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May 2009			



Special Fabrications
in Stainless Steel

Ancon[®]

Special Fabrications in Stainless Steel

ANCON LTD

Ancon designs and manufactures high integrity steel components for a wide range of industries including Civil Engineering, Building, Infrastructure, Water Treatment, Nuclear and Mining. Primarily, products are manufactured from stainless steel.

The company supplies projects worldwide ranging from small-scale residential developments to major infrastructure projects. The larger projects require considerable material tonnage and have delivery schedules which may span several years.

Company History

Ancon's origins date back to 1882 when 'George Clark' was founded in Sheffield, England. The Ancon name came from 'Ancon Stainless Steel Fixings', which was founded in 1971 and merged with George Clark in 1993. The company's head office is still located in Sheffield, the city which is world renowned as the traditional centre of the stainless steel industry.

Today, Ancon has 350 employees, three UK manufacturing sites and nine overseas operations located in Australia, United Arab Emirates, Germany, Switzerland and Austria.

Ancon is part of a substantial building materials group with a turnover in excess of €20billion, operations in 34 countries and approximately 92,000 employees.

Environment, Health & Safety

Ancon has well developed EHS systems and procedures, and has accreditation under ISO 14001. Our Health and Safety policies and procedures are at the forefront of all our internal processes as we aim to make EHS part of our employee culture. To support this cultural approach, the company has developed a behavioural safety programme to further increase awareness and recognition of good EHS practices.



ISO 9001: 2008
FM 12226



ISO 14001: 2004
EMS 505377



OHSAS 18001: 2007
OHS 548992



Ancon Head Office, Sheffield, South Yorkshire, UK



Deeside Manufacturing Facility,
North Wales, UK

Ancon UK
Sheffield (Head Office)
and Deeside

Ancon Austria
Vienna
Ancon Germany
Nuremberg
Ancon Switzerland
Near Bern

Ancon UAE
Dubai

Manufacturing Facilities

Ancon's manufacturing sites are capable of producing a high volume of standard products on very short lead times, and bespoke products specifically engineered to meet individual project requirements.

Products are manufactured from wire, coil, plate, tube and bar, to exacting quality standards. Processes include laser cutting, shearing, welding, section forming, machining and deburring. Large stocks of standard grade material are held in stock in order to meet urgent delivery deadlines.

Operational Excellence

Ancon has a strong culture of Operational Improvement and Innovation. The key objective of this strategy is to enhance customer service. Ancon has been particularly successful at re-engineering and improving its transactional and project management processes in recent years, in order to deliver savings in time and money. Targets are set each year for operational savings, traditionally 1% of turnover.

Technical Support

On a daily basis, Ancon's technical staff liaise with project teams throughout the world, advising on the most cost-effective and practical solutions.

Further Information

For more information on Ancon's capabilities or to submit details of your individual project requirements please contact:

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Special Projects Manager

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Email: info@ancon.co.uk

Visit: www.ancon.co.uk/fabrications



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Ancon Australia
Sydney, Brisbane,
Melbourne, Adelaide
and Perth

STAINLESS STEEL

Stainless steel is not a single specific material; it is the name given to a group of corrosion resistant steel alloys which contain a minimum of 10.5% chromium.

The chromium in stainless steel reacts with oxygen in the air to produce a very thin, inert, chromium-rich oxide film on the surface of the steel. It is the presence of this film which provides the corrosion resistance of stainless steel. This passive film is unlike coatings such as paint or galvanising in one very important way. If it is damaged by abrasion or mechanical means such as cutting, it re-forms and continues to protect the steel.

Stainless steel offers many advantages to the specifier:

- Excellent corrosion resistance
- Life-cycle costing benefits
- 60% Recycled content
- 100% Recyclable
- High ductility and strength
- Non-magnetic (Austenitic only)
- Excellent high and low temperature properties
- Aesthetic surface finish
- Resistance to unsightly staining

Life-cycle costing is increasingly recognised as the true way to establish the cost of construction. The maintenance-free life and confirmed integrity of stainless steel mean that no costly remedial or refurbishment measures are required during the life of the structure. As the trend to higher specification and longer life continues, stainless steel will continue to provide a cost-effective, long term design solution.

Stainless steel is 100% recyclable. When a stainless steel component finally reaches the end of its long service life, it remains a valuable source of its main alloying elements - chromium, nickel and molybdenum. These can be easily recovered and returned to the production process.

In addition to end-of-life recycling, any scrap material generated during manufacture is recycled in the same way.

Austenitic Stainless Steels

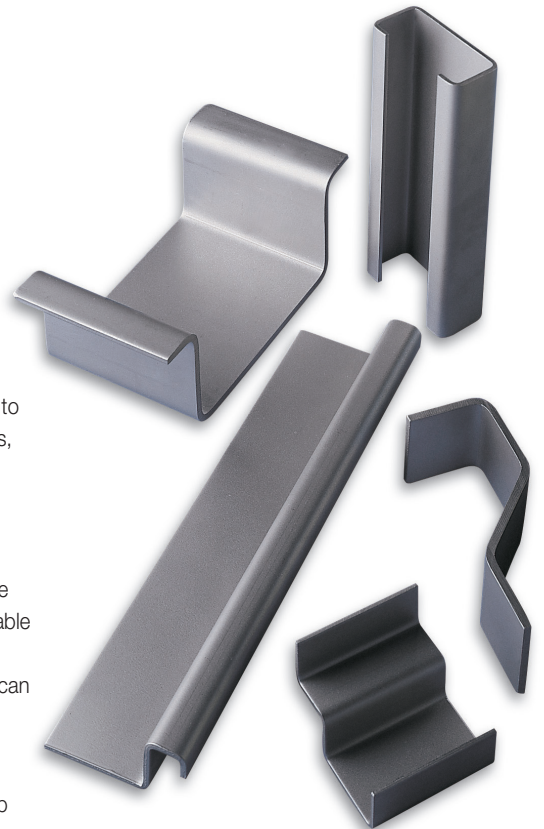
Austenitic stainless steels offer excellent resistance to corrosion. These high chromium steels are ductile and strong. They are non-magnetic and can be readily formed and welded. Higher strengths can be obtained by cold working.

Duplex and Super Duplex Stainless Steels

These steels have a mixed austenitic/ferritic microstructure. They are stronger than austenitic steels but are not as easily formed. They are magnetic and can be welded; their corrosion resistance is better than that of austenitic steels, particularly their resistance to stress corrosion cracking.

More information is available in the Ancon brochure, 'The Use of Stainless Steel'.

Ancon has the capability to fabricate all Austenitic, Duplex and Super Duplex stainless steels.



Formed Sections

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FABRICATION SERVICES

Ancon has a wealth of experience of working with a variety of material grades and boasts an impressive project portfolio. The company has the capability to fabricate all Austenitic, Duplex and Super Duplex stainless steels in a plate thickness of up to 30mm.

All fabrication work is designed and manufactured to suit individual customer requirements and large stocks of stainless steel are maintained in order to meet urgent deliveries.

Ancon supplies both volume and one-off orders to exacting quality standards. The company is well-equipped to supply repeat orders for non-standard products.

The following services are available:

- Plasma, laser and water jet profiling
- Plate sawing
- CNC Press braking
- MIG, TIG, MMA and Spot Welding
- Machining including drilling, milling and turning
- Section rolling
- Perforating
- Wire and Strip, bending and forming
- Bar bending, threading and forming
- Tube Processing
- Coining, forming and blanking
- Pickling
- Deburring and finishing



Welding



Section Forming

Design Service

Technical staff will advise on the most appropriate and cost-effective solution to suit specific applications. Drawings can be submitted to your design team for approval before manufacture.

Project Management

Ancon will dedicate the services of a project manager to ensure all fabrication work is produced and scheduled for delivery to suit site requirements.

Quality and Approvals

All Ancon fabrications are designed and manufactured to the quality requirements of ISO 9001: 2008. Our environmental management system complies with ISO 14001: 2004.

Fabrication personnel are routinely coded to BS4872 and in addition are regularly approved to BS EN 287 to weld to the procedures specific to BS EN 288.

A full range of destructive and non-destructive testing can be carried out to meet contract requirements. Full traceability and certification of raw materials is available as required.



ISO 9001: 2008
FM 12226



ISO 14001: 2004
EMS 505377



Laser Cutting



Shearing

Surface Finish

The surface finish of stainless steel can vary from a matt descaled finish to a bright highly polished finish. Fabrications can be supplied with a specific surface finish to suit the requirements of the application. Ancon offers the following services:

- Mechanical and Electro-polishing
- Bead and Grit Blasting
- Advice on most suitable surface finish

Unless specified all Ancon products will be manufactured in a rolled mill finish to EN 10088.

Ancon is a member of the British Stainless Steel Association. As such, Ancon is able to draw on the Association's specialist technical knowledge and experience, when required, in order to deliver the most practical and cost-effective solution for any application.



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EXAMPLES OF ANCON'S FABRICATION WORK

Tunnelling & Infrastructure

Project References:

- Brisbane North-South Bypass, Australia
- City West Cable Tunnel, Australia
- Perth City Metro Rail Tunnel, Australia
- Clyde Tunnel, UK
- Dartford River Crossing, UK
- Channel Tunnel Rail Link, UK
- Waterloo International Terminal, UK
- Thessaloniki Metro, Greece
- Plabutsch Tunnel, Austria
- Gotthard Tunnel, Switzerland
- Horburg Tunnel, Switzerland



Decorative Bridge Cappings and Bracketry. *Project: Channel Tunnel Rail Link, UK (Contractor: Carillion)*



Tunnel Ceiling Suspension Systems



Project: Brisbane North-South Tunnel, Australia (Contractor: LBB JV, Engineer: Bilfinger Berger)

© Wikipedia.Erk9

Tunnelling & Infrastructure



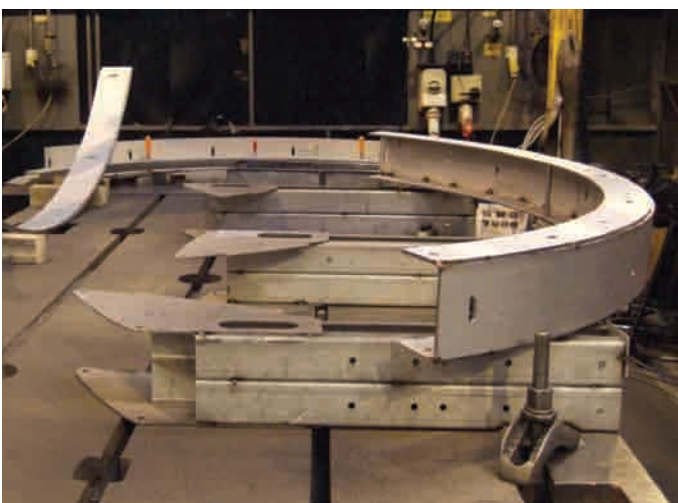
Components of Architectural, Fire-Resistant Tunnel Linings and Support Systems



Tunnel Linings. *Project: Clyde Tunnel, UK
(Contractor: Byzak, Engineer: Faber Maunsell)*



Project: City West Cable Tunnel, Australia (Client: Energy Australia, Contractor: Thiess, Engineer: Maunsell/AEcom)



Cable Support Systems



*Project: Carlton Cable Tunnel, Australia
(Client: Energy Australia, Contractor: The Abergeldie Group, Cable Support Engineering: Ancon)*

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Tunnelling & Infrastructure



Project: Waterloo International Terminal, UK

Maintenance Walkways. Project: Perth Metro Rail, Australia (Contractor: Leighton Kumagai JV)



Road Deck Endplates. Project: Dartford East Tunnel, UK (Contractor: Kvaerner/Skanska)



Engineered Reinforcing Bar. Project: Cradlewell Bypass, UK (Contractor: Alfred McAlpine/Carillion)

Marine & Water Treatment



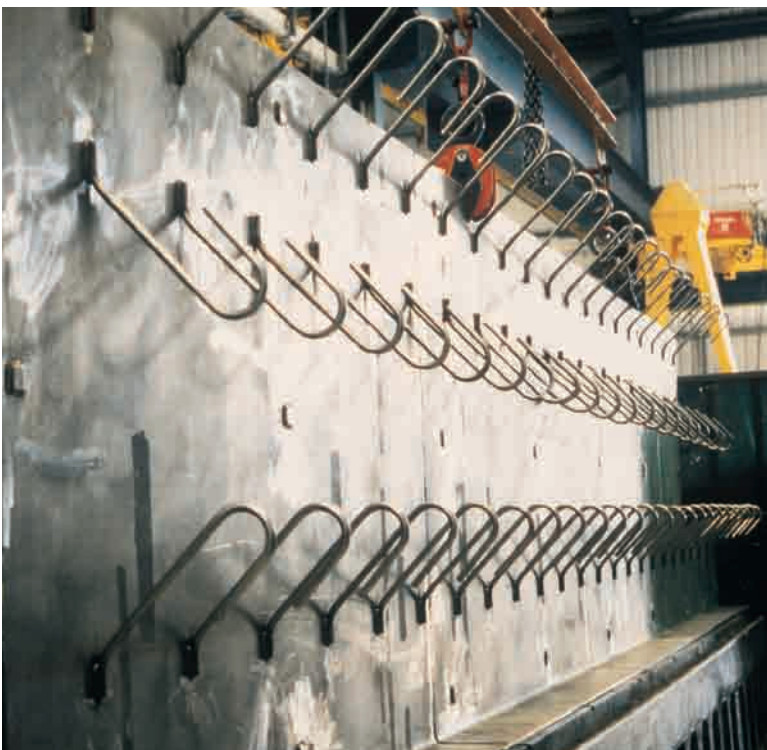
Pressure Tanks



Aesthetic Presswork



Sewage Flow Control Systems



Dock Gate Endplates. (Client: Ministry of Defence, UK)



Access Walkways and Ladders

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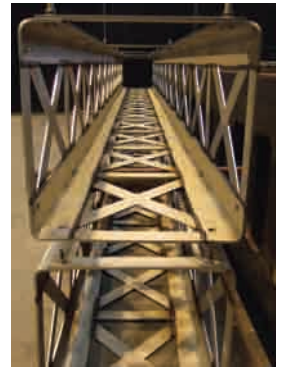
Building & Construction



Project: One London Wall, UK (Architect: Foster and Partners)



External Cladding Support Systems



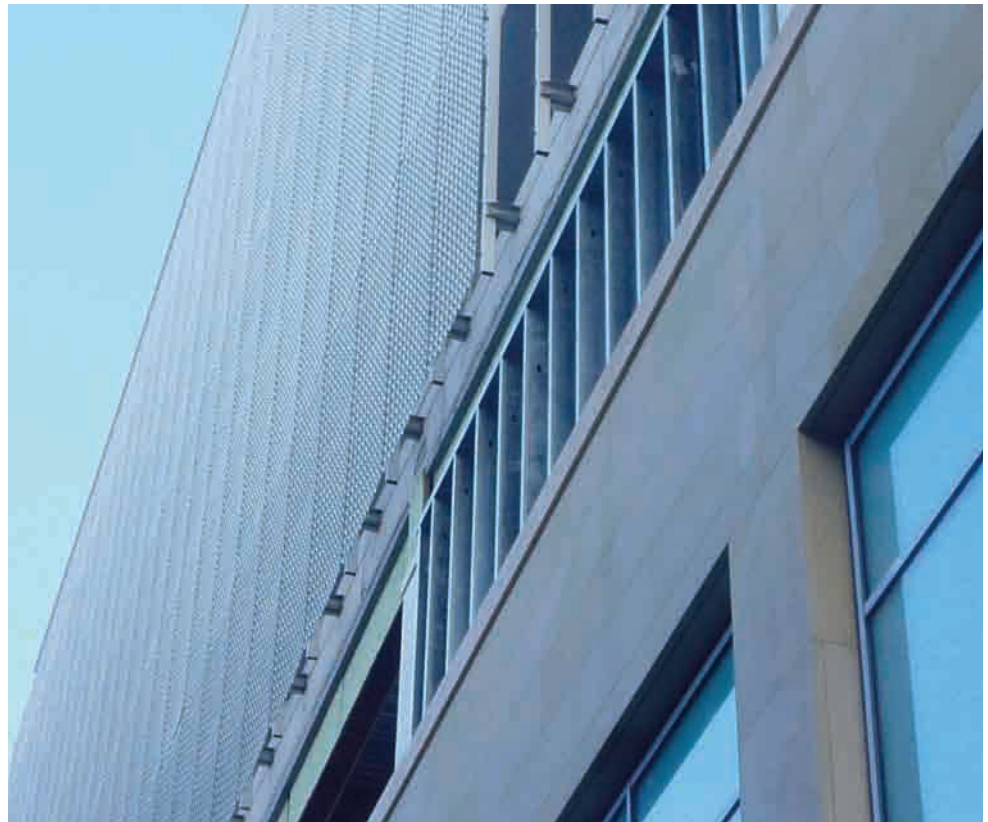
© Christopher Smallwood Architects



Exposed Architectural Features



Fixings and Bracketry for Architectural Claddings
(Façade: James and Taylor)



© James and Taylor Ltd

OTHER ANCON PRODUCTS

Masonry Support Systems

Structures with brick or stone cladding will usually necessitate the use of stainless steel support for the masonry. Ancon Support Systems form a horizontal support angle in the outer leaf. Ancon Windposts span vertically between floors to provide lateral support for large panels of brickwork or panels with openings. Ancon Masonry Reinforcement is manufactured from flattened steel wire and locates in a bed joint to strengthen masonry panels.

Channel and Bolt Fixings

Cast-in channels are available in different sizes ranging from simple self anchoring channels for restraints, to large capacity channels with integral anchors. A selection of channels can also be supplied plain-backed for surface fixing. Stainless steel expansion bolts and resin anchors complete the range.

Shear Load Connectors

Ancon DSD 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 plain dowels. The two-part construction ensures alignment, vital where movement is required. The Ancon DSDQ features a rectangular box section to allow lateral movement in addition to longitudinal movement.

Punching Shear Reinforcement

Ancon Shearfix is used within a slab to provide additional reinforcement around columns to alleviate the effects of punching shear. The system consists of double-headed studs welded to flat rails, positioned around the column head. The shear load from the slab is transferred through the studs into the column.

Reinforcement Continuity Systems

Reinforcement Continuity Systems are an increasingly popular means of maintaining continuity of reinforcement at construction joints in concrete; they eliminate the need to drill shuttering and can simplify formwork design, thereby accelerating the construction process. The Ancon Eazistrip System is CARES approved and is available in both standard units and special configurations.

Reinforcing Bar Couplers

The use of reinforcing bar couplers can provide significant advantages over lapped joints. Design and construction of the concrete can be simplified and the amount of reinforcement required can be reduced. The joint can also remain unaffected by any loss of cover because the strength of a mechanical splice is independent of the concrete in which it is located. The range includes threaded and mechanically bolted couplers.

Tension Systems

Tie bars are increasingly being used in structures and buildings as an architectural as well as a structural element. Ancon Tension Systems comprise a range of components which can be supplied in carbon steel or stainless steel in a variety of sizes and finishes. A variety of assemblies can be created from simple tie bars to complex bracing systems involving several bars joined at one point.

Reinforcing Bar

Ancon supplies stainless steel plain and ribbed reinforcing bar direct from stock. Grade 1.4301 (304), grade 1.4436 (316) and lean duplex stainless steels are readily available.

Floorplate and Open Grid Flooring

Ancon's stainless steel floorplate and open grid flooring are ideal for environments where corrosion resistance, hygiene, durability and slip resistance are essential. This flooring is suitable for a wide variety of industries including chemical, marine engineering, catering and pharmaceutical. When required, floorplates can be supplied with a polished surface finish.



Design Program Available



Design Program Available





Ancon Building Products

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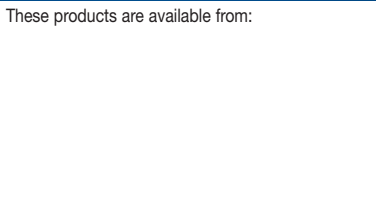
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The construction applications and details provided in this literature are indicative only. In every case, project working details should be entrusted to appropriately qualified and experienced persons.

Whilst every care has been exercised in the preparation of this document to ensure that any advice, recommendations or information is accurate, no liability or responsibility of any kind is accepted in respect of Ancon Building Products.

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