Tie (medium duty).
- Helical Wall Tie.
- Ancon masonry to masonry ties or Ancon Frame Cramps.
- Ancon Fastrack Ties.
- Ancon Two-Part Ties for cavities exceeding 150 mm.

Ancon Retaining Clips:

- Insulation retaining clips.
- Ancon H75/2 insulation retainer.

Ancon Wall Starter Systems: Select from:

- 36/8 Wall starter systems (36/8 channel 2320 mm long).
- Staifix Universal Wall Starter System (Suitable for wall widths from 60 mm to 250 mm and masonry up to 8 m high).

Ancon Head Restraints: Select from:

- Ancon IHR – Internal Head Restraint:
- Ancon IHR – B with hole.
- Ancon IHR – V with slot.
- Ancon IHR – C to suit cast-in Channel.
- Ancon FHR – Head Restraint.

Ancon SAH - Sliding Anchors.

Ancon Remedial Wall Ties:

- Ancon MM63.
- Ancon RM63.
- Staifix R/R.
- Stairib Bar.
- Ancon AC 31.
- Ancon AC 31C.
- Cameron T 47.

Ancon Masonry Reinforcement: Select Ancon AMR or Ancon AMR-X.

For further details see [www.ancon.com.au/products/wall-ties-and-restraint-fixings/other-restraint-fixings/masonry-reinforcement](http://www.ancon.com.au/products/wall-ties-and-restraint-fixings/other-restraint-fixings/masonry-reinforcement)

#### 4.5 CHANNEL AND BOLT FIXINGS

##### Channel and bolt fixings schedule

Type	Reference number	Location

Ancon Cast-in Channels range from simple self-anchoring slots for accepting restraint fixings to large capacity channels with integral anchors.

Ancon Surface-Fixed Channels: Plain-backed channels surface-fixed to steel, concrete and masonry.

Ancon bolts and fasteners:

Expansion bolts: Range consists of Single expansion bolts and High performance bolts.

Bonded anchors: Create a strong chemical bond between the anchor and the host material.

Fixings for steelwork: Ancon Steelgrip simplifies the fixing of support systems to hollow steel sections where access is available only from one side.

Cast-in sockets: Sockets enable fixing to concrete where adjustment is either unnecessary or can be provided elsewhere.

For selection of Channels and Bolts download the trade literature from [www.ancon.com.au/products/channel-and-bolt-fixings](http://www.ancon.com.au/products/channel-and-bolt-fixings)

#### 4.6 TENSION SYSTEMS

##### Tension systems schedule

Type	System	Size (mm)	System length (mm)	Material	Finish	Location

Ancon Tension Systems are supplied as full systems and are not available as individual components.

For internal installations, electrodeposited zinc coating Fe//Zn12//A to BS EN ISO 2081 on bars and discs provides protection against corrosion.

Hot-dip galvanizing to BS EN ISO 1461 provides greater protection as only part of the overall protection.

Stainless steel provides the greatest protection and does not require any further treatment.

Dimensions are measured pin-to-pin. For further details see [www.ancon.com.au/products/tension-and-compressionsystems](http://www.ancon.com.au/products/tension-and-compressionsystems)

#### 4.7 SHEAR LOAD CONNECTORS

##### Shear load connectors schedule

Type	Reference number	Location

Conventional dowelled or corbelled joints can be replaced by joints incorporating Ancon shear connectors. The range of shear load connectors provides solutions for a wide range of applications (ground floor slabs, suspended floor slabs, structural control joints in frames and beam to wall or slab connections), loads, slab depths and joint thicknesses and can be provided with a 90 min fire protection sleeve.

Select from:

- Ancon DSD Shear connector is a two-part double dowel shear load connector.
- Ancon DSDQ Shear connector uses the same dowel component as Ancon DSD but has a cylindrical sleeve contained within a rectangular box section to allow lateral movement in addition to longitudinal movement.
- Ancon ESD Shear load connector where loads are smaller than requiring DSD but alignment is important.
- Ancon ESDQ Shear load connector uses the same dowel component as Ancon ESD but has a cylindrical sleeve contained within a rectangular box section to allow lateral movement in addition to longitudinal movement.
- Ancon ESDQ-L Slab-to-Slab Lockable Dowel allows initial movement to take place before the dowel is locked in position.
- Ancon ESDQ-L30 Slab-to-Wall Lockable Dowel allows initial movement to take place before the dowel is locked in position.
- Ancon HLDQ-L30 Slab-to-Slab Lockable Dowel allows initial movement to take place before the dowel is locked in position. This is a high load Lockable Dowel with a design capacity of up to 136kN.
- Ancon ALP Locking Pin allows movement and is then locked. Used where tension loads are high but there is little or no shear load, or the shear load is accommodated elsewhere e.g. used in conjunction with Ancon Lockable Dowels or other shear load connectors.
- Ancon ED is a low cost dowel connector for use in floor slabs where alignment is important but loads are small.
- Ancon Staisil Acoustic Dowel is designed to transfer shear loads and limit sound transmission across joints in concrete.
- Ancon MultiJoint – An all-in-one solution to load transfer, concrete contraction, armoured edge protection and formwork. Suitable for use in ground bearing concrete floor slabs.

- Ancon Dominator Dowel (ADD 75/10) – Individual plate dowel suitable for the majority of applications in ground bearing concrete floor slabs.
- Ancon Hi-Move Dowel (AHM 100/10) - Individual plate dowel suitable for wider than average joints in ground bearing concrete floor slabs.

For further details see [www.ancon.com.au/products/shear-load-connectors](http://www.ancon.com.au/products/shear-load-connectors)

#### 4.8 REINFORCING BAR COUPLERS

##### Reinforcing bar couplers schedule

Type	Reference number	Location

Select Reinforcement Bar couplers from:

- BT: Smallest and most cost-effective in the range. The ends of the bars are enlarged and a parallel thread is cut into the ends to suit the threaded coupler. These are designed and manufactured in accordance with BS EN ISO 9001 and comply to AS 3600 when used with reinforcing bar to AS/NZS 4671.
- MBT: MBT Couplers are suitable where it is not convenient to have the bar ends prepared. The bars are supported within the coupler on two serrated saddles and are locked in place by a series of special lockshear bolts.

For further details see [www.ancon.com.au/products/reinforcing-bar-couplers](http://www.ancon.com.au/products/reinforcing-bar-couplers)

#### 4.9 REINFORCEMENT CONTINUITY SYSTEMS

##### Reinforcement continuity systems schedule

Type	Reference number	Location

Keybox Reinforcement Continuity Systems are suitable for use in any construction joint in concrete but the most common applications are in floor slabs, walls, stairwells, corbels, diaphragm walls, jumpforms and brick support ledges. These systems meet the requirements of AS/NZS 4671.

- Standard range.
- Special requirements (Coupler boxes).

For further details see [www.ancon.com.au/products/reinforcement-continuity-systems/keybox-system](http://www.ancon.com.au/products/reinforcement-continuity-systems/keybox-system)

KSN Threaded Anchors - The use of Ancon KSN Threaded Anchors with BT threaded reinforcing bars can simplify concrete design at construction joints, typically in wall-to-slab applications. This system eliminates the need to drill formwork or concrete. It replaces coggled or hooked bar ends, simplifying bar scheduling and minimising congestion in the wall.

For further details see [www.ancon.com.au/products/reinforcement-continuity-systems/ks-threaded-anchors](http://www.ancon.com.au/products/reinforcement-continuity-systems/ks-threaded-anchors)

#### 4.10 PUNCHING SHEAR REINFORCEMENT

##### Punching shear reinforcement schedule

Type	Reference number	Location

Ancon Shearfix is the ideal solution to the design and construction problems associated with punching shear. For further details see [www.ancon.com.au/products/punching-shear-reinforcement](http://www.ancon.com.au/products/punching-shear-reinforcement). A design program is available from [www.ancon.com.au/shearfix\\_software](http://www.ancon.com.au/shearfix_software)

**4.11 SPECIAL FABRICATIONS****Special fabrication schedule**

Type	Reference number	Location

For further details see [www.ancon.com.au/products/special-fabrications](http://www.ancon.com.au/products/special-fabrications)

**4.12 FLOORING****Flooring schedule**

Type	Reference number	Location

Provide Staigrig: A lightweight, corrosion-resistant open grid flooring ideal for use where hygiene, low maintenance and assured long life are required. Document the grade of stainless steel required as well as span, width and quantity of panels. For further details see [www.ancon.com.au/products/sections-and-flooring](http://www.ancon.com.au/products/sections-and-flooring)

**4.13 COLD FORMED STAINLESS STEEL SECTIONS****Cold formed Stainless steel sections schedule**

Type	Reference number	Location

Ancon is a leading supplier of stainless steel sections and flooring. Stainless steel sections can be fabricated or cold formed in a wide range of shapes such as:

- Angle Sections.
- Zed Sections.
- Channel Sections.
- Lipped Channel Sections.
- I Section.
- T Section.
- Hollow sections.

For further details see [www.ancon.com.au/products/sections-and-flooring](http://www.ancon.com.au/products/sections-and-flooring)

**4.14 STAINLESS STEEL REINFORCEMENT****Stainless steel reinforcement schedule**

Type	Reference number	Location

For further details see [www.ancon.com.au/products/stainless-steel-reinforcement](http://www.ancon.com.au/products/stainless-steel-reinforcement)

## 4.15 STEEL CONNECTIONS

### Steel connections schedule

Type	Reference number	Location
Steelwork fixings		
Cavity fixings - Lindapter Hollo-Bolt - Lindibolt		
Floor fixings - Grate-fast - Floorfast - Type GF3030		
Support fixings - Lindapter Support Systems		

For details on cavity fixings and support fixings see [www.ancon.com.au/products/lindapter-weld-free-steel-connectors](http://www.ancon.com.au/products/lindapter-weld-free-steel-connectors)

#### REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS/NZS 2699		Built-in components for masonry construction
AS/NZS 2699.1	2000	Wall ties
AS/NZS 2699.2	2000	Connectors and accessories
AS/NZS 2699.3	2002	Lintels and shelf angles (durability requirements)
AS 4100	1998	Steel structures
AS/NZS 4671	2001	Steel reinforcing materials
AS/NZS 4673	2001	Cold-formed stainless steel structures
ASTM A240/A240M	2016	Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications

The following documents are mentioned only in the *Guidance text*:

AS 3600	2009	Concrete structures
NATSPEC GEN 006	2007	Product specifying and substitution
NATSPEC GEN 024	2015	Using NATSPEC selections schedules
NATSPEC TR 01	2016	Specifying ESD
BS EN ISO 1461	2009	Hot dip galvanized coatings on fabricated iron and steel articles. Specifications and test methods
BS EN ISO 2081	2008	Metallic and other inorganic coatings. Electroplated coatings of zinc with supplementary treatments on iron or steel
BS EN ISO 9001	2015	Quality management systems. Requirements