Tension and Compression Systems for the Construction Industry

Ancon®
Tension and Compression Systems
High performance in an architectural design

Ancon Tension and Compression Systems are manufactured in accordance with EN 1090: Execution of Steel Structures and Aluminium Structures, to Execution Class 2.

These products are supplied with CE marking to demonstrate compliance with this harmonised European Standard which includes the initial inspection and on-going surveillance of Ancon’s factory production controls (FPC) by an authorised body.

Visit www.ancon.co.uk/CE to access all associated documentation including Declarations and third party FPC certificates.

BS EN 1090-1

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, Ancon’s systems meet the demanding aesthetic requirements of today’s applications which can range from sporting stadia roof structures to glazed areas in office developments.

Ancon manufactures a range of components that can be used to create a variety of assemblies, from simple tie bars to complex bracing systems involving several bars joined at one point. Unlike standard tie bars that require turnbuckles, adjustment to the length is accommodated within the fork connectors.

Building Information Modelling
Ancon 500 tension systems are available as BIM Objects for use in a 3D building model and its associated component database.

Visit www.ancon.co.uk/BIM or the NBS National BIM Library to download our objects in Revit, IFC, ArchiCAD, Vectorworks and Bentley file formats.

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Adjustment without turnbuckles

CE marked to BS EN 1090-1

Supplied as complete systems

Product information in NBS format

Large range of sizes and loads

Polished finish available

Comprehensive international project portfolio

Stainless and carbon steel available

ISO 9001, ISO 14001 & ISO 45001
Ancon 500 Tension System

The Ancon 500 Tension System combines aesthetic appearance with high performance. It is available in various sizes from 8mm to 42mm 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 500N/mm².

✓ CE marked
✓ High load capacity
✓ Carbon steel or stainless steel
✓ Bars from 8mm to 42mm diameter
✓ Choice of finishes
✓ Aesthetically designed forks
✓ Locking nut included as standard
✓ Full adjustment within fork connectors
✓ Visual check of correct installation
✓ Isolation supplied as standard with stainless steel systems

Ancon 500 Tension System
Carbon Steel

The carbon steel Ancon 500 System is suitable for most applications requiring a cost-effective solution. Bars are available in nine diameters from 8mm to 42mm. Performance details are shown on page 10. Bars are either untreated, zinc plated or hot-dip galvanised and are available in most sizes up to 6 metres in length. The availability of each size of bar is given on page 11. The system can be extended over the maximum bar length by the inclusion of couplers or anchor discs. Discs are supplied in the same range of surface finishes as the bars. All fork connectors and locking nuts are zinc plated as standard to provide a basic resistance to corrosion. The fork connectors and couplers are designed to allow adjustments to be made to the system length without the need for turnbuckles.

Other finishes, in addition to those mentioned above, are available on request. All systems are suitable for painting, which Ancon recommends is carried out insitu rather than prior to installation to ensure threads and other recesses are unaffected.

Ancon 500 Tension 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. Stainless steel bars in nine diameters can be supplied, in most cases, in lengths up to 6 metres. Performance details are shown on page 10 and the availability of each size of bar is given on page 11. The system can be extended over the maximum bar length by the inclusion of couplers or anchor discs. The fork connectors and couplers are designed to allow adjustments to be made to the system length without the need for turnbuckles.

Surface finish is usually an important factor in applications using stainless steel. Ancon bars are bright drawn as standard but can be hand polished if required. The stainless steel forks
and locking nuts can be supplied electro-polished, satin-polished or hand polished. The photographs below provide a good indication of the available finishes; actual finishes may differ slightly. Couplers and anchor discs are supplied with a smooth machined finish as standard, and can be satin-polished or hand polished when required. All available finishes and order codes are shown on page 13.

**Isolation System**
Isolation material is supplied as standard with the stainless steel system to enable its fixing to a connecting plate of a dissimilar metal. Each stainless steel fork connector is supplied with two clear, self-adhesive, PET (polyester) washers to be applied around the fixing hole either side of the structure. Stainless steel pins feature a PTFE coating around the barrel.

**Ancon 360 Tension System Carbon Steel**
The Ancon 360 System is available in two sizes for applications requiring a bar diameter above 42mm. This carbon steel system extends the Ancon range to 56mm and a capacity of 712kN. Similar in appearance to the Ancon 500, this system uses bar with a minimum yield strength of 360N/mm². All technical details for the Ancon 360, including performance details, dimensions and the available lengths of each size of bar are shown adjacent to the Ancon 500 on pages 10 and 11.

**Ancon Compression Systems**
To complement the Tension System range, Ancon designs and manufactures Compression Systems. These systems use the same fork connectors and locking nuts as the Tension System but use high strength tubes instead of bars.

They are available in both carbon and stainless steels in a variety of sizes and finishes. To enable Ancon to design a compression system the following information is required:

- Pin to pin dimension
- Applied system load
- Material and surface finish required

For further information on Compression Systems, please contact Ancon.
System Components
The wide range of components available can be used to create a variety of assemblies, from simple tie bars to complex bracing systems involving several bars joined at one point.

Fork Connectors & Locking Nuts
Ancon fork connectors are supplied with a locking nut which provides a neat transition from bar to fork. Forks and their locking nuts have left or right hand threads, and are supplied complete with a pin. They are stamped with the size and either the letter R or L to identify the hand of the thread. The locking nuts firmly lock the bar to the fork and ensure that the connection remains secure. The internally threaded section of the locking nut is recessed to allow the threaded end of the bar to be hidden when the installation is complete.

Adjustments to the length of the system can still be made after installation without a turnbuckle, by loosening the locking nut and rotating the bar. The extent of this adjustment depends on the size of the bar, but will range from ±9mm for an Ancon 500/8 to ±45mm for an Ancon 360/56.

Carbon steel forks and locking nuts are zinc plated as standard. Stainless steel forks and locking nuts are electro-polished as standard and can also be supplied satin or hand polished.

Each stainless steel fork is supplied with two clear, self-adhesive, PET (polyester) washers to isolate the system from a connecting plate of a dissimilar metal.

Pins
The pins are a two-part construction and once installed are flush with the fork. The installation requires a twin-pin driver. Two driver bits of the appropriate size are supplied with each Ancon system. This type of fixing, known as “Snake Eyes”, allows a high torque to be achieved without damage to the pin.

The female section of the pin is located through the fork connector and temporarily held in position. A second driver is then used to wind the male section into position creating a secure connection.

Stainless steel pins are supplied with a PTFE coating around the barrel, as illustrated, to isolate the system from a connecting plate of a dissimilar metal.

Compression Systems
Ancon designs and manufactures Compression Systems which comprise standard fork connectors and pins with bespoke high strength tubes, rather than the tie bars shown on page 7. The same selection of materials and surface finishes are available. For more information please contact Ancon.

*“Snake Eyes” is the registered trademark of Tamperproof Screw Company Inc.*
**Tie Bars**

Tie bars have a right-hand thread at one end and a left-hand thread at the other. Flats are pressed into the bar close to each end. These allow the bar to be screwed into the fork connectors and adjustments to be made at any time after assembly. Neither couplers nor turnbuckles will be required for applications using a single bar between two forks. The bar is correctly installed when all threads are hidden within the locking nut.

The availability of each size of bar is given on page 11. All bars are cut to a tolerance of ±2mm of the specified length.

Carbon steel bars are available either untreated, with the electrodeposited zinc coating Fe/Zn12/A to BS EN ISO 2081 or are hot-dip galvanised to EN 1461.

Stainless steel bars are bright drawn as standard or hand polished when required.

**Couplers**

Couplers have right and left hand threads and are used in applications where more than one tie bar is required between forks. They are supplied with a locking nut for each end of the coupler. Adjustments to the length of the system can still be made after installation, by loosening the locking nut and rotating the bar.

Couplers are machined from bar and can have the provision for a hanger to be fitted to limit the deflection of bars of 16mm diameter or greater. If a hanger is required a lug is welded to the coupler. Stainless steel couplers can be supplied with a polished finish to match the system.

**Anchor Discs**

Anchor discs allow up to eight bars to be connected together. They can be used at the centre of conventional cross bracing, or where several bars need to be connected at one point. Anchor discs are machined from plate and can be supplied polished or coated to match the surface finish of the tie bars.

Ancon can design and manufacture plates in special shapes to replace standard anchor discs and suit the aesthetic requirements of an application.

**Cross Couplers**

When forming a cross brace, a Cross Coupler offers a streamlined alternative to an anchor disc and minimises the number of fork connectors and locking nuts required. Cross Couplers are available in zinc-plated carbon and stainless steel to suit bar sizes from 10 to 24.
Applications
Ancon has supplied Tension and Compression Systems to many structures and buildings. The wide range of components can be used to create a variety of assemblies, from simple tie bars to complex bracing systems involving several bars joined at one point. The following applications demonstrate the variety of uses.

Timber Construction
A combination of timber and steel can use the best properties of each material and achieve a cost-effective and attractive design. Ancon Tension Systems can be connected to timber compression members, and if high loads are involved, several bars can be used together.

Roof Structures
Trusses and lattice frames which support roofs can benefit from the replacement of tension members with the Ancon system. This will allow generous site adjustments to be made to accommodate inaccuracies within the frame. This would not be possible with a conventionally bolted frame.

Canopies
Canopies are frequently supported from above to provide unobstructed access below. Ancon tension bars transfer the load from the front of the canopy back to the main structure or to a mast for free standing canopies.
Stainless Steel Systems
Stainless steel is used for applications where a maintenance-free life is important or where a high quality polished finish is required. This can be particularly impressive when used in conjunction with large areas of glazing.

Cross-Bracing
The use of anchor discs or cross couplers form a cross brace, allowing bars to lie in the same plane. This removes the need to offset bars, with the disc or coupler providing an interesting design feature for the panel.

Glazed Structures
The passage of light is normally a vital consideration in the design of glazed structures. The small profile of the Ancon Tension System ensures the maximum transmission of light while enhancing the overall appearance of the structure.
### Performance and Dimensions

The design resistances include a material factor ($\gamma_m$) of 1.25 against failure. An appropriate partial safety factor ($\gamma_f$) will need to be applied to the characteristic dead, imposed and wind loads.

Forks must be correctly aligned, and positioned in the same plane to ensure that bending is not introduced into the tension system.

#### Design Example

- **Characteristic dead load** = 30.0kN \( \gamma_f = 1.35 \)
- **Characteristic imposed load** = 22.6kN \( \gamma_f = 1.5 \)
- **Design load** = \( (30.0 \times 1.35) + (22.6 \times 1.5) = 74.4\text{kN} \)

Use Ancon 500/20

**Design Resistance** = 79.1kN > 74.4kN

*Ancon Tension Systems are not suitable for dynamic loads.*

#### Ancon 500 & 360 Carbon Steel Tension System

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
<th>48</th>
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<td>23.0</td>
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<td>263.8</td>
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#### Ancon 500 Stainless Steel Tension System

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</thead>
<tbody>
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<td>37.5</td>
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<td>503.2</td>
<td>712.5</td>
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#### Dimensions of Fork Connectors (mm)

<table>
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<td>12</td>
<td>16</td>
<td>20</td>
<td>24/25</td>
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<td>35</td>
<td>42/40</td>
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<td>56</td>
</tr>
<tr>
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<td>l</td>
<td>40</td>
<td>49</td>
<td>60</td>
<td>78</td>
<td>94</td>
<td>115</td>
<td>140</td>
<td>169</td>
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<td>29</td>
<td>35</td>
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<td>60</td>
<td>70</td>
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<td>20</td>
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<td>12.5</td>
<td>16</td>
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<td>28</td>
<td>33</td>
<td>41</td>
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<td>15</td>
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<td>29</td>
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<td>14.5</td>
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<td>30</td>
<td>35</td>
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<td>20</td>
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<tr>
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<td>19</td>
<td>23</td>
<td>27</td>
<td>35.5</td>
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<td>52</td>
<td>62.5</td>
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<td>18</td>
<td>22</td>
<td>27</td>
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<td>38</td>
<td>49</td>
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<td>84</td>
<td>93</td>
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</table>

**Notes:**

- The bar diameter of Ancon 500/24 is 24mm in Stainless Steel and 25mm in Carbon Steel.
- The bar diameter of Ancon 500/42 is 42mm in Stainless Steel and 40mm in Carbon Steel.
- Ancon 360 Systems are only available in Carbon Steel.
### Dimensions of Couplers (mm)

<table>
<thead>
<tr>
<th>Thread Size</th>
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<th>10</th>
<th>12</th>
<th>16</th>
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<tr>
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<td>38</td>
<td>43</td>
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<td>11.5</td>
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<td>17</td>
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<td>Hanger Bar Diameter</td>
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<td>–</td>
<td>–</td>
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<td>8</td>
<td>8</td>
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<td>10</td>
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<td>Note Position</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>33.0</td>
<td>37.0</td>
<td>49.0</td>
<td>59.1</td>
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<td>17</td>
<td>19</td>
<td>30</td>
<td>36</td>
<td>46</td>
<td>55</td>
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</table>

**Note:** Ancon 360 Systems are only available in Carbon Steel.

### Maximum Bar Lengths (metres)

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<tr>
<td>Untreated</td>
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<td>3</td>
<td>7.5</td>
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<td>Hot-Dip Galvanised</td>
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**Note:** Material in excess of these lengths can be sourced to meet special project requirements. Contact Ancon for more information.

### Minimum Material Specification for Carbon Steel Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Thread Size</th>
<th>UTS (Rm) N/mm²</th>
<th>Yield or 0.2% Proof Stress (Rp) N/mm²</th>
<th>Elongation %</th>
<th>Material Reference</th>
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</thead>
<tbody>
<tr>
<td>Bar</td>
<td>8-42</td>
<td>650</td>
<td>500</td>
<td>16</td>
<td>080M40*</td>
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<tr>
<td>Fork Connector &amp; Locking Nut</td>
<td>8-12</td>
<td>520</td>
<td>355</td>
<td>16</td>
<td></td>
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<tr>
<td>Pin</td>
<td>8-56</td>
<td>400</td>
<td>250</td>
<td>20</td>
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*Selected certified material

### Minimum Material Specification for Stainless Steel Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Thread Size</th>
<th>UTS (Rm) N/mm²</th>
<th>Yield or 0.2% Proof Stress (Rp) N/mm²</th>
<th>Elongation %</th>
<th>Material Reference</th>
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<tr>
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<td>Fork Connector &amp; Locking Nut</td>
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<td>500</td>
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*Selected certified material
Anchor Discs

Dimensions of Anchor Discs (mm)

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<thead>
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<th>10</th>
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<th>16</th>
<th>20</th>
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<tbody>
<tr>
<td>500 System</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>30</td>
<td>30</td>
<td>35</td>
<td>48</td>
</tr>
<tr>
<td>360 System</td>
<td>40</td>
<td>50</td>
<td>100</td>
<td>123</td>
<td>148</td>
<td>196</td>
<td>242</td>
<td>282</td>
<td>355</td>
<td>425,5</td>
</tr>
<tr>
<td>Disc Thickness</td>
<td>p</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>30</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Overall Diameter</td>
<td>k</td>
<td>100</td>
<td>123</td>
<td>148</td>
<td>196</td>
<td>242</td>
<td>282</td>
<td>355</td>
<td>425,5</td>
<td>493,5</td>
</tr>
<tr>
<td>Effective Diameter</td>
<td>j</td>
<td>76</td>
<td>93</td>
<td>112</td>
<td>150</td>
<td>184</td>
<td>212</td>
<td>269</td>
<td>318</td>
<td>367</td>
</tr>
<tr>
<td>Hole Diameter for Pin</td>
<td>h</td>
<td>7.5</td>
<td>9.5</td>
<td>11.5</td>
<td>14.5</td>
<td>18.5</td>
<td>21.5</td>
<td>26.5</td>
<td>30.5</td>
<td>35.5</td>
</tr>
</tbody>
</table>

Note: Ancon 360 Systems are only available in Carbon Steel.

Special Requirements
Ancon can design and manufacture anchor plates in special shapes to replace standard discs and suit the aesthetic requirements of any application.
**Connecting Plates**

Connecting plates should be designed to suit each application. The critical dimensions are provided in the table and diagrams. In the examples shown here θ is 45°. These plates should be manufactured from either grade S355 carbon steel or grade 1.4462 stainless steel; users should consider the corrosion properties of the material selected. Isolation material is supplied as standard with the stainless steel tension system to enable its fixing to a connecting plate of a dissimilar metal.

![Diagram of connecting plate dimensions](image)

**Dimensions of Connecting Plates (mm)**

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>16</th>
<th>20</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
<th>48</th>
<th>56</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Plate Thickness</td>
<td>p</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>30</td>
<td>30</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Hole Diameter</td>
<td>h</td>
<td>7.5</td>
<td>9.5</td>
<td>11.5</td>
<td>14.5</td>
<td>18.5</td>
<td>21.5</td>
<td>26.5</td>
<td>30.5</td>
<td>35.5</td>
<td>40</td>
</tr>
<tr>
<td>Position of Hole</td>
<td>t</td>
<td>12</td>
<td>15</td>
<td>18</td>
<td>23</td>
<td>29</td>
<td>36</td>
<td>43</td>
<td>54</td>
<td>63</td>
<td>74</td>
</tr>
<tr>
<td>360 System</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42.5</td>
<td>50.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** Ancon 360 Systems are only available in Carbon Steel. Required minimum yield stress (0.2% proof stress for stainless) for material for connecting plates is 350N/mm². Required minimum UTS for material for connecting plates is 460N/mm².

**Specifying and Ordering**

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

System lengths are measured between the centres of the pins in the forks. The bar lengths are shown in the table on page 11 and should be considered when determining the system length.

Electrodeposited zinc coating Fe/Zn12/A to BS EN ISO 2081 on bars and discs will provide some protection against corrosion, but is only intended to be used for systems which are internal installations. Hot-dip galvanising to EN 1461 will provide greater protection but should be considered as only part of the overall protection treatment. Stainless steel affords the greatest protection and does not require any further treatment.

The Ancon Tension System can be specified as follows: System / size / system length / material / finish.

A fully polished Ancon 500 stainless steel system using 16mm diameter bar, 2750mm between the pins would be specified as: Ancon 500/16/2750/SS/6. The material and finish codes are from the adjacent table.

![Diagram of system length](image)

**Material and Finish Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Material</th>
<th>Bar</th>
<th>Fork &amp; Nut</th>
<th>Coupler</th>
<th>Cross Coupler</th>
<th>Disc</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS/1</td>
<td>Carbon</td>
<td>Untreated</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Untreated</td>
</tr>
<tr>
<td>CS/2</td>
<td>Carbon</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Hot-dip galvanised</td>
</tr>
<tr>
<td>CS/3</td>
<td>Carbon</td>
<td>Hot-dip galvanised</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Zinc plated</td>
<td>Hot-dip galvanised</td>
</tr>
<tr>
<td>SS/4</td>
<td>Stainless steel</td>
<td>Bright drawn</td>
<td>Electro-polished</td>
<td>Machined</td>
<td>Electro-polished</td>
<td>Machined</td>
</tr>
<tr>
<td>SS/5</td>
<td>Stainless steel</td>
<td>Bright drawn</td>
<td>Satin-polished</td>
<td>Satin-polished</td>
<td>Satin-polished</td>
<td>Satin-polished</td>
</tr>
<tr>
<td>SS/6</td>
<td>Stainless steel</td>
<td>Hand polished</td>
<td>Hand polished</td>
<td>Hand polished</td>
<td>Hand polished</td>
<td>Hand polished</td>
</tr>
</tbody>
</table>

**Notes:** This table includes Ancon’s standard finishes. Other finishes are available on request.
Installation Guidance
It is advisable to assemble tension bars on the ground first, before lifting into position over the connecting plates.

The locking nuts should be fully screwed onto the bar at each end, and the bar screwed into the forks, ensuring full thread engagement, using an open-ended spanner of the correct size. The locking nuts must be turned back to the fork and tightened using soft touch pliers for Ancon 500/8 to 500/12 or a hook spanner for Ancon 500/16 and above and the Ancon 360 System.

On a level surface as close as possible to the final fixing location, assemble the full system, without pins, to the required pin-to-pin dimension. The full assembly should be lifted over one connecting plate, avoiding excessive sag by using lifting equipment or temporary props as appropriate. Secure the system in place with the pin. Repeat the process at the other connecting point. Final adjustment/tensioning of bars can now take place. Adjustment should be shared between components to ensure adequate bar engagement throughout the system. Tighten the locknuts against fork ends (and couplers if used), ensuring no threads are visible, to complete the installation.

Installing the pin
Two driver bits of the appropriate size are supplied with each Ancon system. The female section of the pin is located through the fork connector and temporarily held in position. A second driver is used to wind the male section into position creating a secure connection.

Isolation material
Each stainless steel fork connector is supplied with two clear, self-adhesive, PET (polyester) washers to isolate the system from a connecting plate of a dissimilar metal. These washers should be applied around the fixing hole, either side of the plate, prior to the installation of the fork connector.
Other Ancon Products
Wall Ties and Restraint Fixings
Ancon’s standard range includes cavity wall ties for all types of construction including traditional brick/block, thin-joint blockwork and timber or steel frames. Many fixings can be supplied within 24 hours of receiving an order. Bespoke wall ties can be ordered by using a simple reference system for the head, shank and tail of the tie.

Masonry Support Systems
Masonry cladding on steel or concrete framed structures is normally supported from a stainless steel support system, positioned above the horizontal movement joints. Ancon designs solutions for all conditions including the support of special masonry features. The range includes the standard AnconOptima system consisting of short lengths of angle and interchangeable brackets of various depths to accommodate variations in cavity width on site.

Masonry Reinforcement
Ancon AMR Masonry Reinforcement and Ancon Windposts are designed to provide additional lateral support for panels of brickwork. Windposts can be installed into either the inner leaf of blockwork or into the cavity, leaving the blockwork undisturbed. Ancon AMR is a fabricated and flattened stainless steel and carbon steel reinforcement, which locates in the bed joint to strengthen a wall. Parapet Posts are used as vertical support for brickwork in either parapet or spandrel panels.

Insulated Balcony Connections
Ancon’s thermally insulated connectors minimise heat loss at balcony locations while maintaining structural integrity. They provide a thermal break and, as a critical structural component, transfer moment, shear, tension and compression forces. Standard solutions are available for concrete-to-concrete, steel-to-concrete and steel-to-steel interfaces.

Shear Load Connectors
Ancon DSD and ESD Shear Load Connectors are used to transfer shear across expansion and contraction joints in concrete. They are more effective at transferring load and allowing movement to take place than simple single dowels, and can be used to eliminate double columns at structural movement joints in concrete frames.

For further information or advice on specific applications please contact Ancon’s Technical Services Team.

Fork Connector Alignment
Forks must be correctly aligned, and positioned in the same plane to ensure that bending is not introduced into the tension system.

The maximum misalignment of an Ancon System is 0.5˚ as illustrated below.
Masonry Support Systems and Lintels
Masonry Reinforcement
Windposts and Parapet Posts
Wall Ties and Restraint Fixings
Channel and Bolt Fixings

Tension and Compression Systems
Insulated Balcony Connectors
Shear Load Connectors
Punching Shear Reinforcement
Reinforcing Bar Couplers
Reinforcement Continuity Systems
Stainless Steel Fabrications
Flooring and Formed Sections
Refractory Fixings

These products are available from:

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The construction applications and details provided in this literature are indicative only. In every case, project working details should be entrusted to appropriately qualified and experienced persons.

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With a policy of continuous product development Ancon reserves the right to modify product design and specification without due notice.