

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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EASY TO SAY... "HYGIENIC" (Si fa presto a dire... "igienico")

Editorial by Fausto Capelli

The materials constituting the "chain" to which a foodstuff is subjected during its processing must be able to maintain, over time, an adequate asepticity with regard to the substance processed, without polluting the foodstuff with elements that could be transferred from the machinery or containers used.

The high level of hygiene that characterises stainless steels has meant that in Italy these materials are fully in compliance with the Ministerial Decree 21/3/1973 and subsequent updates, which includes a "positive list" with all grades suitable for contact with foodstuffs. However, one often finds, even on the national market, products (especially imported ones) made from stainless steels that do not fall within the above-mentioned positive list.

In order to better protect the consumer, it would be advisable, in addition to the awareness-raising work that is already being done through the media covering the sector, to have greater control by the competent authorities along the entire food chain.

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LASER MICRO-DRILLING: USE IN THE FOOD SECTOR

(Microforatura laser: impiego nel campo alimentare)

Since the second half of the twentieth century, perforated sheets have started to replace wire meshes in many industrial uses. However, punching can have some limitations, especially in the case of punching thicker sheets or making holes with small diameters. In these cases, laser micro-drilling can certainly be a solution.

Laser drilled, or micro-drilled, products find applicability in various sectors: as far as the food sector is concerned, an example of filters, intended for fruit and vegetable juice extraction, made by laser micro-drilling is given in the article.

The filter consists of a laser micro-drilled stainless steel cylinder made of EN 1.4401 (AISI 316) austenitic stainless steel. The first processing step involves the laser micro-drilling of the

starting sheet (1 mm of thickness) and, using the same technique, cutting the final shape of the piece. Then, the piece is calendered and welded at the ends. Finally, pins and ferrules are applied in order to allow it to be fixed.

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FROM OUR MEMBERS

UGITECH PRESENTS UGI® 4521:

A FERRITIC STAINLESS STEEL SUPERIOR TO AUSTENITICS

(Ugitech presenta UGI® 4521: un acciaio ferritico superiore agli austenitici)

Ugitech launches the production of a new stainless steel grade, the UGI® 4521 (EN 1.4521 / AISI 444), a Mo-enriched ferritic stainless steel with a surface stabilised with Nb and Ti. Due to its characteristics, some recommended applications for this grade are: fluid management (also potable water distribution), agro-food industry, hot water containers, heat exchangers and heat transfer fluid management.

Corrosion resistance - UGI® 4521 exhibits good resistance to all types of corrosion due to its Cr and Mo content. It has very good resistance to pitting and crevice corrosion, equal to or better than classic austenitic grades. It is also resistant to intergranular corrosion. The material responds positively to temperatures up to 850 °C in air and up to 600 °C in the presence of water or sulphur compounds.

Hot and cold forming - UGI® 4521 demonstrates excellent formability as a result of its structure, which is ferritic at all temperatures. It also has excellent cold forming aptitude for bending, wire and bar drawing.

Machinability - UGI® 4521 is easier to machine than all other ferritic grades due to the presence of Mo and the precipitates of Nb and Ti: these precipitates facilitate chip fragmentation.

Weldability - Due to its Nb and Ti bi-stabilisation, UGI® 4521 is weldable by most processes. No heat treatment is necessary, either before or after welding.

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TREATMENT OF SPENT EMULSIONS (Trattamento di emulsioni esauste)

Introduction - In the treatment of spent emulsions, for the separation of the oil from the aqueous fraction, ultrafiltration is of considerable importance. As a matter of fact, through the use of appropriate membranes, it is possible to separate the water and emulsifying agents by breaking up the emulsion, without the addition of chemicals and with modest energy consumption.

Treatment process - The cycle can be divided into the following three process stages:

Pre-treatment - Before being sent to the ultrafiltration modules, the oil emulsion is pre-treated in order to remove the coarsest oil and dirt particles to prevent rapid membrane pollution.

Ultrafiltration - During this stage, that is the most important one, separation into the two main streams takes place: the permeate and the concentrate. Ultrafiltration membranes are installed in special vessels for easy maintenance.

Membrane flushing - During operation, membranes tend to become dirty. Plants must therefore be equipped with flushing circuits for regenerating the membranes.

Materials - Cleaning solutions with varying degrees of aggressiveness may be required for membrane washing, depending on the type of cleaning to be carried out. It is therefore a good rule to use stainless steel for all parts in contact with the recirculating fluid.

Generally, the choice falls on EN 1.4301 (AISI 304) for piping and tanks, and on EN 1.4404 (AISI 316L) for parts more subject to wear such as pumping units and valves.

We thank Condoroil Chemical Srl for the material provided.

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WITH STAINLESS STEEL, NEW POSSIBILITIES FOR FILLED PASTA PRODUCTION

(Con l'inox, nuove possibilità per la produzione di pasta ripiena)

In the field of fresh filled pasta production,



it is not always easy to recreate on a large scale the recipes and production methods that can be adopted “on a small scale”. This is not the view of a company from Genoa, which has been designing and building solutions for pasta production and processing for almost forty years.

The “RAV” moulding machines, presented in the article, which feature a structure, body and calibrating rollers, in EN 1.4301 (AISI 304) stainless steel, respond to the new needs of fresh pasta producers: overcoming the limitations of traditional moulding machines, with their equipment they offer pasta makers the possibility of designing and using innovative filling types and working with pasta sheets of any thickness.

In this respect, stainless steel is an ideal partner: its hygienic characteristics allow a safe production in the food (and other) sectors.

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ENVIRONMENTALLY FRIENDLY FILTERS FOR THE AUTOMOTIVE SECTOR

(Filtri “amici” dell’ambiente per il settore automotive)

In the varied world of the automotive industry, an air filter with unique characteristics is finding more and more space, presenting itself as the first and only one built entirely of metal, with the filter element made of stainless steel fabric and micro-fabric. The technical configuration of this delicate component provides some interesting advantages for the end user: increased engine output and improved combustion.

Thanks to its “intelligent” EN 1.4301 (AISI 304) stainless steel core, this filter offers a high degree of resistance to corrosive agents, thermal loads or dangerous flashbacks, even under the most severe operating conditions; it does not deteriorate and requires no maintenance, guaranteeing its efficiency unchanged over time.

Manufacturer: Colombo Angelo snc - I-22045 Lambrugo CO - Via Statale 6, phone: +39 031 607309, info@colomboangelo.it, www.colomboangelo.it

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A SPECIAL CATERING IN THE HEART OF THE “QUEEN”

(Nel cuore della “Regina” un catering speciale)

The article describes the use of EN 1.4301 (AISI 304) and EN 1.4401 (AISI 316) stainless steels during the “refitting” of the catering area on the cruise ship Queen Victoria (Cunard). Stainless steel was used not only for its well-known characteristics of durability and robustness, but also to be able to adequately meet the American “USPHS” health regulations, which

impose conditions mainly related to the concept of hygiene that must be absolutely guaranteed over time. The article gives an overview of applications of these materials (refrigerated tables with tanks, refrigerated cabinets, shelves, bar counters, etc.)

With regard to the processing technologies used, starting with laser cutting of the starting plates, punching and subsequent cold plastic deformation operations were employed. For assembly operations, laser and TIG welding techniques were mainly used. The final surface appearance was obtained by mechanical finishing. Approximately 8,000 kg of AISI 304 and 2,000 kg of AISI 316 in the form of hot and cold-rolled sheets, tubes with different cross-sections, and bars were used for the project.

Realisation: Precetti Srl, part of De Wave Group - I-31028 Vazzola TV - Via Cal Longa 22, phone: +39 0438 444911, info@precetti.biz, www.precettisrl.it

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THE IMPORTANCE OF STAINLESS STEEL IN THE “HEART” OF OVENS (L’importanza dell’inox nel “cuore” dei forni)

A fundamental part of industrial heat treatment furnaces is the muffle, a metal structure whose main purpose is to contain the active atmosphere inside the furnace. The materials that make up its structure must be characterised by high performance in terms of high-temperature oxidation, corrosion resistance and mechanical performance at high temperatures.

The article reports the experience of a company specialising in the manufacture of furnace components and equipment, including the above-mentioned muffles. For the construction of these structures, EN 1.4845 (AISI 310S), EN 1.4841 (AISI 314), EN 1.4835 (UNS S30815) and AISI 330 (UNS N08330) stainless steels are commonly used.

The structural part of the muffle sees the presence of flat, long and tubular products, suitably machined and welded.

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LIVORNO: GREAT INTEREST FOR THE SEMINAR ON THE INTEGRATED DRINKING WATER CYCLE

(Livorno: grande interesse per il seminario sul ciclo integrato dell’acqua potabile)

On 24 November, another seminar on the use of stainless steel in the integrated drinking water cycle was held at ASA in the city of Livorno, with the same formula followed for the other similar meetings held recently by Centro Inox.

There was considerable interest in this event,

which was attended by around forty people, mainly from the technical sector, and the debate was very lively, especially with regard to applications in particular locations, such as the islands of the Tuscan archipelago.

PRESENTED THE VOLUME “L’ACCIAIO INOX “: WATCH THE VIDEO INTERVIEW

(Presentato il volume “L’Acciaio inox”: guarda la videointervista)

The volume “L’Acciaio Inox” (“Stainless Steel”) is now available, a practical compendium on stainless steels published by Centro Inox Servizi Srl and written by Eng. Fausto Capelli. The 380-page book is available at a cover price of 39 Euros + postage.

The video interview of the presentation of the volume is available on the Centro Inox’s website and on its social channels (LinkedIn and Facebook).

For further information and for the purchase:

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COOKING “BIG” WITH LOW CONSUMPTION? STAINLESS STEEL IS THE KEY WORD

(Cucinare “in grande” con bassi consumi? L’inox è la parola chiave)

In community kitchens, canteens and food industries, the large quantity of food to be prepared means that, inevitably, consumption, in terms of both energy and gas, is very high. It is no coincidence, therefore, that manufacturers of equipment for large kitchens have moved in this direction, offering solutions that could limit consumption.

The article reports an example of an automatic tilting braising pan, made entirely of austenitic stainless steel: the load-bearing frame, the lid, the self-supporting walkway, the trolley for collecting the cooked product and the panelling are in EN 1.4301 (AISI 304) stainless steel, while the cooking container is in EN 1.4401 (AISI 316). It is this last detail that allows considerable energy savings, thanks to the thermostatic temperature regulation, the complete insulation and the high thickness of the pan base.

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