

INOSSIDABILE

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Summary

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

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FROM SEED TO PRODUCT (Dal seme al prodotto)

A company based in Tuscany, in the province of Arezzo, which is a leader in Italy in the area of natural and organic health products, relied on an engineering company which boasts a consolidated expertise for the construction of its plants and systems for the pasteurization of fluids to be orally consumed. The plant described in this article, which has a production capacity of about 3,000 lt of syrup per lot, is formed by three turbo-emulsifiers. The plant allows producing 1,000 different recipes, and in the final stage provides for product pasteurization in bottles by means of a continuous-belt pasteurizing equipment. The importance of using stainless steel in this kind of plants is further stressed by the fact that these products, which can be hardly cleaned out, must in some cases be completely free of any kind of allergens. Therefore, it is of paramount importance to completely clear all the remains of previous processes left in the plant between a production lot and the following one. The framework the whole piping system, the tanks, and other essential elements of this plant weigh in all 5,000 kg and are made of EN 1.4301 (AISI 304) and EN 1.4404 (AISI 316L) stainless steel, including also mirror-finish polished plates of different thicknesses, framework supporting tubes, and rolled floor plates. Plate thicknesses range from 2 to 10 mm, and tubes have usually a 32, 50, 80, and 100 mm diameter and an overall length of 450 m.

AISI 316L of a low-roughness ($ra < 0,3$ micron) with a "Scotch-brite" finish has been used for all the parts which come into contact with the products. All welds have been made through TIG welding process.

Plant manufacturer: Senna Inox Srl – Commercial offices: Via Filippo Carcano 2 – I-20149 Milano, phone +39 0248020407 fax +39 02 4980614, pharmadivision@sennainox.it – Head Office: Graffignana LO, www.sennainox.it / **Company:** ABOCA Spa Azienda Agricola – Frazione Aboca 20 – I-52037 Sansepolcro AR, phone +39 0575 7461, www.aboca.it

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RESEARCH PREFERS STAINLESS STEEL (La ricerca preferisce l'inox)

The new research centre based in Turin of a leading company in the area of public water systems is a building characterized by high vertical façades, in which the highest walls aim at recalling the long Roman aqueducts though a continuous sequence of slender arches, which give the building transparency and lightness, due also to the use of materials – such as stainless steel and a particular kind of glass – which reflect the surrounding landscape. The 53 door- and window frames placed inside and outside the building have been made using thermal-cut EN 1.4404 (AISI 316L) stainless steel and "Scotch-Brite" finish section bars. The lining of the ventilated façade is made of stainless steel panels, boxed on the four sides and made of folded EN 1.4301 (AISI 304) 2B finish stainless steel plate. The 1,130x500 mm panels are 0.8 mm thick and spaced apart so as to create 10 mm vertical and horizontal shutters.

The back front of the building is more linear, as it is only broken by the outdoor glass block containing a metal circular staircase lined with perforated sheet panels. The continuous façade above the 40 sq. mt. main entrance consists of EN 1.4401 (AISI 316) stainless steel tubular frames in 1.2 mm thickness, with polished finish and 55 mm section. The fixed handles are made of stainless steel as well.

Work: Centro di ricerca Società Metropolitana per le

Acque di Torino (SMAT), Torino / **Project:** Arch. Alberto Grelli, Torino / **Workshop:** GStramandinoli Srl, Rivalta di Torino TO / **Secco EBE thermal-cut door and window frames:** Secco Sistemi Spa – Via Terraglio 195 – I-31022 Preganziol TV, phone +39 0422 497700, fax +39 0422 497705, info@seccosistemi.it, www.seccosistemi.it

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FROM OUR MEMBERS TRAFITEC: FROM THE LUCEFIN GROUP, LOVING STAINLESS STEEL

(Trafitec: dal Gruppo Lucefin, amando l'acciaio)

Origins and Production - Trafitec is a company which belongs to the Lucefin Group, and is specialized in the production of drawn, peeled and ground stainless steel and special steel bars.

Though having been established only recently (May 2010), this company is already well-known and highly valued for its ever-growing production capacity. The main grades of austenitic, martensitic, ferritic and duplex stainless steel represent the core business and the value of this production plant, which is equipped with state-of-the-art drawing, peeling and grinding process lines. Trafitec produces cold-drawn round in coils (ranging from 4.50 to 16.00 mm), cold-drawn round bars (ranging from 3.00 to 30.00 mm), square- and hexagonal drawn bars (ranging from 8.00 to 60.00 mm), round peeled bars (ranging from 20.00 to 100 mm) and round ground bars (ranging from 3.00 to 100.00 mm). Thanks to its capability to fully meet any requirement, the company is in a position to supply also special parts with specific and very strict tolerances. **Growth and Distribution Capacity** - Trafitec spreads its keen passion all over Europe and world wide thanks to the competent and timely support provided by the distribution network of the Group, especially in Italy, Czech Republic, Germany and United Kingdom.

Safety and Difference - Perfect products, technology, and state-of-the-art treatments are some of the strong points of the Trafitec's processes, which are constantly ensured by strict quality checks.

1.4106 MOD Steel – 1.4106 MOD steel is surely a prominent product in the Trafitec production range. This steel grade is characterized by its improved workability and excellent corrosion resistance in presence of acids and chlorides due to high molybdenum content. Thanks to its peculiar chemical composition, this kind of steel has high magnetic permeability and considerable electric resistivity. **The Strength of Passion** - Trafitec is an active element of the Lucefin Group, an industrial holding which gives employment to 550 persons in Italy, Czech Republic, Germany and United Kingdom.

TRAFITEC S.R.L. – Via Regone 54 - I-20078 San Colombano al Lambro MI, phone +39 0371 29051, fax +39 0371 898694, info@trafitec.it, www.trafitec.it

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STAINLESS STEEL SCRAPS: AN ESSENTIAL COMMODITY IN THE STAINLESS STEEL INDUSTRY

(Rottame inox: materia prima fondamentale per il settore siderurgico)

Stainless steel is a totally recyclable material. In a modern society increasingly oriented to environmental and raw material protection, this characteristic plays a role of paramount importance. Sure enough, the possibility to use recycled materials for the production of new stainless steel items does not only allow to less and less resort to the natural resources of our planet, but also facilitates the disposal of stainless steel itself without polluting the air, the soil and the ground water.

The role of scraps proves essential in the production cycle of stainless steel. Each new casting contains in average scraps by 60 per cent, and raw materials by 40 per cent. A part of this 60 per cent originates from end-of-life stainless steel, while the rest consists of return stainless steel processed products. In 2010, the overall stainless steel production in Italy grew by 30 per cent compared to 2009, and this growth obviously has led to greater and greater scrap consumption. Italy imported in 2010, more than 139,000 tons of stainless steel scraps, 74 per cent of which originating from EU member countries. According to the data released by BIR (Bureau of International Recycling), stainless steel scrap availability between 2009 and 2010 rose from about 7 million tons to almost 8 million tons. In 2011, overall consumption is predicted to further grow by 500,000 tons. In a market characterized by a rather scarce availability of raw materials (especially iron alloys), as the stainless steel market, a correct management of the scrap recycling sector becomes extremely important, as scraps represent, in all respects, a real "secondary" commodity for the steel industry.

We wish to thank ASSOFERMET, Milan, and CO.FER.M Spa, Camerata Picena (Ancona) for their precious collaboration. Photos 1,2,3,4: Courtesy of CO.FER.M Spa

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THE PRE-PAINTED 470LI STAINLESS STEEL LINING OF THE "SASSO GALLETTO" TUNNEL: A GUARANTEE OF DURABILITY AND SAFETY (Acciaio inox 470LI preverniciato per il rivestimento della galleria "Sasso Galletto": garanzia di durabilità e di sicurezza)

A significant example of tunnel lining is analyzed in this article. The lining used for the internal walls of the "Sasso Galletto" tunnel was made by a company which has been working in the sector of constructions and infrastructures for about thirty years. This company made and installed this lining consisting of 0.5 mm thick stainless steel pre-painted Vernest® panels. All the plates are painted in white (RAL 9001) by means of a polyester painting process applied on a 20-25 micron thick primer basecoat. In this specific case, each stainless steel panel was coupled with a 5.5 mm thick "Silbonit" load-bearing fibre-cement slab. This panel and slab assembly was anchored through 12 mm diameter stainless steel bars. The Vernest® pre-painted stainless steel panels were supplied with a special pigmented organic coating which is applied on a thin primer layer. In this case, the "skin" of the Vernest® panel was painted in a glossy and light colour, which is in a position to considerably improve the brightness of the tunnel and reduce at the same time the necessary lighting power, the radiance of the walls being equal. The stainless steel grade used for the tunnel lining is 470LI – 24 Cr, a product that can ensure greater durability in terms of corrosion resistance than the AISI 304 stainless steel provided for in the original project.

Contractor: SPAI SRL - Registered Office: Via Guido d'Arezzo 15 – I-20145 Milano - Administration and Technical Department: Via Mario Gatti 5 – I-25050 Timoline di Cortefranca BS, phone +39 030 9884295-6, fax +39 030 9884688, info@spaisrl.it, info@pec.spaisrl.it, www.spaisrl.it / **Stainless steel produced by:** ThyssenKrupp Acciai Speciali Terni S.p.A. – Viale B.Brin 218 – I-05100 Terni, phone +39 0744 490282, fax +39 0744 490879, marketing.ast@thyssenkrupp.com, www.acciaitermi.it



A SCREWING ANCHORING (L'ancoraggio che si avvita)

The T-BLOCK foundation anchoring system is a bolting assembly which generates a universal tightening point into the ground and in many cases avoids using concrete. T-BLOCK consists of one or more tubes of different diameters, which are processed and formed for the purpose of obtaining a single body. A constant pitch spiral is welded all around the smallest diameter tube, and a hexagonal plate with a threaded central hole is welded to the tube of the largest diameter. This hexagonal plate allows installing the anchor bolt assembly by means of standard socket spanners. This anchor bolt assembly is entirely made of EN 1.4301 (AISI 304) or EN 1.4509 (441) stainless steel. The size of the tubes composing the body of a T-BLOCK can vary depending on model typology. In standard products, diameters ranging from 14 to 89 mm and thicknesses ranging from 1.5 to 3 mm are used, while larger diameters can be produced on demand. The spiral is obtained from stainless steel strips of different sizes, and usually of an average thickness of about 3 mm. The hexagonal plate which forms the head of the anchoring assembly is obtained from a laser-cut sheet. The application range of these parts is very wide: renewable energy, road signs, street furniture, agriculture, stock breeding, recreational and professional camping, civil defence, and so on.

Manufacturing company: Sistemi Chiocciola s.r.l. - Via dell'Osedale 15 - I-52035 Monterchi AR, phone +39 0575 709047, info@t-block.it, www.chiocciolasystems.it - Ing. Aldo Bianchini / *Stainless steel produced by:* ThyssenKrupp Acciai Speciali Terni SpA - Viale B. Brin 218 - I-05100 Terni, phone +39 0744 490282, fax +39 0744 490879, marketing.ast@thyssenkrupp.com, www.acciaitermi.it / *and distributed by:* Terminox SpA - Filiale di Firenze - Via Petrosa 15 - I-50019 Sesto Fiorentino FI, phone +39 055 4491212, fax +39 055 4491231, info.terminox@thyssenkrupp.com, www.terminox.it

A STAINLESS STEEL WATER BARRIER (Una barriera inossidabile)

The HARD-TOP™ HAB BURLAMACCA water barrier is a hand-operated or automatically operated system consisting of a metal shield which is lifted through an inflatable tubular to form a continuous barrier of an appropriate height, which performs three main functions: it stops the salty wedge, it intercepts the toxic algae which come into bloom before summer in the Lake of Massaciuccoli, and prevents them from migrating and settling on the bathing shore, thus making the water way completely navigable as it ensures free forward and aft draught in all circumstances.

The peculiar characteristics of this water barrier consist in the possibility to automatically fall down in case of flood, and in the possibility, under normal operating conditions, to remain concealed under the surface of the water and therefore not to produce any negative environmental impact. Made of 10 mm thick 2B-finish EN 1.4404 (AISI 316L) stainless steel sheet, the hard top of the barrier is the shield which protects the inflatable tubular pipe and represents, at the same time, the real active barrier body. The TIG "pilgrim" welding process technology was adopted on the whole assembly. The gaskets ensure complete air- and water seal and are blocked by two pierced and slotted profiles made of 2B-finish AISI 316L as well. These profiles are tightened to the hard top by a set of M10 A4 stainless steel studs. The side shoulders, which are about 4 m long and 4 m wide, are completely made of AISI 316L stainless steel. The side shoulders are equipped with a system of cramps and anti-siphoning walls which ensure the required flatness values, and allow the assembly perfectly adhering to the concrete as well as stopping water passage. The whole pneumatic piping system consists of 2" and 1" ½ stainless steel pipes. In addition, AISI 316L stainless steel was also used to anchor the water barrier, since all the main, auxiliary and secondary cramps of the shield and of the tubular inflatable pipe are made of 2B-finish AISI 316L.

Customer: Amministrazione Provinciale di Lucca - Genio Civile di Lucca, Ing. Gennarino Costabile / *Hydraulic works contractor:* Hydro Air Bank S.r.l. - *Company Owner:* Dott. Ferdinando Ferraro - *Project Engineer:* Ing. Morrone Antonio - Via Claudia 4 - I-20158 Milano, phone +39 02 39313083, fax +39 02 39310655, info@hab.it, www.hab.it

TECHNOLOGY WITH A STAINLESS STEEL HEART (Tecnologia dal cuore inox)

The "Padova" rolling blind, a state-of-the-art and advanced outdoor sun protection system makes use, in its most strategic and critical elements, of stainless steel. Obviously, in an outdoor sun rolling blind, a high-tech look becomes a key factor. The core of this system is the head of the stainless steel rolling blind box, which acts as a support to the cable guides. Stainless steel offers indeed unquestionable resistance characteristics in all environmental and weather conditions. All mechanical parts require simple maintenance and, differently from other materials, can be supplied in a variety of finishing types. In the case of stainless steel assemblies, the state of the surface is an extremely important factor in the production of protection oxides, so as to ensure maximum corrosion resistance. In the "Padova" model, EN 1.4301(AISI 304) has been used for the side heads of the box, which are turned and milled, acting as a support for the roller on the guide. The roller blind driving system consists of a tensioning threaded round plate, which allows improving the corrosion resistance properties of the box. All the screws and bolts used for this assembly are made of stainless steel as well. This company is focusing on stainless steel due to the versatility of this material and to the aesthetical perception of solidity it conveys.

Manufacturer of the mosquito nets and sun protection systems: Marinello Tende snc - Viale Europa 8 - I-35020 Ponte San Nicolò PD, phone +39 049 8790160, fax +39 049 8790102, info@marinellotende.com, www.marinellotende.com

THE ROLE OF STAINLESS STEEL IN THE PRODUCTION OF RELIEF VALVES FOR TANKS: A GUARANTEE OF CORROSION RESISTANCE, HYGIENE AND FORMABILITY

(Il ruolo dell'acciaio inox nella produzione delle valvole di sfogo dei serbatoi: garanzia di resistenza alla corrosione, igienicità e formabilità)

Stainless steels are increasingly used in the production of wine and food tanks, due to their: technical characteristics (corrosion resistance and strength), hygienic properties and considerable inexpensiveness. Relief valves are tank fittings conceived and developed to avoid that too high pressures may produce dangerous situations or bad or reduced functioning. The wine-making process provides for the addition of sulphur dioxide after the fermentation stage. If the liquid does not reach the top of the tank, the sulphur dioxide in the gaseous area may condense on the metallic surface in the form of very small drops thus producing a sulphurous acid which, at high concentrations, can start a pitting corrosion process on the stainless steel surface. For this reason, the ferrules placed on the top of a wine tank are usually made of EN 1.4404 (AISI 316L) stainless steel. The manufacturing company this article is focused on is based in Treviso, and is specialized in the production of breathing valves for wine tanks. The production range of the relief valves produced by this company includes a special type of valve consisting of four elements, three of which are drawn, while the fourth element is a tube. Among the three drawn elements, one stands out in particular for its high formability properties. This element is has a semi-cylindrical shape of 10 cm depth and 13.5 cm diameter, and is made starting from a disc. These special relief valves are made of deep-formed AISI 304 stainless steel, because as well as having all the previously analysed characteristics, this grade can be easily formed. This is an essential characteristics for achieving the required drawing values of the parts.

Manufacturing Company: INOX BREVAL S.r.l. - Via Lombardia 12 - I-31050 Monastier di Treviso TV, phone +39 0422 898977, fax +39 0422 898263, info@inoxbreval.it, www.inoxbreval.com / *Stainless steel produced by:* ThyssenKrupp Acciai Speciali Terni S.p.A. - Viale B. Brin 218 - I-05100 Terni, phone +39 0744 490282, fax +39 0744 490879, marketing.ast@thyssenkrupp.com, www.acciaitermi.it

STAINLESS STEEL WORLD CONFERENCE & EXPO 2011 Maastricht (NL), November 29 ÷ December 1, 2011

This event, organized by Stainless Steel World, will be held at the MECC (Maastricht Expo and Congress Centre) and represents an important opportunity to promote knowledge on the use of stainless steel and the related advantages. This three-day event combining conference, exhibition, and social events offers a unique and perfect opportunity for establishing new business collaborations, strengthening existing relationships, and for getting in touch with operators belonging to this area from all over the world. At the same time, all participants will benefit from possibility to have free admission to the exhibition ground during the three days of this event, to visit the stands of the about 250 exhibitors.

Additional information and registrations:
www.stainless-steel-world.net

EURO INOX STAINLESS STEEL DESIGN AND FABRICATION SEMINAR

10:00 - 15:30, 30th November 2011, Maastricht (NL)
On Wednesday 30th November 2011, Euro Inox will hold a one-day seminar on innovative design and fabrication techniques for stainless steel. The event will be embedded in the Stainless Steel World Conference, which takes place at the MECC, Maastricht, the Netherlands. It is addressed specifically to designers and to small and medium-sized fabricators of process equipment, building products and consumer durables. Delegates attending the Euro Inox Design and Fabrication module of the Stainless Steel World Conference will have free access to the exhibition.
Details and registration: www.euro-inox.org - www.stainless-steel-world.net/pdf/SSW2011_RegEuroInox.pdf

A MULTI-PURPOSE BUILDING PLANNED TO MEET DIFFERENT REQUIREMENTS (Un edificio per tante soluzioni)

The building described in this article was built, according to the directions of the builder, with a view to a multi-purpose use, favouring maximum flexibility in the interior design, but nonetheless with the precise willingness to give the finished work a high-quality, new, and winning look. The need to find simple and quick solutions without long waiting times, and above all the need to use a long-lasting material thus avoiding any risk of break and cracks, led to the choice of mirror-finish polished EN 1.4404 (AISI 316L) stainless steel panels. About 1,000 Kg of 1,000x3,000 mm stainless steel lining panels were used for this purpose. These panels, which are 0.8 mm thick, have a mirror-polished finish and are cut to measure by means of electro-hydraulic shears. The panels are tightened through simple plastic expansion screw anchors directly to the brickwork. The combination of two materials which are so different, such as red brick and mirror-polished stainless steel is surprising and striking. The reflection of the surrounding landscape on the polished stainless steel surfaces continuously transforms the aspect of the building depending on the colours of the seasons and on the weather changes.

Building Company: Costruzioni Edili R.B. Srl - Via dell'Artigianato 25/33 - I-24121 Cologno al Serio BG, costruzioniedilibr@libero.it / **Designer:** Arch. Ivo Redaelli - Studio di Architettura ed Ingegneria Redaelli ed associati - Via Terraggio Pace 4 - I-20059 Vimercate MB, ivo.redaelli@ticino.com / **Door- and window frames and stainless steel lining:** Robbiati Srl - Via Dante 10 - I-20881 Bernareggio MB, cocco.a@robbiati.it, www.robbiati.it / *Stainless steel:* Lamiere Speciali Inox Spa - Via Giulio Natta 7/A - I-43122 Parma, www.acciails.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

