

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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THE PARK OF CASTEL TRAUTTMANSORFF: STAINLESS STEEL FOR MERANO BOTANICAL GARDENS

(I giardini di Castel Trauttmansdorff: l'acciaio inossidabile per l'Orto Botanico di Merano)

The Botanical Gardens of Merano, an elegant resort town in Northern Italy, are located in the grounds of Castel Trauttmansdorff (built in the thirteenth century and later modified and renewed). The gardens cover about 12 hectares, divided by theme, and attract about 275,000 visitors a year. In such a setting, nature is of course the star of the show, and furnishings merely serve to make the place safe and comfortable, without stealing the limelight. Stainless steel is perfect for constructing less invasive structures offering the same performance as other materials but requiring less maintenance.

The park's railings, benches, wastebaskets and pergolas were all built out of stainless steel – about 12 tons of it. The furnishings required wires, round welded pipes, and solid and perforated sheets.

A polished surface finish helps improve resistance to corrosion caused by the elements and "hides" the forms of items which reflect the surrounding environment so as to merge with it completely. The furnishings were made of EN 1.4301 (AISI 304) stainless steel, replaced by EN 1.4401 (AISI 316) stainless steel in structures located near pools and waterfalls because of the material's greater resistance to corrosion.

Fig. 1 – Handrail made of EN 1.4301 (AISI 304)

Fig. 2a and 2b – Railings near waterways were made of EN 1.4401 (AISI 316)

Fig. 3 – Pergolas were fashioned in the same style as the handrails

Fig. 4a and 4b – Benches were made of perforated EN 1.4401 (AISI 316) sheeting

Fig. 5 – Wastebaskets were made of EN 1.4401 (AISI 316)

(From the paper "Tra tradizione e modernità. L'acciaio inossidabile nell'Orto Botanico di Merano" [Between tradition and modernity. Stainless steel in the Merano Botanical Gardens] presented by M. Ebner, designer and supervisor of works at Merano Botanical Gardens, at the convention "The stainless city: stainless steel, street furnishings and communications", organised by Stainless Products in Bologna on February 4, 2004 at the "Europolis: Technologies for the City" trade fair)

Design:

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Commission:

Provincia Autonoma di Bolzano

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STAINLESS STEEL AND DRINKING WATER: A NEW DECREE CONFIRMS THE MARRIAGE

(Inox e acqua potabile: un connubio sancito da un nuovo Decreto)

The July 17 edition of the Official Gazette of the Republic of Italy published the April 6, 2004 Decree n. 174, "Regulations concerning materials and objects to be used in permanent plants for the collection, treatment, conveyance and distribution of water for human consumption".

Attachment I to art. 5 of the regulations lists metallic materials suitable for this purpose; paragraph 1.4, Stainless steel, states that all stainless steels identified in the 21.3.1973 Ministerial Decree as suitable for contact with foodstuffs (with any restrictions stated therein) may also be used in production of

items destined to be in contact with drinking water.

This very important document was prepared by a technical commission under the leadership of the Ministry of Health and the Upper Health Institute; Centro Inox has participated actively in the work since 1998.

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FROM OUR MEMBERS

THE LAUNCH OF THE NICKEL INSTITUTE

(Dalle Associate. E' nato Nickel Institute)

On 1st March this year, President Dr Ivor Kirman announced the launch of the Nickel Institute. The Institute, whose members represent over 70% of current world production, will generate and communicate knowledge required to support safe and sustainable production, use and reuse of nickel.

The Nickel Institute is committed to responding effectively to the growing requests for nickel-related information by offering research-based, cutting-edge science and technical information.

The Institute provides a single membership and management structure for activities previously undertaken by the Nickel Development Institute (NiDI) and the Nickel Producers Environmental Research Association (NiPERA) which will continue as a well-respected provider of peer-reviewed, published information on the human health and environmental science of nickel.

The Institute will develop partnerships with organisations representing the interests of the nickel-producing industry's downstream customers and other parts of the nickel life cycle. The Institute will also collaborate with regional and local metals industry organisations.

Nickel plays an essential enabling role in many areas of rapidly changing technology such as transport, energy, architecture, telecommunications, food processing, water treatment, environmental protection and healthcare. In many cases, that role is accomplished via nickel-containing stainless steels, a role that has been promoted and reinforced via the long established partnership between the nickel industry association and Centro Inox (educational seminars and courses, organised and promoted by Centro Inox and supported by the Nickel Institute).

Membership of the Nickel Institute is open to all producers of nickel. Current members are: Anglo Platinum, BHP Billiton, Codemin/Anglo Base Metals, Empress Nickel, Eramet, Falconbridge Ltd., Inco Limited, Inco TNC, Nippon Yakin Kogyo, OM Group, P.T. International Nickel, Sherritt International, Sumitomo Metal Mining, Umicore, and WMC Resources.

The full range of services provided by the Nickel Institute can be accessed via the Institute's web site, www.nickelinstitute.org, or via the regional offices whose contact details are listed on page 7 and which can also be found on the web site.

The Nickel Institute's representative in Italy is:

Dott. Ing. Luciano Fassina, Consulente Nickel Institute - Via Lambro 4 - I-20129 Milano - phone/fax +39 02 2953 1073, luciano.fassina@libero.it

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HELPFUL ADVICE FOR CLEANING AND MAINTENANCE OF STAINLESS STEEL

(Consigli pratici per la pulizia e la manutenzione dell'acciaio inox)

General information on cleaning: destined, for example, for maintenance of components exposed to the atmosphere.

To get rid of light dirt (dust, smog deposits, etc.), it is best to use a damp cloth (such as microfibre). Use a nylon sponge (such as Scotch Brite) to get rid of stubborn dirt, but do not use a pad made of metal fibres other than stainless steel (such as ordinary steel pads, which not only scratch but contaminate surfaces). Satin finished surfaces should be cleaned with motions in the same direction as the grain of their surface finish. It is advisable to dry stainless steel after cleaning.

If you don't want any lime scale, you will have to use de-ionised water.

Fig. 1 – Never use hydrochloric acid or any solution containing halides, even in low concentrations. If a stainless steel surface accidentally comes into contact with such a substance or with sodium hypochlorite or bleach, wash the surface immediately with plenty of water and then dry it.

As for how frequently to clean, in non-aggressive environments routine cleaning every 6 to 12 months should be sufficient, while in industrial, marine, and other difficult environments, it will be necessary to clean every 3-6 months.

Decontamination: materials may deposit on stainless steel surfaces during transportation, fabrication, assembly or just ordinary use and service of stainless steel components. Depending on their nature, these deposits may be inert or they may cause damage to the steel, at least at an aesthetic level.

Iron contamination

Fig. 2 – Make sure that tiny particles of iron are not deposited on the material while it is in storage.

Fig. 3 – Iron particles can also come from tools which have been used on ordinary steel.

Fig. 4 – Pay attention to "sparking" from welding of carbon steel.

Fig. 5 – Be careful to sandblast with an appropriate grain which does not contain iron particles.

Iron particles should be removed as soon as possible; at first they can be simply washed away, using a nylon sponge if necessary. But if the problem is more serious, you may need a passivating paste containing nitric or phosphoric acid, which may be applied locally to "dissolve" oxidised iron powder and repassivate the stainless steel. If the surface already bears signs of localised pitting, you must first treat it with a pickling paste and then with a passivating product. If you need to treat large surfaces you may use a spray system. One effective way of preventing contamination is covering with peel-off protective film, to be removed at the end of the production cycle. But it is important to remember that if film is left exposed to UV rays for a long time it may be difficult to remove, as glue deposits may form and chlorinated substances may be conveyed if the film has not been stabilised.

In addition to ferrous contamination, stainless steel may be contaminated by other metals, such as aluminium, copper, etc., which may be eliminated in the same ways as traces of iron. Also note that there are ways of quickly determining the passivity of stainless steel.

Cement, mortar, chalk (Fig. 6): Traces of these substances may be removed with water to which a very small percentage of phosphoric acid has been added. It is important to rinse with water afterwards and dry.

Paint or graffiti (Fig. 7): Remove with special products, which are normally alkalis, or paint remover solvents and then rinse thoroughly with hot water (60° C). Experimental tests have found that stainless steel surfaces subjected to this type of treatment will not change in appearance, which can happen if the surface is treated with protective coatings (such as paints, etc.). And no corrosion occurs, even later on. These results are particularly significant for fighting graffiti on railway cars, street furnishings, etc.. Mechanical removal with scrapers or knives is not recommended, as it will mark the surface.

Oils and greases (Fig. 8): May be removed using alcohol-based products and, in some cases, with acetone, using a soft cloth and rinsing with water afterwards.

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IDENTIFYING STAINLESS STEELS AND THEIR PASSIVE STATE

(Riconoscere gli acciai inossidabili e il loro stato passivo)

Figure 1 illustrates the functioning of the molybdenum reagent (celmo) used to distinguish EN 1.4301 (AISI 304) from EN 1.4401 (AISI 316). The test consists in dropping a drop of reagent on the metal to identify the presence of molybdenum, which will cause the liquid to change colour, a test which can even be performed on vertical surfaces.

Figure 2 illustrates the result obtained with a kit which achieves the same purpose by an electro-chemical method.



Two solutions and an ordinary 9 V battery are used to determine the presence of molybdenum. This instrument is quicker than the method described above and is also based on a change in the colour of the solution.

Finally, there is also a test for checking the passive state of stainless steel surfaces that may have been soiled or contaminated. Passivation is also determined on the basis of the intensity of the colour which forms on the surface.

Production:

NDT Italiana - Via del Lavoro 28 - I-20049 Concorezzo MI - phone +39 039 647590, fax +39 039 647799, info@ndt.it, www.ndt.it

SANDWICH PANELS FOR THERMAL AND NOISE INSULATION OF WALLS

(Pannelli sandwich per l'isolamento termico e acustico delle pareti)

Insulated, self-supporting monolithic panels are composed of two metal supports, which may, on request, be made of EN 1.4301 (AISI 304) stainless steel, with an insulating layer of bio-soluble rock wool or sintered expanded polystyrene between them. All components are fully recyclable.

These panels are used in safety compartments, fire walls, escape routes, elevator shafts, fire stairways and protected premises of all kinds.

The "Leonardo" version features a special connecting system and a special invisible anchoring screw to give the outside of the panel a uniform appearance.

Dimensions include widths of 1,000 to 1,200 mm, thicknesses of 40 to 240 mm and lengths of up to 19 metres (on request).

In the figures: the exterior of the company's offices and, in the box, the "Zeroklass Wall" panel, which features stability, impermeability to gases and thermal insulation (REI 30, 60 and 120 certificates for the corresponding thicknesses) and a reaction to fire classified as MO, constituting a safety factor in the event of fire.

Production:

RW Panel Spa - Via Industria 1 - I-30029 San Stino di Livinza VE - phone +39 0421 312083, fax +39 0421 312084, info@rwpanel.com, www.rwpanel.com

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STAINLESS STEEL WALKWAYS: LEISURE AND UTILITY COMBINED

(Passerelle inox: tempo libero e utilità in un'unica soluzione)

A cycling track links the towns of Prato and Vaiano, in Tuscany. The 2.5 m wide, 9 km long track winds along beside the pipes of the aqueduct constructed at the same time. The principal crossings take the form of three bridges with reticular stainless steel trusses, with dual deck, carrying the aqueduct on the lower level and the cycling track above it.

The first bridge has just been built, with a span of 18 m. The other bridges will have a span of 26 m.

The structure already built weighs nearly 18 t. It was constructed in the factory and then transferred to the site.

The material used is EN 1.4401 (AISI 316) in the form of round tubes for the main structure, L-shapes, plates and fretted sheeting for the deck.

The joints between sections are obtained with fillet welds or with the aid of stainless steel plates. The cycle path level is made of fretted stainless steel sheeting supported by a reinforced concrete slab, completed with a coloured bituminous layer.

The aqueduct pipes along the path are made of coated carbon steel and measure 600 mm in diameter. But at the bridges a stainless steel pipe of the same size is used, to prevent galvanic corrosion generated by contact with the stainless steel structures of the bridge. An elastic joint prevents such contamination between the two different materials used in the pipes, and compensates differences in thermal dilation.

Design and works management:

Ing. Gianpiero Porquier, Studio Tecnico - Via del Ghirlandaio 9 - I-50100 Prato PO - phone and fax +39 0574 571163, studioporquier@porquier.191.it

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ATI Eliseo Ing. Renato Srl - P.C.M. & C. Snc - Contrada Calvario 52 - I-86100 Campobasso CB - phone +39 0874 90799, fax +39 0874 90540

Commission:

Publiacqua Spa - Via Villamagna 90/c - I-50126 Firenze - phone +39 055 6862001, fax +39 055 6862495.

MODULAR STAINLESS STEEL PROTECTION FOR SWIMMING POOLS: DOUBLE SECURITY

(Protezioni modulari inox per piscine: la doppia sicurezza)

The "Swimming pool kit" is a new system featuring modular

protective panels (barriers) and access control (pedestrian gates), applicable to sports facilities as a security system and to mark the boundaries of pool areas. The size of the modules prevents access to the swimming pool area by unaccompanied children.

The system, composed of tubes, pedestals and accessories of EN 1.4301 (AISI 304) or EN 1.4401 (AISI 316) stainless steel, is produced by three-dimensional laser work permitting cuts and holes to be made in exactly the right shape, with no dangerous burr.

No welding is required and the panels can be connected to the supporting uprights anchored to the ground in just a few simple operations. The result is a modular structure capable of guaranteeing adaptability, stability and load-bearing capacity.

A second type of security is essential to the system: both the material it is made of (stainless steel, as it requires no coating or painting subject to deterioration with time, will not form cutting burr or rust) and the construction method employed (with rounded-off components, rounded edges, vanishing screws and no sharp corners) guarantee perfect safety.

Production:

Expo Inox Srl - Via Don Motti 36 - I-27027 Gropello Cairoli PV - phone +39 0382 814343, fax +39 0382 817223, expoinox@expoinox.com, www.expoinox.com

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ENVIRONMENTALLY FRIENDLY STAINLESS STEEL

(L'acciaio inossidabile per il rispetto dell'ambiente)

The ecological qualities of stainless steel (such as its recyclability and the fact that it needs no painting) are underlined by its use in the paper industry for de-inking systems used on recycled scrap paper.

The de-inking process can be performed using particularly ecological technologies based solely on physical and mechanical processes. It is possible to obtain pulp for production of recycled paper with characteristics analogous to those of pure cellulose using a series of centrifuges and bubbling through to separate the paper fibres from coatings, inks and other materials applied to them.

No bleaching is required, and a closed water cycle (water is treated and reused) ensures that these production systems are even more ecological.

In these plants, use of EN 1.4301 (AISI 304) and EN 1.4401 (AISI 316) stainless steels permits reduced maintenance, especially on valves. In fact, in a closed cycle the salinity of the water increases over time, comporting a risk of corrosion on inadequately protected materials, which can be eliminated with use of quality materials such as stainless steel. This is why stainless steel permits more economical operation of plants, guaranteeing savings on maintenance and shutdowns, with a lower life cycle cost of the plant.

A de-inking plant uses an average of about 6,800 metres of stainless steel electro-welded pipes of different diameters and thicknesses, as well as about a thousand curves and the same number of binders. About 8,500 metres of electro-welded pipe go into the piping on a paper machine with a productive capacity of 6 t/h, plus over 1,300 curves.

Realization:

Di Marco I. & C. Sas - Via Pesciatina 276/278 - I-55100 Lunata LU - phone +39 0583 429400, fax +39 0583 935905, info@dimarcos.com, www.dimarcos.com

Piping:

Ilta Inox - S.S. 45 bis km 13 - I-26010 Robecco d'Oglio CR - phone +39 0372 9801, fax +39 0372 921538, sales.ilta@arvedi.it, www.arvedi.it/ilta

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Meeting

STRUCTURAL USES OF STAINLESS STEELS (Impieghi strutturali degli acciai inossidabili)

Florence, Thursday, October 28 2004, Party room, Palazzo Cerretani

Home of the Italian Board of Railway Engineers

Piazza Unità d'Italia, 1 - 8.30 - 13.00

Stainless steels are assuming an increasingly prominent place in both civil and industrial constructions and for the consolidation of bearing structures of monumental buildings. This is due, above all, to the traditionally known guarantees of durability and corrosion resistance and to other specific properties of these materials that are becoming more and more highly appreciated by design engineers, architects and technicians. Particularly their high mechanical and fire resistance properties, and the absence of maintenance over time give great advantages in structural constructions. The aim of the meeting is to improve the knowledge of stainless steel and its qualities without neglecting examples of applications.

All participants will be given a copy of the notes on the meeting and technical documentation from Centro Inox and its Associates. **The meeting language is Italian.**

Programme

8.30 Registration

Welcome and introduction to the session

Eng. Angelo Pezzati, Italian Board of Railway Engineers
Prof. Giancarlo Martarelli, Chairman of the Order of Engineers of the Province of Florence

Prof. Gennaro Tampone, Chairman of the Board of Engineers of Tuscany, Florence

Eng. Fausto Capelli, Director of Centro Inox, Milan

Chairman and coordinator:

Prof. Franco Angotti, Dean of the Faculty of Engineering, University of Florence

Stainless steels in construction: grades, properties and applicable examples.

Eng. Vittorio Boneschi, Centro Inox, Milan

Eng. Giampiero Porquier, Studio Tecnico Porquier, Prato

Stainless steel in reinforced concrete structures. Laws and regulations governing design

Prof. Alberto Franchi, Professor of Construction Science, Structural Engineering Department, Milan Polytechnic

Stainless steels' reaction to corrosion

Prof. Pietro Pedferri - Professor of Corrosion and Protection of Materials "Giulio Natta" Department of Chemistry, Chemical Engineering and Materials - Milan Polytechnic

Use of stainless steel in making existing buildings resistant to earthquakes

Prof. Natale Gucci, Professor of Construction Technique, Department of Civil Engineering, Faculty of Engineering, University of Pisa

Use of stainless steels in restoration and consolidation of monumental buildings

Prof. Gennaro Tampone, Professor of Architectural Restoration, Architectural Heritage Restoration and Conservation Department, University of Florence

13.00 Debate

Participation in the event is free of charge.

Please register by fax or e-mail within October 22, 2004.

Fax +39 02 860986 - e-mail: eventi@centroinox.it

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HOME RADIATORS OF STAINLESS STEEL: ART OR DESIGN?

(Radiatori d'arredo in acciaio inox: tra arte e design)

The company first introduced stainless steel radiators in 1992, ahead of its time.

The productive know-how acquired making boilers, tanks, flues and food containers, all rigorously out of stainless steel, permitted the company to come up with the first radiator combining elegant form with excellent mechanical properties and strength.

The company now produces two full lines of radiators suitable for rooms of all kinds, from the bathroom to the kitchen and the most elegant parlour: the Inox® Series (fig. 1) and the Inox® Collection (fig. 2 and 3), offering a total of over 18 models polished and satin finished.

It was only inevitable that they should attract the involvement of the world of design, a component ever more in demand in products of all kinds. Some of the models in the Inox® Series and the Inox® Collection have won prestigious international awards. Foglia® won the "I.D. Magazine Annual Design Review" prize in New York in 2001, TamTam was selected for participation in "Italian Design on Tour" 2004/2005 and Stradivari was selected to appear in the cultural event "Casanova Room n. 3" to be held in Verona during the "Abitare il Tempo" fair (September 2004).

Production:

Cordivari Srl - Via Padova, Z.A. - I-64020 Morro d'Oro TE - phone +39 085 80401, fax +39 085 8041418, info@cordivari.it, www.cordivari.it

The manufacturer of these radiators has purchased the "Inox Trademark" (registered in Italy and abroad) identifying products made of stainless steel and permitting users to recognise them. Request an authorisation form or more information from Centro Inox, Piazza Velasca 10, I-20122 Milan, phone +39 02 86450559, fax +39 02 860986, info@centroinox.it.

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