ArcelorMittal

Industrial Wire

Together we are transforming tomorrow

Sustainable solutions.

Unparalleled performance.

ArcelorMittal Industrial Wire is part of the Long Carbon Europe division of the ArcelorMittal Group.

ArcelorMittal is one of the largest steel producers in the world and recognised globally for the quality of its high performance, corrosion resistant wire products.

ArcelorMittal manufactures and supplies some of the most advanced wire solutions in the world, delivering sustainable solutions and unparalleled performance to diverse industries including:

- Mechanical engineering
- Energy
- Agribusiness
- Livestock farming
- Construction
- Consumer goods
- Automotive

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> Our future depends on how we act today.

Together we are transforming tomorrow.

Our planet is at a crossroads and our future depends on how we act today.

ArcelorMittal is changing the wire solutions industry and sustainability standards globally.

We are using our research, development, production and logistics expertise to challenge the ways in which we do things. These challenges involve looking at the ways we source and process raw and recycled materials, and how we package and distribute our wire products.

Our ambition is to significantly reduce our carbon footprint and achieve our goal of becoming carbon neutral in Europe by 2050.

We are working with our customers and our partners to challenge the status quo, developing new and innovative processes and transforming tomorrow.

XCarb™ Towards carbon neutral steel

CARBON NEUTRAL BY 2050

Why work with ArcelorMittal Industrial Wire?

- Passionate Experts
- Quality Standards
- Research & Development
- Solutions Led
- Vertically Integrated Business Model
- Worldwide Accessibility

Complete control. Complete confidence.

Our vertically integrated business model means that our mining, steel production and industrial wire processing is all undertaken by ArcelorMittal. This gives us complete control and confidence in the quality of the materials we use and the highest levels of confidence in our processing and production methods.

Our vertically integrated business model, combined with our world-class research and technical development expertise, means that we can provide our customers with unparalleled quality and exceptional value for money.

Research & Development. Continuous reinvention.

Operating for all ArcelorMittal group units, ArcelorMittal Industrial Wire benefits from the Group's global research and development resources.

Worldwide we have 1500 full time researchers and 11 research centres. Research and development is the cornerstone of our commitment to innovation and new product development. This commitment drives the continuous renewal of our products and services, providing new levels of performance and opportunities to our worldwide customer base.

PASSIONATE EXPERTS

QUALITY STANDARDS

RESEARCH & DEVELOPMENT

SOLUTIONS LED

VERTICALLY INTEGRATED BUSINESS MODEL

WORLDWIDE ACCESSIBILITY

"The pioneering achievements of the Industrial Wire team are founded on ArcelorMittal's long standing commitment to research and product development. We have been able to develop our world renowned Crapal® technology and provide our customers with greater efficiencies whilst contributing to a more sustainable future".

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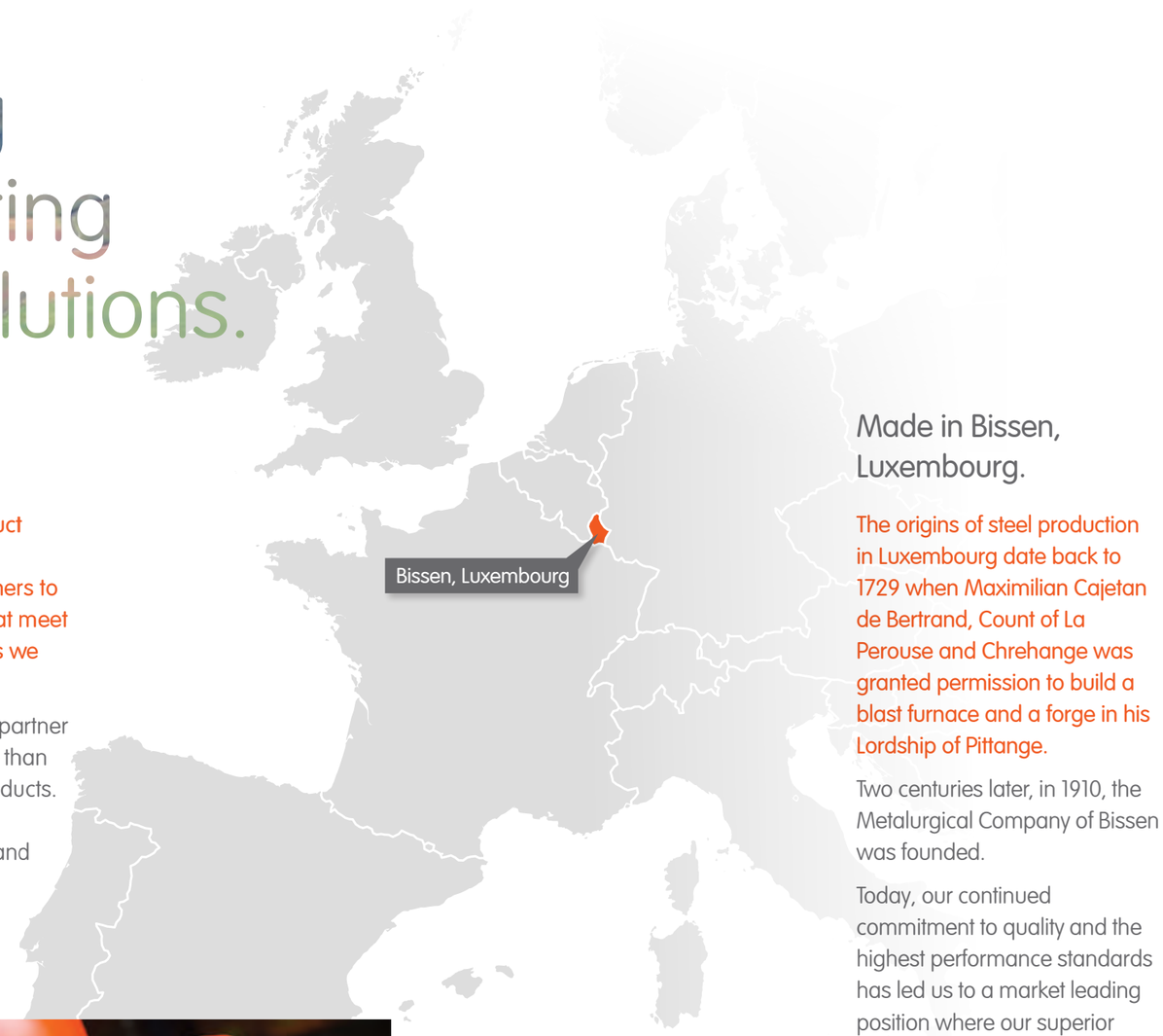
Developing and delivering effective solutions.



Optimising solutions for our customers.

Our commitment to innovation and product development is built on the principle of collaboration. We work with diverse partners to develop and deliver effective solutions that meet the precise requirements of the industries we serve.

ArcelorMittal Industrial Wire is a strategic partner to all our customers. We offer much more than competitively priced, high quality wire products. We work with our customers to fulfil their demanding requirements quickly, safely and efficiently. Your success is our success.

> Together we are working to challenge the status quo.

Made in Bissen, Luxembourg.

The origins of steel production in Luxembourg date back to 1729 when Maximilian Cajetan de Bertrand, Count of La Perouse and Chrehange was granted permission to build a blast furnace and a forge in his Lordship of Pittange.

Two centuries later, in 1910, the Metalurgical Company of Bissen was founded.

Today, our continued commitment to quality and the highest performance standards has led us to a market leading position where our superior anti-corrosive industrial wire products are in demand all over the world.

In 2010 ArcelorMittal Bissen celebrated its centenary.

100 BISSEN years

ArcelorMittal

Committed to the circular economy.

Reducing our carbon footprint.

ArcelorMittal Industrial Wire is actively reducing its carbon footprint and working towards becoming carbon neutral in Europe by 2050.

We are a significant player in the circular economy, striving to reduce waste at each stage of the materials lifecycle - Making, Using and Recycling.

100% of our industrial wire products are manufactured from a recycled process route.

As the worldwide demand for steel is only expected to further increase, we need to significantly reduce our carbon footprint.

ArcelorMittal is working on breakthrough low-emissions steelmaking technologies for several potential pathways.

You can find out more on ArcelorMittal's commitment to sustainability and download our Climate Action Report by visiting: https://corporate.arcelormittal.com/sustainability

100%

of our industrial wire products are manufactured from a recycled process route.

ArcelorMittal Europe

An Environmental Product Declaration (EPD) is available for industrial wire qualities Crapal®4, Crapal®Optimum and Crapal®Premium. It can be adjusted for specific industrial wire qualities Crapal®4, Crapal®Optimum and Crapal®Premium coating weights and steel thicknesses.

For more information please visit
www.ibu-epd.com | https://epd-online.com

CRAPAL® The best protection against corrosion.

ArcelorMittal Industrial Wire enjoys a worldwide reputation for its corrosion resistant Crapal® coatings.

Crapal® technology combines zinc, aluminium and, in the case of Crapal®Premium, magnesium to provide a highly protective anti-corrosive coating.

How does Crapal® work?

The base steel within every Crapal® wire product is a high grade drawn steel wire. We take what is already a superior grade steel wire and coat it in our Crapal® protective anti-corrosive zinc and aluminium alloy.

The alloy adheres to the steel base wire and protects it against extreme weather conditions, hot, cold, dry and humid and in diverse locations including coastal and highland sites.

Zinc gives an active and sacrificial protection while aluminium provides passive protection in covering zinc and significantly slowing down its sacrificial reaction.

- Excellent adhesion with no peeling, flaking or cracking.
- Durable and smooth surface.
- Consistent concentricity of the coating.
- Continuous protective layer encapsulates the steel base wire
- Outstanding performance under thermal stress
- Excellent protection against the cathodic corrosion of cut ends
- Total protection of welded joints - No requirement to galvanise after manufacture.
- Extended lifetime
- Economic and efficient solution
- 100% recyclable.

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Innovation through collaboration.

Crapal®Premium is the result of the collaboration between the ArcelorMittal Research and Development Centre and the Metallurgical Research Centre (CRM) in Liège, Belgium and is today protected by national and international patents including WO 2011/009999A1 and EP 2456903A1.

Like all our wires, the central core that runs through Crapal®Premium wire is a high grade steel base wire. We have taken what is already a superior grade steel wire and encapsulate it in our Crapal®Premium protective zinc, aluminium and magnesium alloy.

The alloy adheres to the steel base wire and protects it against extreme weather conditions.

Zinc gives an active and sacrificial protection while aluminium provides passive protection in covering zinc and significantly slowing down its sacrificial reaction.

The addition of magnesium stabilises the whole molecular structure and gives the coating an even and efficient resistance against corrosion, ensuring optimal protection in the most aggressive environments.

Performance and longevity. Business critical.

Where consistent performance standards and longevity are business critical, ArcelorMittal Industrial Wire is the clear choice with numerous applications including:

Armoured cables, Automotive components, Braces, Buildings and Public Works, Cable pullers, Cable trays, Protective livestock cages, fences, gabions, Lightning conductors, Lobster pots, Maritime containers, Nails and fixings, Security panels, Sieves, Meshes, Hooks, Slatted flooring, Vineyard wire, Wire for spring manufacturing.

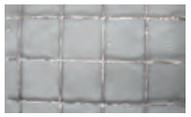
Exceptional durability

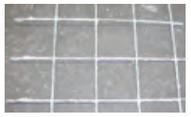
A new chemical and metallurgical technology, combined with an adapted manufacturing process gives Crapal®Premium exceptional longevity and durability.

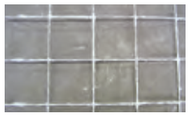
Corrosion test performance

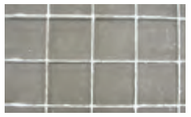
Salt spray test according to DIN EN 50021 SS/ISO 9227

› Sample after:

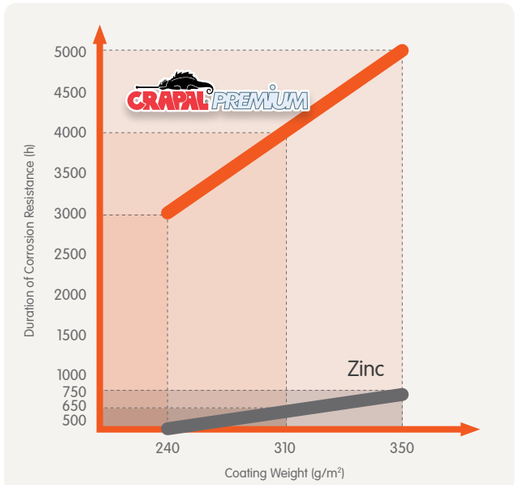

1000 hours

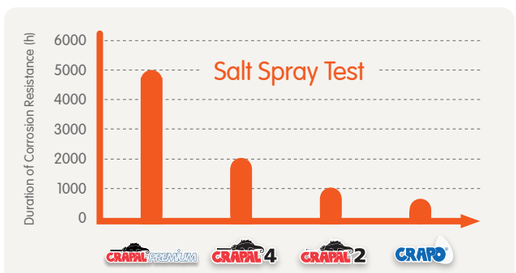

2000 hours


3000 hours


4000 hours


5000 hours





Kesternich test

› Sample after:


10 Cycles


20 Cycles


40 Cycles


60 Cycles


80 Cycles

Specifications

Manufacturing program

› Diameter from 0.80 to 10.00 mm

› Resistance from 350 to 1500 N/mm²

› Along this range, all applications' needs can be supplied

Packaging

› Pattern laid coils, spoolless coils, catch weight or exact weight coils

› Specific packaging can be offered upon request

ArcelorMittal

Optimised protection. Outstanding performance.

We are transforming tomorrow. We are doing this by working with our customers around the world to develop new, more sustainable products that deliver greater value for money. In doing so our innovations are reducing our carbon footprint and taking us closer to our 2050 goal of being carbon neutral.

Our range of Crapal® products offer outstanding performance standards across different levels of corrosion resistance.

CARBON NEUTRAL BY 2050

CRAPAL® PREMIUM

8X – Life span 8x longer than EN 10244-2 Heavily galvanised

- Fn
- Zn 94-95%
- 5%<Al<6%
- Mg 0.2-0.7%

- zinc, aluminium and magnesium
- 5000 hours salt spray test

CRAPAL® 4

4X – Life span 4x longer than EN 10244-2 Heavily galvanised

- Fn
- Zn 94-95%
- 5%<Al<6%

- Zinc and aluminium
- 2000 hours salt spray test

CRAPAL® 2

2X – Life span 2x longer than EN 10244-2 Heavily galvanised

- Fn
- Zn 94-95%
- 5%<Al<6%

- Zinc and aluminium
- 1000 hours salt spray test

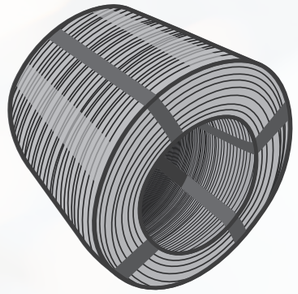
CRAPO®

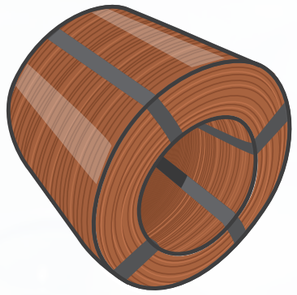
1X – Life span 1x longer than EN 10244-2 Heavily galvanised

- Fn
- Zn 100%

- Zinc
- 500 hours salt spray test

Diameter (mm)	Zinc layer thickness of the surface (mm) (acc. to EN 10218-2) in g/m² based on EN 10244-2), Class A		Diameter (mm)	Diameter tolerance (acc. to EN 10218-2)
	CLASS A CRAPO/Crapal®4/PREMIUM	CLASS B Crapal®2/OPTIMUM		
1.00 - 1.19	165	80	0.80 - 0.85	+/-0.035
1.20 - 1.39	180	90	0.86 - 1.00	+/-0.035
1.40 - 1.64	195	100	1.01 - 1.23	+/-0.040
1.65 - 1.84	205	100	1.24 - 1.30	+/-0.040
1.85 - 2.14	215	115	1.31 - 1.65	+/-0.045
2.15 - 2.49	230	125	1.66 - 1.68	+/-0.050
2.50 - 2.79	245	125	1.69 - 2.04	+/-0.050
2.80 - 3.19	255	135	2.05 - 2.19	+/-0.060
3.20 - 3.79	265	135	2.20 - 2.77	+/-0.600
3.80 - 4.39	275	135	2.78 - 2.93	+/-0.060
4.40 - 5.19	280	150	2.94 - 3.42	+/-0.070
5.20 - 8.19	290	150	3.43 - 4.00	+/-0.070
8.20 - 10	300	150	4.01 - 4.93	+/-0.080
			4.94 - 5.22	+/-0.080
			5.23 - 6.61	+/-0.090
			6.62 - 6.72	+/-0.100
			6.73 - 8.16	+/-0.100
			8.17 - 8.77	+/-0.120





Black Annealed Wire

Black annealed wire; 0.9 to 3.50mm

Our Black Annealed wire is produced using our annealing heat treatment process. The use of furnaces in a controlled atmosphere enable us to guarantee consistent mechanical characteristics and an excellent surface finish.

Copper Washed Wire

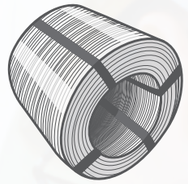
Copper wash wire; 0.9 to 1.5mm

Coppered washed wire is produced according to EN 10016-1 to 4. Bespoke specifications are available on request.

Packaging

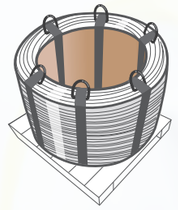
Specifications

- Each unit is secured with at least 4 steel straps with lifting eyes (optional)
- We can supply on request: formers, on pallets, cardboard centres, shrink wrapped, cardboard sleeve for handling protection
- Pallet marking to ISPM available on request



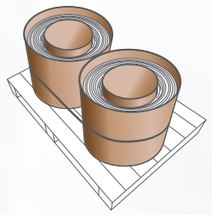
Standard Coils (pattern laid/orbit wound)

Range Ø (mm)	Inside Ø (mm)	Outside Ø (mm)	Weight (kg)	Height (mm)
0.80 – 1.60	±350	±570	±430	±700
0.80 – 2.00	±450	±750	±800	±800
2.50 – 3.15	±450	±750	±900	±800
2.50 – 8.00	±450	±850	±1000	±800
5.00 – 8.00	±500	±950	±1500	±1000
5.00 – 10.00	±850	±1300	±2000	±1000



Z-Spools

Range Ø (mm)	Spool type	Inside Ø (mm)	Outside Ø (mm)	Weight (kg)	Height (mm)
2.6 – 10.0	Z	550	950	800 – 1500	550
2.6 – 3.1	Z2	350	700	400 – 500	280
2.6 – 6.0	Z3	500	950	< 1500	570
2.6 – 6.0	Z3 – small	500	950	< 900	360



Cardboard Drum

Range Ø (mm)	Inside Ø (mm)	Outside Ø (mm)	Weight/Drum (kg)	Height (mm)
0.80 – 1.25	330	500	150 – 250	< 700
1.30 – 1.60	330	500	150 – 250	< 700

Formers / tophat*

Range Ø (mm)	Inside Ø (mm)	Outside Ø (mm)	Weight/Former (kg)	Height (mm)
0.80 – 1.25	450	750	400 – 800	< 850
1.30 – 1.60	450	750	400 – 800	< 850
1.70 – 2.50	450	750	400 – 800	< 850

*Return of formers organised by Transport ArcelorMittal Bissen S.A.

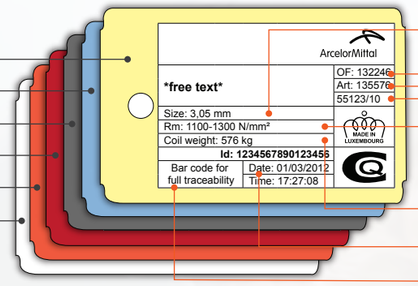
Labels

Standard

Coating

Commercially galvanised wire
CRAPO®
Crapal®2 (Aluzinc Class B)
Crapal®4 (Aluzinc Class A)
Crapal®Premuim
Annealed and Coppered washed wire

Label colour



Label legend

Size – Nominal diameter (mm)
OF – Production order (internal)
Art – Item code number (internal)
OV – Order number (internal)
Rm – Tensile (N/mm²) min-max
Coil weight – Weight (kg)
Date/time – Production date/time
– Coil number (traceability)

Certificates

According to EN 10204

Number	Type	Order conformity	Diameter	Tensile weight	Coating	Steel quality Standard analysis	Steel quality Real analysis	Heat number
			Results Frequency (Standard)					
0	WITHOUT CERTIFICATE							
1	2.1	x	-	-	-	-	-	-
2	2.2	x	1/5	1/5	1/5	x	-	-
3	2.2	x	1/2	1/5	1/5	x	-	-
4	2.3	x	1/1	1/1	1/1	-	-	-
5	2.3	x	1/1	1/1	1/1	x	-	-
6	2.3	x	1/1	1/1	1/1	-	x	-
7	3.1B	x	1/1	1/1	1/1	-	x	-
8*	3.2	x	1/1	1/1	1/1	x	x	x

› *Certificate 8 is Third Party Inspection.
We are an open plant and welcome outside inspections.

Traceability is our guarantee

- Fully conforming product
- Traceability throughout the total production process
- ISO certified production for optimised process control
- Wide range of low and high carbon grades
- Several packaging options
- Integrated IT-system for logistic service
- EDI connection
- International back office service.

Traceability

- Full traceability of each batch from wire rod to galvanisation thanks to integration in the ArcelorMittal supply chain
- Data is recorded in an integrated system for at least 10 years
- Production to ISO 9001 / 14001 / 45001.

Labels

- Each unit is identified with an ID number for full traceability
- Weather proof quality labels.

Test certificate

- Inspection documents according to EN 10204.

Stocks

- Safety stock for standard specification (EN 10257-1/2)
- Consignment stock agreement.

Logistics

- Safety first regulations
- Load secured for stability during transport
- Delivery follow-up by integrated system for exact ETA service
- Ethics code is respected.

ArcelorMittal

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7769 Bissen
Grand-Duché de Luxembourg

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ArcelorMittal Industrial Wire is manufactured to international production standards ISO 9001, ISO 14001 and ISO 45001.

Our wire solutions offer superior corrosion resistance and increased product life cycle.

barsandrods.arcelormittal.com/wiresolutions/industrialwire

Made in Luxembourg