

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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WHEN EMPTY SPACES CAN CREATE AN IMAGE

(Quando il vuoto si fa immagine)

The company we are focusing on joins images and steel and combines them into a personalized product that can be used in many civil and industrial applications.

The manufacturing process begins from the acquisition of a photographic image and ends with the production of a steel panel in which a grid of holes arranged in a honeycomb pattern reinterprets the light and shade effects of the original picture. Currently, this product can be supplied in three different versions: stainless steel, steel and polymethyl methacrylate, and bakelit steel.

The first stage of the process consists in loading the desired image on the website of the company in ".jpg" format. After having started the picture processing stage, the software analyzes the loaded file, and establishes the optimal size and spacing of the holes basing on a series of pre-set parameters. During the actual production stage, the stainless steel sheet – EN 1.4301 (AISI 304), in this case – is cut to measure by shearing, then it is conveyed to a working station in which it is punched. Sheet thicknesses range from 0.8 to 1.5 mm.

In the event that the panel to be processed is made exclusively of steel or stainless steel, at the end of the punching stage, the semi-finished part is folded in order to better stiffen the structure of the panel. The final shape of the panel is ensured and further strengthened through some micro-plasma welding spots. As an alternative, the panel can be combined with other materials. In this case, the steel sheet is sheared to form a rectangular or square shape and no additional bending and welding processes are required, since the sheet is then applied on a dark-colour glossy polymethyl methacrylate sheet, which helps highlighting the natural shine of stainless steel, or on a LED-backlit transparent support. Finally, after the drilling process, the part is packed. The product we show in this article has been specifically designed for furnishing purposes, and is addressed in particular to end consumers, although its manufacturing technology can also be employed in several civil engineering, business and industrial application fields.

Project, design and manufacture: Oneplot s.r.l. – Viale Europa 38 – I-26855 Lodi Vecchio LO, info@oneplot.com, www.oneplot.com / **Designer:** Davide Coppaloni, davidecoppaloni@tin.it, mob. +39 338 7670721

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THE FORMAL AND AESTHETICAL LANGUAGE OF OUTDOOR LIFE (Il linguaggio formale ed estetico dell'abitare outdoor)

The LEM collection designed by Monica Armani is a distinctive line due, in particular, to its curved shapes and the peculiar characteristics of the parts holding the inserts. One of the main characteristics of the LEM collection consists in the insertion mechanism of the seats, which are provided with clips to allow them being easily replaced in order to give customers the opportunity to change the look of the seat using different kinds of either fishnet or matched fabrics especially studied for outdoor applications. The stainless steel grade used for these chairs is satin-finish EN 1.4401 (AISI 316). In this specific case, the chair body is made of 20x2 mm stainless steel tubes, while the armrests are made of 12x1.5 mm tubes. The matching tables can be supplied in different sizes, and are provided with a multi-layer top leaning on appropriate clutches placed on a stainless steel structure. The table structure is formed by a stainless steel tube of 48.3 mm diameter and 2 mm thickness. All welds are made through TIG welding process.

Manufacturer: Coro – Via F. Cavallotti 53 – I-20052 Monza MB, phone +39 039 2726260 – fax +39 039 2727409, info@coroitalia.it, www.coroitalia.it / **Design:** Monica Armani

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FROM OUR MEMBERS

SMST ORGANIZATION IN THE SERVICE OF THE ITALIAN STAINLESS STEEL SEAMLESS TUBES MANUFACTURING INDUSTRY

(L'organizzazione SMST al servizio dell'industria italiana dei tubi in acciaio inox senza saldatura)

Salzgitter Mannesmann Stainless Tubes is going to further improve its organization in order to provide better and better services aimed at supplementing its products in the different consumer areas of the Italian manufacturing industry.

SMST studied a logistic solution called XS (where S means "settimane" – weeks in Italian), which allows customers receiving, within a specific programme - in terms of quantities, stainless steel grades and sizes - the requested products within a fixed delivery term of X weeks (4 or more).

This special service allows customers planning their activity with firm delivery times and costs, and limiting material stock in their warehouses as much as possible.

SMST strength consists in ensuring this kind of service for its whole product range as regards sizes (from 6 to 219.1 mm) and quality, in terms of stainless steel grades.

This means that it is possible to create customized "ad hoc" programmes for all the major concerned distributors within an extensive product range, starting from austenitic steel grades to austenitic-ferritic grades up to the main nickel alloys. Another strong point of SMST is represented by great diversification as regards product offer, thanks to four different production units and a network of skilled engineers. SMST presents itself as a highly qualified supplier characterized by a wide range of products, which include, in particular, heat exchanger U-shape bent tubes, bimetallic tubes for Urea plants, internal shot-peening heat-resistant boiler tubes, tubes for the gas & oil industry, and tubes made of nickel alloys for the chemical and petrochemical industry. This extensive product range entails for users the great advantage of enhancing synergies, since they have a single supplier at their disposal for a variety of product typologies. Finally, another SMST strong point consists in the possibility to follow and meet, through its Research & Development department and organization, any special market requirement in terms of new technologies and/or steel types and grades, being the SMST Group characterized by great offer diversification as regards products, services and application areas.

SALZGITTER MANNESMANN STAINLESS TUBES ITALY S.R.L.

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THE SALT SPRAY TEST: COMMENTS AND CLARIFICATIONS

(La prova in camera di nebbia salina: commenti e schiarite!)

One of the most frequently mentioned corrosion test in the major technical production specifications is surely the salt spray test performed in a salt spray chamber. Hereafter we report some comments concerning the most frequently used reference specifications concerning the salt spray test, namely ASTM B117 "Standard Practice for Operating Salt Spray (Fog) Apparatus".

Test general description – The salt spray test can be

concisely described as an accelerated corrosion test. Samples of a particular material or parts, are "immersed", according to a precise procedure, into a specific atmosphere consisting of a "mist" resulting from the atomization (spraying) of a watery solution of NaCl (sodium chloride – mass ratio: 5 parts of NaCl and 95 parts of water), kept at a temperature of 35°C.

Interpretation of the test results – ASTM B117 standard practice do not absolutely establish the evaluation standards of the results: these standards have to be established by the customer who has commissioned the test (as provided for by the standard themselves) basing on his requirements. The salt spray test is of a qualitative and not of a quantitative nature. Therefore, we should not wrongly expect, for example, that this test is capable to define, for a particular stainless steel grade (for example EN 1.4301 – AISI 304), a number of hours of permanence in the chamber in a position to characterize its real corrosion resistance. Consequently, it is not possible to predict how many hours a specific stainless steel grade is capable to resist to a salt spray test!

Significance of the salt spray test – Paragraph 3 of the ASTM B117 standard practice very clearly establishes and circumscribes the boundaries of the test described in the subsequent paragraphs of this standard. A first important sense we can attribute to the salt spray test is that it can become an effective control system of the production process and quality. In fact, since it is an accelerated test based on extremely severe conditions, it is in a position to point out any anomaly that might be later detected on a product or part in real operating conditions. In addition, it can be considered a valuable and effective support to the planning and design of all the parts in which an exposure to atmospheres of different aggressiveness degrees is likely to generate critical situations. Finally, we wish to mention that this test can be used also to assess the performance of a particular surface finishing process on a stainless steel product. The simple exposure to salt spray of samples made of the same material but submitted to different finishing processes, and oriented in different directions, may prove sufficient to point out and enhance their different responses to production choices based exclusively on aesthetical requirements, which sometimes do not marry with functional and durability standards!

We wish to thank the RTM Breda laboratory (www.rtmbreda.it) for the pictures of the salt spray test chamber.

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A STAINLESS STEEL DISPENSER/MIXER (Dosatore/miscelatore inox)

The LiveDS¹² system is the fruit of a multi-product and fully automated dosage system. This system is quite versatile and can be used first to dose, and then to fill containers of different kinds and capacity with various liquid substances, even those of variable density, depending on temperature changes. The use of this system can be extended to different industrial areas, such as the chemical, pharmaceutical, food industries, and so on. EN 1.4404 (AISI 316L) has been widely used in the construction of this system.

The system operator can enter all the data concerning the supply from a "touchscreen" panel. The supply cycles are then automatically and repeatedly operated under the supervision of the operator, whose task consists in positioning the supplying nozzle in the subsequent container at the end of each filling operation. The measurement of the supplied product quantities are made through a dedicated meter, while the pump is driven by an inverter. The system is capable to immediately measure the supplied product quantity, and compare it with the reference quantity in order to detect any possible presence of air, and consequently inform the operator about the need



to make use, if necessary, of precision scales.

Manufacturer: Omniaplant Srl – *Operating Office:* Via Fulcheria 31 – I-26010 Chieve CR, phone +39 0373 236882, fax +39 0373 649719 – *Registered Office:* Via Piave 1 – I-24043 Caravaggio BG, omniaplant@libero.it, www.omniaplant.it

STAINLESS STEEL AND GLASS FOR “TRANSPARENT” ELEVATORS

(Acciaio e vetro per ascensori “trasparenti”)

Due to its resistance, the elevator manufacturing industry makes widely use of stainless steel today, in particular for the lining of doors and car interiors. Due to its corrosion and resistance to scratches, stainless steel guarantees durability, and keeps the aesthetical aspect of the elevator almost unchanged over time, thus minimizing maintenance operations. The Highlight Towers, a modern office building formed by two glass and steel towers, has become one of the most significant and popular architectural elements of the “new” Munich. Architect Helmut Jan designed and planned a geometrical and rigorous building, in which two panoramic elevator systems face each other. Ten panoramic elevators in all are installed inside the towers. The elevators are equipped with special doors entirely made of stainless steel. A stainless steel plate, which optically connects the elevators one another, was chosen as a structural element in place of the standard fixing plate of the door mechanisms. The use of this EN 1.4301 (AISI 304) stainless steel plate has allowed to drastically reduce height and overall dimensions by actually “dematerializing” all the mechanisms, which are completely visible through the glass panels. The car door mechanisms of the elevators are made in a similar way, using two stainless steel plates for the purpose of structurally supporting the door opening and closing drive. Finally, the panels of the doors, made of glass, have narrow profiles lined with satin-finish EN 1.4301 (AISI 304) stainless steel.

Manufacturing company: Wittur S.p.A. - Via Macedonio Melloni 12 – I-43052 Colomo PR, phone +39 0521 3111, fax +39 0521 311200, carlo.ferrari@wittur.com, info@wittur.it / *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.acciaitermi.it *and distributed by:* Terminox S.p.A. – Viale Milano 12 – I-20020 Ceriano Laghetto MI, phone +39 02 969821, info.terminox@thyssenkrupp.com, www.terminox.it

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SAFETY AT HIGH ALTITUDES

(La sicurezza in quota)

These fall protection systems have been designed to be permanently installed on the covering and roofing of civil and industrial buildings in order to prevent persons from falling down. As a matter of fact, when they have to carry out their maintenance and inspection activities on the covering and roofing elements of buildings, workers and engineers are often exposed to the risk of falling down. The company specialized in the planning, design, production and supply of the fall protection systems mentioned in this article, makes exclusively use of EN 1.4301 (AISI 304) stainless steel due to the corrosion resistance properties of this material. This company makes use of stainless steel for many elements of its product range. The anchoring post used for the A1 lifelines is made of a stainless steel tubular element having 101 mm outer diameter and 3 mm wall thickness. The baseplate allows tightening the post to the bearing structure through threaded bars. The A2 bracket placed under the roof tile is a 3 mm thick, 418x30 mm, stainless steel plate. The posts for the Class C – Speed Line lifelines consist instead of rectangular tube 100x100 mm, 4 mm thick. The Class C lifeline, which is made of parts classified as “speed industrial” elements, is formed essentially, by two end supports. Concerning the production process, the tubes are cut by a cutter, while the fixing plates are laser cut. All the elements forming the lifeline are assembled through a filler wire welding process and submitted to a pickling process in order to remove any welding process leftover.

Planning, design, production and supply: CTSAFE S.r.l. – *Head Office:* Vicolo Silvio Pellico 4 – I-24050 Cividate al Piano BG – *Operating Office:* Via Balilla 110 – I-24058 Romano di Lombardia BG, phone +39 0363 945478 – fax +39 0363 979287, www.ctsafesrl.com / *Stainless steel brand:* issued by Centro Inox, www.centroinox.it/marchio

SMALL METAL PARTS: 470LI, A SUCCESSFUL CHOICE

(Minuterie metalliche: il 470LI, una scelta di successo)

In this article, we are focusing on a company that has become a leader in the design (also in terms of co-design with customers) and production of small formed metal parts obtained from strips. Among the quality materials used by this company, we find stainless steel. The decisive element that led to the choice of stainless steel consists in its corrosion resistance properties. All applications in the sanitary, hydraulic, thermal, building, automotive, electronics, and renewables industries require the use of a particular stainless steel type capable to offer extremely high corrosion resistance levels. From this point of view, super-ferritic 470LI stainless steel represents the most successful solution. This stainless steel grade is well-known because of its high chrome content (24 per cent), and consequently, its high resistance to corrosion onset, even in particularly aggressive environments. However, further basic characteristics should not be neglected in the production of small metal parts, such as, for example, material workability. This company, through the use of super-ferritic stainless steel, has achieved excellent results in the production of the different parts included in its product range, especially in terms of material cold-forming. The use of 470LI has proved, in fact, a very satisfactory choice from the point of view of material spring back, which considerably impacts on the dimensional characteristics of the parts.

Manufacturing company: Ve-Ca S.r.l. – Via della Costituzione 14 – I-42025 Cavriago RE, phone +39 0522 371959, fax +39 0522 371720, info@ve-ca.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.acciaitermi.it

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STOP TO PLASTIC CONTAINERS IN THE SCHOOL DINING HALLS, THE MUNICIPALITY OF MILAN SAID. THEY WILL BE SOON REPLACED BY STAINLESS STEEL CONTAINERS

(Via i contenitori di plastica dalle mense scolastiche. Il Comune di Milano: saranno sostituiti da vaschette in acciaio inox)

In order to guarantee greater respect for the environment, the Municipality of Milan decided to use only stainless steel containers for the transport of food. In fact, as from the next month of September, plastic containers will no longer be used for the transport of food to the schools of Milan.

EXPO MILANO 2015 NOURISHING THE PLANET, ENERGY FOR LIFE

(EXPO Milano 2015 - nutrire il pianeta, energia per la vita)

In view of the international showcase represented by the World Expo of 2015 to be held in Milan, Centro Inox is preparing itself to promote stainless steels both in terms of commodities and in terms of components and finished products. Centro Inox has begun to make contacts with EXPO 2015 S.p.A. a few months ago in order to promote and present during this event all the potentialities of stainless steel. A dedicated website allows all those concerned to have access to the information referring to EXPO 2015, the requests for bids, related procedures and required documents. Through this website, each company wishing to take part in EXPO 2015 will have the opportunity to spontaneously propose itself as candidate.

For additional information: www.expo2015.org

11TH INTERNATIONAL STAINLESS & SPECIAL STEEL SUMMIT – Stockholm (Sweden), September 12 ÷ 14, 2012

This summit, organized by Metal Bulletin and SMR, is focused on the stainless steel and special steel industry, and will be held in the month of September 2012.

For additional information: <http://www.metalbulletin.com/EventDetails/0/4813/11th-International-Stainless-and-Special-Steel-Summit.html>

DUPLEX SEMINAR & SUMMIT – Stresa VB (Italy), September 26 ÷ 27, 2012

Stainless Steel World will host the Duplex Seminar & Summit 2012 in Stresa (VB) Italy on September 26th & 27th,

2012. This event is sponsored by Sandvik, Outokumpu, Wujin Stainless, and supported by Centro Inox and AIM. The goal is to create an international platform for the ongoing technical and commercial exchange of information on the latest technologies, focusing in particular on duplex stainless steels. It will be a so-called “open source” event, where both suppliers and vendors will meet to discuss innovation and new applications. In addition, they will have the opportunity to bring themselves up to date on the requirements from the end-user industry and the availability of grades and products, as well as to discuss manufacturing and fabrication issues concerning duplex stainless steels. In order to facilitate this exchange, the Duplex Seminar & Summit 2012 will provide a 2-day interactive workshop programme, along with round-table meetings and discussions. In conjunction with this event, there will also be a dedicated 2-day Duplex Club Lounge and Duplex Exhibition.

The programme is available on-line: www.stainless-steel-world.net/duplex2012

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ADVANCED COURSE “STAINLESS STEELS” – Milan (Italy), October 2-3-10-11-17-18-25-26, 2012 (Corso “Gli Acciai inossidabili” – Milano, 2-3-10-11-17-18-25-26 ottobre 2012)

More than forty years after the first appearance of this unique cultural action of its kind, Associazione Italiana di Metallurgia (the Italian Metallurgy Association) will organize, in cooperation with Centro Inox, the eighth edition of the advanced course dedicated to engineers, researchers, professionals, and in general to all operators working in the stainless steel industry. The 2012 edition of this course provides for a single module divided into 8 days of study, in order to favour a more slender and agile format in comparison with the previous editions. The first days of the course will be focused on basic metallurgy and its major characteristics, and on corrosion resistance properties. The second part of the course will be instead focused on stainless steel production and processing technologies, and on the reference market. The issues dealt with in the starting phase have been devised as to result preparatory for the second part of the course. In addition, in order to promote contacts and exchange of opinions between participants and the different realities of the stainless steel market, during the first two days of the course (October 2 and 3), several “information tables” will be organized by some companies which have sponsored the course.

For additional information:

Segreteria AIM – Associazione Italiana di Metallurgia
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THE WARMTH AND COMFORT OF ELEGANCE (Il calore dell'eleganza)

The waves of the sea and their winding movements are the elements which have inspired “Blow”. This furnishing complement combines efficiency and state-of-the-art heating technology, thus providing excellent results also in terms of thermal performances. “Blow” is a simple radiator characterized by a sophisticated architectural design, and can be easily positioned in any habitat. “Blow” is made of 2B finish EN 1.4301 (AISI 304) stainless steel. The radiator is mirror-finish polished, measures 1700x500 mm, and can be either vertically or horizontally installed.

Manufacturing company: Cordivari Design – Zona Industriale Pagliare – I-64020 Morro D'Oro TE, info@cordivari.it, www.cordivari-design.it / **Designer:** Jean-Marie Massaud

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