

# 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

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#### A NEW PAVILION TO ENRICH THE AQUARIUM IN GENOA

(Un nuovo Padiglione arricchisce l'Acquario di Genova)

An important enlargement of the Aquarium in Genoa was lately completed and opened: the new Pavilion of the Cetaceans. This new wing is formed by 1,000 m of walls with concrete panels, and 1,700 m of glass walls. The continuous façade is anchored to the supporting structures by means of steel brackets and develops through main posts formed by two joined open-profile 55x12 mm section bars made of EN 1.4401 (AISI 316) stainless steel. The main crossbeams are formed by two joined 55x12 mm open-profile section bars made of EN 1.4401 stainless steel, while the secondary crossbeams, made of the same steel grade, are produced in the following sizes: 5x12 mm and 32x12 mm. The exhibition itinerary for the visitors is structured on two levels and allows the public to watch the animals both from on high and from an underwater angle.

**Commissioning body:** Costa Edutainment Spa / **Architectural project:** Renzo Piano Building Workshop – Via Rubens 29 – I-16158 Genova, phone +39 010 61711, fax +39 010 61711350, italy@rpbw.com, www.rpbw.com / **Design Team:** S. Scarabicchi, D. Magnano (partner and associate in charge) with Vittorio Tolu, S. D'Atri (CAD Operator) / **Consultants:** Officina Architetti (executive architect); Studio Boero (structure); Planex (services); A. Severati (water treatment) / **Metal structures and façades made by:** Stahlbau Pichler – Via Edison 15 – I-39100 Bolzano, phone +39 0471 065 000, fax +39 0471 065001, info@stahlbaupichler.com, www.stahlbaupichler.com / **Use of photographs granted by:** RPBW, Costa Edutainment and Stefano Goldberg - Publifoto

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#### A TRADITION UP WITH THE TIMES AND THE LAW

(Una tradizione al passo con i tempi e con le leggi)

An Italian company producing food processing and preservation machines combines a strong industrial commitment, moulded in the metal, with an authentic love for good and well made things. This company, as a European manufacturer of products that come into contact with foodstuffs, is subject to compliance with the European Regulation 1935/2004 on "Materials and Articles Intended to Come into Contact with Food" and with the Ministerial Decree, March 21, 1973. The stainless steel grade used in most cases is EN 1.4301 (AISI 304), which ensures high corrosion resistance, greater duration of components over time, and easier sanitizing operations and processes for end users, which in the professional area, are fully specified by the HACCP (Hazard Analysis and Critical Control Points) system. Martensitic stainless steel grades as EN 1.4031 and EN 1.4028 (AISI 420), as well as EN

1.4125 (AISI 440C), are used for knives and other cutting items, due to the characteristics of hardness, which can be achieved through a heat treatment. Ferritic stainless steel sheets are used instead for the bodies of the machines.

**Production:** FACEM spa - Tre Spade – Via Fabbriche 11/C – I-10141 Torino, phone +39 011 337119, www.trespade.it / **Stainless steel produced by:** Aperam Stainless Services & Solutions Italy S.r.l. – Divisione Massalengo – Loc. Priora – I-26815 Massalengo LO, phone +39 0371 49041, fax +39 0371 490475, leonardo.frosali@aperam.com, www.aperam.com

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#### FROM OUR MEMBERS

##### ARINOX – ARVEDI GROUP

#### ULTRA-THIN STAINLESS STEELS WITH HIGH TECHNOLOGICAL CONTENT NOW AVAILABLE IN DUPLEX AND TITANIUM ALLOYS

(Arinox - Acciai inox extrasottili ad elevato contenuto tecnologico, ora anche in duplex e titanio)

With a production capacity of over 55,000 tons/year, the industrial hub of Sestri Levante is the **only one Italian manufacturer** and the **major European** producer of stainless steel precision strips for the automotive, mechanic, plant design, component, and electronic industries. The only one in a position to supply precision strips in widths up to 1,270 mm. Thanks to its numerous cold rolling, bright annealing, levelling, precision cutting lines and the innovative and exclusive SUT® (**Surface Ultracleaning Treatment**) line, Arinox can meet, also with innovative and customized solutions, the most varied application requirements. Three precision cold-rolling plants, four bright annealing lines (one of which in a position to process titanium and duplex alloys), and the use of a stretch levelling plant also on 1,270 mm wide strips, either annealed or hardened, ensure the production of stainless steel strips of all sizes with matchless and unique precision levels. The large production range of the company includes processed products up to 0.03 mm thickness in the case of hardened strips, and up to 0.05 mm thickness in the case of annealed strips, in widths up to 1,270 mm. The rich product range is further increased by different finishing processes, as the strips can be either annealed or hardened and calibrated. **Quality in products, quality and efficiency in services** - Arinox is one of the few European industrial realities that can avail itself of a workforce and machines in a position to guarantee these peculiar processes, in order to meet every day all the different market requirements. Flexibility is the strong point that leads customers to consider Arinox a precious partner in managing their stocks and their special supplies. **Applications:** automotive, process, and petrochemical industries, heat exchangers and finned tubes, precision forming, flexible tubes and chimney tubes, cold-rolled hardened strips.

#### ARINOX S.P.A.

Via Gramsci 41/A – I-16039 Sestri Levante GE, phone +39 0185 3661, fax 0185.366320, sales@arinox.arvedi.it, www.arvedi.it

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#### THE STAINLESS STEEL HYDROFORMING PROCESS: PERFORMANCE AND CONSTRUCTIONAL SIMPLENESS

(L'idroformatura dell'acciaio inossidabile: prestazioni e semplicità costruttiva)

Hydroforming increasingly represents the ideal solution for manufacturing shapes that sometimes are particularly complex and cannot be easily produced in an efficient and flexible way through conventional forming techniques. There are different hydroforming technologies, and all of them share the use of a high pressure fluid to form the metal. In the case of the water punching hydroforming technology, the pressure of the fluid drives the metal sheet to reproduce the shape of the template that forms the mould. Due to the greater and greater use and spreading of stainless steel, the union of hydroforming and stainless steel has gradually gained ground, especially though the use of steels with high nickel content. As a matter of fact, the characteristics of formability of these stainless steel alloys perfectly combine with the manufacture of hydroformed parts characterized by a considerable elongation capacity of the starting material. There is a difference between tube and metal sheet hydroforming. **Tube hydroforming** is extensively applied in the area of the automotive and furnishing industries, as well as in a large range of sub-components for different industrial applications. Compared to the traditional forming technologies, it allows to achieve the following advantages: improved mechanical performance and reliability, weight reduction, reduction or elimination of welded joints, reduction of assembly operations, possibility to change the tube thickness without changing the mould, flexible and scalable production process, and overall cost reduction. In the case of **metal sheet water punching hydroforming process**, the mould is essentially formed by a die coupled to a locking plate to ensure water tightness under pressure. Metal sheet hydroforming presents some significant advantages compared to traditional forming methods: improved surface planarity and quality, better mechanical characteristics of the finished part, lower local thinning, possibility to form metal sheet of different thicknesses, lower costs and faster production of equipment and tools, and set-up time reduction. In addition, the part is usually produced through a single forming process and a single mould. **Pict. 1, 2, 3, 4 e Pict. A, B:** © Inoxveneta Spa. Thanks to Inoxveneta Spa – Via Podgora 8 – I-31029 Vittorio Veneto TV – phone +39 0438 5021, info@inoxveneta.it, www.inoxveneta.it / **Pict. 5,6,7:** Photos courtesy of Tubificio di Terni – Strada di Sabbione, 91/A – I-05100 Terni – +39 0744 808251, www.tubiterni.it

### STAINLESS STEEL CABLE TRAY SYSTEMS: HIGH PERFORMANCE PRODUCTS IN HIGHWAY TUNNELS

**(Sistemi portacavi in acciaio inox: prodotti ad alte prestazioni nelle gallerie autostradali)**

The cable tray systems produced by the company this article is focused on are supplied in the following types: solid bottom and perforated trays, ladder trays and mesh trays. The trays can be produced in different sizes and materials, among which stainless steel. Stainless steel is demanded, in particular, by the Oil&Gas, infrastructures, and food industries. We report, as an example, the case of highway tunnels in which the use of stainless steel is of paramount importance due to the highly aggressive elements that characterize the environmental conditions of the tunnels. The most demanded stainless steel grade is usually 2B-finish EN 1.4301 (AISI 304), in thicknesses ranging from 0.6 to 3 mm. However, in some areas close to the seaside, where greater corrosion resistance is required, the company has supplied cable trays made of EN 1.4404 (AISI 316 L), in the same range of thicknesses, as in the case of the tunnels located on the Messina-Palermo highway segment.

**Manufacturing company:** Femi-CZ SpA – Viale del Lavoro 16 – I-45100 Rovigo RO – phone +39 0425 470711, fax +39 0425 475447, www.femicz.it / **Stainless steel produced by:** Acciai Speciali Terni S.p.A. – Viale B.Brin 218 – I-05100 Terni TR, phone +39 0744 490282, fax +39 0744 490907, marketing.ast@acciaitermi.it, www.acciaitermi.it

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### A SINGLE-PIECE BOWL (Una vasca tutta d'un pezzo)

The bowls shown in this pages are made of EN 1.4301 (AISI 304) stainless steel and are produced through a single-piece deep-drawing process, thanks to a 2,400 ton press, and without making use of the traditional welding process of different bended or spin-formed parts. These bowls are used by Italian and foreign companies for kneading machines and plants designed for the bread-making and pastry-making industry. The heaviest processes are carried out by robots and by plants designed and produced in-house by the company itself. The available size range is particularly extended and includes bowls ranging from 450 mm to 1,500 mm diameter in variable heights and thicknesses. Large-size bowls are now produced thanks to the recent takeover of a long-standing manufacturer specialized in the production of custom-made stainless steel bowls.

**Manufacturing company:** Steelbau S.r.l. – Via Lago di Vico 50 – I-36015 Schio VI, phone +39 0445 575510, fax +39 0445 576086, info@steelbau.com, www.steelbau.com / **Stainless steel produced by:** Aperam Stainless Services & Solutions Italy S.r.l. – Divisione Massalengo – Loc. Priora – I-26815 Massalengo LO, phone +39 0371 49041, fax +39 0371 490475, leonardo.frosali@aperam.com, www.aperam.com

### AN INCREASING NUMBER OF SPECIALIZED TRAINING COURSES ON STAINLESS STEELS

In the current Italian scene of stainless steel production, distribution, and use, several important changes have taken place in the last few years as regards material types, steel products, and application fields. As a “physiologically” logic consequence, this situation is increasingly bringing to our Association a greater number of requests for “made-to-measure” technical courses. It being understood that among the institutional activities carried out by Centro Inox, the courses on general

themes and issues still remain, the Association has reorganized its training activity for the purpose of increasingly meeting also individual and peculiar requirements frequently expressed by all industrial areas. Though its associate company Centro Inox Servizi S.r.l., Centro Inox makes itself available to examine all kinds of training requests, and to plan their schedule and timing.

**Additional information:** Centro Inox Servizi srl, phone +39 02 86450559/69, fax +39 02 860986 – centroinoxservizi@centroinox.it, www.centroinox.it

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### 8TH EUROPEAN STAINLESS STEEL & DUPLEX STAINLESS STEEL CONFERENCE 2015

**Congress Graz (Austria), April 28 ÷ 30, 2015**

The eighth edition of the European Stainless Steel & Duplex Stainless Steel Conference, organized by ASMET, will be held in Graz, Austria.

**Additional information:**

ASMET - stainlesssteel2015@asmet.at, www.stainlesssteel2015.org

### MADE IN STEEL

**fieramilano (Rho), Milan, May 20 ÷ 22, 2015**

This year the event will be focused on stainless steel. The geographic and thematic closeness of “Made in Steel” with “EXPO 2015 – Feeding the Planet. Energy for Life” will offer the stainless steel industry, which finds in the food industry an important outlet market, a number of themes and topics to be discussed and studied in depth. During all three days Centro Inox will be present with a stand (L19 – Pad. 8). On **May 21st, 2015**, the conference “Acciaio inox e food safety: l'eccellenza che garantisce la sicurezza alimentare nell'industria di trasformazione” (**Stainless Steel and Food Safety: the Excellence that Guarantees Food Safety in the Food Processing Industry**), organized by Centro Inox and Made in Steel, will be held from 2.30 to 5.30 p.m.

Free participation (\*) until all available seats in the hall are taken.

(\*) *After the purchase of Made in Steel ticket*

**Additional information:** MADE IN STEEL S.R.L. – phone +39 030 2548520, fax +39 030 2549833 – info@madeinsteel.it – www.madeinsteel.it

### NATIONAL WELDING DAYS – GNS 8

**Porto Antico, Genoa – May 28 and 29, 2015**

**(Giornate Nazionali di Saldatura)**

This event, which has arrived now to its eighth edition, and is organized by Istituto Italiano della Saldatura at the Congress Centre of the Ancient Port of Genoa, will prove a unique opportunity for the world of welded constructions, since over 1.500 Italian and foreign engineers and technicians, experts and researchers are expected to take part in it. An exhibition area will be organized, and within it Centro Inox will be present with its stand.

**Additional information:** www.gns.iis.it - Manager of the Event: Ing. Michele Murgia, phone +39 010 8341405, michele.murgia@iis.it (for information about the program and the technical content) - Organizational Secretariat: Ms. Ivana Limardo, phone +39 010 8341373, gns8@iis.it (for registration and information on the event)

### 10TH ASIAN STAINLESS STEEL CONFERENCE

**Singapore (Singapore), June 3 ÷ 4, 2015**

This event, organized by SMR – Steel & Metal Research and Metal Bulletin, has come this year to its tenth edition, and will be held in Singapore. Centro Inox will be a media partner of this event.

**Additional information:** www.smr.at – www.metalbulletin.com/Events

### EXPO MILAN 2015

Centro Inox will participate to EXPO 2015 into the Civil Society Pavilion of Cascina Triulza with a stand during the week **June 8÷14, 2015** for the launch of the “Educational program for the promotion of the technical and market knowledge of stainless steels”.

Furthermore, on **June 10**, there will be the meeting:

**“PRODUCTION AND CONSERVATION OF FOODSTUFFS: THE STAINLESS STEEL HYGIENIC CHAIN”, 10.30 – 13.30 h.**

### PROGRAMME:

■ Introduction - *The safety of foodstuffs: legal issues*

F. Capelli - Professor of European Law - European College / Università di Parma / Lawyer in Milan, Italy

■ *National and European regulation aspects for stainless steel in contact with food*

E. Cecere – Ministry of Health – Food Safety and Nutrition Head Office, Rome, Italy

■ *Stainless steel in contact with drinking water and food. The North American legislation*

L. Cazzola – NSF International, Long Hanborough, UK

■ *Food safety & compliance evaluation of stainless steel in food manufacturing processing line and beverage system applications*

M. Scialpi – R&D Food Safety Manager – Nestlé System Technology Centre, Orbe Switzerland

■ *Stainless steels cleaning: experimental tests and new monitoring systems*

R. Guidetti, L. Franzetti – Università degli Studi di Milano, Milan, Italy.

Free participation (\*) until all available seats in the hall are taken.

(\*) *After the purchase of Expo 2015 ticket*

Finally, Centro Inox will hold a half-day meeting, on **September 24, 2015**, focused on “*Stainless steel: eco-sustainability and recyclability*”.

**Additional information:** Centro Inox – phone +39 02 86450559/69 – eventi@centroinox.it – www.centroinox.it, Cascina Triulza – www.cascinatriulzaexpo2015.org

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### STRENGTH AND DURABILITY MADE OF STEEL (Una resistenza d'acciaio)

The taps and fittings made of EN 1.4301 and 1.4401 (AISI 304 and 316) stainless steel have come as leading actors in our homes, and are a guarantee that we are using a non-toxic, hygienic, long-lasting and completely recyclable material, fully complying with the international specifications and regulations. Starting from product engineering, this company transforms and processes stainless steel by using high-precision numerical control machines, through turning, milling, welding, brushing and colouring processes, up to the final assembly and test of the parts. The latest process launched in the market by this company is the PVD (Physical Vapour Deposition) colouring technology, that allows to obtain different kinds of colours, product toxicity, as well as complete absence of any environmental impact during the production cycle. This company is also a proud holder of the “INOX” brand.

**Production and project:** AR.BE. Srl – Via Della Pace 5 – I-20098 S. Giuliano Milanese MI – phone +39 02 98490375, fax +39 02 98240465, arbe.srl@libero.it

### 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.

