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Corus

Corus Speciality Steels  
Stocksbridge  
Sheffield S36 2JA  
United Kingdom

T +44 (0) 114 2882361  
F +44 (0) 114 2832079  
E [Enquiries.ces@corusgroup.com](mailto:Enquiries.ces@corusgroup.com)  
W [www.corusaerospace.com](http://www.corusaerospace.com)

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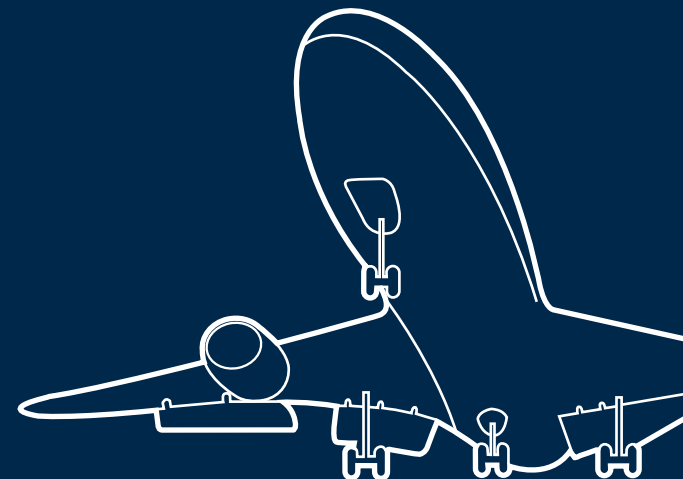
## Corus Speciality Steels

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## Pure Specialisation

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Steels for the Aerospace industry



## Steels for the Aerospace Industry

### Producing high integrity steels

**For more than 60 years Corus has been a leading manufacturer of Aerospace steels with systems and products approved by over 100 OEMs, primes and third party accreditations.**

Our high integrity specialist steels are used in major commercial and military aerospace projects around the world.

A sincere commitment to quality and product excellence is underpinned by our philosophy of 'right first time' and continued investment in new technology.

With the ability to deliver material as ingot, bar and cut pieces in quantities from as little as 1kg we provide our customers with a truly bespoke offering either direct from the mill or from one of our service centres.

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## Quality approvals

Our quality assurance procedures have been assessed by over 100 component and equipment manufacturers, end users, third parties and national bodies. The relevant approvals include:

### Accreditations

AS/EN9100  
ISO 9001: 2000  
ISO 17025  
Nadcap  
Heat treatment  
NDT  
Material testing

Hamilton Sundstrand

Hawker Beechcraft  
Hispano Suiza  
ITP

Liebherr Aerospace  
Lockheed Martin  
Magnaghi  
Messier – Bugatti  
Messier – Dowty  
Microturbo

Pratt & Whitney  
Ratier Figeac  
Rolls-Royce  
Safran Group

Sikorsky  
Smiths Industries  
Snecma  
Turbomeca

### Environmental approval

ISO 14001

### Customer approvals

Agusta Westland  
Airbus  
Alenia  
APPH  
Avio Propulsione Aerospaziale  
BAe Systems  
Bell Helicopter Textron  
Boeing Commercial Airplane  
Bombardier  
Cessna Aircraft  
FAG Aerospace  
Finmeccanica  
General Dynamics  
GE  
Goodrich

## Products and services

Corus has the capability to meet individuals and OEM global requirements, from basic JIT delivery to total supply chain management responsibility.

This is supported by:

- A unique integrated mill and service centre facility.
- Specialist manufacturing capability for VAR and ESR remelted steels.
- Worldwide representation.
- Continuous improvement programmes.
- Application of lean manufacturing practices.

### Service centre

Alloy Steels – Stainless Steels – Maraging Steels – Precipitation Hardening Steels – Nickel Alloys – Aluminium Alloys – Titanium Alloys – Yellow Metals

Rounds – Squares – Rectangles – Plate – Sheet – Tube – Bored Bar (sizes on application)

### Mill product capability

#### Ingots

Square – 5.4T, 6.6T  
Round (multi-fluted) – 6.1T, 8.3T, 12.8T  
VAR – 4.3T, 5.9T, 8.2T  
ESR – 4.3T

#### Squares

70 – 457mm sq

#### Rounds

76 – 381mm dia (larger forged sizes on request)

#### Slabs

Width 100 – 500mm  
Thickness 50 – 330mm

#### Turned Bar

70 – 450mm dia

**Secondary Rolled Bright Bar** 19 – 70mm dia

### Specifications

The following specifications are only an indication of the comprehensive range we can supply or manufacture. In addition, we produce and stock steels to customer specifications.

Specifications are related by nominal analysis only. The reference group may include both single and remelted grades to various mechanical property specifications achieved through differing heat treatments.

## British specifications

### Nominal chemical analysis %

'S' specs	VAR	ESR	Single melted	Related specifications	C	Mn	Cr	Mo	Ni	V	Nb	Other elements
S1	-	-	✓	S21	0.20	0.70						
S14	-	-	✓	W1.1144	0.13	0.50						
S15	-	-	✓	MSRR 6004	0.12	0.55			3.00			
S21	-	-	✓	S1	0.20	0.70						
S28	-	-	✓		0.30	0.50	1.20	0.30	4.00			
S62	-	-	✓	W1.4014	0.20		13.00					
S80	-	-	✓	Z15CN17.03, W1.4044	0.16		16.50		2.40			
S82	✓	✓	✓	S156, MSRR 6009/10/55, 16NCD17, W1.6722/3, ZFNL 9206, LAT1.9043	0.16	0.40	1.20	0.22	4.10			
S92	-	-	✓	W1.1169	0.22	1.50						
S93	-	-	✓	W1.1157	0.40	0.85						
S95	-	-	✓	S119, S139, MSRR 6017/36	0.40	0.60	1.25	0.30	1.40			
S97	-	-	✓	S140, S153, S154, MSRR 6043	0.32	0.55	0.70	0.50	2.50			
S98 to S99	-	-	✓	W1.6745	0.40	0.60	0.70	0.50	2.50			
S106	-	-	✓	MSRR 6001/2/3, 6020/34, 6907/8	0.25	0.50	3.25	0.60				
S114	-	-	✓		0.36	1.50			0.27			
S119	-	-	✓	S95, S139, MSRR 6017/36	0.40	0.60	1.25	0.30	1.40			
S129	-	-	✓	AMS 5645	0.05		18.00		9.50			0.45% Ti
S130	-	-	✓	MSRR 6522/3/4/5, AMS 5646, W1.4546	0.05		17.50		9.60		0.55	
S132 & S134	-	-	✓	MSRR 6011/2, 6097, 6100/4, 6910/1/2, MAT 122, 40CDV12, W1.8523	0.40	0.55	3.25	1.00		0.20		
S135	-	-	✓	MSRR 6013/25, AMS 6440/4, 100C6, W1.3505/14	1.00	0.30	1.50					
S139	-	-	✓	S95, S119, MSRR 6017/36	0.40	0.60	1.25	0.30	1.40			
S140	-	-	✓	S97, S153, S154, MSRR 6043	0.32	0.55	0.70	0.50	2.50			
S143 to S145	-	-	✓	MSRR 6647, BACM 85E, SF 520B	0.05		14.00	1.50	5.50		0.30	1.5% Cu
S147	-	-	✓	SAE 8740	0.40	0.90	0.50	0.25	0.60			
S149	-	-	✓	AMS 6409/14/15/84, SAE 4340, AMS-S-5000, BMS 7-28, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80			
S150	-	-	✓	MSRR 6591/2/5/6/7, 6603/31, 6902/19, W1.4914, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35	0.06% N
S151	-	-	✓	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6906/16/18, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30		0.03% N
S153 to S154	-	-	✓	S97, S140, MSRR 6043	0.32	0.55	0.70	0.50	2.50			
S155	✓	-	-	MAT 137, MTL 1201, AMS 6257, 6417/9, SAE 4340M, BMS 7-26, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08		1.7% Si
S156	✓	-	-	S82, MSRR 6009/10/55, 16NCD17, W1.6722/3, LAT1.9043, ZFNL 9206	0.16	0.40	1.20	0.22	4.10			
S157	-	-	✓	16NCD13, W1.6657, ZFNL 9203, LAT1.9028	0.17	0.45	1.00	0.25	3.25			
S162	✓	-	-	MSRR 6551, DTD 5212, MAT 102, AMS 6512, W1.6359, EZ2NKD18	0.01	0.05		5.00	18.00			8.0% Co +Al/Ti

## British specifications

'Rolls Royce' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %								
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements	
MSRR 6001 to 6002 & 6003	-	-	✓	S106, MSRR 6020/34, MSRR 6907/8	0.25	0.50	3.25	0.60					
MSRR 6004	-	-	✓	S15	0.12	0.55			3.00				
MSRR 6005	-	-	✓		0.12	0.50							
MSRR 6009 & 6010	-	-	✓	S82, S156, MSRR 6055, 16NCD17, W1.6722/3, ZFNL 9206, LAT1.9043	0.16	0.40	1.20	0.22	4.10				
MSRR 6011 & 6012	-	-	✓	S132/4, MSRR 6097, 6100/4, 6910/1/2, MAT 122, 40CDV12, W1.8523	0.40	0.55	3.25	1.00		0.20			
MSRR 6013	-	-	✓	S135, MSRR 6025, AMS 6440/4, 100C6, W1.3505/14	1.00	0.30	1.50						
MSRR 6017	-	-	✓	S95, S119, S139, MSRR 6036	0.40	0.60	1.25	0.30	1.40				
MSRR 6020	✓	-	-	S106, MSRR 6001/2/3, 6034, 6907/8	0.25	0.50	3.25	0.60					
MSRR 6025	✓	-	-	S135, MSRR 6013, AMS 6440/4, 100C6, W1.3505/14	1.00	0.30	1.50						
MSRR 6034	-	-	✓	S106, MSRR 6001/2/3, 6020, 6907/8	0.25	0.50	3.25	0.60					
MSRR 6036	-	-	✓	S95, S119, S139, MSRR 6017	0.40	0.60	1.25	0.30	1.40				
MSRR 6043	-	-	✓	S97, S140, S153, S154	0.32	0.55	0.70	0.50	2.50				
MSRR 6046 to 6047	-	-	✓		0.12		0.60		0.50				0.003% B
MSRR 6050	-	-	✓		0.30	0.75							
MSRR 6055	-	-	✓	S82, S156, MSRR 6009/10, 16NCD17, W1.6722/3, ZFNL 9206, LAT1.9043	0.16	0.40	1.20	0.22	4.10				
MSRR 6097, 6100 & 6104	-	✓	-	S132/4, MSRR 6011/2, 6910/1/2, MAT 122, 40CDV12, W1.8523	0.40	0.55	3.25	1.00		0.20			
MSRR 6119	✓ +	✓	-	S132/4, MSRR 6011/2, 6910/1/2, MAT 122, 40CDV12, W1.8523, PWA 36280, CPW 758	0.40	0.55	3.25	1.00		0.20			
MSRR 6502 to 6506 & 6508 to 6510	-	-	✓	MSRR 6544/58, 6665, 6906/16/18, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30			0.03% N
MSRR 6519 to 6521	✓	-	-	MSRR 6542, 6903, 6920, SF 535	0.09		10.50	0.70	0.35	0.15	0.32		5.7% Co +N/B
MSRR 6522 to 6525	-	-	✓	S130, AMS 5646, W1.4546	0.05		17.50		9.60		0.55		
MSRR 6542	✓	-	-	MSRR 6519/20/21, 6903, 6920, SF 535	0.09		10.50	0.70	0.35	0.15	0.32		5.7% Co +N/B
MSRR 6544	-	✓	-	MSRR 6502/3/4/5/6/8/9/10/58, 6665, MSRR 6906/16/18, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30			0.03% N
MSRR 6551	✓	-	-	S162, DTD 5212, MAT 102, AMS 6512, W1.6359, EZ2NKD18	0.01	0.05		5.00	18.00				8.0% Co +Al/Ti
MSRR 6558	✓	-	-	MSRR 6502/3/4/5/6/8/9/10/44, 6665, MSRR 6906/16/18, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30			0.03% N
MSRR 6591 to 6592 & 6595 to 6597	-	-	✓	S150, MSRR 6603/31, 6902/19, W1.4914, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35		0.06% N
MSRR 6601	-	-	✓	SF 17/4, AMS 5622/43, Z7CNU17.04, W1.4548	0.05		17.00		4.00			0.30	4.0% Cu

## British specifications

'Rolls Royce' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %							
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements
MSRR 6603	-	-	✓	S150, MSRR 6591/2/5/6/7, 6631, 6902/19, W1.4914, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35	0.06% N
MSRR 6621	-	✓	-	MSRR 6674	0.05	13.00	18.00		3.00			0.35% N
MSRR 6631	-	-	✓	S150, MSRR 6591/2/5/6/7, 6603, 6902/19, W1.4914, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35	0.06% N
MSRR 6647	-	-	✓	S143/4/5, BACM 85E, SF 520B	0.05		14.00	1.50	5.50		0.30	1.5% Cu
MSRR 6665	✓	-	-	MSRR 6502/3/4/5/6/8/9/10/44/58, MSRR 6906/16/18, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30		0.03% N
MSRR 6674	-	✓	-	MSRR 6621	0.05	13.00	18.00		3.00			0.35% N
MSRR 6902	-	-	✓	S150, MSRR 6591/2/5/6/7, 6603/31, 6919, W1.4914, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35	0.06% N
MSRR 6903	✓	-	-	MSRR 6519/20/21, 6542, 6920, SF 535	0.09		10.50	0.70	0.35	0.15	0.32	5.7% Co +N/B
MSRR 6906	✓	-	-	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6916/18, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30		0.03% N
MSRR 6907 & 6908	-	-	✓	S106, MSRR 6001/2/3, 6020/34	0.25	0.50	3.25	0.60				
MSRR 6910 & 6911 to 6912	✓	-	-	S132/4, MSRR 6011/2, 6097, 6100/4, MAT 122, 40CDV12, W1.8523	0.40	0.55	3.25	1.00		0.20		
MSRR 6916 & 6918	-	-	✓	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6906, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30		0.03% N
MSRR 6919	-	-	✓	S150, MSRR 6591/2/5/6/7, 6603/31, 6902, W1.4914, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35	0.06% N
MSRR 6920	✓	-	-	MSRR 6519/20/21, 6542, 6903, SF 535	0.09		10.50	0.70	0.35	0.15	0.32	5.7% Co +N/B
<b>'Other' specs</b>												
BACM 85E	-	✓	-	S143/4/5, MSRR 6647, SF 520B	0.05		14.00	1.50	5.50		0.30	1.5% Cu
DMS 127	-	-	✓	AMS 6302	0.30	0.55	1.25	0.50		0.25		0.65% Si
Jethete M152	✓	✓	✓	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6906/16/18, S151, DTD 5066, AMS 5719, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30		0.03% N
Jethete M160	-	-	✓	MSRR 6591/2/5/6/7, 6603/31, 6902/19, S150, W1.4914, SF 448	0.13		10.50	0.60	1.00	0.20	0.35	0.06% N
DTD 5192	-	✓	-		0.42	0.55	1.25	1.00	1.75	0.20		0.65% Si
DTD 5212	✓	-	-	S162, MSRR 6551, MAT 102, AMS 6512, W1.6359, EZ2NKD18	0.01	0.05		5.00	18.00			8.0% Co +Al/Ti
H 46	-	✓	-	PWA1091	0.15	0.75	11.00	0.70	0.60	0.25	0.30	0.06% N 0.005% B

## British specifications

'Other' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %								
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements	
MAT 102	✓	-	-	S162, MSRR 6551, DTD 5212, AMS 6512, W1.6359, EZ2NKD18	0.01	0.05		5.00	18.00				8.0% Co +Al/Ti
MAT 122	-	✓	-	MSRR 6011/2, 6097, 6100/4, 6910/1/2, S132/4, 40CDV12, W1.8523	0.40	0.55	3.25	1.00		0.20			
MAT 135 & MTL 1203	✓	-	-	35NCD16, NCT10-123-11/19MD, IGQ 41-06	0.37	0.45	1.80	0.45	4.00				
MTL 1201	✓	-	-	S155, AMS 6257, 6417/9, SAE 4340M, BMS 7-26, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
RS 138	-	-	✓	DTD 5122	0.33	0.50	1.00	0.20					
RS 241	-	-	✓	W1.7734/6, 15CDV6	0.15	1.00	1.35	0.90		0.25			
SF 15/5	✓	✓	-	AMS 5659, Z7CNU15.05, W1.4545, LAT 1.9037	0.05		15.00		5.00		0.30		3.5% Cu
SF 16/5/1	-	-	✓	Z8CND1704, 1.4418	0.05	0.75	16.00	1.00	5.00				0.03% N
SF 17/4	✓	✓	✓	MSRR 6601, AMS 5622/43, Z7CNU17.04, W1.4548	0.05		17.00		4.00		0.30		4.0% Cu
SF 448	-	-	✓	MSRR 6591/2/5/6/7, 6603/31, 6902/19, W1.4914, Jethete M160, S150	0.13		10.50	0.60	1.00	0.20	0.35		0.06% N
SF 450	-	✓	✓	AMS 5763/73	0.03	0.50	14.75	0.75	6.50		0.60		1.5% Cu
SF 520B	-	✓	✓	S143/4/5, MSRR 6647, BACM 85E	0.05		14.00	1.50	5.50		0.30		1.5% Cu
SF 535	✓	-	-	MSRR 6519/20/21/42, 6903/20	0.09		10.50	0.70	0.35	0.15	0.32		5.7% Co +N/B

## US specifications

'AMS' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %								
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements	
AMS 5612	-	-	✓		0.14		12.00						
AMS 5613	-	-	✓		0.12		12.00						
AMS 5616	-	✓	✓		0.18		13.00		2.00				3.0% W
AMS 5622	✓	✓	-	MSRR 6601, AMS 5643, Z7CNU17.04, W1.4548, SF 17/4	0.05		17.00		4.00			0.30	4.0% Cu
AMS 5629	✓	-	-	W1.4534, 13/8 Mo	0.04		12.50	2.00	8.45				1.2% Al
AMS 5643	-	-	✓	MSRR 6601, AMS 5622, Z7CNU17.04, W1.4548, SF 17/4	0.05		17.00		4.00			0.30	4.0% Cu
AMS 5645	-	-	✓	S129	0.05		18.00		9.50				0.45% Ti
AMS 5646	-	-	✓	S130, MSRR 6522/3/4/5, W1.4546	0.05		17.50		9.60			0.55	
AMS 5659	✓	✓	-	SF 15/5, Z7CNU15.05, W1.4545, LAT 1.9037	0.05		15.00		5.00			0.30	3.5% Cu
AMS 5719	✓	-	-	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6906/16/18, S151, DTD 5066, Jethete M152, Z12CNDV12, W1.4939	0.11		11.50	1.60	2.60	0.30			0.03% N
AMS 5763 & 5773	-	-	✓	SF 450	0.03	0.50	14.75	0.75	6.50			0.60	1.5% Cu
AMS 6257	✓	-	-	S155, MAT 137, MTL 1201, AMS 6417/9, SAE 4340M, BMS 7-26, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
AMS 6260	-	-	✓	AMS 6265/7, SAE 9310	0.11	0.55	1.20	0.10	3.25				
AMS 6263	-	-	✓		0.14	0.55	1.20	0.10	3.25				
AMS 6265 & 6267	✓	-	-	AMS 6260, SAE 9310	0.11	0.55	1.20	0.10	3.25				
AMS 6302	-	-	✓	DMS 127	0.30	0.55	1.25	0.50		0.25			0.65% Si
AMS 6304 & 6305	-	-	✓	PWA 733, PWA-S-6304	0.45	0.60	1.00	0.60		0.30			
AMS 6308	✓	-	-	CPW 245, PWA768, PWA817	0.10	0.40	1.00	3.25	2.00	0.10			0.90% Si 2.00% Cu
AMS 6348 & 6370	-	-	✓	SAE 4130	0.30	0.50	1.00	0.20					
AMS 6382	-	-	✓	SAE 4140, 40CD4	0.40	0.80	1.00	0.20					
AMS 6409	-	-	✓	AMS 6414/15/84, SAE 4340, BMS 7-28, S149, AMS-S-5000, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80				
AMS 6411	✓	-	-	SAE 4330M, BMS 7-122	0.32	0.90	0.90	0.45	1.90	0.08			
AMS 6414 & 6415	✓	-	-	AMS 6409/84, SAE 4340, BMS 7-28, S149, AMS-S-5000, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80				
AMS 6417 & 6419	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, SAE 4340M, BMS 7-26, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
AMS 6418	-	-	✓	DMS 1841, HYTUUFF	0.26	1.30	0.30	0.40	1.85				1.5% Si
AMS 6425	✓	-	-	DMS 1841, HYTUUFF	0.26	1.40	0.30	0.40	1.80				1.5% Si
AMS 6427	-	-	✓	E4330M	0.30	0.80	0.85	0.40	1.80	0.08			
AMS 6431	✓	-	-	D6AC	0.47	0.75	1.10	1.00	0.50	0.10			
AMS 6440 & 6444	-	-	✓	S135, MSRR 6013/25, W1.3505/14, 100C6	1.00	0.30	1.50						
AMS 6470 & 6472 & 6471	✓	-	-	AMS 6709, AMS-S-6709, N135	0.40	0.65	1.70	0.35					1.10% Al

## US specifications

'AMS' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %								
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements	
AMS 6481	✓	-	-	32CDV13	0.34	0.55	3.00	0.90		0.28			
AMS 6484	-	-	✓	AMS 6409/14/15, SAE 4340, BMS 7-28, S149, AMS-S-5000, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80				
AMS 6512	✓	-	-	S162, DTD 5212, MAT 102, W1.6359, EZ2NKD18	0.01	0.05		5.00	18.00				8.0% Co +Al/Ti
AMS 6526	✓	-	-	W1.6974, 9-4-30, BMS 7-182	0.30		1.00	1.00	7.70	0.10			4.5% Co
AMS 6709	-	-	✓	AMS 6470/1/2, AMS-S-6709, N135	0.40	0.65	1.70	0.35					1.10% Al
<b>'SAE' specs</b>													
SAE 4130	-	-	✓	AMS 6348/70	0.30	0.50	1.00	0.20					
SAE 4140	-	-	✓	AMS 6382, 40CD4	0.40	0.80	1.00	0.20					
SAE 4340	✓	✓	✓	S149, AMS 6409/14/15/84, AMS-S-5000, BMS 7-28, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80				
SAE 4330M	✓	-	-	AMS 6411, BMS 7-122	0.32	0.90	0.90	0.45	1.90	0.08			
SAE 4340M	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, BMS 7-26, DMS 1935, 300M, AMS-S-8844, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
SAE 8740	-	-	✓	S147	0.40	0.90	0.50	0.25	0.60				
SAE 9310	✓	-	✓	AMS 6260/5/7	0.11	0.55	1.20	0.10	3.25				
<b>'Other' specs</b>													
AMS-S-5000	-	-	✓	S149, AMS 6409/14/15/84, SAE 4340, BMS 7-28, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80				
AMS-S-6709	-	-	✓	AMS 6470/1/2, 6709, N135	0.40	0.65	1.70	0.35					1.10% Al
AMS-S-8844	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, SAE 4340M, BMS 7-26, DMS 1935, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
ASTM F1314	-	✓	-	22-13-5	0.02	4.80	21.5	2.25	12.00	0.15	0.15		0.35%N
BMS 7-26	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, SAE 4340M, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
BMS 7-28	-	-	✓	S149, AMS 6409/14/15/84, SAE 4340, AMS-S-5000, NCT 10-123-21/2MD, MTL 1101	0.40	0.75	0.85	0.25	1.80				
BMS 7-122	✓	-	-	AMS 6411, SAE 4330M	0.32	0.90	0.90	0.45	1.90	0.08			
BMS 7-182	✓	-	-	AMS 6526, 9-4-30, W1.6974	0.30		1.00	1.00	7.70	0.10			4.5% Co
CPW 245	✓	-	-	AMS 6304-5	0.45	0.60	1.00	0.60		0.30			
DMS 1841	✓	-	-	AMS 6418, HYTUUFF	0.26	1.30	0.30	0.40	1.85				1.5% Si
DMS 1935	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, BMS 7-26, SAE 4340M, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
13/8Mo	✓	-	-	AMS 5629, W1.4534	0.04		12.50	2.00	8.45				1.2% Al
300M	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, BMS 7-26, SAE 4340M, DMS 1935, AMS-S-8844, IGQ 41-11, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
D6AC	✓	-	-	AMS 6431	0.47	0.75	1.10	1.00	0.50	0.10			
HYTUUFF	✓	-	-	AMS 6418, AMS 6425, DMS 1841	0.26	1.30	0.30	0.40	1.85				1.5% Si
N135	✓	-	✓	AMS 6470/1/2, 6709, AMS-S-6709	0.40	0.65	1.70	0.35					1.10% Al
PWA 36280	✓	✓	-	MSRR 6119, CPW 758	0.40	0.55	3.25	0.40	1.00			0.20	

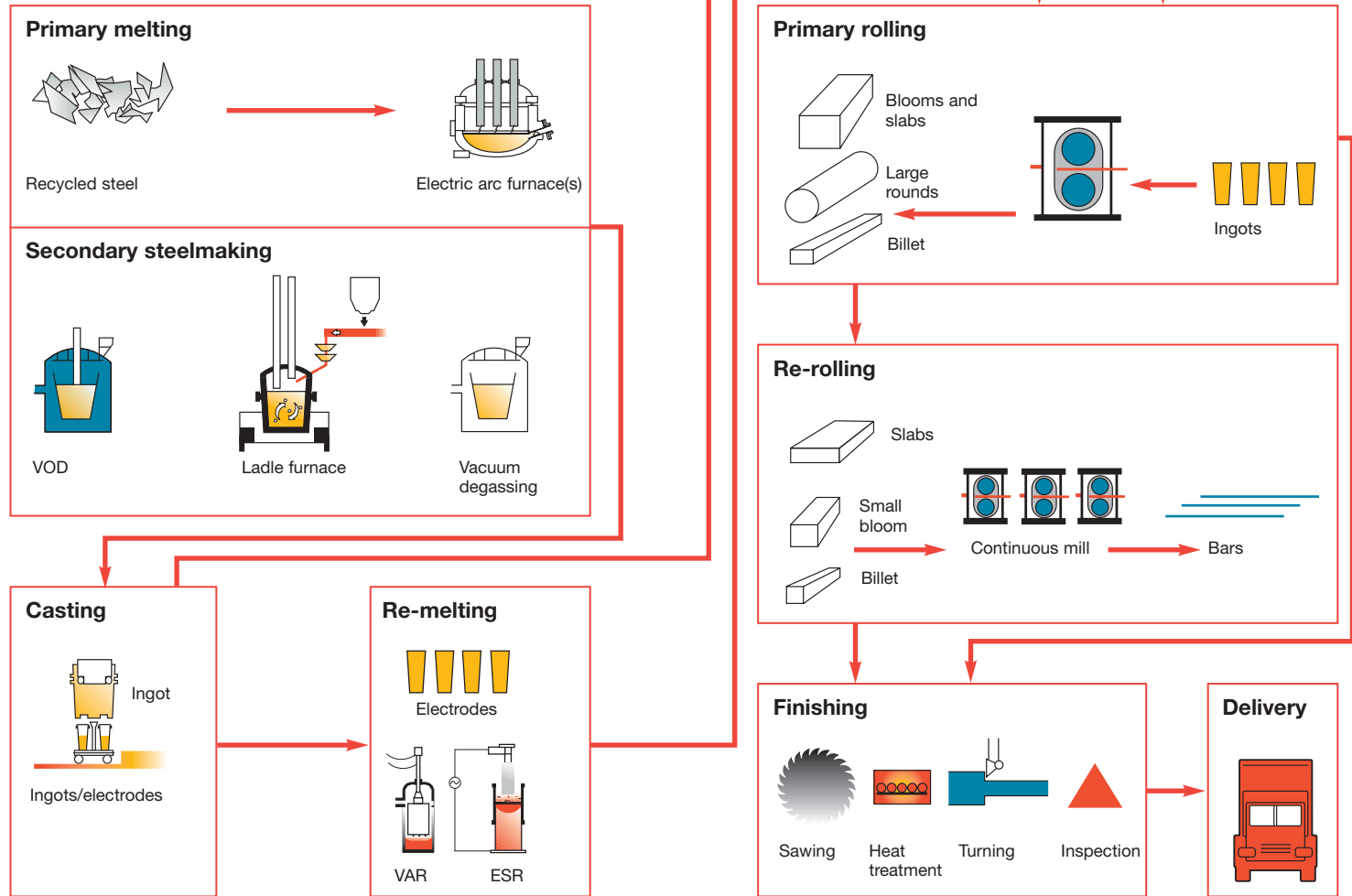
## French specifications

'AIR 9160' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %								
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements	
(E)15CDV6	-	(✓)	✓	W1.7734/6, RS 241	0.15	1.00	1.35	0.90		0.25			
(E)16NCD13	(✓)	(✓)	✓	S157, W1.6657, ZFNL 9203, LAT1.9028	0.17	0.45	1.00	0.25	3.25				
(E)16NCD17	(✓)	(✓)	✓	S82, S156, MSRR 6009/10/55, W1.6722/3, ZFNL 9206, LAT1.9043	0.16	0.40	1.20	0.22	4.10				
(E)30NCD16	-	(✓)	✓	W1.6747	0.30	0.50	1.40	0.45	4.00				
(E)35NCD16	(✓)	-	✓	MAT 135, MTL 1203, NCT10-123-11/19MD, IGQ 41-06	0.37	0.45	1.80	0.45	4.00				
25CD4S	-	-	✓	W1.7214	0.25	0.70	1.00	0.20					
30CD12	-	-	✓	W1.8564	0.30	0.50	3.00	0.40					
(E)32CDV13	(✓)	-	✓	AMS 6481	0.34	0.55	3.00	0.90		0.28			
35CD4	-	-	✓	W1.7220, NCT 10-122-09/12/14MD	0.34	0.70	1.00	0.20					
(E)40CDV12	✓	(✓)	✓	MSRR 6011/2, 6097, 6100/4, 6910/1/2, S132/4, MAT 122, W1.8523	0.40	0.55	3.25	1.00		0.20			
(E)100C6	(✓)	-	✓	MSRR 6013/25, AMS 6440/4, S135, W1.3505/14	1.00	0.30	1.50						
(E)Z12CNDV12	(✓)	(✓)	✓	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6906/16/18, S151, DTD 5066, Jethete M152, AMS 5719, W1.4939	0.11		11.50	1.60	2.60	0.30			0.03% N
Z15CN17.03	-	-	✓	S80, W1.4044	0.16		16.50		2.40				
Z8CND17.04	-	-	✓	1.4418, SF16/5/1	0.05	0.75	16.00	1.00	5.00				0.03% N
EZ2NND18	✓	-	-	S162, MSRR 6551, DTD 5212, MAT 102, AMS 6512, W1.6359	0.01	0.05		5.00	18.00				8.0% Co +Al/Ti
<b>'Other' specs</b>													
40CD4	-	-	✓	AMS 6382, SAE 4140	0.40	0.80	1.00	0.20					
EZ7CNU15.05	✓	✓	-	SF 15/5, AMS 5659, W1.4545, LAT 1.9037	0.05		15.00		5.00		0.30		3.5% Cu
(E)Z7CNU17.04	(✓)	(✓)	✓	SF 17/4, MSRR 6601, AMS 5622/43, W1.4548	0.05		17.00		4.00		0.30		4.0% Cu
IGQ 41-06	✓	-	-	MAT 135, MTL 1203, 35NCD16, NCT10-123-11/19MD	0.37	0.45	1.80	0.45	4.00				
IGQ 41-11	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, SAE 4340M, BMS 7-26, DMS 1935, AMS-S-8844, 300M, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
MTL1101	-	-	✓	S149, AMS 6409/14/15/84, SAE 4340, AMS-S-5000, BMS 7-28, NCT10-123-21/22MD	0.40	0.75	0.85	0.25	1.80				
MTL1201	✓	-	-	S155, MAT 137, AMS 6257, 6417/9, IGQ 41-11 SAE 4340M, BMS 7-26, DMS 1935, AMS-S-8844, 300M, LAT 1.9042, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
MTL1203	✓	-	-	MAT 135, 35NCD16, IGQ 41-06 NCT10-123-11/19MD	0.37	0.45	1.80	0.45	4.00				
NCT 10-122-09MD & 10-122-12MD & 10-122-14MD	-	-	✓	W1.7220, 35CD4	0.34	0.70	1.00	0.20					
NCT 10-123-11MD & 10-123-19MD	-	-	✓	MAT 135, MTL 1203, 35NCD16, RGQ 41-06	0.37	0.45	1.80	0.45	4.00				
NCT 10-123-21MD & 10-123-22MD	-	-	✓	S149, AMS 6409/14/15, 6484, SAE 4340, AMS-S-5000, BMS 7-28, MTL 1101	0.40	0.75	0.85	0.25	1.80				

## German specifications

'Werkstoff' specs	VAR	ESR	Single melted	Related specifications	Nominal chemical analysis %								
					C	Mn	Cr	Mo	Ni	V	Nb	Other elements	
1.1144	-	-	✓	S14	0.13	0.50							
1.1157	-	-	✓	S93	0.40	0.85							
1.1169	-	-	✓	S92	0.22	1.50							
1.3505 & 1.3514	-	-	✓	S135, MSRR 6013/25, AMS 6440/4, 100C6	1.00	0.30	1.50						
1.4014	-	-	✓	S62	0.20		13.00						
1.4044	-	-	✓	S80, Z15CN17.03	0.16		16.50		2.40				
1.4418	-	-	✓	Z8CND17.04, SF16/5/1	0.05	0.75	16.00	1.00	5.00				0.03% N
1.4534	✓	-	-	AMS 5629, 13/8 Mo	0.04		12.50	2.00	8.45				1.2% Al
1.4545	✓	✓	-	SF 15/5, AMS 5659, Z7CNU15.05, LAT 1.9037	0.05		15.00		5.00		0.30		3.5% Cu
1.4546	-	-	✓	S130, MSRR 6522/3/4/5, AMS 5646	0.05		17.50		9.60			0.55	
1.4548	✓	✓	-	MSRR 6601, AMS 5622/43, Z7CNU17.04, SF 17/4	0.05		17.00		4.00		0.30		4.0% Cu
1.4914	-	-	✓	MSRR 6591/2/5/6/7, 6603/31, 6902/19, S150, Jethete M160, SF 448	0.13		10.50	0.60	1.00	0.20	0.35		0.06% N
(WL)1.4939	(✓)	(✓)	✓	MSRR 6502/3/4/5/6/8/9/10/44/58, 6665, MSRR 6906/16/18, S151, DTD 5066, Jethete M152, AMS 5719, Z12CNDV12	0.11		11.50	1.60	2.60	0.30			0.03% N
1.6359	✓	-	-	S162, MSRR 6551, DTD 5212, MAT 102, AMS 6512, EZ2NKD18	0.01	0.05		5.00	18.00				8.0% Co +Al/Ti
1.6604	-	-	✓		0.30	0.50	2.00	0.35	2.00				
1.6657	-	-	✓	S157, 16NCD13, ZFNL 9203, LAT 1.9028	0.17	0.45	1.00	0.25	3.25				
1.6722 & 1.6723	✓	✓	-	S82, S156, MSRR 6009/10/55, 16NCD17, ZFNL 9206, LAT 1.9043	0.16	0.40	1.20	0.22	4.10				
1.6745	-	-	✓	S98, S99	0.40	0.60	0.70	0.50	2.50				
1.6747	-	-	✓	30NCD16	0.30	0.50	1.40	0.45	4.00				
1.6974	✓	-	-	AMS 6526, 9-4-30, BMS 7-182	0.30		1.00	1.00	7.70	0.10			4.5% Co
1.7214	-	-	✓	25CD4S	0.25	0.70	1.00	0.20					
1.7220	-	-	✓	35CD4, NCT 10-122-09/12/14MD	0.34	0.70	1.00	0.20					
1.7734	-	-	✓	15CDV6, RS 241	0.15	1.00	1.35	0.90		0.25			
1.7736	-	✓	-	15CDV6, RS 241	0.15	1.00	1.35	0.90		0.25			
1.8523	-	-	✓	MSRR 6011/2, 6097, 6100/4, 6910/1/2, S132/4, MAT 122, 40CDV12	0.40	0.55	3.25	1.00		0.20			
1.8564	-	-	✓	30CD12	0.30	0.50	3.00	0.40					
<b>'Other' Specs</b>													
LAT 1.9028	✓	-	-	S157, 16NCD13, W1.6657, ZFNL 9203	0.17	0.45	1.00	0.25	3.25				
LAT 1.9042	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, BMS 7-26, SAE 4340M, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, ZFNL 9207	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si
LAT 1.9043	✓	✓	-	S82, S156, MSRR 6009/10/55, 16NCD17, W1.6722/3, ZFNL 9206	0.16	0.40	1.20	0.22	4.10				
LAT 1.9037	✓	-	-	AMS 5659, Z7CNU15.05, W1.4545	0.05		15.00		5.00		0.30		3.5% Cu
ZFNL 9201	-	✓	-		0.17	0.50	1.50		1.50				
ZFNL 9203	✓	-	-	S157, 16NCD13, W1.6657, LAT 1.9028	0.17	0.45	1.00	0.25	3.25				
ZFNL 9206	✓	-	-	S82, S156, MSRR 6009/10/55, 16NCD17, W1.6722/3, LAT 1.9043	0.16	0.40	1.20	0.22	4.10				
ZFNL 9207	✓	-	-	S155, MAT 137, MTL 1201, AMS 6257, 6417/9, BMS 7-26, SAE 4340M, DMS 1935, AMS-S-8844, 300M, IGQ 41-11, LAT 1.9042	0.42	0.80	0.85	0.40	1.90	0.08			1.7% Si

# Aerospace process route



## Ingot Material

All Corus Speciality Steels material is produced via the Electric Arc (EAF) steelmaking route using 100% high quality scrap, the molten steel is ladle refined and vacuum degassed before being cast in Wide End Up (WEU) bottom poured ingot moulds. Ingots can be supplied airmelted, Electro Slag Refined (ESR) or Vacuum Arc Remelted (VAR).

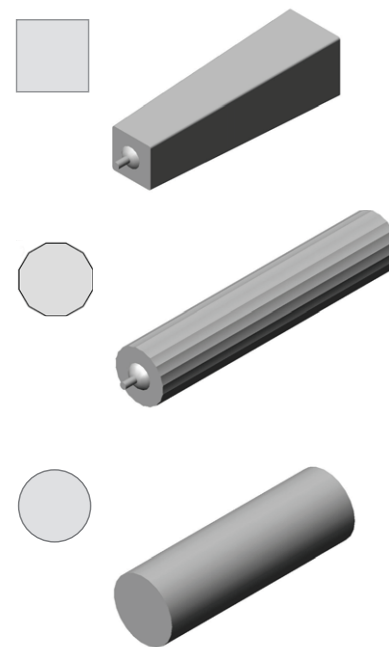
### Black as cast (nominal sizes)

#### Nominal Ingot Dimensions (mm)

		Top	Bottom	Length	Weight (Tonnes)
Un-discarded	<b>Airmelt</b> To ladle analysis				
	<b>Square 5.4t</b>	653	490	2310	5.4
	<b>Square 6.6t</b>	721	550	2285	6.6
	<b>Round (Multi fluted) 6.1t</b>	619	598	3000	6.1
	<b>Round (Multi fluted) 8.3t</b>	722	700	3000	8.3
	<b>Round (Multi fluted) 12.8t</b>	860	845	3220	12.8
<b>Remelt - To individual ingot analysis</b>					
Discarded	<b>VAR Round</b>	660	660	1750	4.3
	<b>VAR Round</b>	760	760	1900	5.9
	<b>VAR Round</b>	915	915	2200	8.2
	<b>ESR Round</b>	635	635	1950	4.3
	<b>ESR Round</b>	700	700	1850	4.3
	<b>ESR Square</b>	555	555	2100	4.3

## Quality Assurance

- Meeting the highest quality assurance standards, such as EN ISO9001, EN/AS9100 and other third party approvals
- Airmelt ingots are supplied undiscarded (uncropped) and can be annealed and fully surface ground as required
- Remelt ingots are supplied discarded (cropped), fully surface ground and annealed as required
- Sawn ingot blocks are available on request.



### Generic Steel types

- Alloy through-hardening, case-hardening and nitriding steels
- Carbon and carbon manganese steels
- Stainless steels – austenitic, martensitic, duplex
- Ultra clean bearing steels
- High quality aerospace and maraging steels
- High temperature and creep resistant steels
- High strength low alloy steels

## Sales offices and contacts

### Corus Speciality Steels

#### Head Office (Mill Sales)

Stocksbridge, Sheffield S36 2JA United Kingdom  
 T: +44 (0) 114 2882361 F: +44 (0) 114 2832079  
 E: enquiries.ces@corusgroup.com

#### Aerospace Service Centre

Union Road, Bolton BL2 2HS United Kingdom  
 T: +44 (0)1204 394474 F: +44 (0)1204 531762  
 E: enquiries.asc@corusgroup.com

#### Aerospace Service Centre Suzhou

Unit A Building, No 5 West Side, No 1 Qiming Road,  
 Suzhou Ind Park, Suzhou 215021 China  
 T: +86 512 8666 8177 F: +86 512 8666 8179  
 E: enquires.asc@corusgroup.com

## Overseas sales

**Commercial teams and selected agents operate on behalf of Corus throughout the world including countries shown below.**

#### Australia

T: +61 2 9437 4211 F: +61 2 9906 1300  
 E: steve@accesssteels.com.au

#### Brazil

T: +5521 3385 4777 F: +5521 2246 8228  
 E: brazil@corusgroup.com

#### China

T: +86 21 5405 1616 F: +86 21 5405 5118  
 E: shanghai@corusgroup.com

#### Czech Republic

T: +42 2 2491 9545 F: +42 2 2491 9546  
 E: prague@corusgroup.com

#### Denmark

T: +45 39 96 09 00 F: +45 39 96 09 49  
 E: denmark@corusgroup.com

#### Finland

T: +358 9 454 2450 F: +358 9 454 2420  
 E: helsinki@corusgroup.com

#### France

T: +33 4 72 14 86 20 F: +33 4 72 41 1994  
 E: lyon@corusgroup.com

#### Germany (Switzerland)

T: +49 211 4926 0 F: +49 211 4926 282  
 E: dusseldorf@corusgroup.com

#### Hong Kong

T: +852 2807 0196 F: +852 2503 3430  
 E: hong-kong@corusgroup.com

#### India

T: +91 22 2287 3126 F: +91 22 2287 5148  
 E: mumbai@corusgroup.com

#### Ireland

T: +353 1 297 3360 F: +353 1 293 8992  
 E: dublin@corusgroup.com

#### Israel

T: 972-3-6442727 F: 972 3 644 2728  
 E: aerniv@aerniv.co.il

#### Italy

TT: +39 010 550851 F: +39 010 5761710  
 E: info@aereng.it

#### Japan

T: +81 3 5215 0445 F: +81 3 5215 0447  
 E: tokyo@corusgroup.com

#### Malaysia

T: +603 7726 9226 F: +603 7726 9227  
 E: malaysia@corusgroup.com

#### Netherlands/Benelux

T: +31 43 4079 219 F: +31 43 4079 297  
 E: benelux@corusgroup.com

#### New Zealand

T: +64 9 271 1780 F: +64 9 271 1970  
 E: auckland@corusgroup.com

#### Poland

T: +48 32 608 3510 F: +48 32 608 3502  
 E: katowice@corusgroup.com

#### Portugal

T: +351 217 817 040 F: +351 217 817 049  
 E: lisbon@corusgroup.com

#### Singapore

T: +65 6 297 6678 F: +65 6 297 6682  
 E: singapore@corusgroup.com

#### South Africa

T: +27 11 849 8500 F: +27 11 849 8501  
 E: johannesburg@corusgroup.com

#### Spain

T: +34 91 425 2910 F: +34 91 579 0234  
 E: madrid@corusgroup.com

#### Sweden (Norway)

T: +46 31 779 3200 F: +46 31 779 3228  
 E: gothenburg@corusgroup.com

#### Taiwan

T: +886 2 2356 8488 F: +886 2 2321 8488  
 E: taipei@corusgroup.com

#### Thailand

T: +662 664 2903 F: +662 664 2905  
 E: thailand@corusgroup.com

#### Turkey

T: +90 212 241 5700 F: +90 212 241 6366  
 E: istanbul@corusgroup.com

#### USA/Canada/Mexico

T: +1 847 619 0400 F: +1 847 619 0468  
 E: CAI@corusgroup.com