

# 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

#### THE STAIRCASE AS A PRESTIGIOUS ELEMENT OF DESIGN

(La scala come prestigioso elemento d'arredo)

The main points of these staircases are: stability, modular design, adaptability to every environment. The main structure is constituted by one load bearing joint in EN 1.4401 (AISI 316) stainless steel made by lost wax casting method, polished by mechanical brush, without any galvanic treatment. The glass steps are supported by spiders also made of AISI 316 stainless steel by lost wax casting method. Such spiders are coupled to the structure through a stainless steel bolt M18.

The 4 fastening points of the spiders are adjustable and are attached to the glass through fixed ball joints that penetrate the inferior slab of the glass. The glass used for the steps is tempered, pierced, stratified, with a finished ground edge and an anti-slip serigraphy.

**Figures on page 3** – In Vigevano (close to Pavia), a new building accommodates the headquarters of the center for surgery and esthetic medicine of Ars Medica and of the Bertazzoni pharmacy. In the facade, a space, enclosed by a curved glass wall, fixed with stainless steel spiders and ball joints, accommodates the "Imperial" model staircase, a stainless steel spiral suspended to the ceiling by stainless steel cables. The railing, a "Pentagramma" model, with a 38 mm handrail and 10 millimeter satin stainless steel rods, emphasizes the upward movement effect.

**Figures on page 4** – The "Regale" model has been chosen instead for the staircase of the BMW dealership in Tokyo. The stainless steel supports are fixed to the wall. The railing is in satin, tempered and stratified glass, fixed with stainless steel spiders and ball joints, and stainless steel 40 mm diameter tubular handrail. The supporting columns of the landings are also made of stainless steel.

**Designer:** Arch. Mauricio Cárdenas Laverde, Milano / **Project and supply of stair and glass wall elements:** Faraone Infissi Srl – Via Salino – I-64018 Tortoreto TE, phone +39 0861 7841, fax +39 0861 781035, faraone@faraone.it, www.faraone.it / **General contractor:** Iomann di Iozzi e C. Srl – Corso della Repubblica 17/A – I-27029 Vigevano PV, phone +39 0381 691513, fax +39 0381 691882, info@iomann.it, www.iomann.it.

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#### INNOVATIVE QUALITY EQUIPMENTS FOR THE FOOD SERVICE INDUSTRY

(Grandi impianti innovativi di qualità per ristorazione)

The Mareno Company has completely redesigned its series 900 cooking line, increasing the performances, still respecting international standards in terms of reliability, hygiene and safety.

The new stainless steel cooking surfaces have been realized in one piece, through molding, without sharp angles and edges, equipped with a reservoir for the collection of liquids, predisposed for the butt joint and certified with a degree of watertight protection. The 2 millimetre thick sheet requires a perfect flatness.

The deep fryers are the only ones with a deep-drawn seamless tank and the burners have achieved a very highest performance improving their reliability and safety.

In the catering field, generally, the materials typically used are stainless steel EN 1.4301 (AISI 304, austenitic) and EN 1.4016 (AISI 430, ferritic).

The Mareno brand was created in 1962, but its entrepreneurial origins go further back to 1922. Today it is a company specialized in the supply of "integrated systems" for professional kitchen equipments, geared towards innovation

and quality.

The complete range of products comprises over 2000 models, including modular cooking lines, self-service, equipments for food preparation, cooled cabinets and tables, ovens, washing equipments and custom-made neutral equipments.

**Fig. 1** – Monobloc stove with 4 gas burners and oven, with stainless steel EN 1.4301 (AISI 304) hob. The edges of the surface are beveled for an easy clean-up.

**Fig. 2** – The same monobloc stove inserted in a cooking system comprising a cast iron surface, tanks for the water bath and deep fryers.

**Production:** Mareno - Via Conti Agosti 247 – I-31010 Mareno di Piave TV, phone +39 0438 498111, fax +39 0438 30621, mareno@mareno.it, www.mareno.it – **Reference persons:** Mr. Fabrizio Rocco, General Manager - Mr. Zanardo, Production Manager / **Stainless sheet supplier:** ThyssenKrupp Acciai Speciali Terni SpA – Viale B. Brin 218 – I-05100 Terni TR - **Marketing:** Dr.ssa V. Fontana, phone +39 0744 490867, fax +39 0744 490879, valeria.fontana@thyssenkrupp.com, www.acciaiermi.it

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#### FROM OUR MEMBERS

##### TERNINOX

Terninox, a company of ThyssenKrupp Acciai Speciali Terni Group, is Italy's leading distributor of stainless quality products.

Sheets, strips, welded tubes, seamless tubes, bars, fittings - 85,000 tons of stainless steel flat and long products are distributed every year by the two service centres and by the seven warehouses located in the North and in the Centre of Italy.

The main operating centre is located in Ceriano Laghetto (MI), while the legal headquarters are located in Terni, within the Italian leading group of ThyssenKrupp Acciai Speciali Terni. Thanks to the main support of ThyssenKrupp Acciai Speciali Terni and of Tubificio di Terni and thanks to a consolidated confidence relationship with companies providing long products, Terninox was able to develop a system of synergies with the production sources, which guarantees a complete collection of products and an articulate range of steel brands for the customer. As an example, it is presently able to find more interesting alternate steels instead than the more common austenitic ones, in order to offer their own customers the possibility to contain the considerable price increases that we witnessed in the past year.

Terninox can also offer new generation steels that, appropriately selected accordingly to their use, will provide the customer a benefit in terms of quality-price ratio.

The steels more commonly offered in substitution of the austenitic ones are the new 430 Ti, 439M, 441, 444, 4513, 430 Ar, 202, the structural STR 12 and the STR 18 but also austenitic steels with reduced nickel content like the 304PSA and the 301 Cu.

The redefinition of the company core business, as well as the integration with the national producer of flat stainless steel products, has allowed Terninox to go from the simple transformation of flat steels to the creation of a business system based on service and a network of decentralized distribution centres.

Terninox, integrating its own sales range with Vivinox, the painted stainless steel, was able to anticipate the demand of an ever more technologically advanced market.

A high quality standard, a complete range of products, a fast and efficient distribution network are the salient points of the company.

**Headquarters, Sales head office, Administration:** Viale Milano, 12 – I-20020 Ceriano Laghetto MI, phone +39 02

96982.1, fax +39 02 96982328-382-385 – **Export:** phone +39 02 96982.1, fax +39 02 96982382, info.terminox@thyssenkrupp.com, www.terminox.it

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#### THE FIRE RESISTANCE OF STAINLESS STEEL: STANDARDS UNI 9503 AND EN 1993-1-2

(La resistenza al fuoco dell'acciaio inossidabile: le norme UNI 9503 e EN 1993-1-2)

Among the peculiarities of stainless steels, one that certainly has a great importance is the fire resistance.

In the buildings and the public locals that are very crowded, where it is necessary to foresee a sufficient time to evacuate the people, stainless steel can be a valid option to the traditional materials. Without forgetting that, as stainless steels do not need protection from "intumescent paints", they limit a lot, in case of fire, the production of extremely toxic smokes.

In addition to those applications in which the security assumes priority importance (e.g. evacuation areas, anti fire protection systems, etc.), austenitic stainless steels, thanks to their high mechanical properties at high temperature, are particularly recommended as structural supporting elements (beams, columns). That was demonstrated by different experiments and simulations (already documented in previous numbers of "Inossidabile").

The world of regulation too has definitively acknowledged this scenario, inserting the specifications dedicated to stainless steel in two documents of major importance: the new edition of the UNI 9503 and EN 1993-1-2:2005 (Eurocode 3 - Part 1.2 of 2005) standards.

The new version of UNI 9503 "Analytical fire resistance assessment of steel structural elements" was updated to the new tendencies of the so called planning to fire. Centro Inox actively took part at this project by submitting to the attention of the working group the proposal to introduce the appropriate section dedicated to the characteristics of the austenitic alloys, as well as the expansion of the application field to the welded beams.

The Appendix A "Additional information for stainless steels" is now an integrant part of the Standard and so it represents a valid help for designers. It draws on the contents of Annex C "Stainless Steel" of the EN 1993-1-2:2005, which contemplates the characteristics at high temperature of austenitic, ferritic and duplex stainless steels. Such indications complete, for the part of fire planning, the contents of the EN 1993-1-4:2007 (Euro code 3 Part 1.4) for the general planning of stainless steel structures.

**Figure 6** shows a stainless steel anchor for fixing stainless profiled ribs supporting fibre-cement cladding panels in the Mont Blanc tunnel, restored after the fire of March 1999.

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#### INCREASING THE AQUEDUCT IN LAIVES (L'ampliamento dell'acquedotto di Laives)

The Municipality of Laives (Bolzano) has increased the network of the civic aqueduct, adding two reinforced concrete reservoirs, with a total capacity of 600 m<sup>3</sup>, next to the old tank, dating back to the early 1900.

The feed and distribution pipes, 200 mm in diameter, made of EN 1.4301 (AISI 304) stainless steel, connect the four tanks of the reservoir. A series of structures, including landings, staircases and other supports, have been realized in stainless steel as well.

The water intakes have been restored with stainless steel collection and decantation tanks with smoothed angles and sloped bottoms in order to facilitate periodic clean-up (**fig. 1**). The new access doors are also made of stainless steel (**fig. 2**).



The aqueduct is also fed by two wells located in the center of village, where underground and above ground stainless steel structures have been built: access stairs and grillage (fig. 3), wellhead (fig. 4) detachable aerated turrets (fig. 5).

The choice to replace the old system, in cold dip galvanized steel, with stainless steel components, has been dictated not only by hygienic reasons (necessary in order to guarantee potable water), but also by cost advantages, considering the longer usable life span of stainless steel, without repeated maintenances, and by the undisputed pleasant esthetic-architectonic aspect.

**Client:** Comune di Laives BZ / **Designer:** Dr. Ing. Livio Tarantino, Bolzano / **Execution:** N. Varesco, Egna BZ / **Execution of works in stainless steel:** Calinox - Via degli Artigiani 2 - I-39040 Cortina Strada del vino BZ, phone +39 0471 817395, fax +39 0471 817720, calinox@brennercom.net

### THE SALVAROLA THERMAL BATHS: WHEN STAINLESS STEEL AIDS THE HEALTH (Terme della Salvarola: quando l'inox aiuta il benessere)

Many of the numerous thermal structures, either ancient or recent, today also referred to as "Well-being centres" or SPA (acronym of the Latin "Salus Per Aquam"), possess accessories in stainless steel, an indispensable material for guaranteeing hygiene and resistance to corrosion in dense humidity environments, warm vapors, even containing aggressive substances, detergents and sanitizers.

The old thermal structures in Salvarola, a pleasant town located on a green hill in the municipality of Sassuolo, only 20 minutes from Modena, already famous during the roman era, offer four types of water: with bromide and iodide salts, with sulfur sodium and calcium salts, with sulfur, bicarbonate and magnesium salts and therefore are indicated for a very wide range of therapies for the cure of numerous affections.

Recently, in the thermal building, a pool formed by two octagons has been added, where the water is maintained at the temperature of 35/36 °C and where it is possible to benefit from the massage supplied by powerful water jets coming from "blades" made with electro-polished EN 1.4301 (AISI 304) stainless steel sheets and tubes.

Every pool is equipped with three low blades, with 25 cm high jets, that perform a delicate cervical massage and with one blade, in the shape of a "half moon", 90 cm high for the general massage.

The handrails and supports of the vascular hydrotherapy circuit are also made of stainless steel.

**Client:** Terme della Salvarola Spa - Centro Benessere Balnea - Via Salvarola 131 - I-41049 Sassuolo MO, phone +39 0536 987530/11, fax +39 0536 873242, info@termesalvarola.it, www.termesalvarola.it / **General project, stainless steel elements and filter pool equipment:** Poolsar Piscine - Via R. Iotti 9 - I-42100 Reggio Emilia RE, phone and fax +39 0522 492207, info@poolsar.it, www.poolsar.it

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### LIFE LINES: STAINLESS STEEL AGAIN FOR SAFETY

(Linee vita: ancora acciaio inox per la sicurezza)

The relationship between stainless steel and safety, complemented with characteristics such as reliability and durability, is ever more present in multiple applications thanks to the specific properties of the material which combines an optimal strength with the lack of a maintenance requirement.

Therefore, stainless steel was chosen also for the realization of "life lines".

The life lines are particular anchor systems that are positioned in proximity of the top of the roofs in order to offer a safety hook for sheet-metal workers, aerial repairers and all those who must have access to a roof for inspections, maintenances, clean-up

The life lines include, together with a stainless steel 7x19 (7 strands and 19 wires) cable of 83 mm in diameter: anchor points, tensioning systems, energy absorbers, tension indicators and various connectors. Obviously, they must be complemented by appropriate individual protection gear (i.e. harnesses)

These requirements are prescribed by the directive EEC 89/656 identified in the Standard EN 363 and, in more detail, in the Standard EN 795 Class C, that requires the use of tested and certified components, while some laws and circulars at a regional level also determine cases in which it is mandatory to equip the building with such equipment.

**Supply, installation, test and certification of life lines:**

REA - Via Sempione 231 - I-20016 Pero MI, phone +39 02 3534044, fax +39 02 38100429, rea.pero@tiscalinet.it, www.reaantinfortunistica.com

### STAINLESS STEEL ACCESSORIES FOR YACHTING (Accessori inox per nautica)

"Yachting does not only include boats, sails and engines, but also an infinity of important and useful items, that make the difference between a good boat and the true value boat", this is the philosophy of the company manufacturing the products represented here.

In fact, the safety as well as the total lifespan of the boats do not depend solely on the robustness of the hull and the superstructures, but also on all the indispensable accessories for life on a boat and for the navigation operations.

This is why most of the manufacturers of these products use stainless steel, whose resistance to corrosion ensures, over time, the reliability of the components, especially in an aggressive environment like at sea.

The type of stainless steel used in the production of the examples illustrated in the figures is the EN 1.4404 (AISI 316L), an austenitic steel with CrNiMo and with a low carbon content (L=Low Carbon).

**Production:** Nautinox - Costruzione Accessori Nautici - Srl - Via Meucci 14/16 - I-20080 Casarile MI, phone +39 02 90093718, fax +39 02 9054631, info@nautinox.it, www.nautinox.it

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### FROM THE FIELD TO THE WINE CELLAR, THE GRAPE BECOMES WINE PROTECTED BY STAINLESS STEEL

(Dal campo alla cantina, l'uva diventa vino protetta dall'acciaio inossidabile)

In order to protect the grape already collected, during the extended pauses in the vineyard or during the transport, a wagon has been engineered, called ARTIC® (Fig. 1 and 2), equipped with a refrigeration system, maintaining an homogenous cooling temperature (12 to 16 °C.), it guarantees the stability of the specific characteristics of the grapes. It is constituted of a container that can be flipped-down from both sides, entirely made of EN 1.4301 (AISI 304) stainless steel, circular patterned externally and polished internally, in order to facilitate unloading and clean-up.

This wagon, available in four versions with a capacity of 3000 to 14000 liters, can be used also in order to cool musts waiting to be processed.

Upon arrival in the wine cellar, the grape is transferred into wine process machines like the SOFT SYSTEM® represented here (Fig. 3), equipped with pockets for refrigeration and heating for the rigorous control of the temperature, constructed in EN 1.4301 (AISI 304) stainless steel or, upon request, in EN 1.4401 (AISI 316) in the top part. This is a wine maker and wine press equipment (with a capacity of 60 to 600 hl), that enables immersion of the peels remaining above the mass of must in fermentation, ultimately breaking them off and making them sink, in a gentle and gradual way, in the must below, therefore obtaining the maximum release of colors and precious aromas for a good wine. Thanks to its inside equipment (all constructed in stainless steel), and to the PLC programme controller, the oenologist can manage the various fermentation steps in a more efficient way.

**Production:** Gortani Srl - Via Valli di Carnia 9 - Zona Industriale - I-33020 Amaro UD, phone +39 043 394174, fax +39 043 343195, info@gortani.com, www.gortani.com

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### TECHNICAL AND REGULATORY ASPECTS OF STAINLESS STEEL IN THE FOOD INDUSTRY - Cibus Tec - Fiere di Parma - Sala dei 100

October 18<sup>th</sup> 2007 - 9.30 a.m.

(Aspetti tecnici e normativi dell'acciaio inossidabile nell'industria alimentare)

The convention is organized jointly by Centro Inox, Fiere di Parma and Federacciai within "Cibus Tec", the exhibition on food processing technologies that will take place October 17-20, 2007, in Parma, the city nominated in 2005 as headquarters of EFSA (European Food Safe Authority) by the European Union. A common theme of the presentation will be the reference to the application of stainless steels as an answer to the current legislation.

### Programme

#### Registration

#### Welcome addresses and opening remarks

Ernesto Amenduni, President of Centro Inox, Milano  
Giuseppe Pasini, President of Federacciai, Milano  
Ugo Calzoni, Managing Director of Fiere di Parma

#### The food chain following ISO 22000: prospects and opportunities for manufacturers of stainless steel equipment and components

Marzio Quassolo - CSQA Certificazioni Srl, Parma

#### Food safety: HACCP and legal aspects

Afro Ambanelli, Studio Ambanelli, Parma

#### The activity of the EHEDG (European Hygienic Equipment Design Group)

Luciano Fassina - Nickel Institute, Toronto/Bruxelles/Milano

#### The Ministerial Decree 21/03/73 and the 1935/04 EEC regulation

Maria Rosaria Milana - Istituto Superiore di Sanità, Roma

#### The American regulatory system (FDA - ANSI/NSF 51-61)

Laura Cazzola - NSF International, Bruxelles

#### Discussion

Chairman: Roberto Massini, University of Parma

#### Sponsor: CSF Inox Group

Also part of the Cibus Tec exhibition will be an area dedicated to stainless steel, called "Pianeta inox". For information and registrations, contact: Fiere di Parma SpA - Phone +39 0521 9961, fax +39 0521 996235, tecno@fiereparma.it, www.fiereparma.it

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### A PEDESTRIAN BRIDGE IN ORTISEI (Un ponte pedonale a Ortisei)

In the town of Ortisei, in Val Gardena, a pedestrian bridge, opened in January 2005, connects the zone where the Hotel Cavallino Bianco is located with the cable car station for the Alpe di Siusi. It is a single structure, 65 m high, with steel cables and a 3 metres wide metallic deck.

It is supported by 8 Y shaped elements, of variable dimensions, and with a welded double T profiles. The load-bearing inferior cables are composed of two 80 mm diameter tension rods, constructed with hot galvanized high-tensile steel wires. The stabilizing lateral cables are also composed of two 80 mm diameter tension rods.

The stainless steel is used for:

- the uprights of the parapet, 15 mm thick, interaxis 1,750 mm, made of satin finished EN 1.4301 (AISI 304) steel;
- the infill cables of the parapet, formed with spiral cables, 6 mm in diameter, made of EN 1.4401 (AISI 316) steel, interaxis 100 mm, equipped with turnbuckles at both extremities;
- the handrail made of satin finished EN 1.4301 (AISI 304) steel, with an oval section of about 160x80 mm, with the lighting system incorporated;
- the lateral protections wire mesh, with an 80 mm mesh, 2 mm diameter wires, completed with various accessories;
- the inferior lining of the deck made of stretch flattened EN 1.4301 (AISI 304) steel sheet.

**Architectural project:** Arch. Lukas Burgauer / **Detail design:** Stahlbau Pichler Srl - Via Edison 15 - I-39100 Bolzano BZ, phone +39 0471 065000, fax +39 0471 065001, info@stahlbaupichler.com, www.stahlbaupichler.com /

**Statics:** Studio di Ingegneria Aste, Innsbruck / **Production, supply and installation:** Stahlbau Pichler Srl / **Stainless steel wire mesh:** Jakob Inox Line - Oberon Srl - Via Volta 42 - I-22070 Veniano CO, phone +39 031 970014, fax +39 031 970521, info@oberonitalia.it, www.jacob.it / **Stainless steel wire rope of railings:** Garelli Rigging Hardware - Via alle Vecchie Fornaci 8 - I-16154 Genova GE, phone +39 010 6501978, fax +39 010 6593610, info@garelli-inox.it, www.garelli-inox.it / **Load bearing cables and cable terminals:** Redaelli Tecna-Tensoteci Engineering, www.redaellitenoteci.com / **Photos:** Oskar Da Riz, Bolzano - Paolo Garelli, Genova.

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