

# Stainless Steel Wire Rod

A world that lasts forever

outokumpu  
high performance stainless steel



# Stainless Steel Wire Rod



## Working towards forever

We work with our customers and partners to create long lasting solutions for the tools of modern life and the world's most critical problems: clean energy, clean water and efficient infrastructure. Because we believe in a world that lasts forever.

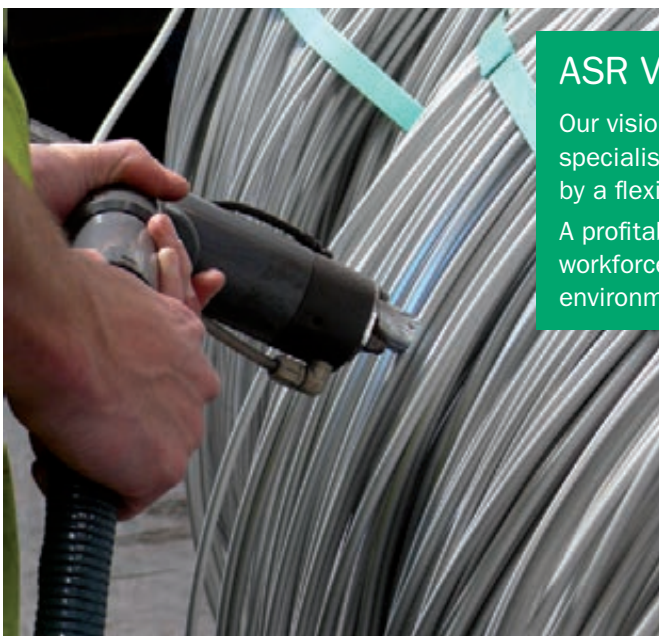


## The Mill

ASR Rod Mill is located in Sheffield, a short distance from the Melting Shop where billet feedstock is produced for our wire rod production. The ASR manufacturing programme consists of a wide range of grades and sizes of which a significant proportion are "niche" products.

The Customer is at the centre of everything we do. We pride ourselves on responding efficiently and effectively to Customer product and service demands. Our Commercial Team in the field and our dedicated Wire Rod Customer Support Team at the Mill in Sheffield work closely with the production operations to ensure all aspects of the Customer's needs, from initial enquiry through to shipment of the finished product, are met.

ASR looks to develop close partnerships with its customers in order to offer engineered solutions to assist them in becoming the leaders in their field and thus giving them a competitive advantage.



## ASR Vision

Our vision is to be recognised in the market as the most responsive specialist rod supplier with industry leading customer service backed by a flexible high quality manufacturing programme.

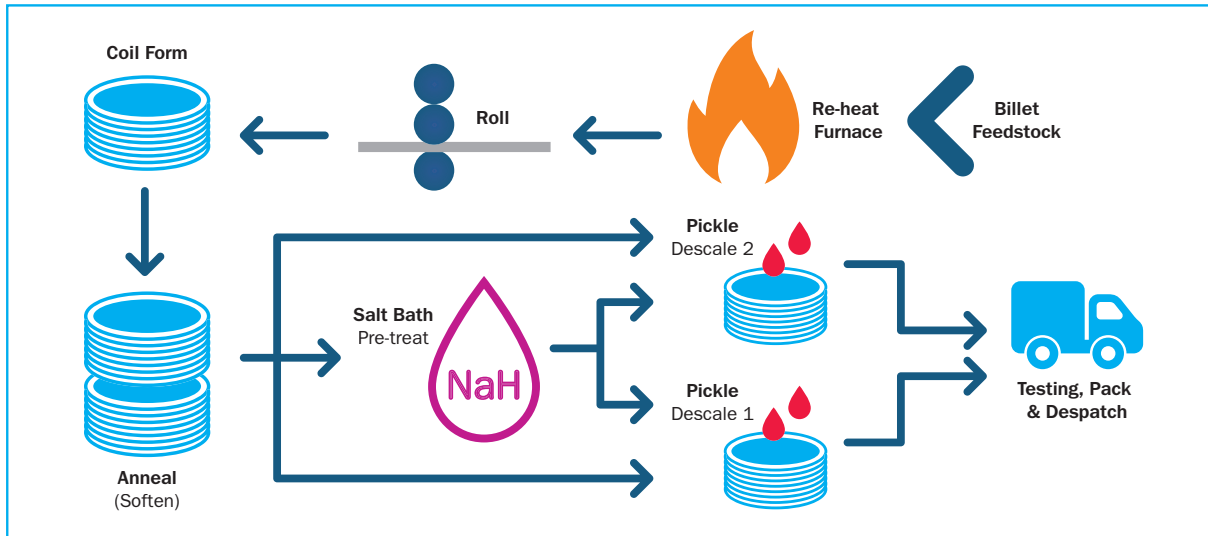
A profitable business supported by an empowered and flexible workforce manufacturing superior products with a high focus on safety, environmental impact and production efficiency.



# Wire Rod Coil






## Process Flow

A compact process flow, supported by modern systems ensures order fulfilment with high product quality, short lead times and high delivery reliability.



## Product Forms and Dimensions

A programme of round wire rod production is complemented by an extensive range of square, hexagon, flat and rebar profiles.

Form	Dimensions
	Round: 5.0 - 27.0 mm 0.5 mm steps to 13.5 mm; 1.0 mm above 14 mm
	Square: 9.0 - 24.0 mm
	Hexagon: 9.0 - 27.0 mm
	Flat: 13.0 - 35 mm x 5.0 - 14.0 mm Not all combinations available - 2:1 min ratio as a guide
	Rebar: 6 / 8 / 10 / 12 / 16 / 20 / 25 mm

## Tolerances

Form	Tolerances
Round, Hexagon & Square	Nominal size +/- 0.2 mm
Flats	Width, nominal size +/- 0.5 mm Thickness, nominal size +/- 0.2 mm
Rebar	To meet BS 6744

## Size and Weight

Dimensions	Inside Diameter (min)	Outside Diameter (max)
5.0 to 9.5 mm	850 mm	1250 mm
10.0 to 27 mm	980 mm	1320 mm
Coil weight 750 kg to 1000 kg (grade dependent)		

# Wire Rod Grades and Properties

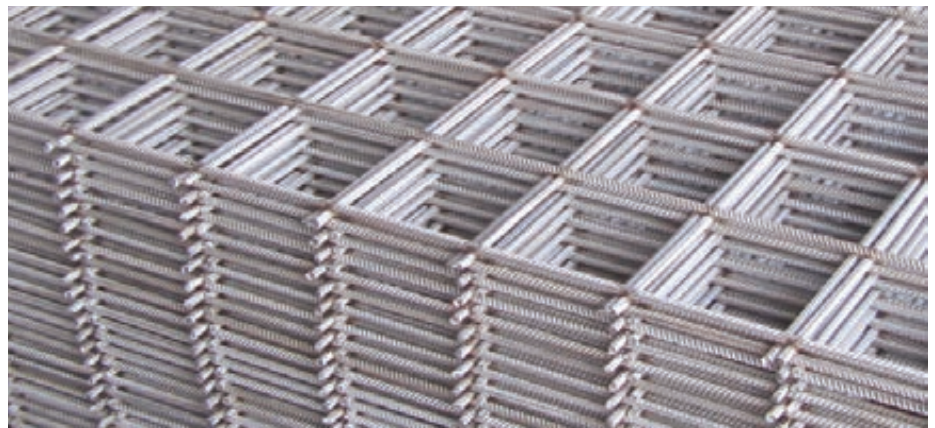
	International Steel Designations							Outokumpu Typical Composition % By Weight						
	Outokumpu Steel Name	ASR Code	EN	ASTM	JIS	UNS	Other	ISO	C	N	Cr	Ni	Mo	Others
Austenitic	4310	302XA	1.4310	301	SUS 301	S30100	-	4310-301-00-I	0.055	-	17.30	7.50	-	-
	4310	302XD	1.4310	302S	SUS 302	S30200	-	-	0.055	-	17.80	8.10	-	-
	4310	302XB	1.4310	302H	SUS 302	S30200	-	-	0.075	-	17.50	8.20	-	-
	4301	304UE	1.4301	304	SUS 304	S30400	-	4301-304-00-I	0.055	-	18.20	9.10	-	-
		304XG	1.4301	304	SUS 304	S30400	-	4301-304-00-I	0.050	-	18.20	8.20	-	-
		304XY	1.4301	304	SUS 304	S30400	-	4301-304-00-I	0.065	-	18.30	8.30	-	-
	4307	304UF	1.4307	304L	SUS304L	S30403	-	4307-304-03-I	0.020	-	18.10	8.10	-	-
		304XR	1.4307	304L	SUS304L	S30403	-	4307-304-03-I	0.020	-	18.20	9.20	-	-
		304UA	1.4307	304L	SUS304L	S30403	304 PRODEC®	4307-304-03-I	0.020	-	18.10	8.10	-	-
		304XW	1.4307	304L	SUS304L	S30403	304 PRODEC®	4307-304-03-I	0.020	-	18.20	9.10	-	-
	4311	304XZ	1.4311	304LN	SUS 304LN	S30453	-	4311-304-53-I	0.025	0.14	17.80	8.60	-	-
	4305	303XI	1.4305	303	SUS 303	S30300	303 PRODEC®	4305-303-00-I	0.040	-	17.20	8.70	-	0.30 S
		303XJ	1.4305	303	SUS 303	S30300	303 PRODEC®	4305-303-00-I	0.050	-	17.20	8.10	-	0.30 S
	4303	305XB	1.4303	305	SUS 305	S30500	-	4303-305-00-I	0.035	-	18.50	11.60	-	-
	4306	304UD	1.4306	304L	SUS 304L	S30403	-	4306-304-03-I	0.015	-	18.50	10.10	-	-
	4567	399XB	1.4567	304Cu	SUS XM7	S30433	-	4567-304-98-X	0.010	-	17.70	9.60	-	3.15 Cu
		399XE	1.4567	304Cu	SUS XM7	S30430	-	4567-304-98-X	0.010	-	17.70	9.60	-	3.40 Cu
		399XG	1.4567	304Cu	SUS XM7	S30430	-	4567-304-98-X	0.010	-	17.30	8.60	-	3.60 Cu
	4401	316XC	1.4401	316	SUS 316	S31600	-	4401-316-00-I	0.045	-	17.60	10.60	2.05	-
	4404	316UK	1.4404	316L	SUS316L	S31603	-	4404-316-03-I	0.020	-	16.80	11.10	2.05	-
		316UL	1.4404	316L	SUS316L	S31603	-	4404-316-03-I	0.015	-	17.20	12.10	2.10	-
		316UM	1.4404	316L	SUS316L	S31603	-	4404-316-03-I	0.020	-	16.80	10.20	2.05	-
		316XM	1.4404	316L	SUS316L	S31603	316 PRODEC®	4404-316-03-I	0.020	-	16.80	11.10	2.05	-
		316XX	1.4404	316L	SUS316L	S31603	316 PRODEC®	4404-316-03-I	0.020	-	16.80	10.10	2.05	-
	4436	316XL	1.4436	316	SUS 316	S31600	-	4436-316-00-I	0.040	-	17.30	11.10	2.60	-
	4406	316UA	1.4406	316LN	SUS 316LN	S31653	-	4406-316-53-I	0.020	0.14	17.30	10.10	2.10	-
4429	316UB	1.4429	316LN	SUS 316LN	S31653	-	4429-316-53-I	0.020	0.14	16.70	11.10	2.60	-	
4435	-	1.4435	316L	SUS 316L	S31603	-	4435-316-91-I	0.020	-	17.30	12.60	2.60	-	
4438	317XA	1.4438	317L	SUS 317L	S31703	-	4438-317-03-I	0.020	-	18.70	13.20	3.60	-	
4571	320XA	1.4571	316Ti	SUS 316Ti	S31635	-	4571-316-35-I	0.040	-	16.60	11.20	2.05	Ti	
	320XD	1.4571	316Ti	SUS 316Ti	-	-	4571-316-35-I	0.010	-	16.80	10.80	2.10	Ti	
4578	316XW	1.4578	316Cu	-	-	-	-	0.015	-	16.80	10.80	2.05	3.20 Cu	
4539	904XA	1.4539	904L	SUS 890L	N08904	-	4539-089-04-I	0.010	-	19.90	24.20	4.30	1.50 Cu	
254 SMO®	254XA	1.4547	-	-	S31254	-	4547-312-54-I	0.010	0.20	20.10	18.10	6.10	0.50 Cu	
4541	321XF	1.4541	321	SUS 321	-	-	-	0.015	-	17.30	9.10	-	Ti	
Heat and Creep	4948	304UE	1.4948	304H	SUS 304	S30409	-	4948-304-09-I	0.055	-	18.20	9.10	-	-
		304XG	1.4948	304H	SUS 304	S30409	-	4948-304-09-I	0.050	-	18.20	8.20	-	-
		304XY	1.4948	304H	SUS 304	S30409	-	4948-304-09-I	0.065	-	18.30	8.30	-	-
	4878	321XB	1.4878	321H	SUS321	S32100	-	4541-321-00-I	0.045	-	17.20	9.10	-	Ti
	4550	347XA	1.4550	347H	SUS 347	S34709	-	4550-347-00-I	0.045	-	17.30	9.10	-	Nb
	153 MA™	-	1.4818	-	-	S30415	-	4818-304-15-E	0.050	0.15	18.50	9.50	-	1.3Si, Ce
	4833	-	1.4833	309S	SUS 309	S30908	-	4833-309-08-I	0.050	-	22.30	12.60	-	-
	4828	-	1.4828	-	-	-	-	4828-305-09-I	0.050	-	19.20	11.10	-	1.7 Si
	253 MA®	253XA	1.4835	-	-	S30815	-	4835-308-15-U	0.080	0.17	20.80	10.40	-	1.6Si, Ce
	4845	310XC	1.4845	310S	SUS 310S	S31008	-	4845-310-08-E	0.045	-	24.70	19.20	-	-
	4841	314XB	1.4841	314	SUH310	S31400	-	4841-314-00-I	0.020	-	24.30	20.30	-	2.2 Si
	-	314XC	-	314	SUH310	S31400	-	4841-314-00-I	0.035	-	23.20	19.10	-	2.2 Si
4886	330XA	1.4886	330	-	N08330	-	-	0.040	-	18.30	34.50	-	1.2 Si	

	Mechanical Properties						Application					
	Outokumpu Steel Name	PRE*	R <sub>p0.2</sub> MPa	R <sub>p1.0</sub> MPa	R <sub>m</sub> MPa	A <sub>5</sub> %	Welding	Cold Heading	Spring	High Temp.	Bright Bar	Rebar
Austenitic	4310	19	300	330	800	50			•			
	4310	19	200	240	570	55			•			
	4310	19	220	270	580	60			•			
	4301	20	290	330	600	55		•			•	
		20	290	330	600	55		•			•	
		20	290	330	600	55		•			•	
	4307	20	280	320	580	55		•			•	
		20	280	320	580	55		•			•	
		20	280	320	580	55					•	
		20	280	320	580	55					•	
	4311	21	320	360	640	55						•
	4305	19	260	330	580	35					•	
		19	260	330	580	35					•	
	4303	20	250	280	570	50		•				
	4306	20	280	320	580	55		•			•	
	4567	19	170	200	440	65		•				
		19	170	200	440	65		•				
		18	170	200	440	65		•				
	4401	25	190	220	500	55			•		•	
	4404	24	220	260	530	55		•			•	
		25	220	260	530	55		•			•	
		24	220	260	530	55		•			•	
		24	220	260	530	55					•	
		24	220	260	530	55					•	
	4436	26	220	260	530	55						•
	4406	27	320	360	620	50					•	
	4429	28	300	340	600	45					•	
	4435	26	270	310	570	55					•	
	4438	31	260	280	580	50					•	
	4571	24	200	250	520	55					•	
24		200	250	520	55					•		
4578	24	175	-	450	45		•					
4539	35	260	300	600	50	•			•			
254 SMO®	43	340	380	680	50				•			
4541	19	250	290	570	55			•		•		
Heat and Creep	4948	20	290	330	600	55				•		
		20	290	330	600	55				•		
		20	290	330	600	55				•		
	4878	18	200	230	540	50				•	•	
	4550	19	230	290	590	65				•		
	153 MA™	22	340	380	660	55				•		
	4833	25	300	340	620	50				•		
	4828	22	270	310	610	55				•		
	253 MA®	24	370	410	700	50				•		
	4845	26	270	310	600	50				•		
	4841	25	240	270	560	50				•		
	-	25	250	280	600	50				•		
	4886	20	240	280	575	40				•		

\*PRE = Cr% + (3.3 x Mo%) + (16 x N%)

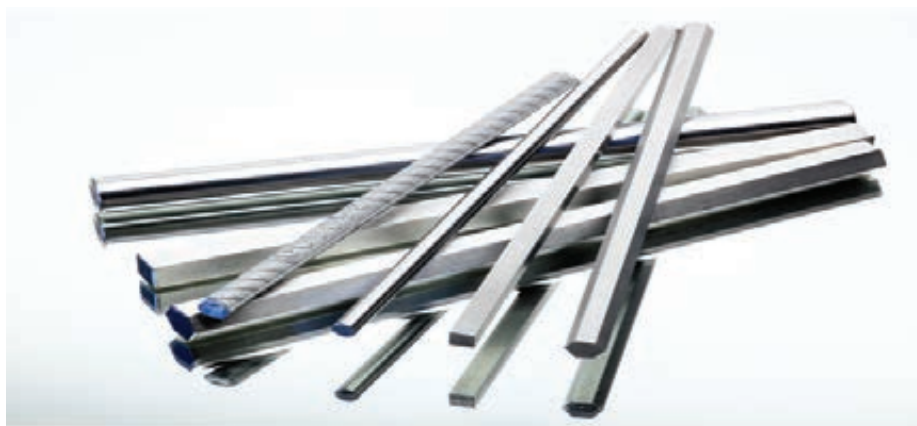
# Wire Rod Grades and Properties Cont.

	International Steel Designations								Outokumpu Typical Composition					
	Outokumpu Steel Name	ASR Code	EN	ASTM	JIS	UNS	Other	ISO	C	N	Cr	Ni	Mo	Others
Martensitic	4006	410XA	1.4006	410	SUS 410	S41000	-	4006-410-00-I	0.130	-	11.90	0.30	-	-
	4005	416XC	1.4005	416	SUS 416	S41600	-	4005-416-00-I	0.120	-	12.80	0.50	-	0.28 S
	4021	420XB	1.4021	420	SUS 420J1	S42000	-	4021-420-00-I	0.190	-	12.40	0.30	-	-
	4104	430XB	1.4104	430F	SUS 430F	S43020	-	-	0.110	-	16.10	0.25	-	0.28 S
Ferritic	4016	430XA	1.4016	430	SUS 410	S43000	-	4016-430-00-I	0.020	-	16.30	0.30	-	-
	4105	430XE	1.4105	430F	SUS 430F	S43020	-	-	0.040	-	16.30	0.30	-	0.20 S
PH	4542 (17-4PH)	174XA	1.4542	630	SUS 630	S17400	-	4542-174-00-I	0.020	-	16.30	4.70	-	3.5 Cu, Nb
		174XB	1.4542	630	SUS 630	S17400	-	4542-174-00-I	0.020	-	15.30	4.70	-	3.2 Cu, Nb
	4568 (17-7PH)	177XA	1.4568	631	SUS 631	S17700	-	4568-177-00-I	0.080	-	16.70	7.70	-	0.9 Al
Duplex	LDX 2101®	210XB	1.4162	2101	-	S32101	-	4162-321-01-E	0.030	0.23	21.60	1.50	-	5.0 Mn
	2304	234XB	1.4362	2304	-	S32304	-	4362-323-04-I	0.020	0.13	22.20	4.80	-	-
	LDX 2404®	240XA	1.4662	-	-	-	-	-	0.020	0.27	24.10	3.60	1.60	3.0 Mn
	2205	329XA	1.4462	2205	SUS 329J3L	S32205	F51	4462-318-03-I	0.020	0.18	22.50	5.40	3.20	-
	2507	257XA	1.4410	2507	-	S32750	F53	4410-327-50-E	0.015	0.28	25.10	6.60	3.80	-
	4501	257XZ	1.4501	-	-	S32760	F55	4501-327-60-I	0.015	0.28	25.30	6.90	3.50	W, Cu
Welding	4313	134XA	1.4313	13-4	-	S41086	AWS ER410NiMo	-	0.010	-	12.30	4.70	-	-
		134XB	1.4313	13-4	-	S41086	AWS ER410NiMo	-	0.015	-	12.20	4.30	-	-
	4370	307XA	1.4370	-	-	-	-	-	0.070	-	18.00	7.70	-	6.9 Mn
		307XD	1.4370	-	-	-	AWS ER307	-	0.075	-	18.70	8.10	-	7.0 Mn
	4316	308XD	1.4316	308L	-	S30883	AWS ER308L	-	0.015	-	19.70	9.70	-	0.40 Si
	4316	308XJ	1.4316	308L	-	S30888	AWS ER308LSi	-	0.015	-	19.90	10.70	-	0.80 Si
	4332	309XC	1.4332	309L	-	S30983	AWS ER309	-	0.015	-	23.40	13.70	-	0.40 Si
	4332	309XA	1.4332	309L	-	S30988	AWS ER309LSi	-	0.015	-	23.30	13.90	-	0.80 Si
	4829	309XE	1.4829	-	-	-	-	-	0.095	-	22.70	11.10	-	1.0 Si
	4432	316XE	1.4432	-	-	S31683	AWS ER316L	-	0.015	-	18.30	12.20	2.20	0.40 Si
	4430	316XG	1.4430	-	-	S31688	AWS ER316LSi	-	0.015	-	18.50	12.20	2.60	0.80 Si
	4576	318XB	1.4576	-	-	-	AWS ER318	-	0.030	-	19.40	11.60	2.60	0.8 Si; Nb
	-	329XC	-	2209	-	S39209	AWS ER2209	-	0.010	0.15	22.70	8.60	3.10	-
	4551	347XB	1.4551	-	-	S34788	-	-	0.030	-	19.30	9.50	-	0.8 Si; Nb
	-	410XC	-	410	-	S41080	AWS ER410	-	0.085	-	12.20	0.30	-	-
4511	430XC	1.4511	-	-	-	430Nb	-	0.015	-	18.60	0.30	-	Nb	



	Mechanical Properties						Application					
	Outokumpu Steel Name	PRE*	R <sub>p0.2</sub> MPa	R <sub>p1.0</sub> MPa	R <sub>m</sub> MPa	A <sub>5</sub> %	Welding	Cold Heading	Spring	High Temp.	Bright Bar	Rebar
Martensitic	4006	12.7	340	430	580	30					•	
	4005	13.6	350	450	550	20					•	
	4021	12.9	500	580	650	20					•	
	4104	17.4	-	-	-	-					•	
Ferritic	4016	17.0	280	-	450	25		•			•	
	4105	17.8	-	-	450	25					•	
PH	4542 (17-4PH)	17.5	850	1050	1100	5					•	
		16.4	850	1050	1100	5					•	
	4568 (17-7PH)	17.7	210	240	700	50			•			
Duplex	LDX 2101®	25.9	480	-	700	38					•	•
	2304	25.3	500	-	700	40					•	•
	LDX 2404®	33.7	520	-	750	25					•	
	2205	35.9	510	-	750	35					•	•
	2507	42.1	530	650	830	25					•	
	4501	41.3	530	640	800	25					•	
Welding	4313	14.0	850	930	960	8	•					
		14.5	850	930	960	8	•					
	4370	19.5	240	230	600	60	•					
		19.8	240	230	600	60	•					
	4316	20.9	200	220	520	70	•					
	4316	21.2	220	260	570	50	•					
	4332	24.6	245	290	560	40	•					
	4332	24.5	250	300	570	40	•					
	4829	23.8	300	360	650	40	•					
	4432	26.1	200	235	510	55	•					
	4430	27.6	250	285	570	70	•					
	4576	28.6	250	300	600	50	•					
	-	35.3	370	600	800	25	•					
	4551	20.4	-	-	-	-	•					
	-	13.0	310	360	550	20	•					
4511	19.1	-	-	-	-	•						

\*PRE = Cr% + (3.3 x Mo%) + (16 x N%)



# Quality Assurance

Our manufacturing programme is supported by an in-house product inspection and testing programme in addition to a technical team with extensive experience. Our rod and stainless rebar production is accredited to recognised international standards, including:



ISO 9001



ISO 14001



BS OHSAS 18001



AD 2000 MERKBLATT  
W 0 / TRD 100

# Rebar Product Assurance

Approval is gained by a manufacturer only after demonstrating that their quality systems meet the requirements of ISO 9001, and the additional product-specific CARES requirements. An extensive programme of witness and independent testing also has to be passed, with independent testing being conducted by UKAS accredited laboratories to ensure integrity and competence.



CARES Product Type  
Approval to BS 6744



CARES Product Type  
Approval to BS 8666



Kontrollrådet "Guideline on Factory  
Production Control System - March 2009"

# Sustainability Assurance

Outokumpu has Environmental Product Declarations (EPD) for both long products and stainless rebar used in the construction industry. The EPD reflect the exceptional sustainability performance of Outokumpu stainless steels, contributing to the establishment of ever more sustainable building. The stainless rebar EPD also complements the CARES Sustainable Reinforcing Steel Scheme approval.



Environmental Product Declaration  
as per ISO 14025 and EN 15804:  
Stainless Steel Long Products



Environmental Product Declaration  
as per ISO 14025 and EN 15804:  
Stainless Steel Rebar Product



CARES Sustainability Scheme Appendix 4:  
Production of Hot Rolled Rebar



# A Range of Special Grades

Outokumpu is a leader in the introduction of specialised stainless steel grades. In wire rod we manufacture a wide range of heat and corrosion resistant grades in addition to specific grades offering enhanced machinability performance. Such grades are used in a diverse range of applications such as corrosive environments, components machined from bar and demanding fastener applications.

## PRODEC® Grades

PRODEC® grades are an established part of our range and are available in 4301 (304), 4307 (304L), 4305 (303) and 4404 (316L). Each offers superior machinability tailored to help our customers achieve increased efficiency in their operations.

Compared to conventional stainless steel PRODEC® grades offer many benefits in the users machining operation including faster machining, better dimensional tolerances in machined parts, superior surface quality, improved yields and consistent performance.

## Duplex Stainless Steels

Outokumpu is one of the world's largest producers of duplex stainless steels. Duplex steels combine the best properties of austenitic and ferritic grades resulting in a product that has increased strength and greatly enhanced resistance to stress corrosion cracking.

**LDX 2101® (Lean Duplex)** - A low nickel duplex grade that has high performance in both strength and corrosion resistance together with good machinability. An important added advantage of the low nickel content is price stability.

**2205 (4462)** - A duplex stainless steel for corrosion resistance, toughness, weldability and high strength.

**2507 (4410)** - A super duplex steel offering high tensile, impact strength and corrosion resistance for the most demanding environments.

## High Performance Austenitic Stainless Steels

**254 SMO®** - Used to provide longer material life in the most corrosive environments.

**253 MA®** - Used for high temperature applications.

# Technical Support

Our technical team has a wealth of experience in both the manufacture and end applications of stainless steels. They are able to assist users in selecting the most appropriate grade to suit their specific use. In helping our customers choose the right grade we aim together to ensure they achieve maximum efficiency and performance from the end product. We are also able to manufacture stainless steel to a customer's specific chemistry if required.

## End Uses

### Wire



### Bar



### Welding



### Fasteners



# Contact Us - Wire Rod

For all enquiries contact either:

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Fax: +44 (0)114 242 2152

Email: sales.asr@outokumpu.com

Wire Rod Commercial Manager

Tel: +44 (0)114 261 5240

Fax: +44 (0)114 242 2152

Email: sales.asr@outokumpu.com

## How to find us

Conveniently located in Sheffield, UK within 3 miles / 5 km of Junction 34 of the M1, we are easily accessible from all directions.

### Travelling by plane:

Whether from one of the local domestic airports (Manchester, Leeds/Bradford, East Midlands, Doncaster), or from the international airports, Sheffield can be easily reached by either road or rail.

### Travelling by car from Sheffield city centre:

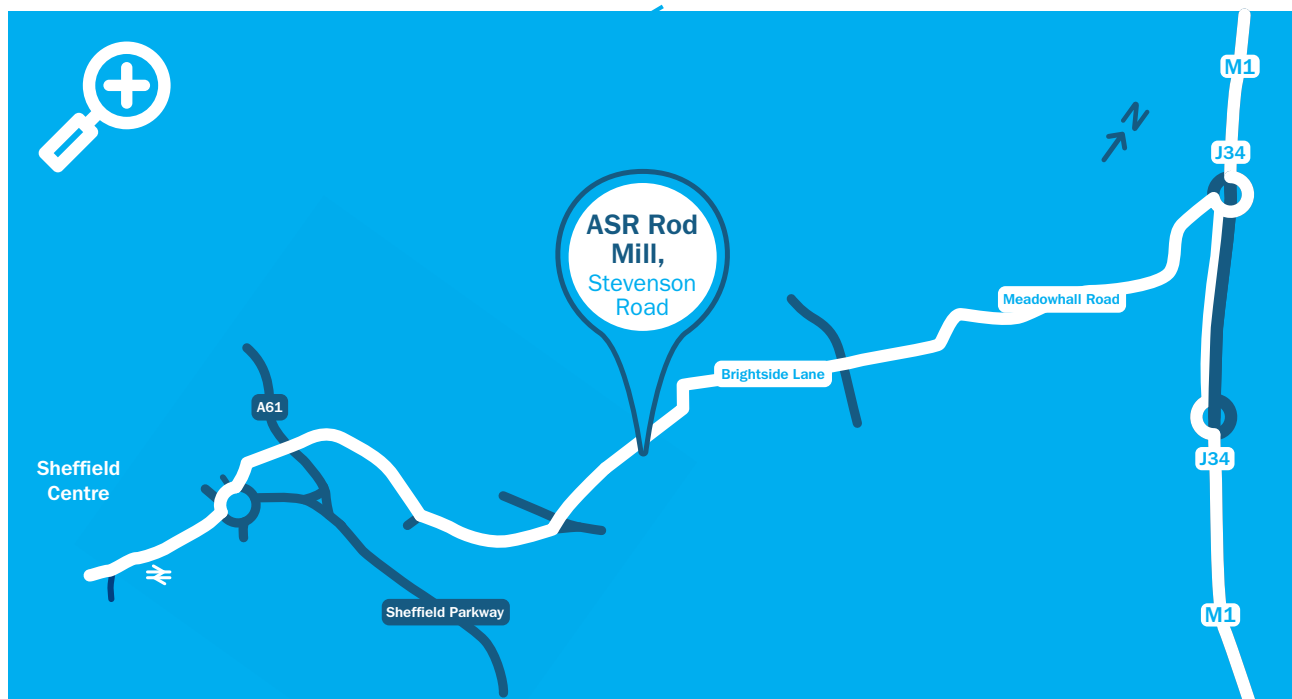
On the A61 ring road, pass Sheffield train station on your right hand side and continue to Park Square roundabout. Take the second real exit on to Exchange Place where you will shortly arrive at some traffic lights, turn right here on to Furnival Road. Continue on Furnival Road, going straight on at the major traffic lights and under the bridge. Continue on Furnival Road which will then turn in to Effingham Road. At the roundabout take the second exit, continuing straight on for a short while. Filter left on to Lovetot Road and at the lights continue straight on, crossing Attercliffe Road on to Stevenson Road. Continue straight on, just after the third junction on your right, you will see the Outokumpu ASR Rod Mill on your right hand side.

### Travelling by train:

Regular train services run through Sheffield from all over the UK. High-speed trains from London stop at Sheffield and take just over 2 hours.

### Travelling by car from the M1 motorway:

- Driving from the South: Exit the M1 motorway at Junction 34. At the roundabout below the motorway, take the third exit and continue along Tinsley viaduct for approximately 1 mile. At the next roundabout, take the first exit on to Meadowhall Road – A6109. Immediately move in to the far right lane. See paragraph c).
- Driving from the North: Exit the M1 motorway at junction 34. At the roundabout below the motorway, take the 4th exit in to Meadowhall Road – A6109. Immediately move in to the far right lane.
- Within 20 metres, take the right hand fork and stay on Meadowhall Road – A6109. Follow the road under the railway bridge to the traffic lights at Weedon Street. Continue straight, still on Meadowhall Road, past the junction with Hawke and Upwell Street (A6102). Immediately after the next traffic lights at Newhall Road, turn left in to Stevenson Road.





## Contacts for other Long Products

### **Slabs, ingots, blooms and concast billets**

#### **SMACC**

Outokumpu Stainless Ltd,  
PO Box 161, Europa Link,  
Sheffield, S9 1TZ,  
United Kingdom

Tel: +44 (0)114 261 6000  
Fax: +44 (0)114 261 6184

#### **All enquiries**

Email: [sales.bar@outokumpu.com](mailto:sales.bar@outokumpu.com)

### **Cold drawn, peeled & black bar and rebar**

#### **Sheffield Stainless Bar**

Outokumpu Stainless Ltd,  
PO Box 161, Europa Link,  
Sheffield, S9 1TZ,  
United Kingdom

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Fax: +44 (0)114 242 2152

#### **Bar enquiries**

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#### **Rebar enquiries**

Email: [sales.rebar@outokumpu.com](mailto:sales.rebar@outokumpu.com)

### **Rolled & forged billet and peeled & black bar**

#### **Degerfors Stainless**

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SE - 693 81 Degerfors,  
Sweden

Tel: +46 586 47 000  
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#### **All enquiries**

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### **Cold drawn, peeled & black bar and rebar**

#### **Outokumpu Stainless Bar**

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#### **All enquiries**

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To find your local Outokumpu Sales Office please visit [www.outokumpu.com](http://www.outokumpu.com)

# Working towards forever.

We work with our customers and partners to create long lasting solutions for the tools of modern life and the world's most critical problems: clean energy, clean water and efficient infrastructure. Because we believe in a world that lasts forever.

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