

# INOSSIDABILE

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## Summary

For more detailed information please contact directly the names indicated at the end of each notification

### COVER PAGES 3-4

#### COMMEMORATIVE MONUMENT FOR THE 100<sup>TH</sup> ANNIVERSARY OF THE DEMISE OF FRANCESCO BARACCA

On 12 July, in Casarsa della Delizia (near Pordenone), a series of events were held to commemorate the 100<sup>th</sup> anniversary of the demise of Francesco Baracca, a pioneer of combat flight and the main Italian Ace in the Great War. The celebrations began in the morning with the inauguration of a dedicated sculpture and the twinning with the 2nd Piedmont Cavalry Regiment, a unit in which Baracca served. The marble work of art was designed and developed with the intention of creating a monument that could recall the figure of the Ace and the historical context in which he served. The work was made with materials that guaranteed durability and the image of solidity; a combination of stainless steel and Trani natural stone was chosen. For the first material it was chosen the type EN 1.4301 (AISI 304), used in the form of a 1 mm thick sheet with a bright finish (2R), a sheet (30x4 mm) and a bar with a 5 mm diameter.

**Stainless steel supplied by:** Nord Est Metalli Srl – I-33078 San Vito al Tagliamento PN – Via Clauzetto 26 – Tel. +39 0434 85236 – [info@nordestmetalli.it](mailto:info@nordestmetalli.it) – [www.nordestmetalli.it](http://www.nordestmetalli.it)  
/ **Photographs:** © Luckyplane – [www.luckyplane.it](http://www.luckyplane.it)

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#### FERMENTORS

In a very important sector in terms of hygiene and health, such as the food industry, stainless steel has always played an absolutely crucial role: Italy is among the most “guaranteed” countries in terms of materials destined to come into contact with food.

In this feature we present some types of fermentors for the aseptic production of cellular biomass of microorganisms (yeast lactic ferments).

All the equipment has been built using EN 1.4301 (AISI 304) stainless steel, and in order to obtain adequate internal sterilisation of the fermentors by flowing steam, a special focus was placed on its internal surface, working mechanically by carefully grinding and polishing all welded joints. Also all internal surfaces of the fermentor walls have been polished.

**Manufacturer:** Bionova Srl – I-29010 Villanova sull’Arda PC – Via Roma 100 – tel. +39 0523 837224 - [info@bionovaitalia.eu](mailto:info@bionovaitalia.eu), [www.bionovaitalia.eu](http://www.bionovaitalia.eu).

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#### FROM OUR MEMBERS ARINOX, THE NEW MILESTONE IS JUST AROUND THE CORNER

**Foundation** - Arinox is one of the youngest companies of the Arvedi Group. It started out in 1989 in Sestri Levante with the production of stainless steel precision strips.

Ever since the early years, the company established itself on the market thanks to the innovative spirit of its founder and president, Cav. Giovanni Arvedi, a true forerunner of the times, who understood what customers needed: greater flexibility.

**Innovation** - The key moment in the history of Arinox was in 2006, when Cav. Arvedi decided to increase the width of the production cycle from 650 mm (the standard up until then) to 1270 mm. Using the best technologies available on the market, the precision mill processed the first extra-thin strip with a width of 1270 mm in 2008.

**A new challenge** - In 2014 Arinox decided that the future was to be 1570 mm wide. Two years later, the world’s first 0.07 mm thick and 1570 mm wide strip was produced, another world record for the company.

Thanks to the latest investments, Arinox will be able to strengthen its position within the world of extra-thin stainless steel strip manufacturers.

**Applications** - The automotive industry is the largest market for precision strips, which are used to make engine head gaskets, heat shields, components for catalytic exhaust systems and parts for the braking system. Arinox also provides a wide range of products in many key sectors of the industry: petrochemical, biomedical, thermotechnics, plant engineering and electronics.

**International vocation** - Arinox exports 90% of its production and its main market is Europe. The Asian market, together with the Middle East and the two American continents are also of great importance for the company’s future expansion plan.

**Future** - From 2008 to the present day, Arinox has seen a regular growth of 10% every year and intends to maintain this growth trend also in the near future, with an approach aimed at customer satisfaction and by focusing on new technologies and applications.

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#### THE VACUUM HARDENING HEAT TREATMENT FOR MARTENSITIC STAINLESS STEEL

Among the families of stainless steel, the class of martensitic stainless steel represents a category that is widely used for industrial

applications in various sectors. These stainless steels can be used in any area where mechanical components require good resistance to corrosion and excellent characteristics in terms of mechanical resistance.

These characteristics can be achieved provided that these materials are adequately subjected to a specific heat treatment, which involves the following steps:

- Preliminary stress relieving;
- Austenitization and hardening;
- Tempering.

Stress relieving is useful and effective if performed between the mechanical roughing and finishing, so as to remove tension from the material.

As for austenitization and hardening, the goal is to achieve martensitic transformation in the material: the heat treatment can be performed by choosing different methods and plant technologies, including vacuum hardening. Vacuum hardening is a process carried out by using ovens that work at very low pressure values.

The austenitization and hardening cycle must include the following steps:

- Heating phase;
- Austenitization phase;
- Switch-off phase.

The heating phase takes the material to a temperature by following a suitably chosen gradient.

The austenitization phase represents a key step, since the chosen temperature determines the distribution of the alloy elements found in the stainless steel and, as a result, the microstructural and mechanical characteristics. The final phase of the hardening treatment is the switch-off (cooling), during which the material must be cooled to room temperature using a pressurised gas, typically nitrogen.

At the end of the hardening treatment, the material is very hard, and yet at the same time very brittle and cannot be used. This is why subsequent tempering thermal cycles must be implemented, which allow the structure of the material to be detensioned, thereby reducing its hardness and increasing its toughness.

By virtue of the results that can be obtained in terms of the treatment being good and versatile, vacuum tempering is the best solution to be pursued, if steel from strongly alloyed tools – such as martensitic stainless steel – needs to undergo tempering.

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#### MODULAR KITCHENS: WHEN CHANGE IS EASY

During the 22<sup>nd</sup> edition of EuroCucina, a new project of free-standing stainless steel kitchens was presented. The project includes a wide

range of independent modules in EN 1.4301 (AISI 304) brushed stainless steel. These kitchens are configurable according to your space, preference and culinary needs and are designed for cooking at home or outdoors, in the outdoor version. The distinctive feature of this product lies in the fact that the kitchen can be modified over time, gradually completing its equipment and changing its configuration as needs change.

**Manufacturer:** Alpes-Inox Srl – I-36061 Bassano del Grappa VI – Via Monte Pertica 5 – tel. +39 0424 513500 – [info@alpesinox.com](mailto:info@alpesinox.com) – [www.alpesinox.com](http://www.alpesinox.com) / **Designer:** Nico Moretto (founder and designer of Alpes-Inox Srl)

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#### STAIRWAY TO... THE BOAT

Ladders are a necessary accessory for boats; however, they can sometimes represent an “obstacle” in a boat against the simple and clean design that designers want for their customers. Ladders can be removable or fixed and the latter can include folding and telescopic versions.

A Milanese company has just launched a type of telescopic ladder on the market, featuring integrated lift handles that appear automatically when the ladder is extracted manually from the watertight box.

When designing this product the company opted for EN 1.4404 (AISI 316L) stainless steel: tubes with a diameter of 19, 25, 32 and 40 mm and a thickness of 1.5 and 2 mm were used for the ladder, and sheets with a thickness of 2.5 and 3 mm for the watertight box.

**Manufacturer:** Nautinox Srl – I-20080 Casarile MI – Via Meucci 14/16 – tel. +39 02 90093718 – [info@nautinox.it](mailto:info@nautinox.it) – [www.nautinox.it](http://www.nautinox.it)

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#### TOASTING BREAD IS A...STAINLESS ART

Toasted bread is a key element of breakfast. However, a special product is needed for the classic browning of our slices of bread, namely a toaster

In this sense, a company in the Brianza area is very popular for making and selling grilling plates, bread toasters, traditional sliced bread toasters or belt toasters and brioche or pizza ovens. All products are made using EN 1.4016 (AISI 430) ferritic stainless steel, with a thickness ranging from 0.8 to 1.5 mm. The surfaces feature a 2R or 2B finish, depending on whether they are visible or not. During the design stage, the designers turned to stainless steel for its well-known properties of corrosion resistance, hygiene and ease of cleaning, combined with a high aesthetic value. All glass ceramic grilling plates and stainless steel elements are suitable for contact with food.

**Manufacturer:** Milantost Srl – I-20884 Sulbiate MB - Via delle Industrie 26 – tel. +39 039 6883332 – [info@milantost.com](mailto:info@milantost.com) – [www.milantost.com](http://www.milantost.com) / **Stainless steel produced by:** Aperam Stainless Services & Solutions Italy Srl – Divisione Massalengo – I-26815 Massalengo LO – Loc. Priora – tel. +39 0371 49041 – fax +39 0371 490475 – [leonardo.frosali@aperam.com](mailto:leonardo.frosali@aperam.com) – [www.aperam.com](http://www.aperam.com).

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#### ICY WATER AND ENERGY SAVINGS: IT'S POSSIBLE WITH STAINLESS STEEL!

An Italian company in the heart of Val Chiavenna specialised in the construction of refrigeration systems has chosen stainless steel as the ideal partner to manufacture its products, mainly intended for the food sector. “Cold” represents an important phase in the production process in the food industry chain and the need to have a great cooling capacity to be used in just a few hours without having to install powerful electrical systems has led to the development of ice storage systems for the production of icy water.

The accurate EN 1.4301 (AISI 304) stainless steel version adds safety from a hygienic-sanitary point of view, as well as durability, reliability and sturdiness.

The coil tubes are welded tubes with a circular section of 21.3 mm in diameter and 1.5 mm in thickness. The tank has a maximum internal length of 13 metres and a head section of 2,000x2,060 mm and is made of 2 mm thick EN 1.4301 (AISI 304) stainless steel sheets.

**Manufacturer:** OMT Triaca Srl – I-23020 Prata Camporaccio SO – Via Sandro Pertini 7 – tel. +39 0343 32218 – [francesco@omt-triaca.com](mailto:francesco@omt-triaca.com), [www.omt-triaca.com](http://www.omt-triaca.com) / **Welded tubes produced by:** Tecnofar SpA – I-23020 Gordona SO – Via al Piano 54 A – tel. +39 0342 684115 – [info@tecnofar.it](mailto:info@tecnofar.it) – [www.tecnofar.it](http://www.tecnofar.it)

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#### ENERGY-SAVING LIGHTING WITH STAINLESS STEEL

A company in the province of Ferrara, involved in the construction of LED lighting systems, also uses stainless steel to create a long-lasting product and minimise maintenance costs.

Stainless steel is used within this system in the structural parts and in the screws and bolts. The type of material is chosen according to where the lighting fixtures will be installed: EN 1.4016 (AISI 430) stainless steel for the internal parts, EN 1.4301 (AISI 304) and/or EN 1.4401 (AISI 316) for indoors and outdoors, depending on the environment they will be used in. Namely, the company uses AISI 316 exclusively where the environment is more aggressive, such as chemical or marine ones.

The appropriately sized front frames, with a minimum thickness of 1.5 mm, are subjected to a laser cutting process and subsequently deformed so that they can fit perfectly on the body of the heat sink.

**Manufacturer:** LP Energy Srl – I-44047 Terre del Reno FE – Via Statale 264 – tel. +39 015 23134 – [info@lpenergy.it](mailto:info@lpenergy.it) – [www.lpenergy.it](http://www.lpenergy.it)

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#### FLASH COURSE STAINLESS STEEL: FOCUS ON WELDING

Centro Inox and the Italian Institute of Welding will organise a flash course in Milan at the beginning of 2019 dedicated to stainless steel welding. It will involve providing the registered delegates with some topics of particular interest related to “welding”, chosen

from the practical application experiences of the Institute and those deriving from technical advice reaching Centro Inox from the most diverse sectors of application. **All details will be soon available on: [www.centroinox.it](http://www.centroinox.it)**

#### MADE IN STEEL

**Fieramilano Rho, Milan – 14 ÷ 16 May 2019**

The 8<sup>th</sup> edition of Made in Steel, the leading Conference & Exhibition in Southern Europe dedicated to the global iron and steel industry, organised by Siderweb – the steel community, will be held from Tuesday 14 to Thursday 16 May 2019.

**In this regard, Centro Inox has already confirmed its presence with an exhibition space and on 15 May 2019 it will organise a meeting dedicated to the most important and current issues related to stainless steel.**

#### For information:

**Made in Steel Srl** – tel. +39 030 2548520 [info@madeinsteel.it](mailto:info@madeinsteel.it) – [www.madeinsteel.it](http://www.madeinsteel.it)  
**Centro Inox** – tel. +39 02 86450559 [eventi@centroinox.it](mailto:eventi@centroinox.it) – [www.centroinox.it](http://www.centroinox.it)

#### SCHOOL CANTEENS: AFTER MILAN AND SCANDICCI, THE CITY OF NICE IS ALSO FOLLOWING SUIT

After the municipality of Milan (see Inossidabile 188 – June 2012 and Inossidabile 190 – December 2012) and that of Scandicci in the province of Florence (see Inossidabile 211 – March 2018), the municipality of Nice in France has also decided to replace plastic with stainless steel in school canteens, extending the “eco-responsible” attitude. No plastic will be allowed neither in the cooking and heating systems of food, nor in those of packaging, transfer to schools or final use: everything will be made of stainless steel, glass or cellulose.

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#### AUTO RELIEF

The passion for cars, especially vintage ones, led a young Milanese artist (Beatrice Di Bitetto) to focus on stainless steel to convey, in an original way, the essential and characteristic styles of some models of cars that have made history.

The natural qualities of the artist have merged in a unique and absolutely original way with the versatility of stainless steel that has been used both in the form of a flat product (strip) and long product (wire), moulding it entirely by hand.

The article shows two works representing, respectively, a Jaguar E-type and an Alfa Romeo Giulietta Spider of the 60s.

**Artist:** Beatrice Di Bitetto – I-20123 Milano – Via S. Maurillo 20 – [beatrice.dibitetto@gmail.com](mailto:beatrice.dibitetto@gmail.com).

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#### CENTRO INOX

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