

ArcelorMittal Europe - Long Products  
Rails & Special Sections



ArcelorMittal

# Cathode bars ArcelorMittal Special Profiles



@Husnes Smelter, Hydro

# Cathode bar

## ArcelorMittal Special Profiles

**ArcelorMittal is the world’s leading steel and mining company**, with over 168,000 employees in more than 60 countries, and annual steel capacity production of 113 million tonnes.

ArcelorMittal is the leader in all major global steel markets, including automotive, construction, household appliances, packaging and rails, with leading R&D and technology, as well as sizeable captive supplies of raw materials and outstanding distribution networks. With an industrial presence in Europe, Asia, Africa and America, ArcelorMittal covers all of the key steel markets, from emerging to mature.

Our rolling mill is located in Rodange (Luxembourg), where we produce environmentally friendly products and services for the national and international markets.

**ArcelorMittal Commercial Sections S.A.** has implemented and keeps update a quality assurance systems that fulfils the requirements of the international standard ISO 9001, Environmental Management System in accordance with the International Standard ISO 14001 and Occupational Health and Safety (OH&S) Management System according ISO 45001.

For many years, ArcelorMittal Europe – Long Products, Rails & Special Sections has played a prominent role in the aluminum business area by providing wide range of cathode collector bars to its customers throughout the world. Cathode collector bars are designed to perform the best way in aluminum pots to achieve the longest lifetime and, at the same time, to fulfil all technical requests.

This leaflet offers a quick overview of all profiles available at our Rodange site, in Luxembourg. Our team will provide you more detailed information on the current range of our cathode collector bars and support you in the development unique solutions to meet your particular requirements.

### Achieving carbon-neutral steelmaking

ArcelorMittal Europe has committed to reduce CO2 emissions by 35% by 2030, with a further ambition to be carbon neutral by 2050, in line with the EU’s Green Deal and the Paris Agreement.

As the leading global steel company, we are engaged in the most important challenge faced by the industry – that of producing all the steel the world needs in an environmentally sustainable way.

XCarb™ is the new brand name for ArcelorMittal’s ongoing global programme of steelmaking innovation targeted at carbon-neutral steel by 2050. The initiatives that are part of XCarb™ aim to reduce the carbon footprint of ArcelorMittal and of our customers.

Our first XCarb™ products are now ready for market: XCarb™ green steel certificates, which are designed for our steel products made from iron ore, and XCarb™ recycled and renewably produced for steel products made via the electric arc furnace route using scrap steel and 100% renewable energy.





# Supply conditions

We supply according to the customer’s specifications:

- Hot sawn lenghts up to 12 m.
- Cold sawn lenghts from 1.0 m to 12. 0 m.
- Fabricated bars, including machining, drilling, welding, sandblasting and coating works.

**ArcelorMittal Commercial Sections S.A.** offers Cathode Collector Bars with special finishing, with copper insert – round, square or plated. The machining is done entirely according to customer’s drawings in ArcelorMittal machining shop or in our partner’s machining shops.

Please contact us if you have special requirements.

# Dimensional tolerances

Standard tolerances as follows.

Width & Thickness: + / –2 mm.

Length: Hot sawn +100 / –0 mm.

Cold sawn: +10 / –0 mm.

Straightness: 1 mm/ 1 m.



Corner **RADIUS**: most bars have corner radius within 9–20 mm.

# Steel grades

## Chemical Composition

GRADE	%C	%Mn	%Si	%P	%S	%N <sub>2</sub>
Low resistivity	≤0.060	≤0.400	≤0.070	≤0,030	≤0.040	≤0.012
Ultra Low resistivity	≤0.040	≤0.400	≤0.070	≤0,030	≤0.030	≤0.012

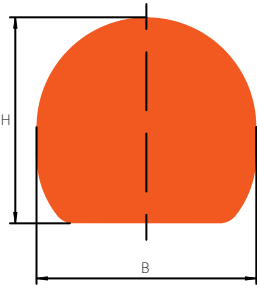
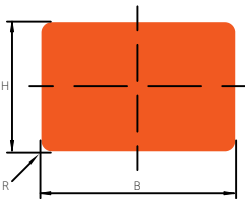
## Mechanical properties

GRADE	Rn min. (MPa)	Re min. (MPa)	RESISTIVITY	
Low resistivity	300	140	Low resistivity	≤ 13 μΩ×cm² at 0°C.
Ultra Low resistivity	270	130	Ultra Low resistivity	≤ 11 μΩ×cm² at 0°C.

# Dimensions

ArcelorMittal Commercial Sections S.A. offers an extensive range of rectacgular, square and egg-shaped bars for the use as cathode bars (collector bars) for the primary aluminium smelters worldwide.

DIMENSIONS (mm)			WEIGHT (kg/m)	DIMENSIONS (mm)			WEIGHT (kg/m)	DIMENSIONS (mm)			WEIGHT (kg/m)
B×H		R		B×H		R		B×H		R	
100×100			76,32	160×100			124,70	160×145			155,70
122×107			101,60	160×110			135,40	160×150			161,90
122×115			109,30	160×140			175,70				
122×122			116,40	160×160	R10		200,30				
125×120			117,00	160×160	R15		199,50				
127×127			125,40	165×70			89,70				
130×110			111,58	165×80			102,70				
130×115			116,70	168×150			195,60				
130×130			130,40	170×60			79,80				
135×135			140,40	170×130			172,50				
140×65			70,70	170×150			199,20				
140×75			82,00	170×170			225,70				
140×100			109,50	180×65			91,30				
140×115			125,44	180×70			98,20				
140×125			136,40	180×80			112,50				
140×140			153,10	180×100			140,40				
140×147			160,70	180×120			168,80				
145×135			153,00	180×140			196,90				
150×90			105,50	190×80			118,30				
150×100			117,40	190×120			178,70				
150×110			129,10	190×140			208,60				
150×115			134,30	190×150			221,50				
150×120			140,90	200×90	R9		140,70				
150×122			143,20	200×90	R11,5		140,40				
150×130			152,80	200×155			242,60				
150×140			164,60	202×150			237,18				
150×150	R10		175,95	210×130			213,60				
150×150	R20		173,93	220×90			155,00				
160×70			85,30	220×155			267,00				
160×80			99,90	230×115			207,00				
160×90			112,10	250×145			283,90				



# Product development

We work in close cooperation with the smelters around the world to improve the performance of the collector bars in the process.

Please contact us to discuss any project.



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