

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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STAINLESS STEEL IN FAST CONNECTION SYSTEMS

(L'acciaio inossidabile nei sistemi di giunzione rapida)

Stainless steel is increasingly used in the area of plant design. In particular, the "press-fitting" and the "push-fit" connection systems have considerably and successfully gained ground in the market in the last few years.

The "Chibro Pressfitting" stainless steel system, which includes junctions, fittings, tubes, and pressing machines, allows to produce several kinds of plants developed for the civil, industrial, and shipbuilding sectors, in diameters ranging from 15 to 108 mm. The tubes are longitudinally welded through EN 1.4404 (AISI 316L) stainless steel strips, and are manufactured in compliance with EN 10312 standard and DVGW W541 specifications. The tubes are obtained from cold-rolled sheets and are submitted to a post-welding solubilization heat treatment at 1050 °C. The main elements of this system are the special "Chibro Pressfitting" fittings made of AISI 316L stainless steel, which are available in different types and sizes, and allow to produce the plants using only fittings and straight tubes. One of the ends of the fittings is equipped with a toroidal chamber, in which a synthetic rubber o-ring is fitted. Coupled with the tube, this o-ring ensures hermetical tightness to the assembly. Mechanical tightness is instead ensured by the combined deformation of the fitting and the tube inserted in it, after a correct pressing process. Another type of fast connection system is commonly known by the name of "push-fit". In the case of stainless steel, this system is also known as "Chibro Steckdrain", available in diameters ranging from 42 to 219.1 mm.

The "Steckdrain" tubes and pipes are made of EN 1.4404 (AISI 316L) stainless steel, and on request, also of EN 1.4307 (AISI 304L) grade. The cup is formed by two annular spaces in which the gasket is housed, and by an inserted tube. The particular shape of the fitting cup ensures stiffness and stability to the connection and guarantees the hermetical tightness of the fitting over time.

Manufacturing company: Ilta Inox SpA – Strada Statale 45 bis, km 13 – I-26010 Robecco d'Oglio CR, phone +39 0372 9801, sales@ilta.arvedi.it, www.arvedi.it

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STAINLESS STEEL IN THE PRODUCTION OF PRESSURE AND TEMPERATURE MEASUREMENT EQUIPMENT FOR INDUSTRIAL PROCESSES

(L'acciaio inox per la produzione di strumenti di misura della pressione e della temperatura nei processi industriali)

The company we focus on in this article is the major Italian manufacturer of pressure gauges, electronic pressure transmitters, hydraulic fluid separators, thermometers, and thermowells for pressure and temperature measurement and control in industrial processes. The company makes use of austenitic stainless steel in all parts which come into contact with the fluid. Due to the high level of their finish, and to their metrological properties, the products manufactured by this company are particularly appreciated by the food and pharmaceutical industries, where the most commonly used stainless steel grade is EN 1.4404 (AISI 316L). In its production process, the company makes use of bars of

different materials, including stainless steel, especially in the production of the connections to the process cycle of tools and instruments, pressure separators, and thermowells. AISI 304 and AISI 316 stainless steel sheets are also used for the production of the cases and rings which form the external shell of the pressure gauges. These stainless steel cases are manufactured in self-contained production units including powerful and fast mechanical presses, equipped with extremely accurate transfer moulds, and combined with eco-friendly washing systems. Manufacturing company: Nuova Fima S.p.a. – Via C. Battisti 59/61 – I-28045 Invorio NO, phone +39 0322 253200, fax +39 0322 253232, info@nuovafima.com, www.nuovafima.com

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@acciaiinterni.it, www acciaiinterni.it

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FROM OUR MEMBERS

COGNE ACCIAI SPECIALI

COGNE ACCIAI SPECIALI IS PROJECTED ONTO THE DEVELOPMENT OF MORE AND MORE COMPLEX PRODUCTS

(La Cogne Acciai Speciali è proiettata verso prodotti sempre più complessi)

Cogne intends to play a leading role in facing the after-crisis phase the international markets are going through. The company is currently developing a multi-year program aimed at refocusing its production and marketing activities. This program, through several important investments in plants, will lead the company to partly give up traditional products, in order to devote itself to the development and the production of more and more sophisticated steel grades to be used in extreme applications and conditions. In particular, thanks to the development of targeted plant design solutions, the company based in the Aosta Valley succeeded in further consolidating its year-long leadership and competence in the steel and metallurgical industry, and is now in a position to produce with greater output, return and effectiveness, an increasingly complex mix of steel grades. These steel grades are the result of the considerable development of the forge department, which as from 2008, the year in which the 5,000 t-press became operational, has reaffirmed its absolute supremacy in terms of quality, dimensions and weights, making Cogne the undisputed leader in this area. In this production refocusing stage, the company continues in any case the development of its Concrinox products, i.e. corrugated stainless steel bars with improved adherence destined to the infrastructure and building industries. These bars are currently used in the construction of what will become – once completed – the longest sea bridge in the world connecting Hong Kong with Macao, along a 42 km, partly suspended and partly undersea route. A New Frontier in the Field of Solenoid Valves Cogne developed in the last few years a specific kind of drawn, peeled, and ground stainless bars made of ferritic stainless steels which, due to their ferromagnetic characteristics, are used in the production of elements operating according to "solenoid" principle, that is to say, valves for fluids or gas control, high-pressure injection systems for internal combustion engines, and ABS braking systems. Depending on each application or requirement, bar products can be submitted to non-destructive Eddy Current and Ultrasound tests. Magnetic characteristics are calculated by determining the BH hysteresis curve through a permeameter,

or by determining the coercive force value. These tests are performed in strict compliance with the international reference specifications.

COGNE ACCIAI SPECIALI Spa

Via Paravera 16 – I-11100 Aosta AO – phone +39 0165 3021, fax +39 0165 43779, info@cogne.com, www.cogne.com

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STAINLESS STEEL DEEP DRAWING: A COMPLEX PROCESS ENSURING HIGH PERFORMANCES

(L'imbutitura profonda dell'acciaio inox: un processo complesso dalle elevate performance)

The deep drawing process, a typical stainless steel cold-forming method, allows to transform a flat sheet into a concave one keeping its thickness unchanged. The materials used for this process are traditional austenitic stainless steels, such as EN 1.4301 (AISI 304) and EN 1.4404 (AISI 316L) grades, of thicknesses ranging from 0.8 to 4.0 mm. More complex products require, instead, AISI 304DDQ (deep drawing quality) and EN 1.4303 (AISI 305) grades. Due to the considerable plastic deformations it is submitted to, the material structure tends to harden, passing from an austenitic to a martensitic structure. This transition makes the material increasingly brittle, since it loses the characteristics of ductility required by the process. Therefore, between the forming stages, a special heat treatment called "annealing" is carried out in a special oven, in which the elements to be treated are heated at a temperature exceeding 1020°. Then the parts are cooled. This process allows to reduce the presence of welds, thereby ensuring improved mechanical properties and better washability to the parts. The deep drawing process is used in several industrial applications and sectors, which include the catering, medical, and aeronautics industries, as well as the furniture and lighting industries.

Thanks to **Davighi International** (www.davighi-international.it)

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SOLAR ENERGY AND STAINLESS STEEL

(L'inossidabile energia del sole)

The first test power plant operating in Italy with molten salt at 550° C and parabolic mirror technology, is based in the province of Perugia. This peculiar technology concentrates and conveys, through parabolic mirrors, the sunlight onto a row of receiver tubes, which contain a fluid (molten salt) used as a heat transfer medium, in order to produce the steam required to operate the power generation turbines. The plant includes a solar field, a thermal storage system, and complementary plants and equipment. The solar field taps the solar energy and conveys it to a fluid in order to store it in the storage system. It is formed by six parabolic collectors provided with a reflecting surface, which collect and concentrate the direct radiation of the sun onto a receiver tube placed on the focus of the parabola. This tube is made of EN 1.4541 (AISI 321) stainless steel. The thermal storage system has been designed to store the thermal energy collected from the solar field before conveying it to the steam generator. The system is formed by two storage tanks, which are also made of AISI 321 stainless steel.

Plant developed and built by: Archimede Solar Energy – Villa San Faustino – I-06056 Massa Martana PG, phone +39 075 895491, fax +39 075 8954800, info@archimedesolarenergy.it,



www.archimedesolarenergy.it

Engineering support: Chiyoda Corporation

Stainless steel produced by: Marcegaglia S.p.A. – Via Bresciani 16 – I-46040 Gazzoldo degli Ippoliti MN, phone +39 0376 6851, fax +39 0376 685625, inox@marcegaglia.com, www.marcegaglia.com

FEATURES AND DESIGN: THE STAINLESS PARTNERS OF THE FOOD & BEVERAGE INDUSTRY

(Funzionalità e design: gli alleati inossidabili del food & beverage)

To manufacture the new “Serie 6” and “Serie 8” lines, launched in the market by a manufacturing company boasting a 50 year expertise in the supply of products designed for the food & beverage industry, in-depth studies have been made in order to reduce welds by 50%. During the planning stage, particular attention and care was also paid to design. The reduced outwards protrusion of the different elements (doors, drawers, racks, etc.), gives them lightness and elegance, as well as improved functionality. These products are made of EN 1.4301 (AISI 304) stainless steel, and are available with Scotch-Brite satin finish and “High-end” BA finish, in thicknesses ranging from 0.6 to 1 mm, depending on the type of semi-finished product to which it is destined. The reflecting capacity of “High-end” BA stainless steel is directly obtained at the steel mill during the rolling process and the subsequent annealing process in inert atmosphere, and therefore the sheet is not subject to further mechanical polishing processes. This peculiarity avoids to see on the surface, under certain light conditions, the effects of the use of abrasive polish.

Manufacturing company: Priolinox S.p.A. – **Registered and administrative office:** Via delle Tuberose 10 – I-20146 Milano – **Establishment and technical office:** Via Ghiaia Risi – I-27040 Borgo Priolo PV, phone +39 0383 871065, +39 0383 871070, fax +39 0383 871296, www.priolinox.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, www.aperam.com

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OUR TRADEMARK: A “PLUS” ALSO IN THE AREA OF HOUSEHOLD PRODUCTS (Il nostro marchio: un “plus” anche nel settore casalinghi)

We report a statement coming from a leading company in the area of household products.

“It is an undisputable fact that to give prominence to this logo means to convey, both to the retailer and to the end customer, the information that the manufacturing company has made the precise choice of fully complying with all the regulations in force concerning the use of materials destined to come into contact with food, and of purchasing them from certified suppliers”. The company has been granted the permission to affix the “INOX” trademark on its price lists and catalogues, in order to provide “an additional information on quality: precise and state-of-the-art technology, guaranteed by a serious and professional association as Centro Inox”.

Manufacturing company: Zani Serafino S.r.l. – Via Zanagnolo 17/b – I-25066 Lumezzane Gazzolo BS, phone +39 030 871861, fax +39 030 8970620, info@serafinozani.it, www.serafinozani.it

Stainless steel trade mark: granted by Centro Inox, www.centroinox.it/marchio

FERRITIC STAINLESS STEELS FOR MOTORCYCLE EXHAUST SYSTEMS (Gli acciai inossidabili ferritici per i sistemi di scarico)

The company the article is focused on is one of the most important Italian producers of exhaust silencers, which are supplied to the major motorcycle manufacturers. The need to cut costs while keeping the technical performance of materials unchanged, has led the manufacturers of exhaust systems to use ferritic stainless steels in place of traditional austenitic steels. Ferritic steels do not contain nickel, and consequently, they are not subject to the problems related to price volatility, but obviously contain chrome, an essential

element which ensures their corrosion resistance properties. Among the alternative ferritic steels available in the market, grade 441 is a material in a position to guarantee high level performance, both in terms of corrosion resistance and in terms of mechanical characteristics, and represents one of the most effective replacements of EN 1.4301 (AISI 304) stainless steel in the automotive industry. Lately, the company started a project aimed at completely replacing AISI 304 with ferritic 441 grade stainless steel, which could be successfully completed in a 6-month time span, and provided for a number of tests, which confirmed the perfect suitability of this new ferritic grade to the production of exhaust systems.

Manufacturing company: Solfer Srl – Via della Innovazione Tecnologica 4 – I-06019 Pierantonio PG, phone +39 075 942951, fax +39 075 9414222, info@solfer.it, www.solfer.it

Stainless steel produced by: Acciai Speciali Terni S.p.A. – Viale B. Brin – I-05100 Terni TR, 218, phone +39 0744 490282, fax +39 0744 490907, marketing.ast@acciaiterni.it, www acciaiterni.it

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LAMIERA AND BLECH ITALY, MAY 14÷17, 2014, BOLOGNA

(Lamiera e Blech Italy 14÷17 maggio, Bologna)

The traditional exhibition “Lamiera” will be held in Bologna on May 14-17, 2014, in conjunction with the event “Blech Italy”. Centro Inox will actively take part in both events with a set of reports and its own stand. **Stay informed:** www.centroinox.it – www.lamiera.net

9TH ASIAN STAINLESS STEEL CONFERENCE, JUNE 4÷5, 2014, HONG KONG

(9th Asian Stainless Steel Conference 4÷5 giugno 2014, Hong Kong)

The “9th Asian Stainless Steel Conference” will be held in Hong Kong on June 4-5, 2014. The event is organized by Metal Bulletin Events and SMR – Steel & Metals Market Research.

For additional information: www.metalbulletin.com/Events

APCE ASSOCIAZIONE PER LA PROTEZIONE DALLE CORROSIONI ELETTROLITICHE

(APCE - Associazione per la Protezione dalle Corrosioni Elettrolitiche)

We wish to communicate the next events organized by APCE.

For additional information: APCE, phone +39 049 8209111, info@apce.it, www.apce.it

PHOTOGRAPHIC EXHIBITION “LA TERNI IN POSA” (Mostra fotografica “La Terni in posa”)

The exhibition “La Terni in posa” - *Immagini dall'Archivio storico della Società, 1907-1965* (“Terni strikes a pose” *Pictures from the Historical Archives of the Company, 1907-1965*), was held at Palazzo “Montani Leoni” in Terni from October 26, 2013 to January 6, 2014. This photographic exhibition was organized by Fondazione Cassa di Risparmio di Terni e Narni and Acciai Speciali Terni. A visit to the plants of the steel mill based in Terni will be organized by ISSF (International Stainless Steel Forum) on the occasion of the event ISSF – 18 that will be held in Rome on May 12-16, 2014.

CD: Records of the Conference “La saldatura degli acciai inossidabili: esperienze e novità” (Stainless Steel Welding: Experiences and New Developments)

(CD memorie “La saldatura degli acciai inossidabili: esperienze e novità”)

A CD containing the records of the reports made during the conference held in Milan on November 27, 2013 is now available. The conference was organized by Istituto Italiano della Saldatura, Genoa, and Centro Inox, Milan.

To receive additional information and buy the CD, please contact: CENTRO INOX SERVIZI Srl, phone +39 02 86450559 – 02 86450569

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STAINLESS STEELS HOT NEWS ON: REGULATIONS – LAWS – DIRECTIVES -CERTIFICATIONS

c/o UNI – via Sannio 2 - Milano – May 29, 2014

(Ultime novità su: normative – legislazioni – direttive- certificazioni - c/o UNI – via Sannio 2 - Milano – 29 maggio 2014)

Schedule. Registration and Presentation of the Seminar: F. Capelli – CENTRO INOX – G. Corbella – UNSIDER.

Product Lists and Norms - Stainless Steels List – Long Products – Status Report on EN 10088-1 / 3 Standard Revision. Notes on EN 10088-5 (M. Cusolito – RODACCIAI, Bosisio Parini LC). **Flat Products – Status Report on EN 10088-2 Standard Revision. Notes on EN 10088-4** (L. Appolloni – ACCIAI SPECIALI TERNI, Terni TR). **Welded Tubes – Status Report on EN 10217-7. Standard Revision. Notes on EN 10357** (S. Toscano – MARCEGAGLIA, Stab. di Forlì, FO). **Coffee break. prEN Standard Projects (ex.: “Rebar”, “Structural Tube”, etc.) and Further Revisions in Progress** (L. Bottazzi – UNSIDER, Milano MI). **Directives on Structural Applications. Construction Technical Specifications. CE Marking** (W. Salvatore – Dip. Ingegneria Civile e Industriale, UNIVERSITA’ DEGLI STUDI DI PISA, PI). **Discussions / Lunch break. Afternoon: Food-related Laws and Regulations – Ministerial Decree Nov. 11, 2013 n° 140 – Latest Update of Ministerial Decree March 21, 1973** (P. Viganò – CENTRO INOX, Milano MI). **Drinking Water Laws and Regulations – Ministerial Decree 174/2004 – Initiative of the 4MS (Four EU Member States)** (L. Lucentini – E. Veschetti – ISTITUTO SUPERIORE DI SANITA’, Roma RM). **The Importance of Certification. Inspection and Check Documents Requirements (EN 10204)** (D. Agalbatto – B. Stefanoni – IGQ Istituto Italiano di Garanzia della Qualità, Milano MI). **Discussions. End of the meeting.**

Further information and applications: Centro Inox, phone +39 02 86450559 – 02 86450569, Fax +39 02 860986, eventi@centroinox.it, www.centroinox.it

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“DRAGON”: THE LEGEND COMES TO LIFE (“Dragon”: la leggenda prende vita)

In the handwork shown in this article, stainless steel becomes a key element. Its dual function as a structural part and an aesthetic element, gives this sculpture of light a strong and impressive visual impact.

The chosen figure represents the mythical Chinese Dragon. The stainless steel structure is covered with Murano glass scales and LED strips arranged all along the contour of the sculpture.

The shape of the dragon is outlined on a super-mirror finish, 1.5 mm thick, EN 1.4301 (AISI 304) stainless steel sheet. This wall lamp is 4 m. high, and 2,5 m wide. When the LED strips light up, as their colours are continuously changing, the Dragon seems to take on a life of its own, aided by the high reflecting capacity of the steel.

Designer/Manufacturer: Lamp di Volpato Patrizia & C. snc – Via del Trifoglio 15 – I-30175 Marghera VE, phone +39 041 932857, fax +39 041 923006, info@patriziavolpato.it, www.patriziavolpato.it

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