



Corus Engineering Steels

---

# In brief

---

What we do, where to find us

## Contents

- 1 Key facts
- 2 Management
- 3 Sales offices and contacts
- 4 Health and safety
- 5 Corporate Social Responsibility
- 6 Environmental policy
- 8 Quality approvals
- 9 Quality policy
- 10 Products & additional services
- 12 Process routes
- 14 Steelmaking & casting
- 15 Remelting
- 16 Primary rolling & finishing
- 18 Narrow Strip
- 19 Aerospace Service Centre
- 20 Re-rolling
- 22 Bright Bar
- 24 Midland Service Centre
- 26 Stockholders
- 28 Overseas sales

## Key facts

**Corus is committed to the manufacture and marketing of engineering steel products. Our philosophy is one of continuous improvement. We aspire to being a leader in all aspects of the business environment.**

- High grade and special steels for the world's leading companies in markets ranging from automotive to aerospace, civil engineering to component manufacturing, energy industries to consumer goods
- Europe's most comprehensive size and specification range of engineering steel products
- Stainless, leaded, alloy and carbon narrow strip and engineering steel bars to international, or customer specifications
- World's largest producer of leaded and free machining steels
- Recognised expertise in engineering steels technology, manufacture and applications
- Investing in "best in class" lean manufacturing facilities
- Environmentally conscious and UK's largest manufacturer of recycled steel products
- Committed to safety, employee development and local community initiatives

# Management

<b>Kees Stolwijk</b>	Managing Director
<b>Tim Oldfield</b>	Finance Controller
<b>Gerry Toyer</b>	Human Resources Director
<b>Steve Smith</b>	Engineering Director
<b>Martin Boul</b>	Technical Director
<b>Sue Turner</b>	Logistics and Planning
<b>Mark Broxholme</b>	Director Aldwarke Cast Products
<b>Colin Muncie</b>	Director Specialised Products
<b>Ian Fretwell</b>	Director Bar Products

# Sales offices and contacts

## **Bolton (Aerospace Service Centre)**

T: +44 (0)1204 394474 F: +44 (0)1204 531762

### **Richard Lowe**

Commercial Manager, Aerospace

## **Rotherham**

T: +44 (0)1709 371234 F: +44 (0)1709 826233

### **Peter Gill**

Commercial Manager

Specialised Products

### **Martin Hawksworth**

Commercial Manager

Bar Products

## **Narrow Strip**

T: +44 (0) 1709 842546 F: +44 (0) 1709 842609

### **Richard Bell**

Commercial Manager

Narrow Strip

## **Stockholders**

T: +44 (0)1709 826116 F: +44 (0) 1709 826113

### **Richard Farnsworth**

Commercial Manager

The Stockholders business has additional offices/depots at

Bolton, Hetton, Slough and Wolverhampton – see page 26 for details.

## **Wednesbury (Bright Bar)**

T: +44 (0)121 568 4408 F: +44 (0)121 568 4444

### **Tony Harris**

Commercial Manager

## **Wolverhampton (Midland Service Centre)**

T: +44(0)1902 351773 F: +44(0)1902 351741

### **Ivan Johnson**

Commercial Manager, Forging

# Health and Safety

**A key priority for Corus is to ensure the health, safety and wellbeing of its employees, contractors, visitors and neighbouring communities.**

Corus aims to continuously improve safety performance and ensure safe operating practices. CES knows that continuous improvement of our health and safety performance is essential for a successful company.

The Corus approach to health and safety starts with our Health and Safety Policy, founded on eight principles of good health and safety management:

- Leadership
- Hazards, risks and control measures
- Health and well-being
- Competence and behaviour
- Incident analysis and prevention
- Sharing and learning
- Contractors and joint ventures
- Monitoring, audit and review

# Corporate Social Responsibility

Corus takes its corporate responsibilities seriously and has effective management systems and sound governance practices to make sure it delivers on its promises.

## Community involvement

Social investment is not only an integral part of our Corporate and Social Responsibility strategy, but also a part of the CES way of life.

We understand that as a company and as individuals, we have an impact on the society and environment that surrounds us.

## Sustainable development

CES is committed to working in partnership with the entire supply chain to improve environmental performance with a longer term, sustainable, approach.

In the global automotive industry, CES is using leading edge technology to help address key environmental challenges, such as cost-effective lightweighting for reduced CO<sub>2</sub> emissions, passenger/pedestrian safety and the EU End of Life Vehicles Directive (ELVD).

## **Environmental policy**

**Corus Group plc considers care for the environment to be essential, both in terms of our duty to society and to ensure the continuity of our business. We are committed to protecting the environment by minimising the impact of our operations and our products through the adoption of sustainable practices and through continuous improvement in environmental performance and control. Corus Engineering Steels demonstrates this commitment through:**

- ISO 14001 approvals
- continued investment in facilities to control fume, effluent and noise emissions
- continued support for award winning schemes, such as the Steel Valley Project at Stocksbridge, in partnership with the local community, environmental groups and authorities

### **Our objectives are to:**

- meet the requirements of all relevant legislation and agreements
- reduce emissions, minimise waste and control noise
- optimise our use of natural resources, using energy and raw materials more efficiently
- encourage employees to act in an environmentally responsible manner
- respect general environment and wildlife habitats and progressively improve their visual amenity
- respond to the concerns of local communities on environmental issues
- promote the recovery, recycling and reuse of our products
- research and develop new technologies for improving the environmental impacts associated with the manufacture and use of our products
- help customers understand the environmental effects of our products throughout their life cycle
- encourage suppliers and contractors to maintain sound environmental practices
- co-operate with regulatory authorities in the development of cost effective legislation
- audit environmental performance and regularly report progress

# Quality approvals

The quality assurance procedures of Corus Engineering Steels have been assessed by over 100 component and equipment manufacturers, end users and national bodies. The relevant approvals include:

ISO9001	GE
BS EN 9100	General Motors
ISO TS 16949	Gillette
Nadcap	GKN – Aerospace
Det Norske Veritas	Goodrich
Germanischer Lloyd	Hispano Suiza
Korean Register of Shipping	ITP
Lloyds Register	JCB
TuV	Liebherr Aerospace
Agusta Westland	Livbag
Airbus	Messier – Bugatti
Allison Transmission	Messier – Dowty
Alstom	NSK
APPH	Perkins
Avio Propulsione Aerospaziale	Pratt & Whitney
Baker Hughes	Raytheon
BAe Systems	Ratier Figeac
Bell Helicopter Textron	Rolls-Royce
Boeing Commercial Airplane	Safran Group
Bombardier	Scania
Bosch	Siemens
Caterpillar	Sikorsky
Cessna Aircraft	SKF
Delphi	Smiths Industries
Denso	SNECMA
EADS	SNR
Earle M Jorgensen	Timken
Eaton	TRW
FAG Kugelfischer	Turbomeca
Firth Rixson	Visteon
	Volvo Trucks

# Quality policy

**Corus Engineering Steels is committed to meeting customer requirements and expectations by delivering engineering steel products of the right quality on time and in full, and developing products which serve our customers in their markets.**

This is achieved through:

- the continual improvement of quality, service and efficiency using lean principles and tools such as 5S, OEE and TPM
- setting quantitative objectives to enable improvements to be measured against agreed goals
- a programme of continual product development
- customer relations focussed on cooperation and partnership
- employee involvement through a monthly two-way communication process
- ensuring that products and services are of consistent quality
- placing emphasis on defect prevention in our drive towards zero defects
- optimising process flows to minimise processing costs
- developing selected subcontractors to maximise the benefit to our customers
- meeting the highest quality assurance standards in the market sectors we serve, such as EN ISO9001, EN/AS9100, ISO/TS16949 and other third party and customer approvals

# Products and additional services

## Steels produced

- Alloy through-hardening, case-hardening and nitriding steels
- Carbon and carbon manganese engineering steels
- Free machining steels (XLCut)
- High strength free machining steels (Hitenspeed)
- Leaded steels
- Improved machining steels (IM)
- Micro-alloyed steels (Vanard)
- Fracture splittable steels (Fractim)
- Cold heading steels
- Spring steels
- Stainless steels – austenitic, martensitic, duplex
- Tool and die steels
- Steels can be supplied remelted (ESR, VAR, VIM/VAR)
- Boron steels

## Other brand name steels

- High temperature bolting steels (Durehete)
- Free cutting steels (Gemcut)
- High temperature (Red Fox) and creep resistant steels (Esshete)
- Aircraft (Jethete) and maraging (Nimar) steels
- High strength low alloy (HSLA) steels (Hypress)

## Product sizes

- Our scheduled size range is:

Blooms	211	–	457	mm sq	
Billets	50	–	211	mm sq	
Bars	25	–	381	mm dia	
Bar in Coil	15.5	–	60	mm dia	
Turned bar	20	–	350	mm dia	
Drawn bar	8	–	90	mm dia	
Ground bar	10	–	90	mm dia	
Narrow strip – widths up to 500mm	10	–	90	mm dia	
Slab					
	Width	100	–	500	mm
	Thickness	50	–	330	mm

- For square and hexagonal bar, please see page 20 for the relevant size details
- Smaller/larger bar sizes may also be available on request

## Additional services

- Heat treatment
- Hire work rolling and processing of ferrous and non-ferrous materials
- First stage processing for Aerospace products
- Scheduled delivery from our Stockholders and Service Centres
- Cutting to 'use' length

A full range of marketing, technical development and metallurgical testing services are also available.

# Process routes

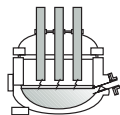
## Primary melting



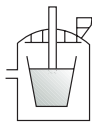
Recycled steel



Electric arc furnace(s)

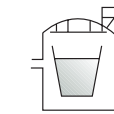
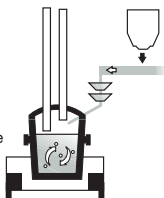


## Secondary steelmaking



VOD

Ladle furnace

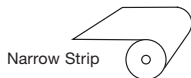


Vacuum degassing

## Re-rolling



Continuous mill



Bars



Bars in coil

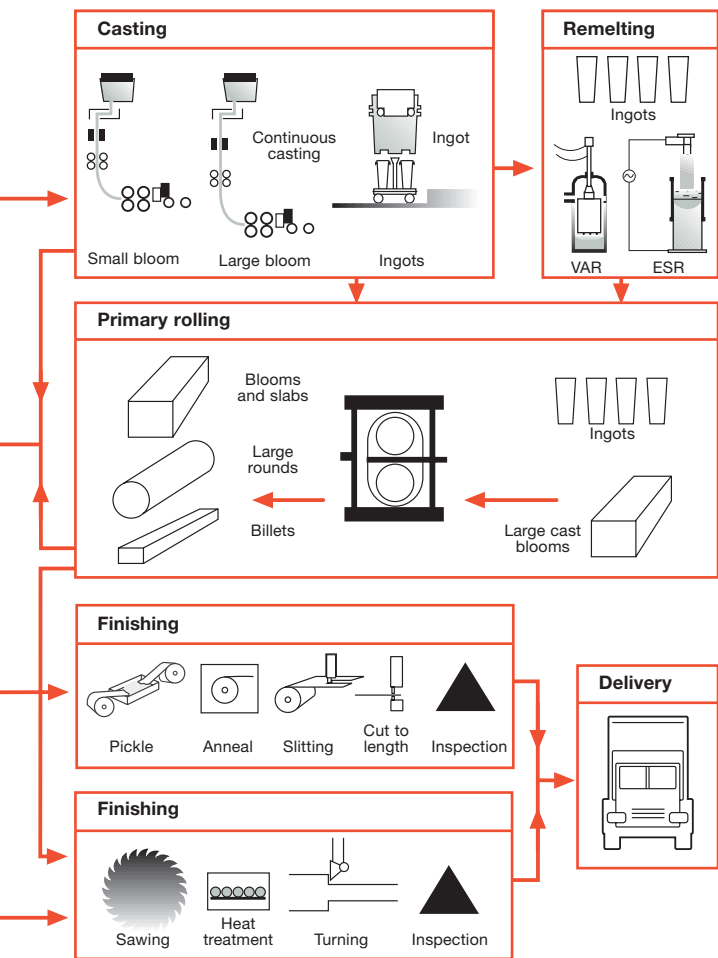
## Bright bar

Drawbench



Drawn/turned bar





# Aldwarke Cast Products

## Steelmaking and casting

**Recyclable steel forms virtually 100% of the raw materials required by the environmentally sustainable electric arc melting process. Our flexible range of secondary steelmaking and casting facilities provides the optimum metallurgical process route for every product.**

### Product range

Ingots	square	5.4 & 6.6 tonnes
Cast Blooms	large bloom	560 mm x 400 mm
	small bloom	180 mm sq

### Steelmaking facilities

- Reiterative computerised models for scrap selection
- 2 x 160t electric arc furnaces
- 3 x ladle steelmaking furnaces
- Advanced ladle leading systems
- 2 Vacuum degassing units
- VOD unit (Vacuum oxygen decarburisation)

### Casting facilities

- WEU bottom poured ingot casting
- Twin strand large bloom caster with complete shrouding, electromagnetic stirring, air mist cooling and full computer control
- Five strand small bloom caster with shrouding, electromagnetic stirring, air mist cooling, full computer control and online predictive quality system and marking

# Specialised Products

## Remelting

Safety critical applications in the aerospace and high performance engineering sectors demand the highest integrity materials. Our fully automated computer controlled remelting furnaces produce steels to the most stringent specifications.

### Product range

ESR Ingots	560 mm sq	(22" sq)
	635 mm dia	(25" dia)
	700 mm dia	(28" dia)
<hr/>		
VAR Ingots	660 mm dia	(26" dia)
	760 mm dia	(30" dia)
	915 mm dia	(36" dia)

### Facilities

- 2 x Electroslag refining (ESR) furnace – fixed and collar mould
- 7 x Vacuum arc remelting (VAR) furnaces

# Primary rolling and finishing

The versatile continuous primary mill and billet finishing facilities provide excellent shape and size control for a variety of product sections including the largest rolled rounds in Europe.

## Product range

### Squares

Blooms	211 – 457 mm sq
Billets	75 – 211 mm sq

---

### Rounds

Rolled*	larger sizes by agreement*	76 – 381 mm dia
Turned		70 – 350 mm dia

---

### Slabs

Width	100 – 500 mm
Thickness	50 – 330 mm

---

### Lengths

Rolled	4.5 – 13 metres
--------	-----------------

## **Rolling**

- Computer controlled soaking pits
- Two computer controlled bloom re-heating furnaces
- Reversing blooming mill and continuous billet mill with in-line scarfing
- In line sawing
- Controlled cooling facilities
- In line automatic product stamping and sampling

## **Inspection**

- Continuous processing line with roller and side press billet straightening, defashing, shot blasting, THERMOMATIC surface and ultrasonic detection
- MAGNAGLO inspection
- Dedicated inspection and finishing facilities for Aerospace steels
- Immersion ultrasonic inspection of remelted primary rounds

## **Finishing**

- Gag, roller and reeler straightening
- Rectification by grinding
- Cold sawing
- Kasto sawing cell for cutting to “use lengths”
- Smooth and precision turning
- Oiling and wrapping line
- Heat treatment furnaces providing oil and water quenching, tempering, normalising, solution treatment and ageing
- Annealing furnaces

# Narrow Strip

At Narrow Strip we produce hot rolled narrow strip, up to 500mm wide, in a variety of grades. Each of our products offers a set of specific properties that makes them suitable for a range of applications in a whole host of market sectors.

## Qualities

- Low carbon steels
- Free cutting steels
- Boron steels
- Medium to high carbon steels
- Alloy steels
- Stainless steels
- Hire / toll rolling of customers special steels and alloys

## Product range

Width	Thickness
200 – 350 mm	1.5 – 10 mm
351 – 420 mm	2 – 10 mm
421 – 500 mm	3 – 9 mm

(restrictions may apply dependant on quality)

## Conditions of supply

Material can be supplied in a variety of conditions:

- Hot rolled
- Black or pickled
- Mill or rotary sheared edges
- As rolled or annealed
- In coils or lengths

# Aerospace Service Centre

The Bolton service centre includes stocking, cutting, boring and machining of aerospace and speciality metals.

## Qualities

- Alloy and stainless steels
- Remelted steels
- High temperature and corrosion resistant alloys
- Aluminium alloys
- Titanium alloys

## Aerospace products (sizes on application)

- Bars
- Flats
- Hexagons
- Bored bar
- Sheet
- Plate
- Cut blanks

# Bar products

## Re-rolling

With precision sizing for all rounds, large coil weights as standard and available in an extended size range, our Thybergh facility is Europe's most modern combined straight and coiled bar mill.

### Product range

<b>Billets</b>		50 – 76 mm sq
<hr/>		
<b>Straight bars</b>		
Rounds*	smaller sizes by agreement*	25 – 105 mm dia
Hexagons		25 – 80 mm a/f
Squares		25 – 48 mm sq
Lengths		18 metres
<hr/>		
<b>Coiled bars</b>		
Rounds		15.5 – 60 mm dia
Hexagons		15 – 52 mm a/f
Squares		15 – 50 mm sq
Coil weights	(nominal)	2150 kg 3225 kg
Coil diameters	O.D	1400 mm
	I.D	1000 mm

### **Facilities**

- 180mm sq bloom feedstock
- Walking beam bloom reheating furnace
- Controllable high pressure water descaling
- 21 stand continuous mill for rounds, squares and hexagons
- On-line ORBIS bar gauge unit
- In line hot eddy current inspection
- Precision sizing block for close tolerance round bar
- Pre-coiler water cooling

### **Straight bar finishing**

- On-line inspection and abrasive cutting
- On-line bundling
- Reeling and straightening
- Eddy current inspection
- THERMOMATIC and ultrasonic inspection for squares & rounds
- CIRCOFLUX crack detection facilities and ultrasonic unit for rounds

### **Coiled bar finishing**

- Computer controlled forced air cooling
- Coil handling system
- On-line inspection and coil compacting facility

# Bright Bar

High volume industrial markets and applications are supplied with bright steel drawn from bar coil. Automotive, warm forging and spring markets rely on our specialist high speed turning, grinding and drawing lines.

## Product range

### Rotherham

Drawn bar	30 – 90 mm dia
Turned bar	20 – 225 mm dia
Lengths	
Drawn	3.0 – 7.0 metres
Turned	3.0 – 9.0 metres
Heat treated	3.0 – 9.0 metres

---

### Wednesbury

Drawn bar	
Rounds	8 – 42 mm dia
Hexagons	10 – 35 mm a/f
Squares	12 – 23 mm sq
Lengths	3.0 – 6.8 metres

## **Facilities**

### **Rotherham**

- Black reeling
  - Danieli drawbench
  - Heat treatment furnaces for hardening and tempering, normalising, annealing, spheroidising, stress relieving
  - Kieserling turning line
  - Landgraf turning line
  - Farmer Norton turning line
  - Inline & offline crack detection
  - Ultrasonic inspection
  - Precision chamfering, precision grinding, precision sawing
- 

### **Wednesbury**

- 1B Schumags
- 2B Schumags
- 3B Schumags
- In-line & offline crack detection
- Cropping
- Facing and chamfering
- Testing and inspection

# Midland Service Centre

Specialist distribution centre for bars and billets, with extensive cutting and processing facilities including shearing, cropping and sawing.

## Product range

Billets	50 – 457 mm sq
Bars	25 – 381 mm dia

## Facilities

- Mair multi-headed saw
- Peddinghaus Caddy 63 Cropper
- Bandsaws
- Carbide circular saws

## Qualities

- Carbon steels
- Free cutting steels
- Alloy steels
- Stainless steels

# Supply Chain Solutions to the Forging Industry, providing a range of facilities to support customer needs.

## Services

- Just In Time / Kanban deliveries
- UK wide distribution network
- Close tolerances on sawn pieces by weight or length
- Full technical support
- Centre of excellence for customer service
- Policy stock items available
- Product development support
- Bar coded bin labels

# Stockholders

**Stockholding, processing and distribution of black and bright engineering steel bars to a full range of carbon, free cutting and alloy steel specifications, including stainless, tool and high speed steels.**

## Sheffield

PO Box 50, Aldwarke Lane, Roundwood, Rotherham S60 1DW

T: +44 (0)1709 826116

F: +44 (0)1709 826113

## Wolverhampton

PO Box 25, Qualcast Road, Horseley Fields, Wolverhampton WV1 3DY

T: +44 (0)1902 875000

F: +44 (0)1902 875011

## Bolton

Unit 2, Pullman Court, Lever Street, Manchester Road, Bolton BL2 1HL

T: +44 (0)1204 370999

F: +44 (0)1204 396684

## Hetton

Hetton Lyons Industrial Estate, Hetton-le-Hole, Houghton-le-Spring,  
Tyne & Wear DH5 0RD

T: +44 (0)191 526 3288

F: +44 (0)191 517 0138

## Slough

477 Malton Avenue, Slough, Berkshire SL1 4QU

T: +44 (0)1753 570171

F: +44 (0)1753 694985

## Product range

### Black rounds

Rolled	< 360 mm dia
Forged	305 – 610 mm dia
Turned	< 590 mm dia
Bored	< 420 mm dia

---

### Sections

Squares	10 – 100 mm sq
Flats	width 13 – 150 mm
	thickness 3 – 50 mm

---

### Bright drawn

Rounds	2 – 160 mm dia
Hexagons	8 – 80 mm a/f
Squares	3 – 100 mm sq
Flats	width 8 – 300 mm
	thickness 3 – 75 mm

---

Turned rounds 25 – 200 mm dia

---

Ground bar sizes on application

---

Stainless steel rounds 12 – 76 mm dia

---

Tool steel rounds 15 – 410 mm dia

---

High speed steel rounds 13 – 164 mm dia

## Overseas sales

**Commercial teams operate on behalf of Corus through wholly owned offices in the countries shown below.**

### **Australia**

T: +61 3 8795 7833

### **Brazil**

T: +55 21 3385 4004

### **China**

T: +852 (0) 280 70196

### **Czech Republic**

T: +42 02 2491 9545

### **Denmark**

T: +45 39 96 09 00

### **Finland**

T: +358 9 454 2450

### **France**

T: +33 4 72 14 86 20

### **Germany**

T: +49 211 49260

### **Hong Kong**

T: +852 2807 0196

### **India**

T: +91 22 2282 3126

### **Italy**

T: +39 02 422 554200

### **Japan**

T: +81 3 5215 0445

### **Malaysia**

T: +603 7726 9226

### **Netherlands/Benelux**

T: +31 (0) 43 4079 292

### **New Zealand**

T: +64 (0)9 271 1780

### **Norway**

T: +47 9325 7828

### **Poland**

T: +48 32 608 3510

### **Portugal**

T: +351 21 781 7040

### **Republic of Ireland**

T: +353 1 631 0600

### **Republic of South Africa**

T: +27 (011) 849 8500

### **Singapore**

T: +65 6 297 6678

### **Spain**

T: +34 91 425 2910

### **Sweden**

T: +46 31 779 3200

### **Switzerland**

T: +41 61 378 9828

### **Taiwan**

T: +886 223 954 638

### **Thailand**

T: +662 664 2903

### **Turkey**

T: +90 212 258 4684

### **USA/Canada/Mexico**

T: +1 847 619 0400



---

**[www.corusgroup.com](http://www.corusgroup.com)**

---

Care has been taken to ensure that this information is accurate, but Corus Group plc, including its subsidiaries, does not accept responsibility or liability for errors or information which is found to be misleading.

Copyright 2007  
Corus

**Corus Engineering Steels**

PO Box 50  
Aldwarke Lane  
Rotherham  
S60 1DW  
United Kingdom  
T +44 (0) 1709 371234  
F +44 (0) 1709 826233  
**[www.corusgroup.com/engineeringsteels](http://www.corusgroup.com/engineeringsteels)**