

INOSSIDABILE

Edited and published by Centro Inox Servizi S.r.l.

Summary

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SCRUBBERS FOR THE MARINE SECTOR: ENVIRONMENTALLY FRIENDLY

(Scrubber per il settore navale: nel rispetto delle normative ambientali)

As part of the various activities aimed at limiting polluting emissions, the shipping industry has also had to adapt its on-board exhaust and filtering systems. A valuable contribution comes from the "scrubbers", towers that wash the fumes, thus allowing sulphur emissions to be reduced to a level of up to 0.5%.

The scrubbers are in constant contact with very aggressive corrosive agents, also at high temperatures. So, the companies involved in their construction have turned to high-performance stainless steels, in particular duplex, superduplex and superaustenitic stainless steels, when selecting the alloys to be used.

This article presents the experience of an Italian company involved in the production of scrubbers. In their products, the external shell is made almost entirely of EN 1.4547 (UNS S31254) superustenitic stainless steel, while some internal components are made of EN 1.4410 (type 2507) superduplex stainless steel. For external parts such as flanges, fittings, etc., the "classic" EN 1.4301 (AISI 304) and EN 1.4401 (AISI 316) are used, also in their low carbon versions.

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DRINKING WATER IN VALTELLINA (Acqua potabile in Valtellina)

Companies involved in the management of integrated water services are increasingly turning to stainless steel for the treatment and distribution of drinking water. The reasons for this are linked not only to the durability performance of the material, but also to evaluations linked to the cost aspect of the various components considered "over time", i.e., during the useful life of the system.

The article illustrates some applications in

Valtellina, in the province of Sondrio. These are manoeuvring chambers, which regulate the water in a basin, in which there is a large use of EN 1.4401 (AISI 316) stainless steel welded tubes, having an average thickness of 2 mm and diameters varying from DN 100 to DN 150, all PN 16.

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FROM OUR MEMBERS

PADANA TUBI: CONTINUED GROWTH IN WELDED TUBE MANUFACTURE (PADANA TUBI: crescita continua nella produzione dei tubi saldati)

Padana Tubi e Profilati Acciaio S.p.A. was founded in 1970 in Guastalla by the Alfieri family with the aim of producing carbon steel welded tubes for carpentry.

The growing success and affirmation on the market encouraged the commitment also in the production of stainless steel tubes, bringing Padana Tubi to be among the leaders at European level in these sectors. Currently, the entire activity is carried out by a staff of about 700 employees, on a total covered area of 450,000 m², for an output of about 800,000 tons of carbon steel and 150,000 tons of stainless steel.

Padana Tubi constantly has a large stock of raw materials and finished products, ensuring promptness and flexibility in responding to every customer request. Padana Tubi is constantly investing in technological renewal and range expansion.

In 50 years of activity, the company has always pursued the common good, also in a broad vision of ethics, responsibility, transparency, value creation and commitment to social initiatives.

The commercial and logistic services allow Padana Tubi to reach all European and non-European countries, with a consolidated and reliable presence at service centres and steel distributors.

Padana Tubi produces and sells tubes in the following types of stainless steel: EN 1.4301 (AISI 304) / EN 1.4307 (AISI 304L) / EN 1.4404 (AISI 316L) / EN 1.4571 (type 316Ti). The dimensions of the round tubes range from 6 mm to 323.9 mm

in diameter, the square tubes from 10x10 mm to 200x200 mm and the rectangles from 20x10 mm to 300x100 mm. Thicknesses range from 1 to 6 mm depending on the sections.

In addition to visual and dimensional checks, all tubes are checked in-line during production through the Eddy Current system. In addition, mechanical tests, chemical composition analyses and macrographic examinations using an optical microscope are carried out in the in-house laboratory.

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HIGH-ALLOY STAINLESS STEEL IN SEAWATER DESALINATION PROCESSES (Inox alto legati nei processi di dissalazione dell'acqua di mare)

Desalination processes - The desalination of seawater can be carried out using various methods: the most common ones exploit well-known natural phenomena such as evaporation or osmotic pressure of a saline solution.

The first method is carried out thermally by evaporating the water with subsequent condensation of the steam produced, which is practically free of salts. Desalination by distillation can be carried out using two different industrial processes: Multi Stage Flash (MSF) or Multi Effects Distillation (MED).

The second method uses the phenomenon of osmotic pressure of two solutions with different salt concentrations placed on either side of a semi-permeable septum.

Selection of materials - In both types of desalination, treated seawater requires special attention in the selection of materials to be used in the construction of the treatment plants, materials that will remain in contact with the seawater or saline solutions throughout the life of the plant. The two described techniques require different considerations, leading to the use of different grades of stainless steel and, above all, different quantities.

The main factors to be taken into account when selecting the materials to be used are: the fluid in contact with the system, the presence of oxygen or the dosage of chemicals, the

operating temperature and pressure, the part of the plant or the equipment under consideration and the need for structural and corrosion resistance. The article describes, for both desalination systems, which stainless steels are used, depending on the substance with which they are intended to come into contact.

Quantities of stainless steels used - The quantities of high-alloy stainless steels used in desalination plants depend mainly on two factors: type of plant (thermal/reverse osmosis) and plant capacity. Experience has shown that for a medium-sized thermal desalination plant producing about 1500 m³/h of distillate, 900-1000 tonnes of stainless steel are required. For reverse osmosis plants, the use of high-alloy stainless steel is limited to pumps, valves and tubes working at higher pressure. A much smaller quantity of steel is then required for these plants than for thermal desalinators, so that for a desalination plant producing 1500 m³/h of permeate, approximately 30-40 tonnes of the above materials are required.

We thank Fisia Italimpianti SpA for the information provided.

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STAINLESS STEEL TOOLS AND ACCESSORIES

(Utensili ed accessori inox)

The article presents a range of tools and accessories made of stainless steel, mainly intended for those areas where the hygienic value of the material making up the equipment must be enhanced.

Beta Utensili, which manufactures these products, has therefore chosen stainless steel, precisely because of its peculiar qualities of corrosion resistance and low bacterial retention, especially in washing and/or sanitising cycles. The article describes a series of tools in AISI 420 and accessories, such as a mobile drawer unit and an extendable basket, in EN 1.4301 (AISI 304) stainless steel.

Beta Utensili has adopted the "Inox Trademark" issued by Centro Inox Servizi Srl to "communicate" to the end user the type of material employed for this particular range of products.

Manufacturer: Beta Utensili SpA - I-20845 Sovico MB - Via Volta 18, phone: +39 039 20771, info@beta-tools.com, www.beta-tools.com/

Stainless steel trademark granted by: Centro Inox Servizi Srl, www.centroinox.it/it/marchio

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SKYSCRAPER IN ISTANBUL (Grattacielo a Istanbul)

In the business area of Istanbul, a skyscraper stands out as an important example of Italian architectural design.

Stainless steel was used extensively for both the external and internal parts of the building. The most significant applications concern, for the

external parts, the vertical shields for which EN 1.4401 (AISI 316) micro-perforated sheets were used and, on the south front, the metal curtains, connected with the inclined metal tubular structure, made of AISI 316.

On the inside, the ground floor staircase is noteworthy: it is completely suspended, connected at only two points by two shaped saddles that embrace the lower part of the tubular elements. For these load-bearing tubes (diameter of 210.3 mm), and also for the transverse rods of the parapet and for the handrails, AISI 316 was chosen.

Stainless steel is also used on details to complete the building, such as fencing, access gates, graphic applications and interior decorative elements.

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GNS (National Welding Days) 11 (GNS (Giornate nazionali di Saldatura) 11) Genoa - 2 ÷ 3 December 2021

The eleventh edition of the GNS, National Welding Days, organised by the Italian Institute of Welding, was held in Genoa on 2 and 3 December 2021.

In spite of the restrictions still in force for many companies in relation to the COVID policy, the attendance was really numerous.

After the opening plenary ceremony, there were 6 thematic workshops that constituted the core of the event: there were several reports concerning the world of stainless steels.

In the exhibition area, 38 Italian and foreign companies were present. Centro Inox, one of the supporters of the event, was present with a stand.

TRAINING COURSE: MOCA DISCIPLINE. STAINLESS STEEL AND REG. 2023/2006.

(CORSO DI FORMAZIONE: DISCIPLINA MOCA. Acciaio inossidabile e Reg 2023/2006.

Linee guida per la costruzione di un sistema di assicurazione e controllo della qualità)

7 ÷ 8 April 2022

Within the framework of the regulations on Food Contact Materials (FCMs, MOCA in Italian) and the relative sanctions framework, the fulfilments of the companies that manufacture or transform stainless steel for the FCMs sector are compulsory and the regulations concerning controls entail the application of heavy sanctions in case of non-compliance. Centro Inox produced in collaboration with IGQ a specific Guideline for the construction of a quality assurance and control system, as required by the Regulation (EC) 2023/2006.

The course, now in its third edition, has the aim of presenting and illustrating in detail the topics that define the framework of the minimum competences necessary for those who operate within the "MOCA supply chain".

The course, organised by Centro Inox and IGQ,

will be held entirely remotely and has a limited number of participants. The full programme and registration details are available on our website: www.centroinox.it

For further information and subscription:

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L'ACCIAIO INOX

(L'acciaio inox)

"L'Acciaio Inox" ("Stainless Steel") is now available, a practical compendium on stainless steels published by Centro Inox Servizi Srl and written by engineer Fausto Capelli.

The text, provides a complete basic overview of stainless steel.

This quick reference guide for the general user, is accompanied by a useful and updated table of correlation between the European and American designations of stainless steels with almost 100 different grades listed.

The 380-page book is available at a cover price of 39 Euros + postage.

For further information and for the purchase:

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FILING CABINETS FOR THE INDUSTRY (Armadi casellario per l'industria)

Filing cabinets are an extremely functional piece of furniture, important for companies and workplaces. The filing cabinets presented in this article are made from 0.8 mm thick sheets of EN 1.4307 (AISI 304L) austenitic stainless steel or EN 1.4509 (commercially known as "441") ferritic stainless steel.

In the first cutting phase, the sheets are mechanically processed by means of a punching machine and, then, bent. The main structure of the cabinet is obtained by means of punching operations. Finally, the hinges are assembled by punching, followed by the various doors and their locks.

As well as being completely fireproof, these filing cabinets comply with Italian FCMs (Food Contact Materials) requirements and they are therefore also suitable for companies in the food chain.

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