



# COLD-HEADING STEEL WIRE



## 70 YEARS OF EXPERIENCE IN STEEL WORKING

Rodacciai can offer to its customers a very particular range of services and functionalities that make it a privileged interlocutor for everything related to the steel world.

Spread all over the world, with 3 production sites and 27 commercial branches, Rodacciai is able to stand by the customers in every production phase, starting from the raw material choice, arriving at the final product and services.



## DYNAMICITY, INNOVATION AND RESILIENCE

However, experience, know-how and support are not the only features that make Rodacciai a preferred player in the world of cold finished steel.

Rodacciai ensures production flexibility and quality thanks to the number of cold-finished steel production lines and the great advantage of having a rolling mill.

All this means an increase of flexibility, punctuality and fast deliveries.

# Rodacciai



# COLD HEADING WIRE

## Introduction

Rodacciai production range for cold-heading wire can be divided into 3 main categories:

- Low carbon steels
- Boron-alloyed steels
- Alloyed steels, without Boron added

The standard reference for cold heading wire is **EN 10263 : 2017**.

Rodacciai supplies the steel grades mentioned in the various parts of the Norm (ref. parts 1 - 4), in different supply conditions and according to the requirements provided for the different features of the product: mechanical properties, decarburization, surface finishing, surface quality, etc. Rodacciai can also evaluate specific requirements from customers that go beyond the requisites of EN 10263 : 2017, studying a customized product.







# COLD FINISHING PRODUCTION LINES & CAPACITY

**75.000 tons / year**

PRODUCT RANGE

**Ø 1,60 mm – Ø 34,00mm**

- N. 21 multipass wire drawing machines
- N. 14 wire drawing Bullblocks
- N. 1 cold-drawing line coil to coil ( range Ø 15,00mm – 35,00mm )
- N. 3 continuous industrial furnaces for wire
- N. 7 bell furnaces
- N. 3 chamber furnaces
- N. 3 muffle furnaces

# HEAT TREATMENT PRODUCTION CAPACITY

**128.000 tons / year**

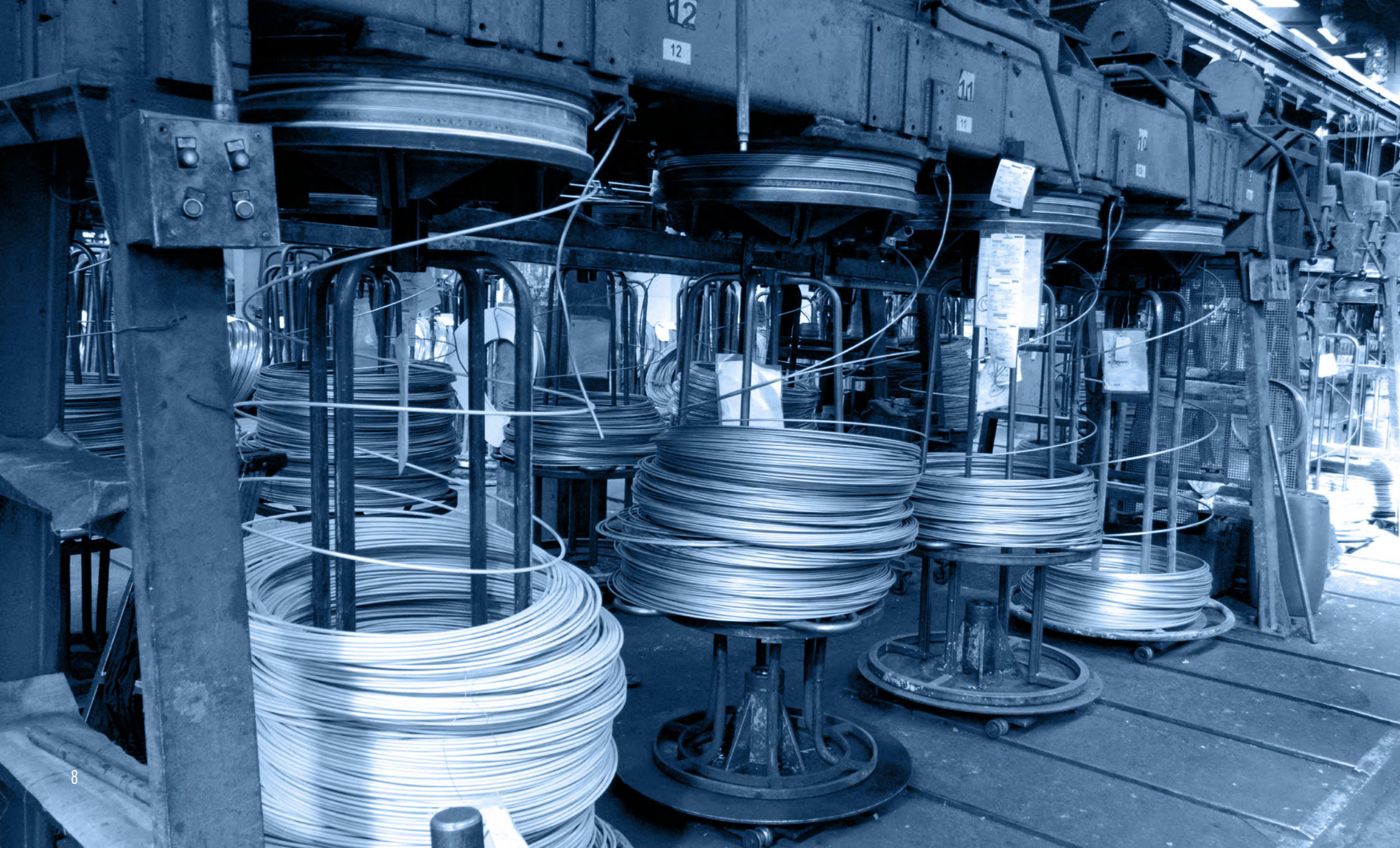
PRODUCT RANGE

**Ø 1,60 mm – Ø 34,00mm**

- N. 3 continuous furnaces
- N. 7 inertized bell furnaces
- N. 3 chamber furnaces
- N. 3 muffle furnaces

**13.000 tons / year**

**115.000 tons / year**



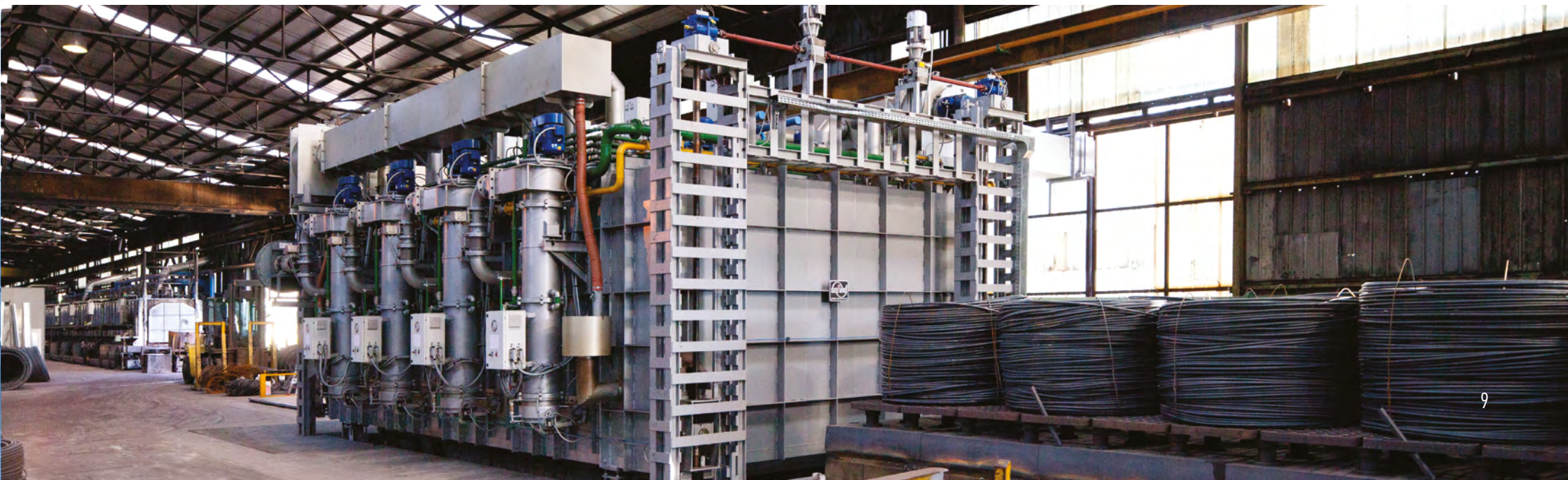
## HEAT TREATMENT & SURFACE FINISHING

Heat treatments serve to homogenize the structure of the raw rolled steel and to reduce internal tensions, thus increasing the deformability of the product.

Surface treatments, performed internally in the company, make the product cleaner and ready for further production steps: **pickling, phosphating, polymerization, liming.**

We internally performe **Q&T, stress relieving, normalization, globular annealing, globular annealing for cold-heading, isothermal annealing, annealing (+A).**

The most commonly used surface finishings are:  
**stearate, phosphated, with polymer.**





## RODACCIAI HEAT TREATMENT FURNACES (IN HOUSE)

### ► CONTINUOUS FURNACES FOR WIRE

Treatment in protected atmosphere: hydrogen/ nitrogen mixture (70 - 30)

Capacity: (Ø1,60÷9,00 mm)

### ► MUFFLE FURNACE

Heat treatment performed on the semi - finished product

Capacity: Ø > 5,50 mm

### ► CONTINUOUS FURNACES

Heat treatment in a protected atmosphere:

nitrogen (100%) for wire - rod and finished product

Capacity: complete range Ø 1,60 mm – Ø 34,00mm

Heat treatment performed on the semi - finished product

Capacity: complete range Ø 1,60 mm – Ø 34,00mm



# STEEL FOR COLD HEADING

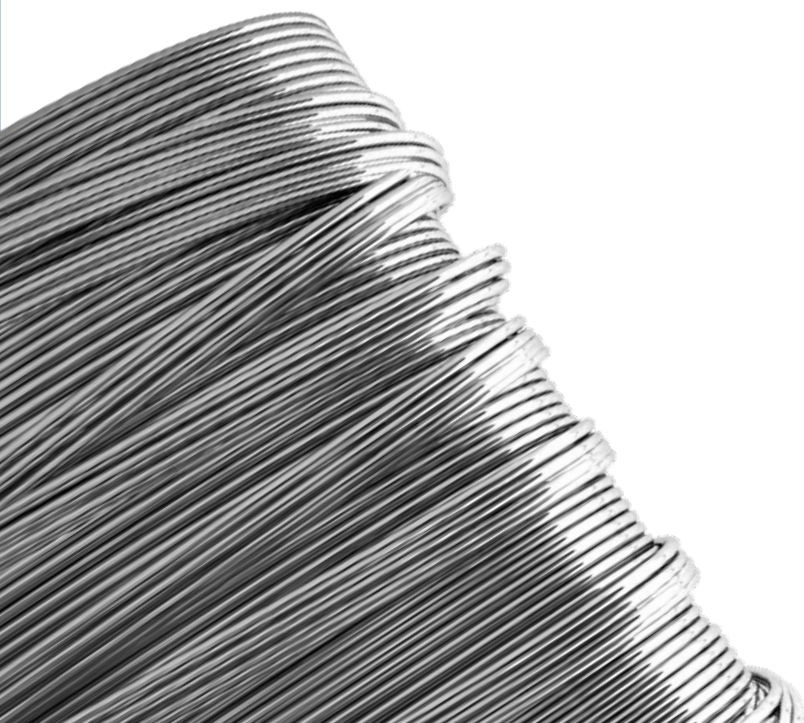
EN 10263-2 - EN 10263-3 - EN 10263-4 - (ISO 4954:2021)

GRADE	CHEMICAL ANALYSIS												
	W.nr.	C	Mn	Si / max	S / max	P / max	Al	Cu / max	B	Cr	Mo	Ni	Others
C4C/SB4/CB4FF	1.0303	0,02÷0,06	0,25÷0,40	0,10	0,025	0,020	-	-	-	-	-	-	-
C10C/CB10FF	1.0214	0,08÷0,12	0,30÷0,50	0,10	0,025	0,025	-	-	-	-	-	-	-
C15C - C15E2C	1.0234 - 1.1132	0,13÷0,17	0,35÷0,60	0,10	0,025	0,025	0,020÷0,060	-	-	-	-	-	-
C20E2C	1.1152	0,18÷0,22	0,30÷0,60	0,30	0,025	0,025	-	0,25	-	-	-	-	-
C35EC	1.1172	0,32÷0,39	0,50÷0,80	0,30	0,025	0,025	-	0,25	-	-	-	-	-
23B2	1.5508	0,20÷0,25	0,60÷0,90	0,30	0,025	0,030	0,020÷0,060	0,25	0,0008÷0,0050	0,30	-	-	-
28B2	1.5510	0,25÷0,30	0,60÷0,90	0,30	0,025	0,030	0,020÷0,060	0,25	0,0008÷0,0050	0,30	-	-	-
35B2**	1.5511	0,32÷0,39	0,50÷0,80	0,40	0,015	0,030	0,020÷0,060	-	0,0008÷0,0050	-	-	-	-
20MnB4	1.5525	0,18÷0,23	0,90÷1,20	0,30	0,025	0,025	0,020÷0,060	0,30	0,0008÷0,0050	-	-	-	-
22MnB4	1.5522	0,20÷0,24	0,90÷1,20	0,30	0,025	0,025	0,020÷0,060	0,25	0,0008÷0,0050	-	-	-	-
23MnB4	1.5535	0,20÷0,25	0,90÷1,20	0,30	0,025	0,025	0,020÷0,060	0,25	0,0008÷0,0050	≤ 0,3	-	-	-
30MnB4	1.5526	0,27÷0,32	0,80÷1,10	0,30	0,025	0,025	0,020÷0,060	0,25	0,0008÷0,0050	≤ 0,30	-	-	-
32CrB4	1.7076	0,30÷0,34	0,60÷0,90	0,30	0,025	0,025	0,020÷0,060	0,25	0,0008÷0,0050	0,90÷1,20	-	-	-
19MnB4* / C23B	1.5523	0,17÷0,24	0,80÷1,15	0,40	0,035	0,035	0,020÷0,060	-	0,0008÷0,0050	-	-	-	-
16MnCr5	1.7131	0,14÷0,19	1,00÷1,30	0,30	0,025	0,025	0,020÷0,060	-	-	0,80÷1,10	-	-	-
17Cr3	1.7016	0,14÷0,20	0,60÷0,90	0,30	0,025	0,025	0,020÷0,060	-	-	0,70÷1,00	-	-	-
34Cr4	1.7033	0,30÷0,37	0,60÷0,90	0,30	0,025	0,025	0,020÷0,060	0,25	-	0,90÷1,20	-	-	-
25CrMo4	1.7218	0,22÷0,29	0,60÷0,90	0,30	0,025	0,025	0,020÷0,060	0,25	0,0008÷0,0050	0,90÷1,20	0,15÷0,30	-	-
42CrMo4	1.7225	0,38÷0,45	0,60÷0,90	0,30	0,025	0,025	0,020÷0,060	0,25	-	0,90÷1,20	0,15÷0,30	-	-
21CrMoV5-7**	1.7709	0,17÷0,25	0,40÷0,80	0,40	0,030	0,025	<0,03	-	-	1,20÷1,50	0,55÷0,80	0,60	V=0,20÷0,35
100Cr6***	1.3505	0,93÷1,05	0,25÷0,45	0,15÷0,35	0,015	0,025	<0,050	0,30	-	1,35÷1,60	≤ 0,10	-	O=<15ppm

\* EN 10269:1999 \*\* EN 10269:2013 \*\*\* EN ISO 683-17:2014

# CARBON AND ALLOY STEEL FOR SCREWS AND BOLT PRODUCTION

EN ISO 898 -1 : 2013



STRENGTH CLASSES	APPLICATION	DIAMETER	EXAMPLE
4.8	Cold - heading	< 35	SB4 - CB10FFS
5.8	Cold - heading	<15	C4C - C10C
	Cold - heading	< 35	C4C-C10C - C20E2C
6.8	Cold - heading	< 13	C10C - C20E2C
8.8	Cold - heading	< 11	19/20MnB4 - 30MnB4 - 35B2
		<21	30MnB4 - 35B2
		< 27	30CrB4 - 34Cr4 - 34CrMo4
		< 27	41Cr4 - 42CrMo4
10.9	Cold - heading	< 16	30MnB4 - 35B2
		< 20	30CrB4 - 34Cr4 - 34CrMo4
		< 27	41Cr4 - 42CrMo4
12.9	Cold - heading	< 18	30CrB4 - 34Cr4 - 34CrMo4
		< 22	41Cr4 - 42CrMo4

## MAIN TYPES OF PACKAGING

### PRODUCT RANGE: Ø 1,60 MM – 9,00 MM

Carrier 300 – 600 kg

Carrier 800 – 1.600 kg

Coil on pallet from 500 to 2.000 kg

### PRODUCT RANGE: > Ø 15,00 MM – 34,00MM

Coil on pallet (from 1.000 kg to 2.000 kg max)



# QUALITY CONTROL SYSTEM

Rodacciai works with innovative machinery and optimized production processes to guarantee constant and repeatable high quality products over time. Since 1990 the company has obtained the ISO 9001 system certification, which certifies full compliance with the standards relating to the Quality Management Systems.

In the continuous development of its Quality Policy, Rodacciai through its production lines is able to comply with all the certifications necessary for its products.

All these certifications, constantly updated, ensure the customer full compliance with current regulations and are synonymous of certified quality.



## LABORATORY & CONTROL QUALITY

**Rodacciai LAB**, is a recent and big investment made by Rodasteel Corporation, dedicated to the R&D and to the continuous improvement of its products.

Rodacciai LAB is composed by a laboratory fully furnished with all the necessary equipment and testing machines calibrated in accordance with the requirements of ISO 9001 standards

and a R&D Dept.

The majority of required tests and reports are made inside the Company and the values obtained are studied and registered for further analysis.

**More than 160.000 3.1 certificates are issued annually.**

The image shows the exterior of a modern industrial building. The upper part of the facade is a light grey or off-white color, while the lower part features vertical corrugated metal siding. Large, three-dimensional blue letters are mounted on the upper section. The word "Rodacciai" is on the left, and "High Performance Steel" is on the right, separated by a small gap. The letters are bold and have a slight shadow, giving them a 3D appearance. The building's roofline is visible at the top, showing a series of dark, rectangular structural elements.

**Rodacciai** **High Performance Steel**

# CONTROL STRATEGY & BUSINESS PROCESS REENGINEERING

The strategic choices, made in the past, have been allowing the Group to differentiate itself over the time. It is precisely starting from these choices that the company is today a leader in the cold finished steel market. Our strategy is composed by: **ALL-IN-HOUSE**, to guarantee our customers continuous product and process improvement. Each phase is monitored and tracked.

**Business Process Reengineering** logic identifies 8 phases, including the redefinition of processes,

identification of the levels for change, the development of concrete objectives and actions for continuous improvements.

**Rodacciai LAB**, an important investment in our laboratory and R&D Dept., creates a high value for both the above explained strategy, helping the company to continuous monitoring the products in each singular step.



# SUSTAINABILITY

## BUILDING A LONG-LASTING FUTURE

Rodacciai has proudly established its three fundamental pillars, drawing inspiration also from the United Nations’ 2030 Sustainable Development Goals (SDGs): people, planet, and performance. These cornerstones reflect the company’s steadfast commitment to sustainability, social responsibility, and excellence.



PEOPLE

At Rodacciai, creating a dynamic and empowering work environment full of talented individuals is our priority. Our mission is to inspire and engage professionals, fostering a culture where people are not only enticed to join us but also feel deeply motivated to stay and grow with the company for years to come.



PLANET

Rodacciai considers environmental preservation to be a pillar of its production activities and an integral component of its ambitious growth objectives. Rodacciai also places strong emphasis on energy efficiency, viewing these efforts as pivotal to its decarbonization goals. This unwavering commitment reflects the company’s determination to align its progress with sustainability at every level.



PERFORMANCE

Rodacciai focuses on optimizing production processes and improving product quality to ensure sustainable progress and superior results. By integrating market signals, stakeholder feedback, and international development policies, the company strengthens its stability and business continuity while upholding responsible governance and ESG principles for ethical and sustainable growth.







Rodacciai stands out as a virtuous example of social commitment and sustainability through a series of initiatives aimed at promoting the culture of merit, professional development, solidarity, and inclusion.

The company operates with a long-term vision, striving to create a positive impact for local communities, institutions, schools, and the most vulnerable sectors of society, using education, training, and cultural support as key tools for transformation.

One of the pillars of its commitment is the promotion of the culture of merit through the “Giuseppe Roda” Scholarships, rewarding the most deserving students from local schools and universities, with the aim of encouraging excellence in studies and fostering social empowerment. The scholarships are awarded at local institutions and non-profit organizations, strengthening the bond between the company and the territory.

The Rodacciai Academy and related initiatives, such as Academy Road PM in collaboration with RoadJob, represent an important step forward in the professional (re)integration of unemployed and precarious youth.

Thanks to qualifying training courses, qualification and requalification activities, and partnerships with local companies, schools, and universities, these projects support the future employment prospects of younger generations. Rodacciai is also committed to promoting STEM disciplines and technical excellence.

Through the HR Excellence project, internship activities, contests, and company visits are offered to students to bring them closer to technical professions and to encourage a corporate culture of excellence.

A notable initiative is the participation in the SIfaSTEM roundtable, aimed at overcoming gender prejudices in scientific and technological subjects and promoting leadership roles in STEM disciplines among female students.



**ROADJOB**  
SHARE OUR FUTURE

In line with its commitment to innovation and sustainability, the company collaborated on projects such as the Innovation Day to stimulate a critical mindset in young people regarding the use of digital technologies.

Additionally, it supported the first Higher Technical Education and Training (IFTS) course in Italy focused on steel processing, facilitating the employment of trainees through apprenticeships.

The tangible economic support to communities during emergencies caused by natural disasters or similar situations also reflects Rodacciai's commitment to human values.

This approach underlines that the company does not limit its efforts to its local context but extends its solidarity to broader realities, responding effectively and promptly to emerging needs.

At the same time, attention to employee well-being is a cornerstone of the company's philosophy.

The HEART and HEALTH initiative represents a concrete commitment to improving the quality of life of its personnel, offering cardiovascular health monitoring to employees over 45.

This is complemented by innovative policies, such as additions to the National Collective Labour Agreement (CCNL), ensuring the opportunity to take paid leaves for personal or family health reasons, proving genuine care for individual and family well-being.

In summary, Rodacciai's commitment to social sustainability is evident in its continuous investment in education, training, and inclusion, but, above all, in its consistent focus on people: fostering the growth and well-being of communities, as well as its own employees.

These initiatives not only reflect the company's values but represent also a model for a fairer, more innovative, and more supportive future.





## PLANET

Rodacciai considers environmental conservation a fundamental pillar of its production activities and growth objectives. The company is fully committed to continuously monitoring and evaluating its environmental impacts to devise innovative strategies that mitigate and reduce adverse effects. A key element of this approach is the responsible management of raw materials: by predominantly using steels sourced from scrap metal within its supply chain—scrap that can be re-melted without any loss of properties—Rodacciai is steadily reducing its reliance on virgin raw materials, whose extraction is highly impactful.

**Waste management** is an integral part of the group's sustainability philosophy. In line with circular economy principles, Rodacciai has implemented projects aimed at the valorization, where permissible, of industrial by-products, thereby reducing the volume of waste destined for disposal. These efforts reflect the company's ongoing commitment to improving and optimizing resources. **Water resource** management plays a crucial role in Rodacciai's environmental strategy. The company diligently monitors water consumption and has equipped its facilities with closed-loop systems that incorporate purification and water recovery processes. Within regulatory and technological limits, it also preserves water consumption from the aqueduct, allocating groundwater for production purposes.

Equally important is the attention given to controlling pollutant emissions. Through monitoring plans and the adoption of appropriate technological solutions, Rodacciai ensures that atmospheric emissions remain under control, guaranteeing that its operations comply with environmental standards and contribute to a healthier ecosystem.

**Energy consumption** is addressed with the same level of commitment. The company focuses on both the nature and quantity of energy used, enhancing the efficiency of production processes and evaluating sourcing from renewable energy sources.

This commitment materializes through the technological modernization of facilities, the limitation of energy waste, and the optimization of operational processes, whose results are documented via an automated performance monitoring system.

These measures culminate in the decarbonization plan with targets for 2030, guiding the company towards a reduced environmental impact linked to its production processes.

These integrated initiatives in the management of raw materials, water, waste, emissions, and energy not only improve operational resilience but also underscore Rodacciai's commitment to environmental stewardship and sustainable growth.





## PERFORMANCES

Rodacciai is deeply committed to the optimization of production processes and the enhancement of product quality, ensuring sustainable progress and superior results across all operations.

These principles, coupled with the incorporation of market signals, stakeholder feedback, and adherence to international development policies, are essential to ensuring business continuity and strengthening the company's stability.

This comprehensive approach reflects Rodacciai's dedication to responsible governance and alignment with Environmental, Social, and Governance (ESG) standards, reinforcing its commitment to sustainable growth and ethical business practices. To support these goals, the company places a strong emphasis on strategic business planning, including the development of comprehensive multi-year growth plans. These plans serve as a roadmap for achieving long-term objectives while adapting to evolving market conditions and global trends.

Rodacciai also prioritizes the measurement and monitoring of its performance through the implementation of Key Performance Indicators (KPIs).

This system enables the company to track progress, ensure transparency, and drive continuous improvement across all areas of its operations, further reinforcing its role as a leader in sustainable and resilient business practices.



[www.rodacciai.com](http://www.rodacciai.com)



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