

# INOSSIDABILE

Edited and published by Centro Inox Servizi S.r.l.

## Summary

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

### COVER/PAGES 3/4

#### NATURE MEETS HI-TECH

(La natura incontra l'hi-tech)

It was really a remarkable and "respectful" choice using electro-coloured stainless steel to renew the front of the building in which a metal fabrication works is located, close to the blue waters of the river Adda, just beyond a steel and wood footbridge that runs along a bicycle path immersed in the green of the valley. A sort of "respect" the owners of the works show for their land, since they wanted to transform the old façade of their premises into a visiting card, which perfectly reflects the levels of excellence reached by an activity they have been carrying out for many years with great commitment and scrupulousness, without forgetting their attachment to a territory that is still capable to live and enjoy its own beauty. The 170 m<sup>2</sup> of the front have been covered with 1,155x555 mm, 1.2 mm thick, blue electro-coloured EN 1.4301 (AISI 304) stainless steel panels on a BA-finish base. A lower band of satin-finish 1,200x1,118 mm, 1.5 mm thick panels, covering a surface of 37 m<sup>2</sup>, made of EN 1.4301 in its natural colour, has been placed to frame the strong and changing colour of the façade. And finally, a "totem" formed by 800x800 mm satin-finish panels, all made of EN 1.4301 stainless steel, too, and reaching an overall height of 8 m, on which the signs and the logo of the company have been engraved by laser cut. All anchor bolts and the other fasteners used for tightening the whole assembly to the underlying structure, which in turn is fastened to the pre-existing façade, are also made of EN 1.4301 stainless steel.

**Contractor:** Della Cagnoletta Srl – Via Gerone 4 – I-23010 Albosaggia SO, phone +39 0342 510190, fax +39 0342 511501, [www.dellacagnoletta.com](http://www.dellacagnoletta.com) / **Electro-coloured stainless steel:** Steel Color Spa – Via Pieve Terzagni 15 – I-26033 Pescarolo ed Uniti CR, phone +39 0372 834311, fax +39 0372 834015, [info@steelcolor.it](mailto:info@steelcolor.it), [www.steelcolor.it](http://www.steelcolor.it)

### PAGE 5

#### STAINLESS STEEL LOCKS, CLAMPS AND HINGES FOR INDUSTRIAL VEHICLES: A MIX OF LIGHTNESS, RESISTANCE, ELASTICITY AND CLEANLINESS

(Chiusure e cerniere di veicoli industriali in acciaio inox: un mix di leggerezza, resistenza, elasticità e pulizia)

The use of stainless steel – and in particular, EN 1.4301 (AISI 304) - for the production of parts, elements and accessories for industrial vehicles body-work, dates back to the early 1970s. In those years, all locks, clamps and hinges fitted to the hatches and doors of commercial vehicles destined to transport were made of chromium-plated brass, and consequently, they were quite expensive and above all, heavy. The company we are focusing on in this article, which has been working for many years in the automotive industry specializing in steel plate processing, designed and developed, through an associate company, a range of products made of stainless steel plate for the purpose of replacing those heavy parts. Stainless steel was capable to ensure lightness and resistance, while keeping the surface quality and integrity unchanged, and allowed obtaining products of an innovative and personalized design. In particular, EN 1.4301 (AISI 304) stainless steel elements ensure the properties of elasticity this kind of transport means require. Only stainless steel allows, throughout the life of a vehicle, the possibility to frequently clean the surface of these locks, clamps and hinges and, due to its resistance against corrosion, it remains unaltered over time, preserving its aesthetical properties.

**Manufacturing company:** Pastore & Lombardi S.r.l. – Via Don Minzoni 3 – I-40057 Cadrano di Granarolo Emilia BO, phone +39 051 764111, fax +39 051 765118, [info@pastorelombardi.com](mailto:info@pastorelombardi.com), [www.pastorelombardi.com](http://www.pastorelombardi.com) / **Stainless steel produced by:** ThyssenKrupp Acciai Speciali Terni S.p.A. – Viale B. Brin 218 – I-05100 Terni TR, phone +39 0744 490282, fax +39 0744 490879, [marketing.ast@thyssenkrupp.com](mailto:marketing.ast@thyssenkrupp.com), [www.acciaiterni.it](http://www.acciaiterni.it)

### PAGES 6-7

#### FROM OUR MEMBERS

#### THE COMPANY ACRONI ITALIA S.R.L. IS FURTHER EXPANDING ITS SALES PROGRAMME

(La società Acroni Italia s.r.l. espande il programma di vendite)

**Our Origins** - In the last fifteen years, the company Acroni Italia s.r.l., has exclusively focused on the distribution of products manufactured by the Slovenian steel manufacturing industry. Today, Acroni Italia s.r.l. is entirely controlled by the Slovenian company Acroni doo, which in turn, is controlled by a Slovenian industrial group owned by the holding SJJ Slovenian Steel Group. **Acroni doo Production** - The company Acroni doo, a European leading manufacturer with its production of stainless steel heavy plates, covers with this product a quarter of the whole European market. In addition to stainless steel plates, the production range includes also special steels plates and coils, as well as non orientated electrical steel sheets. **Reference Market** - Currently, Acroni doo is selling its products mainly in the European market, though the company is increasingly gaining ground also in the global market. The Italian market, in particular, is today one of the major reference markets, and product sales through Acroni Italia s.r.l., acting as one-firm agent of the parent company, represent 20% Acroni doo total sales. The priorities set by Acroni Italia s.r.l. include the pursuit of customer satisfaction, and this goal can be reached by establishing close relations between supplier and purchaser based on cooperation. By monitoring each stage of the production process, Acroni Italia s.r.l. is in a position to provide its customers with an excellent service consisting in high-quality products, immediate solutions capable to meet any requirement, flexibility and complete willingness to follow customers' suggestions. **Projects** - Acroni doo aims, above all, at continuously updating and upgrading its product range, focusing in particular on products capable of adding value. All this involves bringing changes to the distribution structure through the careful search of new market niches, and the establishment of a fruitful and satisfactory relationship with customers. The investments made by the steel mill, especially in the heat treatment, pickling, and hot-straightening departments, allow it producing more than 100,000 tons of stainless steel quarto plates, 30,000 tons of special steel plates, and 70,000 tons of structural steel plates. Toward the end of 2012, the efforts lavished by the company will lead to the installation of a new plate rolling mill, which is expected to increase the current width of the plates from 2,000 to 2,500 mm, and further extend the range of products in order to meet customers' requirements and their demand for larger plates as much as possible. In addition, depending on the stainless steel grade, the new rolling plate plant will reduce plate thickness up to 7 mm. The plant technology will further improve the quality of products, since its acts on the tolerances, the steel micro-structure, and the mechanical characteristics of high thicknesses.

**ACRONI ITALIA S.r.l. - a socio unico -**

Via San Michele 334 – I-34170 Gorizia, phone +39 0481 520096, fax +39 0481 520222, [info@acroni.it](mailto:info@acroni.it), [www.acroni.it](http://www.acroni.it)

### PAGES 8-9

#### TRANSPORT OF DANGEROUS LOADS: A BURNING ISSUE

(Trasporto di merci pericolose: un tema scottante)

Resistance to the high temperatures developed by the load of fire is not only an important issue for ensuring the stability of a structure, but concerns also another area, namely the transport of dangerous goods, where safety is a requirement of the utmost importance, considering the devastating consequences an accident would involve.

The containers designed for this purpose (IBC – Intermediate Bulk Containers) are produced in strict compliance with specific standards, i.e. UN31A, GGVSEB/ADR and GGVSEB/RID, in order to ensure maximum transport safety. Different types and construction solutions have been adopted by

container manufacturers, in terms of used materials: plastic, steel, and so on.

In particular, the major manufacturers of stainless steel IBCs are linked up in an association (SSCA – Stainless Steel Container Association), which intends to monitor the production chain of these containers throughout their useful life: production, use and recycling. In this same spirit, SSCA has taken charge of evaluating an extremely delicate aspect of the life of these containers: their performance in case of fire, both when they are stocked in a warehouse, and when they form the load of a truck or a railway wagon. The pictures supplementing this article (taken from the original video of the tests) show the different stages of the comparative tests performed in Germany at BAM (Federal Institute for Material Research and Testing). The two tested containers, one made of plastic, and the other made of EN 1.4301 (AISI 304) stainless steel, were exposed for 30 minutes to a simulated fire of kerosene. The final results are definitely unequivocal: the plastic container was completely destroyed by the heat (except for the steel frame), and its content totally leaked out of it and dispersed in the surrounding area; the stainless steel container, regardless of its deformation, was not subjected to any change capable to impair its functions, and succeeded in confining the harmful product inside its structure without producing further potential damages.

*Material provided by: AZZINI SPA, Via Caduti sul Lavoro 2/4, Casalmorano (CR) – a SSCA member*

### PAGE 10

#### ITALIAN EXCELLENCE IN THE SERVICE OF SPACE

(L'eccellenza italiana al servizio dello spazio)

The supply of drinking water for "space use", the so-called "water of flight", is an all-Italian service used on the International Space Station (ISS) jointly produced by the Aerospace Agencies of United States, Russia and Europe. The ISS consists of several modules developed in different countries, and the drinking water used in it has to meet the different technological and hygienic properties required from the American and Russian specifications for the space station. As a matter of fact, as well as their common need to ensure the complete absence of harmful substances, basing on the different aerospace experiences of the two countries, a supply of drinking waters with different mineralization degrees has been requested. Starting from the basic characteristics of the two waters, different treatments are therefore required for the preparation of the water of flight. Among the different supply sources managed by the company it was easy to find waters capable to meet the Russian and American technical specifications, that are then submitted to further treatments before the conditioning process required for going into orbit. So, the water of Pian della Mussa, which arrives to the waterworks of Venaria, duly treated, is destined to the American astronauts, while the water destined to the Russian astronauts is drawn from the waterworks of Regina Margherita, located at Grugliasco (in the province of Turin). The engineers of this company, based in Turin, ensure full compliance with all requested standards. They carry out the preliminary disinfection of the loading systems, they manage the production, and perform all the necessary analyses and tests aimed at ensuring water conformity to all technical and hygienic requirements of the flight protocols. The plant is entirely made of EN 1.4301 and EN 1.4401 (AISI 304 and 316) stainless steel.

**Water production and supply:** Centro Ricerche SMAT Società Metropolitana Acque Torino Spa – C.so Unità d'Italia 235/3 – I-10127 Torino, phone +39 011 4645111, fax +39 011 4365575, [info@smatorino.it](mailto:info@smatorino.it), [www.smatorino.it](http://www.smatorino.it)

### PAGE 11

#### STAINLESS STEEL IN SERVICE OF INDUSTRIAL AUTOMATION

(L'inox al servizio dell'automazione industriale)

The use of technology for operating and managing machinery



and processes is continuously growing in all industrial sectors, thereby increasingly reducing the need for man's interventions. Automation is mostly used for carrying out repetitive or complex operations, but also where safety or action certainty are required, or simply for the sake of convenience or comfort. In this specific industrial area, proximity sensors – that it to say, sensors capable to detect the presence of objects placed nearby the “sensible side” of the sensor itself even without a real physical contact with them – are extensively used. And once again, due to its intrinsic capability to resist to aggressive agents, and to its mechanical characteristics, stainless steel gives an effective contribution in the manufacturing process of these specific elements. The inductive proximity sensors described in this page are manufactured by a leading company specialized in the sectors of industrial processes, building automation, and data centres. These sensors are placed inside a 0.4 mm thick case completely made of stainless steel, with a frontal sensible part, which ensures the sensor very high levels of direct shock resistance. These sensors are capable to detect ferrous and non-ferrous materials without diminishing the working distance.

These sensors are produced in two different stainless steel grades, EN 1.4305 (AISI 303) and EN 1.4404 (AISI 316L). Those made of AISI 303, are mainly used for machine tools or metal processing applications. Those made of AISI 316L, are instead used in applications that require improved resistance to chemical washing, in the naval industry, on special vehicles, and in the food and beverage industries.

**“OsiSense® XS9” manufacturing company:** Schneider Electric Spa – Via Circonvallazione Est 1 – I-24040 Stezzano BG, phone +39 035 4151111, fax +39 035 4153200, www.schneider-electric.it

#### PAGE 12

### A NEW SOLUTION FOR MILK SURFACING SYSTEMS FOR “GRANA PADANO” CHEESE (Una nuova soluzione impiantistica per gli affioratori per Grana Padano)

The production of Grana Padano cheese provides for using semi-skimmed milk obtained through a fat surfacing process by gravity. In the modern cheese factories in which Grana Padano cheese is produced, the surfacing process is obtained through automatic systems, which include a “surfacing” plant consisting of a set of large-diameter round-section tanks stacked in a pile, an electro-pneumatic valve assembly, control and check instruments, and weighing instruments connected to the surfacing system, which are all PLC-controlled. This surfacing system allows drawing the skimmed milk to be conveyed to the subsequent process stages. From the point of view of construction, traditional milk surfacing systems present a number of problems a leading company in the production of stainless steel tanks was able to overcome by eliminating the central supporting column. This solution could be achieved thanks to an extremely complex calculation system, which allowed developing a self-supporting structure that does not provide for a central support. This milk surfacing system, which is made of EN 1.4301 (AISI 304), 2B-finish stainless steel plate, offers three essential advantages: no cracks caused by the stiffeners and by the central support column; the complete washing of the tanks is ensured, since there are no areas difficult to reach; and the weighing system makes exclusively use of load cells located on the outer edge of the structure in order to equitably divide the weight and guarantee correct measurement.

**Milk surfacing system manufacturing company:** Azzini SpA – Via Caduti sul Lavoro 2/4 – I-26020 Casalmorano CR, phone +39 0374 74701, fax +39 0374 343505, info@azzini.it, www.azzini.it

#### PAGE 13

### 1000 PANELS MADE OF 470LI SUPER-FERRITIC STAINLESS STEEL: AN ANTICORROSION SHIELD WITH A CATCHY DESIGN

**(1000 pannelli in acciaio inox superferritico 470LI: uno scudo anticorrosivo dal design accattivante)**

The new premises of a leading company specialized in the production of industrial ovens, were recently built in the industrial compound Cadoneghe Nord. The facing of the building is made of stainless steel panels. The choice to use stainless steel for the facing of this building is strictly connected to the load-bearing capability of this material, as well as to its aesthetic and ornamental characteristics. In addition, the use of a 100 per cent recyclable material as stainless steel, has meant high levels of environmental sustainability, which perfectly suits the corporate philosophy. The facing panels having 1,250x2,200 mm size, are made of 470LI, Scotch-Brite finish, 1.2 mm thick stainless steel plate, and are provided with an omega-shaped reinforcement and stiffening profile stuck onto the back of each panel, and are assembled on an aluminium frame. The super-ferritic 470LI

stainless steel used for the panelling structure, is an innovative material ensuring high performances, which is particularly suggested for industrial environments, due to its strong corrosion resistance characteristics ensured by high Chromium content. The final result effectively combines the corrosion resistance properties and the aesthetical characteristics of 470LI, mixing innovation and design, which contextualize in a rapidly growing and developing industrial area.

**Customer:** UNOX S.p.A. - Registered office: Via dell'Artigianato 28/30 – I-35010 Vigodarzere PD - Head office: Via Majorana 22 – I-35010 Cadoneghe PD, phone +39 049 8657511, fax +39 049 8657555, info@unox.com, www.unox.com / **Stainless steel produced by:** ThyssenKrupp Acciai Speciali Terni S.p.A. – Viale B. Brin 218 – I-05100 Terni TR, phone +39 0744 490282, fax +39 0744 490879, marketing.ast@thyssenkrupp.com, www.acciaiterni.it

#### PAGE 14

### COMPETENCE AND PRESTIGE IN THE PRODUCTION OF STAINLESS STEEL GRIDS

**(Competenza e prestigio nella produzione di grigliati inox)**

The grids we describe in this page have been specifically designed for the food industry (and particularly for the tomato, dairy and wine industries), and are manufactured with narrow strips obtained from coils and worked on special shearing lines. The in-between knots of the grid are formed by interlocking pressure between the different strips obtained from the previous shearing process. The grid is subsequently welded to the edges strips of the grid either through a robotized welding process, in case of mass production, or by hand, in case of special products. The size of the supporting strips varies depending on their function. From 20 x 2 mm to 100 x 4 mm for the primary strips and for those forming the perimeter edges of the grid; from 10 x 2 mm to 15 x 3 mm for the secondary strips forming the grid. In 85% applications, the food industry requires EN 1.4301 (AISI 304)/ EN 1.4307 (AISI 304L) stainless steel, and only in case of specific applications, also EN 1.4401 (AISI 316)/ EN 1.4404 (316L). The stainless steel grades used in the production of the grids presented in this page are: EN 1.4301 (AISI 304), EN 1.4307 (AISI 304L), EN 1.4401 (AISI 316), EN 1.4404 (316L) and EN 1.4541 (AISI 321), all produced in compliance with UNI EN 11002 standard. As well as in the food industry, stainless steel grids can be used also in the chemical and pharmaceutical industries, in waste water treatment plants, and in the building industry in presence of salty environments (coastal areas and docks).

**Manufacturing company:** Conte Srl – parallela Via delle Industrie 4 – I-20054 Nova Milanese MI, phone +39 0362 450810, fax +39 0362 450778, conte@conte-af.it, www.conte-af.it

#### PAGE 15

### CONTINUOUSLY HOT-ROLLED STAINLESS STEEL – PAY ATTENTION TO THE STANDARD CONCERNING TOLERANCES ON DIMENSIONS AND FORM

**(Acciaio inox laminato a caldo in continuo - Attenzione alla norma sulle tolleranze dimensionali e di forma)**

With the exception of the stainless steel grades included in the new version of UNI EN 10051 standard, which came into force in 2011 and concerned the tolerances on dimensions and form of continuously hot-rolled wide strips and sheets/plates cut from wide strips made of alloy and non-alloy steels, it is now necessary to make exclusively reference to UNI EN ISO 9444-2 standard. This standard, in force since June 2010, specify the tolerances on dimensions and form of wide strips made of continuously hot-rolled stainless steel having a rolling width ranging from 600 to 2,500 mm.

### TABLE REFERRING TO THE CHEMICAL ANALYSIS OF THE MAIN STAINLESS STEEL GRADES, AND CORRESPONDENCE OF THEIR DIFFERENT DESIGNATIONS ACCORDING TO EN, AISI AND ASTM

**(Tabella dell'analisi chimica dei principali acciai inossidabili e corrispondenza fra le designazioni secondo EN, AISI e ASTM)**

This new table (in Italian language) will be available in the month of October 2012. It has been conceived as a guidance for identifying both the chemical composition of the main stainless steel grades, and the approximate correspondence of their names according to EN European Standards, AISI Manual, and ASTM Standard and Specifications. This table allows establishing some correspondences based on similarity (but not on identity) among the cast analyses of stainless steel products (castings excluded). 79 different stainless steel grades

have been grouped basing on their metallographic structure. The chemical analysis of these steel grades is mostly based on the requirements of the EN European Standards (in case they refer to projects, the initials being “prEN”). In case stainless steels are not included in these standards, reference has been made to the AISI Manual or to the ASTM Standard and Specifications.

Furthermore will be published within short a manual (in Italian language) entitled “Acciaio inossidabile – conoscerlo, sceglierlo, trattarlo”, written by Fausto Capelli and published by Centro Inox Servizi Srl.

**For further information and details:** Centro Inox Servizi Srl - Piazza Velasca 10 - 20122 Milano - phone +39 02 86450559 / 69, fax +39 02 860986, centroinoxservizi@centroinox.it, www.centroinox.it

### MADE EXPO – MILANO ARCHITETTURA DESIGN EDILIZIA

On October 17-20, 2012, the international exhibition dedicated to the building industry, design and architecture will be held at the exhibition centre of Milano-Rho. On Thursday October 18, a round table will take place with the participation of Centro Inox. In the afternoon of the same day, Centro Inox will organize a meeting focused on the theme “Improved Adherence Stainless Steel Rods for Reinforced Concrete Structures”, Centro Servizi Fiera – Aquareus room. The official language will be Italian. The speakers who have confirmed their participation are: Fausto Capelli, Centro Inox, Milan – Managing Director / Alberto Franchi, Politecnico di Milano – Department of Structural Engineering / Vittorio Boneschi, Centro Inox, Milan – Technical and Standards dept. / Giuseppe Mancini, Politecnico di Torino – Department of Structural, Building and Geotechnical Engineering / Luca Bertolini, Politecnico di Milano – Department “Giulio Natta” of Chemistry, Material and Chemical Engineering

**For further information:** CENTRO INOX - Piazza Velasca 10 – I-20122 Milano – phone +39 02 86450559 / 69, fax +39 02 860986, eventi@centroinox.it, www.centroinox.it

#### PAGE 16

### A STAINLESS STEEL WORLD IN MILAN (A Milano un mondo inossidabile)

Expo 2015 is a non-commercial universal exhibition. Currently, the number of participants is continuously growing, and Milan will be soon covered with the colours of the flags of all the countries which have confirmed their participation in this event. An innovative element of urban design, which keeps up with the pace of the city, will be integrated in different areas to create an in-progress installation displaying the flags of the different nations. The number of elements to be installed is destined to rise in the forthcoming years up to reach about 160-180 total structures. This installation has been conceived, designed, and developed as a flexible instrument to bequeath to the city also after the Expo, and shall be permanently included in the urban furniture of the city of Milan. The structure of the standard-bearer is about 6.30 m high and is formed by: a ballast steel pedestal filled with sand; a steel tube fixed to the pedestal, which acts as an inner sleeve for the subsequent tube; a second AISI 304 stainless steel (size 168.3 x 4.00 mm) tube clutched to the previous tube, and reaching approximately the height of +3.00 m from the support pedestal; another AISI 304 (size 139.7 x 4.00 mm) tube of an approximate length of 3.40 m welded to the previous one, and finally, a set of AISI 304 (size 60.0 x 3.00 mm) tubes placed horizontally at +2.77 m and + 6.27 m height.

**Architects:** Ico Migliore, Mara Servetto, and Italo Lupi for Expo Milano 2015, www.expo2015.org

### CENTRO INOX

The Italian Stainless Steel Development Association

Piazza Velasca, 10 - 20122 Milano - Italy  
Telephone +39 02 86450559 - +39 02 86450569  
Fax +39 02 860986

redazione.inossidabile@centroinox.it  
www.centroinox.it

The subscription to the quarterly INOSSIDABILE, outside Italy, is free of charge.

