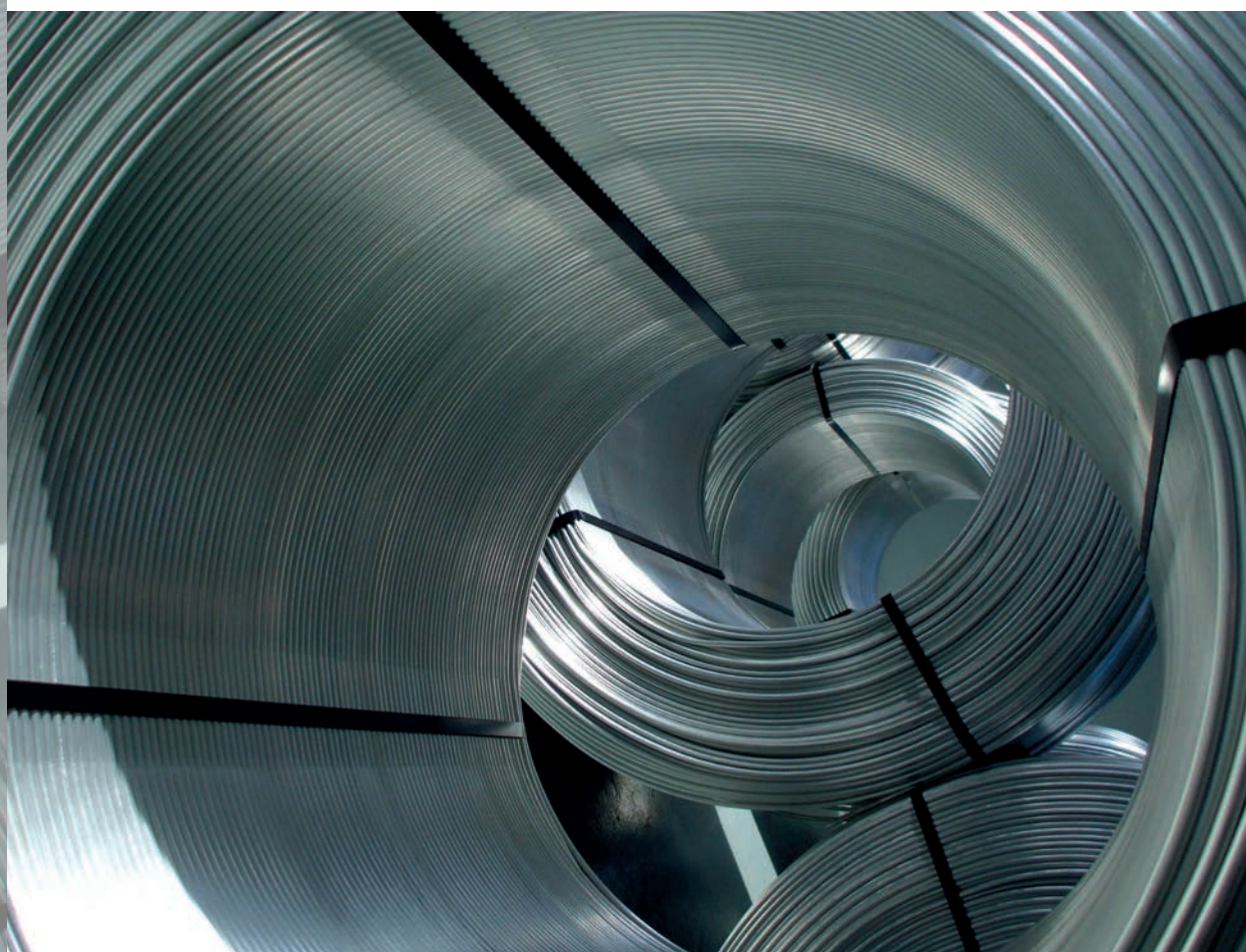


Yesterday, Today and Tomorrow

PROPERZI

Aluminium World



NOTE

The equipment displayed in this magazine has been photographed without protection for editing purposes.

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First Edition - 2026

Rooted in Continuity, Focused on the Future

(Where Roots Become the Future)



We live in a fast-paced world: markets, technologies, decisions. It is a complex, often unstable time, which requires companies not only to evolve, but also to persevere, adapt, and above all, **believe deeply in their identity.**

This is how Continuum-Properzi has grown: through decades of industrial, social, and technological change, without ever losing its center of gravity. Today, in 2026, we are a global company with a human dimension, a multinational capable of competing in the world while maintaining the spirit, cohesion, and responsibility of a large industrial family.

Strong roots do not simply preserve a legacy: it **interprets, renews, and projects it into the future.** Honoring our roots does not mean standing still; it means building on solid foundations that allow us to push further. From here comes our ability to look ahead, to expand our business horizons, and to face new markets and challenges with vision and determination.

The future of Continuum-Properzi speaks the language of young people: **new skills,** new perspectives, new energy integrated with the experience, methods and industrial culture built over time. We believe in the value of intergenerational exchange, teamwork, and innovation driven by diverse perspectives and ideas. Because innovation is never a solitary act: it is always the result of **deep collaboration.**

In a world that demands speed, we respond with **reliability.** In a complex environment, we choose continuity. Our technological solutions are designed to last, to operate like a perfectly engineered system, and above all to support our customers over time as partners, not merely suppliers.

Behind every plant, every patent and every successful project, there are people. People who share goals, responsibilities, challenges and achievements. People who understand that shared values and strong foundation are not limit, but strengths capable of creating trust, stability and a true sense of belonging. And it is precisely this cohesion, tested by complexity, that becomes our truest and most enduring root.

Continuum-Properzi looks to the future with realism and ambition, strengthened by a past that is not nostalgia, but **foundation.**

Because today, longevity means one thing above all: **staying united, looking ahead, and believing in the value of people.**

Chiara Properzi



FROM INNOVATION TO INNOVATION



Yesterday, Today, Tomorrow

A long time ago, in 1949, a couple of years after the establishment of Continuus Company, Ilario Properzi introduced the revolutionary continuous cast and rolled (CCR) aluminium rod to the world's (aluminium) industry.

It was a shock to the Cable Industry, especially for those focused on the manufacturing of overhead conductors.

The traditional mills that were used to roll aluminium billets were immediately declared obsolete even though the first Properzi line – almost a toy machine – could produce far less than one ton per hour.

For several decades Properzi E.C. rod has been a commodity, but in recent years a higher and higher percentage of aluminium rod is destined for more sophisticated products. Fine wires, enameled conductors, modern overhead compositions plus a variety of mechanical alloys and welding alloys in various diameters make the new Properzi rod lines, a mix of sturdy, affordable equipment complete with know-how from furnaces to coilers, the best choice for the most demanding market niche.

Continuus-Properzi has kept a prominent leading position as supplier of aluminium rod lines of any size and with any level of complexity: from super sophisticated to basic.

Basic but far from imitations where the operators' safety is neglected; where bearings are lubricated by emulsion instead of oil; where pipes are plastic hoses normally used for gardening; where maintenance is a nightmare; where instrumentation and automation is nonexistent and rod quality is a question mark! A very low initial equipment price is still a very high price to pay for substandard rod quality and huge operating costs!

We are proud of our founder, we added his name to Continuus Co., now Continuus-Properzi Co. We are equally confident of the inventiveness and strong leadership shown by Giulio Properzi, our President and Chief Engineer, and in the commitment and capabilities of the entire Continuus-Properzi team. And innovation is following innovation.

As aluminium rod became Properzi rod a long time ago, today the aluminium ingot is becoming the Properzi ingot.

Eng. Ilario Properzi
Explaining
how our
Rolling
Mill Works



Eng. Giulio Properzi
During the
Official
Presentation
of our Self-
Annealing
Micro Mill in
Düsseldorf



The patented Track & Belt caster started a new Properzi revolution in the aluminium world. Launching the ingot of the future. We are also proud to present our latest innovative solution that is the Vert-Melt furnace for a high melting rate; something that allows 20,000 – 50,000 tpy of aluminium rod production starting from solid ingots at a cost similar to production from the Smelter. And let us also remember our Microrolling® mills and the recent Pro-Form rotary extrusion system.

Step by step, the Company has developed into a **real Engineering, Procurement and Construction (EPC) company** that has accumulated not only the broadest worldwide portfolio of complete Lines, from furnaces to coiler, for the rod and wire industry but also Project Engineering and/or full packages from finished foundations to plant in operation.

Our commitment is to continue and surpass the 75+ years of success of our company based on the continuous attentiveness to our Customers and to the novel requirements of the global market.



QUALITY IS OUR GOAL AND SAFETY IS FIRST

Quality is a word with different meanings; but it certainly includes Safety and Customer Satisfaction. Relative to a CCR rod Line, quality means high efficiency, low maintenance and the final rod product, be it E.C. grade, conductor alloy or mechanical alloy, perfectly matching the international standards.

Thousands of CCR Line components, from furnace refractory materials to furnace burners with their flame control, to the rod quenching system to the double automatic coiler, and all the components in between, have a storied past which spans 70+ years of research, improvements and developments in metallurgy, mechanics and automation.

A new Properzi CCR Aluminium rod plant is tailored for the best Quality with maximum Safety. Each one is definite in production rate and specific for the required rod in different diameters from pure Aluminium to the most sophisticated alloys.

When commissioning a new Plant we take advantage of our extensive experience in interacting with our Customers/Users and by combining the following:

- Properzi Technology from Furnaces to Coiler
- A skilled and well-trained Operating Team
- All know-how and expertise collected during 70+ years
- Good Manufacturing Practices of modern times

The Goal is achieved!

To repair the obsolescence of those Systems (Plant + GMP + Team) commissioned years ago, when the requirements for rod were less severe and less demanding, our Excellency Group can provide all the support necessary for an up-grading in production and technology in order to attain the quality standards that are a "must" today with a reasonable and justifiable investment while posing no danger to the Owner's balance sheet.

However, updated QUALITY and increased production and the production of more difficult alloys are requirements and also targets for rod producers with older Lines.



A Typical Properzi Continuous Casting and Rolling Aluminium Line

In general, the backbone of the aluminium rod industry worldwide is comprised of older plants.

Our experts can suggest how to modernize the Line and also transfer the "Total Quality" and "Zero Defects" approach following the methods that the Automotive Industry – the most demanding industry – has identified, implemented and improved upon year after year.

Several courses are available in our QUALITY ROAD MAP (QRM), for example:

- Programmed maintenance and better total efficiency course
- Housekeeping and production parameters control course
- Highest percentage of premium quality rod course

We are making the European Norm for Safety and Total Quality Policy familiar around the world. They are known ISO 45001:2018 and ISO 9001:2015, respectively.

QUALITY IS THE COMBINATION OF GOOD MACHINERY, GOOD MANUFACTURING PRACTICES AND A WELL TRAINED CREW.

Spare parts are the lifeblood of the plant, and extending the technical life of the plant very much depends upon the availability of spare parts. Especially during the first two to three years of plant operation, we try to guide the customer in scheduling/managing their spare parts inventory as a function of the expected scheduled production to diminish the risk of facing urgencies and/or problems.

Spare parts are available for all of our systems to guarantee their durability and operation. Our Spare Parts office is fully available to create customized "annual" packages that offer significant economic advantages.

ALUMINIUM ROD LINES



The first Continuous Casting and Rolling Line (CCR Line) for Al rod production, invented by Eng. Ilario Properzi in 1947, still remains the essence and basis of the modern CCR Line. At that time the production capacity was much lower and the knowledge of Al alloys was very different from today.

Over the years Continuus-Properti, starting from the seed planted by Eng. Ilario Properzi, has developed an extensive portfolio (like a thick tree) of CCR Line configurations to satisfy all market requirements in terms of capacity (from 1.5 t/h to 15 t/h) and alloy range (1xxx, 2xxx, 3xxx, 4xxx, 5xxx, 6xxx, 7xxx and 8xxx series).

QUALITY of Properzi rod:

- Highest worldwide percentage of premium quality
- Highest rod quality exceeding the standards, worldwide recognized bench mark
- Rod quality repeatable and constant
- All alloy families (1xxx, 2xxx, 3xxx, 4xxx, 5xxx, 6xxx, 7xxx, 8xxx) can be produced, from pure Al to the most complex alloys
- Widest range of commercial al rod diameters
- Increased mechanical properties using the 2-roll rolling process in the roughing mill
- Best geometrical quality using the 3-roll rolling process in the finishing mill
- Perfect coil shape in both pitch-to-pitch and random mode

PLANT:

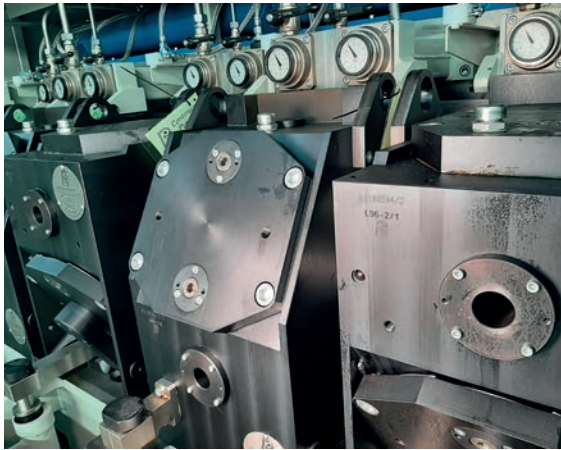
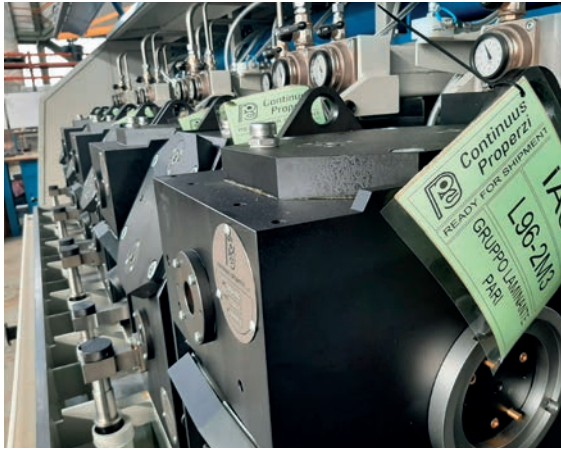
- 100% engineered internally, tailor made, from layout to software
- Our equipment is manufactured and assembled at our headquarters in Italy
- Only the highest quality and safety in our equipment
- Lowest operational costs in the industry
- Lowest consumption of utilities
- Incomparable longevity of our plants
- Overall equipment efficiency above 85%
- Several models of casting machine, rolling mills and coilers to satisfy all possible customer requirements
- Rod can be coiled in loose or tight coils
- Tight coils can be produced both in European and American standards
- Complete technical assistance for training, commissioning and start-up
- Continuous customer service: remote and on-site
- Longest availability of spare parts even several decades after equipment supply
- Prompt and precise spare parts service
- Latest available technologies and automation, ready for industry 4.0

Properzi
Rolling Mill
in Operation



Aluminium Coils
Produced with
Properzi Technology





Lateral View of a Properzi Rolling Mill



Properzi Coils in Stock

MORE & MORE ON...

CONTINUOUS-PROPERZI CCR ALUMINIUM AND ALUMINIUM ROD LINES...
and also special CCR for welding wires & master alloys

COMPANY:

- Inventor of the continuous casting & rolling system for non-ferrous metals
- 75+ years of experience with almost 480 casting and rolling lines designed, manufactured, and commissioned
- Widest knowledge of global market having operated in more than 60 countries
- Unique group of experts in terms of knowledge and experience
- Market share > 90% of the aluminium rolling mills sold, excluding local imitations
- Aluminium rod became properzi rod
- Always innovator of our innovation without comparison
- Our goal is customer satisfaction
- Full equipment supply, including fumes treatment system
- Turn-key solution, including installation and erection

CCR ALUMINIUM ROD LINES – SMALL OUTPUT RATE FOR EC GRADE AND THE MOST COMMON ALLOYS

- Production rate: from 1.5 tph to 3.5 tph
- Expected yearly output: from 10,000 t to 17,500 t
- Alloys range: 1350, 1370, 6101, 6201 and similar
- Coils type: loose coils (most used) or tight coils

CCR ALUMINIUM ROD LINES – MEDIUM OUTPUT RATE FOR EC GRADE AND THE MOST COMMON ALLOYS

- Production rate: from 4.5 tph to 6 tph
- Expected yearly output: from 30,000 t to 40,000 t
- Alloys range: 1xxx, 5xxx (Mg < 2.5%), 6xxx, 8xxx
- Coils type: loose coils or tight coils (most used)

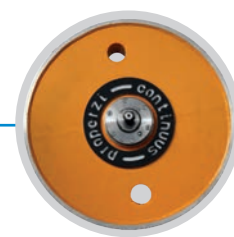
CCR ALUMINIUM ROD LINES – MEDIUM OUTPUT RATE FOR EC GRADE AND THE MOST COMPLEX ALLOYS

- Production rate: from 4.5 tph to 8 tph
- Expected yearly output: from 22,000 t to 40,000 t
- Alloys range: 1xxx, 2xxx, 3xxx, 4xxx, 5xxx (also high Mg content), 6xxx, 7xxx, 8xxx
- Coils type: tight coils

CCR ALUMINIUM ROD LINES – LARGE & EXTRA LARGE OUTPUT RATE FOR EC GRADE AND THE MOST COMMON ALLOYS

- Production rate: from 8 tph to 16 tph
- Expected yearly output: from 50,000 t to above 100,000 t
- Alloys range: 1xxx, 6xxx, 8xxx
- Coils type: tight coils (also jumbo coils)

ALUMINIUM ROD APPLICATIONS



Aluminium rod is produced by different processes namely extrusion, rolling and coiling, or casting, rolling and coiling directly from molten aluminium. These processes elongate the aluminium into circular or bar-shaped pieces that can be further processed to fulfill various applications. Many machine and equipment parts, such as rivets, nails, screws and bolts, are made from rod. Aluminium wire is used extensively in electrical transmission applications due to its excellent conductivity, light weight and non-corrosive nature. Every-day products produced from wire and rod include: chain-link fence material, aluminium antennas, zippers and those handy re-twistable twist-ties used to keep food fresh.

THE ALUMINIUM ALLOYS SERIES

Alloy	AA
Al > 99%	1000
Al +Cu Al+Cu+Mg	2000
Al+Mn	3000
Al+Si	4000
Al+Mg	5000
Al+Mg+Si	6000
Al+Zn+Mg Al+Zn+Mg+Cu	7000
Al+other	8000

Producing rod

One method to produce aluminium rod is similar to rolling sheet. A continuous trapezoidal hot bar is progressively reduced in cross-section by passing it through a series of rolls, and then coiled. The coils of rod are further processed into wire through subsequent rolling or drawing operations.

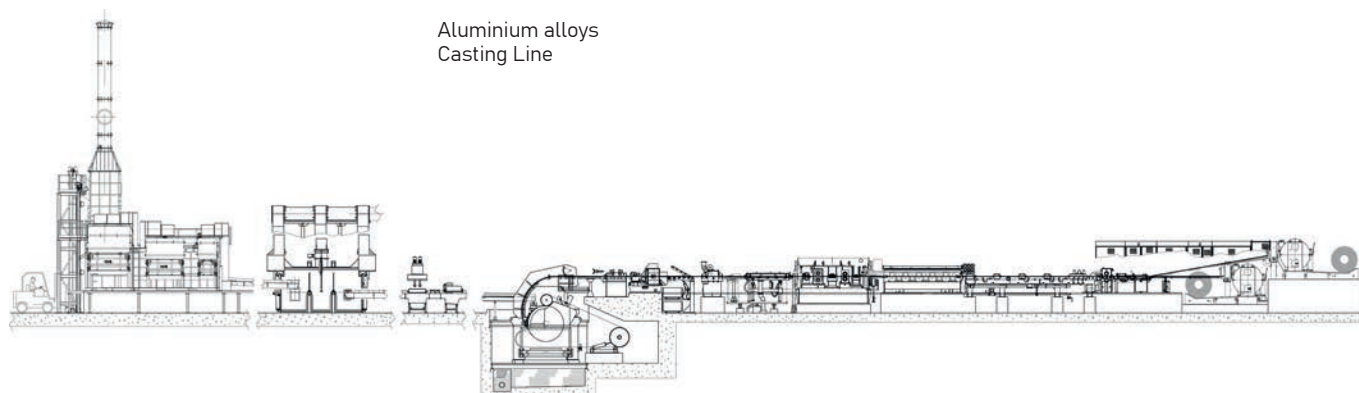
Applications

Electrical transmission lines are by far the largest application for aluminium rod products. This is a market in which aluminium has virtually no competition from other metals. Aluminium is simply the most economical way to deliver electrical power. Aluminium wire and cable are also used almost anywhere there is an electrical impulse to conduct: in commercial buildings, machinery and equipment, transportation and consumer durables. Wire and cable are used for little jobs we seldom think about, such as the non-rusting staples in tea bags and re-twisting twist-ties.

The major families of rod and wire production can be divided by application as follows:

- 1) Electrical applications
- 2) Mechanical applications
- 3) Welding applications
- 4) Harness applications

Aluminium alloys
Casting Line



Electrical Applications

They include insulated cables for low, medium and high voltage distribution networks, conductors for overhead transmission lines, flexible cables for robotics, welding and railway engineering, cables using nickel-plated wire for aeronautical engineering, enameled wire for windings, etc.

The Electrical alloys are: AA1120, AA1310, AA1350, AA1370, AA6101, AA6201, AA8030, TAL alloys.

Mechanical Applications

The mechanical applications include: rivets, bolts, screws or forged parts. The future for these applications will increase in particular for the automotive and transportation industries to reduce the weight and consequently the emission of CO₂, **in particular:**

AA2011: for screw machining

AA2017: die-forgings, nuts and bolts and screw machining

AA2024: rivets, bicycle nipples, screws, balls

AA3103: impact extrusion of cartridge cases, tube extrusion by the PRO-FORM (rotary extrusion) process

AA5019: cold heading (rivets, nails, miscellaneous), zip fasteners, metal screening and wire fencing, staples

AA5051: wire fencing

AA5052: cold heading, zip fasteners, wire fencings, tea bag staples

AA5154: cold heading, wire fencings, staples

AA6056: screws, nuts and bolts, fittings

AA6082: cold heading, knitting needles, die-forgings

Welding Applications

This application is in continuous increment due to the growing use of aluminium in the automotive and transportation fields. The major families are 4000 and 5000 series.

These alloys, which mainly contain Si as an alloying element, are used as welding filler materials. The

range is from 5% (**AA4043**) to 12% (**AA4047**) silicon. They have excellent fluidity due to their low melting point and are also widely used as soldering alloys. If structural parts need to be anodized after welding the joint forms a natural dark grey anodic coating. Major applications are MIG, TIG and Laser.

AA5183 and **AA5356** are the best choice if high mechanical properties in the welded structure are required. **AA5183** has even higher mechanical properties than **AA5356**. They produce welds with higher ductility than those using 4xxx series filler materials but are not as easy to use as the 4xxx series alloys. However, they should not be used with high Si content alloys (i.e. castings) because excessive magnesium-silicide (Mg₂Si) develops in the weld structure and will decrease ductility and increase crack sensitivity.

These welding fillers are mainly used for automotive components, bicycle frames, body panels, shipbuilding, the railway industry, the offshore industry, the trailer industry, tanks, containers, etc.

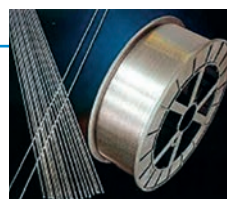
Harnesses Applications

In the automobile industry the need for weight reduction has increased as CO₂ emission regulations have become more stringent. To develop a lightweight and low cost wiring harness, many companies, initially in Japan, have examined the replacement of copper wires with aluminium wires.

Aluminium wires have been used mainly in overhead power lines and automobile battery cables, where the cross sectional area of the conductor is large to support high current. Both tensile strength and electrical conductivity are required for automobile aluminium wires. The purpose of this application was to achieve tensile strength of 110 MPa or more and conductivity of 58% IACS or more, assuming that the conventional 0.5 mm² copper wire generally used in a low-voltage power cable could be replaced by a 0.75 mm² aluminium wire.

Example of Welding, Harnesses and Mechanical Applications

Example of Electrical Applications



Conclusion

World aluminium wire rod usage is estimated to have increased from 5.87 million tons in 2014 to about 8.4 million tonnes in 2025. Owing to its properties, aluminium cables and conductors have successfully replaced copper as the principal medium for carrying electricity over the last five decades. Owing to quick urbanization and faster growth of the building and construction sector, electrical transmission and distribution networks have grown over the years driving demand for aluminium products like wire rod, wire, cable and overhead conductor.

The PROPERZI CCR (Continuous Casting & Rolling) Lines are considered the worldwide best and simplest system to produce rod. Couple the CCR system with

the PROPERZI cold Microrolling® Mill and you have the most economical method to produce wire. The advantages of the PROPERZI technologies include:

- Easy to maintain consistent rod and wire parameters
- High productivity and overall equipment efficiency
- Precision automation
- Reliable and convenient packaging
- Readily available technical support and customer service
- Unparalleled customer satisfaction

Customers who use PROPERZI aluminium rod and wire always experience an increase in their profits!

PRIMARY AND SECONDARY INGOTS LINES



For Aluminium Producers with the Properzi Track and Belt Process

Regardless of the starting material (molten aluminium or scrap), the usual re-melt forms standardized worldwide are ingots. Tee-bars and sows are less popular.

For many years ingots have been produced with the traditional mould chain and such ingots are referred to as "Open Top Ingots" in the market.

Although many improvements have been made over the years, several problems related to the general design concept remain unresolved.

The recently patented Properzi Track & Belt Ingot Casting Machine Model 1 and Model 2 transform the molten metal into a continuous cast straight bar of trapezoidal shape with total repeatability. This cast bar is cut into ingots of precise length by a rotary shear. The ingots are then cooled in line to a temperature of 70-80°C in order to allow the palletization and strapping operations with plastic or steel straps.

Thanks to the advantages listed below, the Properzi system boasts one of the lowest Operational Expenditures (OpEx) available in the market to produce ingots either for primary smelters or for scrap reclamation.

The Track & Belt process is gaining wide acceptance in many countries from Italy to Mexico, from Poland to Russia and China. **We have also enjoyed record repeat orders from Raffmetal (Italy) with five (5) machines ordered and all are in production!**

The Properzi T&B Ingot Casting Lines can work either in continuous operation reaching an Overall Equipment Efficiency (OEE) exceeding 90% or on a batch basis as requested by most refineries of aluminium scrap.

Ingots can be of 8.5, 10.0 or 15.0 kg always having a maximum length of 720 mm but it is also possible to produce ingots with a length of 600 mm with different relative weights.

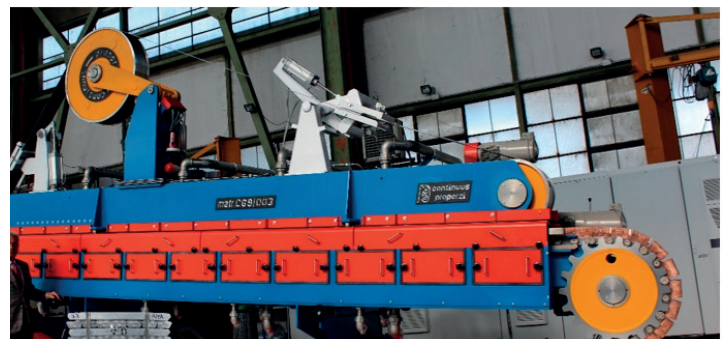
Different plant configurations can provide ingot production rates ranging from 10 tph or higher for secondary alloys up to 28 tph for pure aluminium.

Lines to produce ingots of special size and weight tailored to customer needs are available upon request.

Properzi is also willing to supply such plants on an Engineering, Procurement and Construction (EPC) basis so that the buyer is only minimally involved with the installation of the plant.

Open top ingot drawbacks:

- Heavy weight (E.C. Al) for high production rate
- Inconsistent geometric
- Instability of the ingot bundles
- Loss of metal due to skimming
- High rate of rejection due to off-size
- Critical de-moulding operations
- Dangerous cracks and voids within the ingot
- Necessity of using at least three straps to secure each bundle; the use of five straps is also quite common



Properzi Track & Belt Ingot Casting Machine Model 2

Advantages of Properzi ingots:

- 100% repeatable shape, dimensions and weight
- Consistent dimensions and shape of ingot bundles with high stability
- 25% less space required for storage
- The cast bar is solidified with zero cracks and no dangerous voids
- Skimming is not required
- Traceability data mechanically imprinted
- Zero de-molding problems
- Minimum number of straps needed



HIGH TENSILE AND WELDING WIRE

The Microrolling® Cold Mill for Aluminium Alloys

Continuus-Properti pursued, with its high precision Microrolling® process, an important objective: **to provide a valid alternative to the conventional breakdown (cold drawing) machines.**

This technology is very well proven for producing wire in both hot and cold conditions.

The Microrolling® process, based on a Monobloc rolling mill with 8-12 rolling stands (each with 3-rolls) and powered by only one motor, really excels with those materials, such as high tensile or welding wire alloys, where the conventional breakdown drawing process must be divided **into several steps with intermediate annealing.**

The advantages of a Microrolling® Mill over a traditional system are:

- Reduced work hardening of the material
- Energy savings
- Higher production rate
- Self-threading (extremely user-friendly)
- Increased safety (self-threading eliminates potential pinch points)
- No pointing required
- No rod shaving required
- Improved wire surface smoothness
- Absence of residual lubricant on wire surface
- Greater reduction between anneals on hard material
- All together: **lower production costs**

Typical lay-out (below):

1) DOUBLE ROD 9.5 mm PAY-OFF

2) ROD DANCER

To ensure the appropriate rod tension prior to entry into the Microrolling® Mill.

3) MICROROLLING® MILL 12 STANDS

The Microrolling® Mill will process the incoming rod, not shaved, from the standard 9.5 mm diameter down to 2.6 or 2.4 mm wire with 12 rolling stands.

The Rolling Sequence is round/triangle/round: each second stand can produce round wire. The maximum exit speed is 25 m/sec.

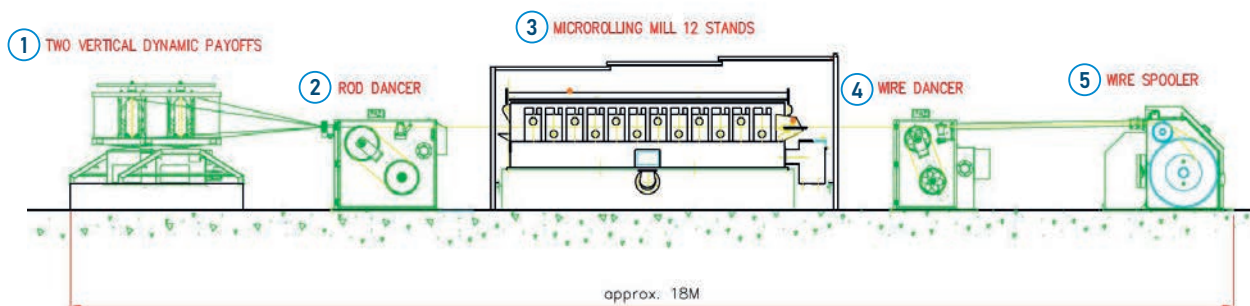
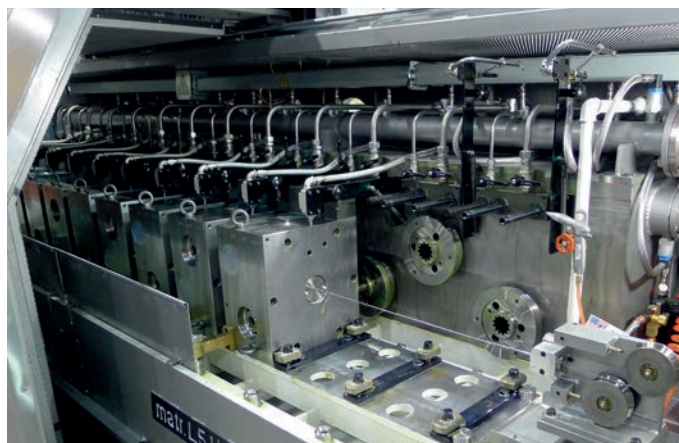
4) WIRE DANCER

Designed to synchronize the speed between the Microrolling® Mill and the dynamic spooler.

5) DYNAMIC SPOOLER

To collect approximately 700-1,000 kg of wire depending upon different reel diameters (can be customized upon request).

Microrolling®
Mill in Operation

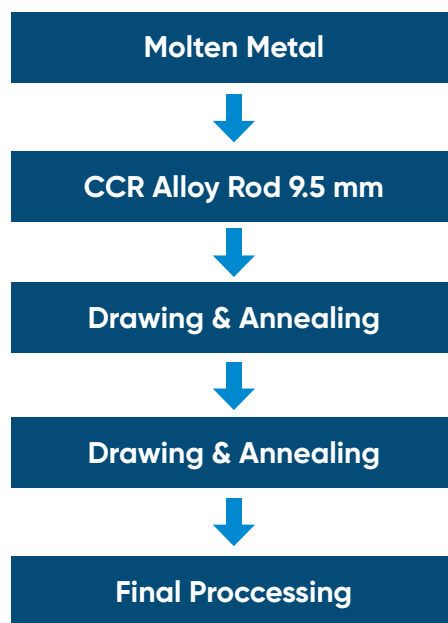


MOST DIFFICULT AL ALLOYS WIRE

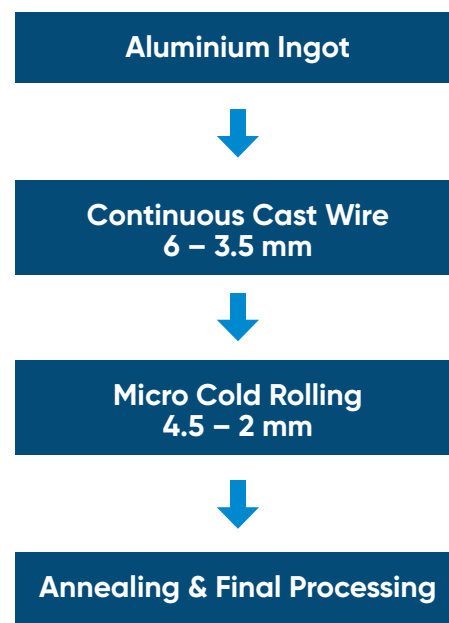


With the latest Properzi Continuous Cast Wire System
and Cold Rolling Break-down

TRADITIONAL



PROPERZI CCW + CR

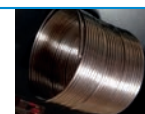


AA3003
AA3004

AA2017
AA2024

AA5051
AA5052
AA5087
AA5154
AA5183
AA5356
AA5754

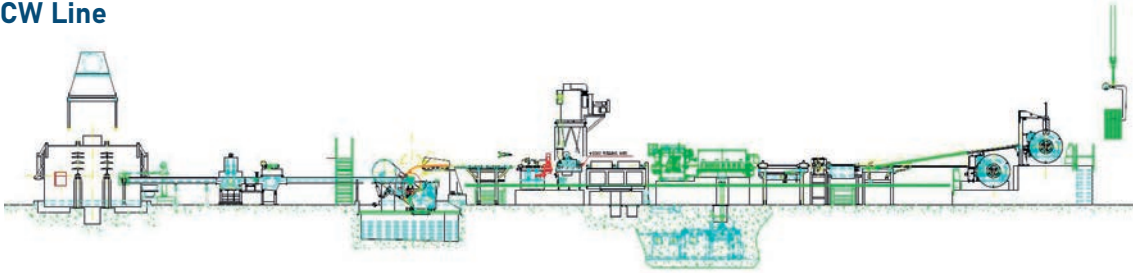
AA4043
AA4047



Some of the many applications of aluminium rod

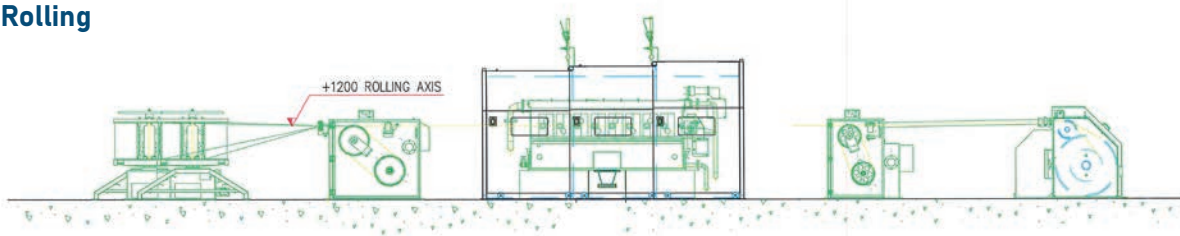
PROVEN TECHNOLOGY FOR HIGH-TECH Welding and Mechanical Alloys

CCW Line



Properzi
Layout
of a CCW
Line

Micro Cold
Rolling

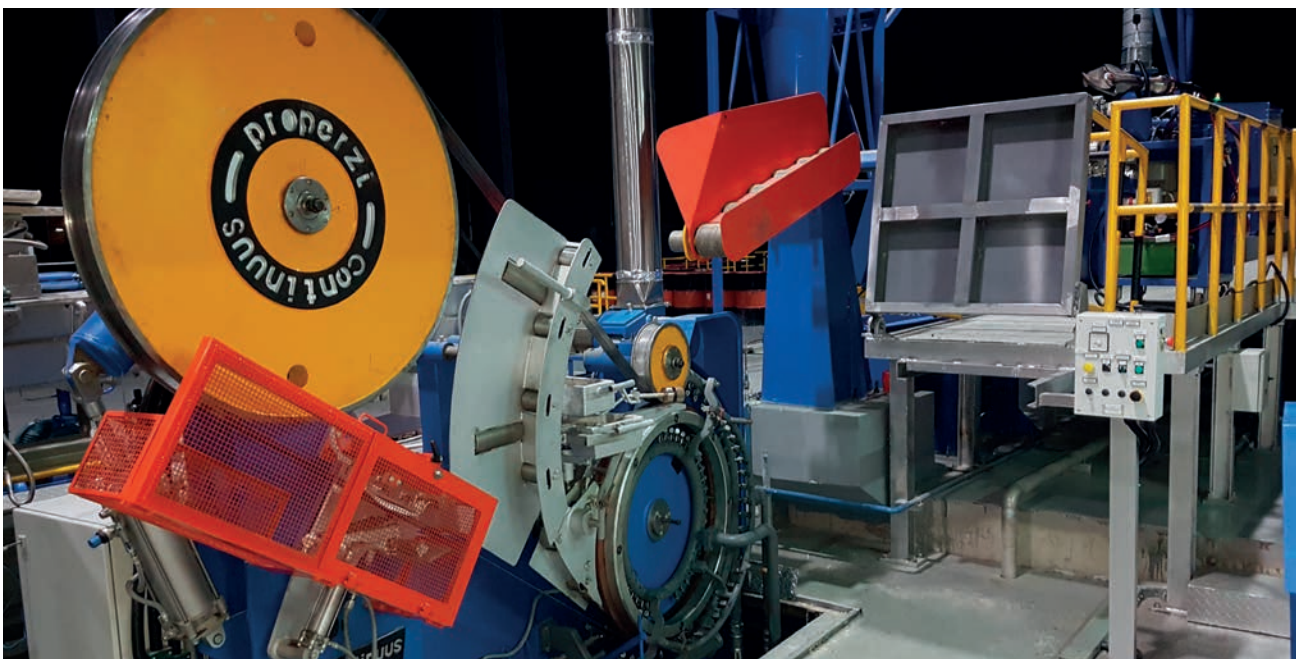


Properzi
Layout of a
Micro Cold
Rolling
Line

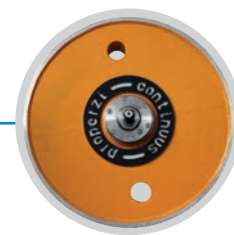
3 LINES ALREADY IN PRODUCTION
Complete Lines from Al ingots
to final product 5,000-10,000 mt/year

- The final diameters range is from 6.25 mm to 3.2 mm
- No annealing required
- Easy tensile strength adjustment
- No breakdown drawing required
- Wide range of mechanical and welding alloys

Properzi
CCW Line



COMBO LINE FOR ROD AND INGOTS TO HAVE MORE FLEXIBILITY FROM PROPERZI “JUMBO LINES”



Generally, the goal is to be able to saturate the production of your process Line with the most beneficial product that can be produced. Normally that is not always possible and consequently if you have an alternative, you can choose the best production mix.

More than sixty years ago, “Properzi rod” became a well-known brand name that referred to the new continuous cast and rolled product. This new product became a substitute for the previously produced extruding or rolling billet.

The name originates from Ilario Properzi, inventor of the system and owner of Continuus Company - supplier of casting machines and rolling mills to the main international players of the time including Pechiney, Alcan, Alcoa, Southwire and others.

Today the range of available packages, **from furnaces to coilers**, covers a span from 10,000 tons for year to above 100,000 tons for year. Naturally, the higher production lines are for the Smelters and E.C. or electrical alloys; the medium or small production lines are mainly for cable companies or mechanical alloys Producers.

In addition to rod lines, more than 20 years ago Continuus-Properzi engineers launched a special application of the wheel and belt caster to make a new type of aluminium ingot. Immediately, this aluminium ingot was being called the “Properzi ingot” by Users like Alba, Dubal, and Raffmetal. To date, many millions of tons of “PROPERZI ingots” have invaded the world.

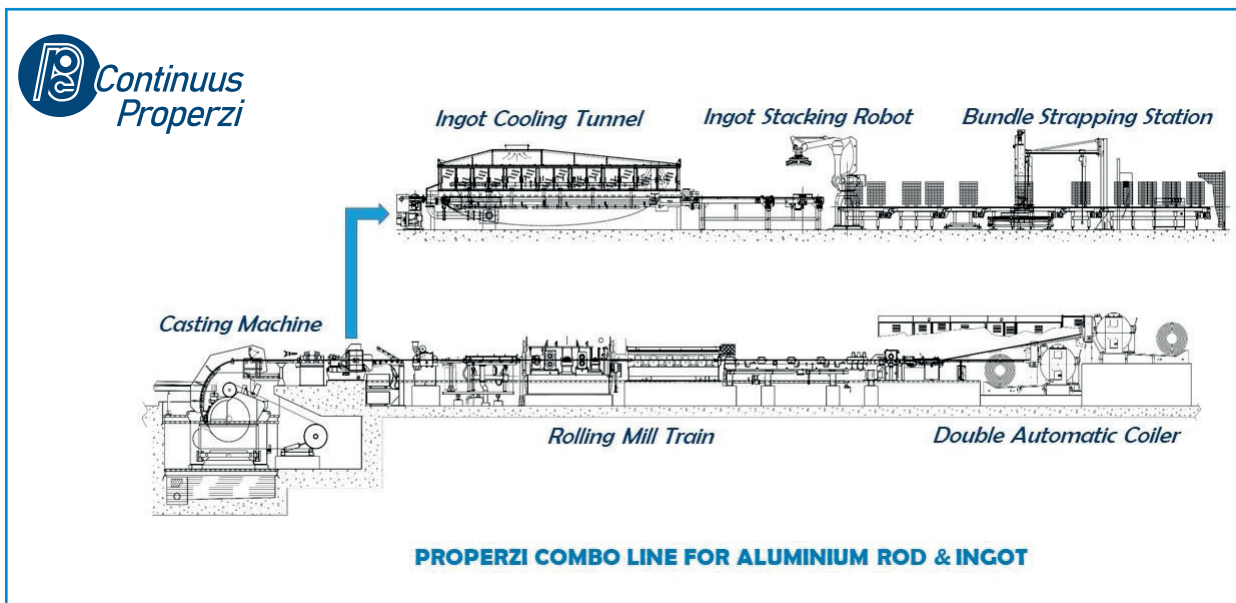


So recently we thought: "for an aluminium smelter it must be difficult to continuously balance the production of semis with market instability. Billets, rod, ingots and other products suffer fluctuations in both price and demand. Continuus-Properti, supplier of aluminium rod lines to practically all the smelters worldwide, has recently developed a combination line able to produce two distinct products: rod and ingots... **from the same line!**

One high production rod caster (10-16 ton/hour) solidifies a continuous bar that can enter into the rolling mill for the production of wire rod or can be sheared by the rotary shear to produce 10 kg ingots having a length of 700 mm. The resulting Properti ingots are far superior to those produced with a traditional open-top system (50% less dross produced during re-melting operation).

The Properti ingots are continuously cooled, stacked and strapped in bundles of one ton approximately. The additional equipment required to the pure rod line in order to facilitate ingot production is not extensive: just a deviation device for the sheared ingots, the cooling tank, the stacking robot, and the strapping unit. With just a small increase of CAPEX you have the flexibility to meet sudden changes in the market.

The shifting from rod to ingot production, and vice-versa, is easily done and does not require major changes; less than a couple of hours arranging the deviation device, some clicks on the HMI, and re-programming of the furnaces .



The Properti Combo Line Produces Both Rod and Ingots

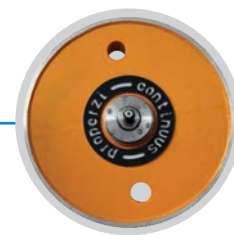
Pure aluminium ingots and mainly primary foundry alloys (Al-Si) ingots are the alternative products for a different market.

Several "Combo-Lines", as they are called, are already in production.

Similar solution and line configuration can also be done for copper.

As shown in the Lay-out example, the ingot line is located near the rod line with the important advantage of optimizing the use of space in the cast house. The necessary area is almost half of the area required to install two separate lines, one for rod production and a separate one for ingot production. Furthermore, since the caster is the same for both products (produced in campaigns), it is not necessary to install two separate furnace sets. This provides important savings in terms of total investment and space.

LATEST UPDATES ON IULIUS 4.0



The Properzi Program Supporting the Transition of Users' Facilities to Digital Factories

Continuuus-Properzi has always been investing in innovations to provide increases in quality and improvements for significantly responding to the end user's needs.

In recent years in the Industry 4.0 field, we developed IULIUS 4.0, a specific package of Automation and Information-Technology features to support and facilitate the transition of our end users' factories into digital factories, with the goal to achieve much higher performances in fields like quality, consistency, OEE, savings, and reactivity to new market challenges.

The package has been designed for the particular industry sector of non-ferrous metals producers, as it addresses the specificities inherent of the Properzi technology/equipment, and the ones of their end users (i.e. rod producers, welding wire producers, ingot casters, etc.). This complies exactly with the purpose of providing a complete set of functionalities, fully integrated and ready-to-use, which greatly ease the non-ferrous metals producers' journey in the digital transition of their facilities.

The **IULIUS 4.0** program currently consists of functionalities divided in two major sets:

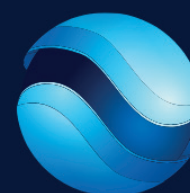
- The **IULIUS 4.0 Ready**: the most basilar and necessary functionalities. They are included as a part of our standard scope in the supply of all new Lines, and consist of:
 - a. wireless visibility of plant's data through the automation LAN
 - b. access to HMIs from on-site mobiles
 - c. Remote Technical Assistance via Internet
- The **IULIUS 4.0 Advanced**: the next, more advanced functionalities. They are supplied upon request, and this is occurring more and more frequently as the market realizes the benefits Industry 4.0 can provide, and include:
 - d. SCADA System
 - e. SCADA pages on end user's mobiles
 - f. KPIs for the end user's Managers, with new graphics and searching functionalities
 - g. database for the end user's IT system
 - h. new interface with the MES system of the end user

The above IULIUS 4.0 advanced package is now enriched and has become even more performant thanks to the addition of two new very effective features:

NEW ENHANCED GRAPHICS AND SEARCHING FUNCTIONALITIES for the KPI dashboard pages

This update consists of completely redesigned KPI dashboard pages enhanced with a brand new graphical aspect. The pages now provide more agile and optimized views, due to the ability of automatically scaling the elements shown therein according to the screen size of the mobile devices used.

Furthermore, these pages have been enhanced with powerful query and filtering functions, which, in addition to making searches easier and faster for locating the data of interest, also allow you to make meaningful comparisons between different production periods, castings, shifts, types of product, etc.



IULIUS 4.0
TECHNOLOGY

CONTINUUS-PROPERZI

NEW INTERFACE with the end user's MES SYSTEM

This function consists of a new interface, made with a set of ready-to-use data that IULIUS 4.0 instantaneously exchanges with the MES, Manufacturing Execution System, program running in the end user's IT.

The main task of the MES is planning , improving, and optimizing production in the entire facility, including that pertaining to the Properzi Line. The data exchanges between IULIUS 4.0 and MES through this interface are of specific interest for the end users to digitally integrate, more quickly and with much less effort, the Properzi Line with their logistics system or with the supply chain of their factory, and/or with other lines present in the same production site.

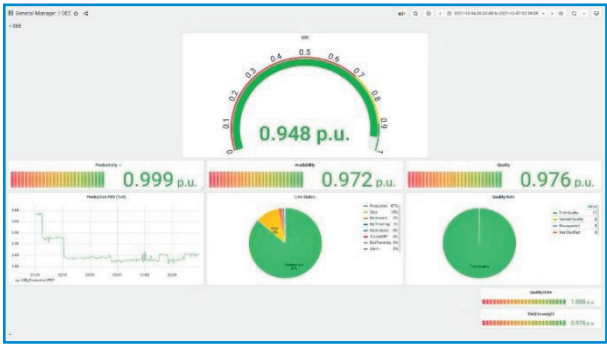
The concerned data exchanges, mainly include production plans, order plans, order status, pending/processed orders, etc. Through these exchanges, production planning, tuning and control by the factory managers, in combination with the KPIs, email alerts, and reports computed by the IULIUS 4.0 system, become much easier, more flexible, and performant.

Regarding implementation, the exchanges are made through an effective but simple and largely diffused protocol, which greatly shortens the work on the end user side. Furthermore, the interface makes use of several stored data, through additional database tables, which keep track and provide information upon request of the exchanges done between MES system and IULIUS 4.0.

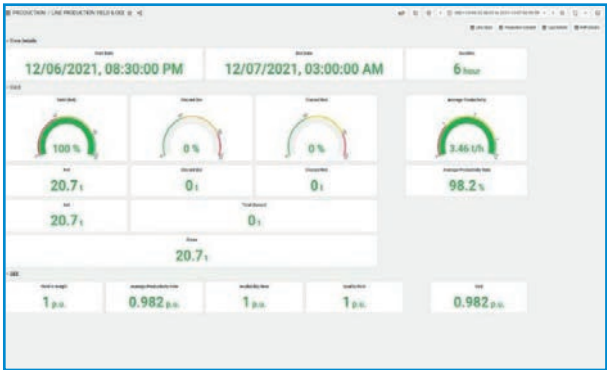
Naturally, the above is a standardized solution that is ready-to-use by the end users. But if required, it can always be customized to comply with particular needs.

With the addition of these two new features above, the IULIUS 4.0 package now offers a fully effective and complete set of capabilities that can ease the transition of your factory into a digital factory. The use of this package has several advantages:

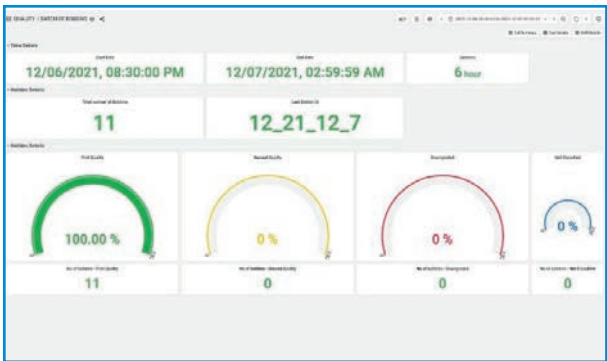
- Specifically designed for the non-ferrous metal market served by the Properzi Lines
- Equipped with ready-made IT functions already integrated with the concerned automation functions
- Captures and records all of the data essential to the concerned process, making them available on ready-made KPIs dashboards on the managers mobile devices
- Automatically generates emails containing alerts and reports
- Shares data with your MES system through a ready-to-use set of databases and interfaces



Dashboard Page for the Line Manager



Dashboard Page for the Production Manager



Quality Dashboard Page on Mobile Device

All of this drastically reduces your implementation costs and times, alleviates the job of your managers in ensuring everything is operating smoothly, and in cascade fashion produces benefits on various performance aspects such as: product quality on a more consistent basis, increased Overall Equipment Efficiency, easier and more timely identification of corrective actions, better yield, more timely decisions, etc.

ALUMINIUM FOUNDRY: VERT-MELT FURNACE



Continuus-Properti can offer today a precise answer to precise market demand that is the Vert-Melt family.

Main Characteristics

High melting rate with minimum cost!

Today's market may require a Furnace Set (Melting and Holding furnaces) with a modest investment, a compact lay-out, low maintenance, and low gas consumption for the production of aluminium in the range of 5-10 tph starting from solid aluminium and not from molten metal coming directly from the pot lines.

The new Vert-Melt Furnace gives extraordinary performances.

Continuus-Properti has taken advantage of our 35+ years of experience with shaft melting furnaces and developed the Vert-Melt family of furnaces, with production rates ranging from 5.0 tph to 10 tph, suitable for the production of any aluminium product.

The Vert-Melt Furnace is a combination of a vertical melting furnace (shaft) with a static receiving (holding) chamber that feeds two holding furnaces when alloys are foreseen in the production mix.

Properti's Vert-Melt technology includes one melting tower for a melting rate up to 5.0 tph. For a higher melting rate, such as 8 or 10 tph, it includes two side-by-side melting towers.



Vert-Melt
Furnace Set

Skills:

- Continuous Melting Operation
- Metal losses are almost three times less when compared to a reverberatory Furnace
- Vert-Melt Technology does not need sophisticated, energy-wasting stirring systems
- Constant melting rate not disturbed by the charging operation - Low and controlled emissions - Easier slagging operation and refractory maintenance
- Reduced hydrogen contamination into the molten aluminium



INTEGRATED FUME TREATMENT SOLUTIONS

For Aluminium Melting Furnaces

In recent years, growing environmental awareness and increasingly stringent emission regulations have profoundly shaped the industrial landscape. In the past, furnace manufacturers and suppliers of fume filtration and pollution control systems often operated along separate paths, collaborating only when strictly necessary. Today, this separation is no longer viable: effective integration between the production process and emission control systems has become essential to ensure operational efficiency, environmental compliance, and workplace safety.

All industrial processes generate fumes with specific physical and chemical characteristics, influenced by raw materials, operating temperatures, and process conditions. Although fume treatment technologies are well established, their successful application requires careful adaptation to the actual process requirements.

Within this framework, Continuous-Properti has built decades of experience as a technology provider for copper scrap refining and aluminium melting furnaces. Over time, the company has consistently selected highly qualified partners for fume filtration and emission control systems. This approach led Giulio Properzi to establish a joint venture — Exus Company — with an experienced Italian specialist, with the aim of offering customers a true one-stop solution for fume treatment systems.

From a technical standpoint, the treatment of fumes generated during molten aluminium processing requires special attention due to the presence of fine dust, aluminium oxides, acid vapours, and organic compounds released from coatings and contaminants. Properly engineered systems include efficient fume capture close to the furnace, thermal destruction of organic compounds, controlled cooling of the exhaust gases, high-efficiency baghouse filtration, and, where required, additional conditioning or odor neutralization stages. These solutions ensure reliable emission control, high plant availability, and long-term compliance with environmental regulations.

Continuous-Properti therefore offers not only individual furnaces, but fully integrated packages including furnaces, fume extraction and treatment systems, casting lines such as Properzi Rod or Ingot Lines, to meet every market requirement.



*Supply of Air
Purification and Fumes
Treatment Systems*

TECHNICAL CONSULTANCY



The Milestone in the Operation of a Plant

The successful operation of large scale plants is focused on the highest possible availability and efficiency of the equipment, combined with the constant stability of the quality of the products.

In the increasingly demanding and competitive markets, with frequent new products and technical requirements being the norm, the maintaining and up-dating of the existing equipment is of paramount importance.

This task is not simple nor straightforward due to the complexity of modern plants and increasing quality demands. At the same time, other factors, including the quick obsolescence of the components, changing market or local conditions, and the excessive turnover of personnel, increase the risk of inefficiency and quality degradation which can result in economic loss.

Supplying a new plant for the production of non-ferrous commodities is not only Properzi's core business, but an act of responsibility and commitment where first-class equipment must be accompanied by first-class After Sales Service during the complete operational lifetime of the equipment. This commitment begins from the start-up and commissioning and continues throughout the entire lifetime of the plant with our Total Quality Policy based on ISO 9001:2015. The quality of the product is a combination of good machinery, good manufacturing and maintenance practices, and a well-trained crew.

To support Properzi's Customers, Continuus-Properzi is now offering a new "Technical Consultancy" service delivered by our team of experienced and highly-skilled specialists.

The areas of consultancy cover a multitude of production topics:

- Training and best practices for production and maintenance: through audits and dedicated courses, the newly hired customer's personnel is trained, while the existing team members are updated
- Programming of scheduled maintenance using modern line diagnostics and audits
- Control and optimisation of key production parameters
- Troubleshooting of the machinery and the production process
- Audits for modernisation, upgrades, and improvement
- Programming of spare parts supply: the extended operative lifetime of equipment depends on an up-to-date spare parts supply and is essential for a well-maintained plant. We guide the Customer, especially during the first two to three years of operation, in scheduling and managing the spare parts inventory as a function of the scheduled production. The result is diminished risk of facing urgencies and interruptions of production.

Remote
After Sales
Technical
Consultancy



The Technical Consultancy is performed through three main channels, permitting a very efficient approach that is well balanced with the Customer's needs and requirements, as well as with the complexity of the topic.

These three channels are:

- **E-mail Troubleshooting/Consultancy**
- **Remote Assistance Service**
- **On-site Assistance**



Remote Electrical &
Automation Technical
Consultancy

E-Mail Troubleshooting/Consultancy:

It is a fast "problem solving" approach based on information exchange via e-mail (consultancy@properzi.it.). The Customer sends an e-mail to the dedicated Properzi address describing in detail the issue, clarifying in which specific cases it occurs, and adding any meaningful additional information or pictures. Properzi will deploy its dedicated and qualified engineering/process team until problem resolution.

Remote Assistance Service:

In case of need, Properzi software and process specialists can provide their support operating on the Customer PLC from the remote control room located in Properzi's premises.

To enable this Service, a communication module has to be installed on the Customer's PLC and connected to the Internet. All new Lines are delivered equipped with a Remote Assistance Module and CCTV circuits, while most of the existing Lines can be easily upgraded.

On-Site Assistance:

Properzi's specialist/s visit the Customer site to give support in resolving the most critical issues or any other Customer requests which cannot be addressed remotely.

Once the intervention is completed, a detailed report will be transmitted to the Customer which will include the reasons for the issue, any recommendations to prevent future issues, and all possible areas of improvement.

Advantages obtained with Properzi services:

Exploiting the opportunity given by the new Technical Consultancy service, Properzi's Customers can obtain:

- Fast troubleshooting and relevant remedies
- Continuous operator(s) training
- Opportunity for improvement and modernisation
- Quality improvement
- Total efficiency improvement
- Consistent economic savings

With the Technical Consultancy service, Properzi is taking the continuous support of our Customers to a higher level.

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Headquarters:
Continuus-Properti S.p.A
 Via Emilia km 310
 26858 Sordio (Lodi), Italy
 Phone: +39.02.98.84.92.1
 sales@properzi.it

USA Division:
Properzi International Inc.
 909, Ridgebrook Rd. Suite 102
 Sparks, MD 21152, USA
 Phone: +1.443.212.4320
 info@properzi.us

WWW.PROPERZI.COM