

INOSSIDABILE

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Summary

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WHO SPENDS MORE, SPENDS LESS (Chi più spende meno spende)

Editorial by Fausto Capelli

We report in this editorial one of the many application examples in which the validity of the postulate “who spends more, spends less” has been demonstrated. Let us consider two pedestrian bridges in the city of Siena: the “Ruffolo” bridge (2006) and the “Pescaia” bridge (2003). The “Ruffolo” bridge was built using duplex stainless steel structural parts, without the use of protective paints, while the “Pescaia” bridge used, again for the structural parts, painted carbon steel. It was considered useful to compare these two infrastructure applications both in terms of LCC (Life Cycle Cost) and in terms of reduced thicknesses and, therefore, the total weight of the structure.

Let us start with this last consideration. For the “Ruffolo” bridge, if it had been made of carbon steel, the weight of the deck would have been 38 t, while the solution chosen using duplex stainless steel resulted in a weight of 28.5 t, with a consequent saving of approximately 25%. The same argument can also be extended to the spars, with a 50% weight reduction (11 tonnes).

Instead, let us focus on the first aspect, i.e. the durability of the two structures, by taking into consideration the planned maintenance costs for the two bridges, costs that are part of the LCC calculation along with, for example, the costs due to the resulting disruptions.

In the case of the “Pescaia” bridge, work was carried out in 2002/2003 for an amount of 523,700 €+VAT; the administration currently has a maintenance project, to restore the deteriorated metal structures, for a total amount of 110,000 €+VAT. In the case of the “Ruffolo” bridge, the amount of work carried out at the time was 704,732 €+VAT, but to date, there is no need for maintenance work.

The advantage of choosing stainless steel at the time, purely based on economic considerations, is therefore immediately apparent. If other implications are considered, the difference between the two choices becomes even clearer.

We would like to thank Seteco Ingegneria Srl of Genoa (Ruffolo bridge design studio) and the Municipality of Siena for the technical and economic data provided.

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FROM OUR MEMBERS SUSTAINABILITY AND RESEARCH, CSM TUBE EXPANDS BETWEEN AMERICA AND EUROPE (Sostenibilità e ricerca, CSM TUBE si espande tra America ed Europa)

CSM GROUP, a Veneto-based leader in the production of stainless steel tubes and industrial machinery, is reaping the benefits of years of investment and far-sighted vision. Therefore, CSM TUBE’s strong expansion abroad continues, with a consequent increase in turnover and employment.

The company has been committed for years to investing both in renewable energy production and in measuring its carbon footprint in order to enhance the environment, society and territory as defined by ESG parameters. Another of the company’s priorities is the enhancement of its Research and Development department.

CSM TUBE, a company of the group whose core business is the production of stainless steel tubes of small thickness and diameter, has internalised the principles of Industry 4.0 and the automation of processes in a lean perspective into its production cycle. Corollary to CSM TUBE’s technological footprint are the new smart production lines developed by the group’s subsidiary CSM MACHINERY.

With the achievement of European leadership, the focus is currently on consolidating the position and entering new markets, also with new products with a new site in Germany. But we also want to continue expansion on the American continent with two production plants in the USA and one in Brazil.

Customer focus is top priority, so much so that in recent years the CSM TRANSFORMING branch of the company has been opened, which specialises in ‘tailor-made’ services.

Today, the Group is based on five plants with a global surface area of over 40,000 m², exports to 74 countries and sells around 70 million metres of pipe per year.

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SUSTAINABILITY AND STAINLESS STEEL: THE WINNING COMBINATION (Sostenibilità e acciaio inossidabile: il binomio vincente)

Stainless steel is a raw material intrinsically linked to sustainability issues. However, the durability of this material alone is not enough to make stainless steel the perfect ally of sustainability. We have chosen an example of a transforming company that, with extremely advanced technologies, realizes products destined for the Ho.Re.Ca. sector. We will then highlight how careful and rational company management of some important aspects make the stainless steel supply chain a “green” value chain and allow the reduction of the environmental impact of the product.

Energy and emissions - Through the implementation of an Energy Management System (EMS), it is possible to continuously improve the organisation’s energy performance. Thanks to the application of the motto “energy efficiency first”, it is possible to achieve: the reduction of energy consumption and of CO₂ emissions, and savings from an economic point of view.

Water - The organisation’s and product’s water footprint can be reduced by optimising water consumption, e.g. through an in-house chemical/physical water treatment plant.

Machinery and equipment - Machinery and equipment play a major role in ensuring a sustainable production cycle, starting from the choice of requesting efficient solutions from suppliers from the point of view of reducing environmental impact, to the conscious use by operators of the tools themselves.

Maintenance - Carrying out proper preventive and predictive maintenance of machines and equipment means guaranteeing a longer life cycle of the same, a higher quality product and more efficient production as it leads to a reduction in downtime.

Disposal and recycling - In addition to the fact that stainless steel does not give rise to problems of accumulating large quantities of material in landfills, it is 100% easily recyclable and can be recycled countless times without losing its characteristics.

Innovation - Sustainability is increasingly reflected by the neologism of “Innovability”, i.e. the fusion of ‘innovation’ and ‘sustainability’. Sustainability, to be such, must be based on innovation, while innovation, to be truly so, must

be based on the principles of sustainability.

Social - Its non-hazardousness to people during processing, production, recycling and final disposal makes it a material that tends to be safe, with risks easily contained through the correct use of Personal Protective Equipment (PPE).

We thank Mori 2A Srl for the material provided.

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BIKE WITH A "FEATHER" FRAME ... BUT MADE OF STAINLESS STEEL!

(Bici con telaio "piuma" ... ma inox!)

A well-known and historic company has developed ultra-light series of stainless steel drawn tubes for the two-wheel sector.

These are tubes with exceptional mechanical characteristics, made of EN 1.4418 martensitic stainless steel. The starting material is supplied already cold-drawn and in the annealed state; this is then further drawn, machined by cold mechanical deformation and finally subjected to accurate finishing. Usually the outer diameter of the bicycle tubes is constant, while the thickness is variable, so as to guarantee maximum structural solidity when welding and maximum lightness at other points, thus gaining a lot in terms of overall weight.

Realization: Gruppo Srl - Div. Columbus and Cinelli - I-20090 Caleppio di Settala MI - Via G. Di Vittorio 21, phone: +39 02 952441, info@columbus1919.com, www.columbus1919.com / **Cold-drawn tubes supplied by:** Trafiltubi Srl - I-20090 Novegro di Segrate MI - Via A. Corelli 180, phone: +39 02 70200080, info@trafiltubi.com, www.trafiltubi.com

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HIGH RELIABILITY THANKS TO STAINLESS STEEL PUMPS

(Alta affidabilità grazie alle pompe in inox)

The offshore marine sector requires extremely reliable and safe pumping systems. In many cases, platforms are located in remote areas, under very heavy workloads and in often extreme conditions. The design phase, especially in the offshore sector, is therefore extremely important when it comes to choosing the materials with which the different equipment will be made.

For these specific applications, a major Italian company has presented a complete range of submersible pumps and horizontal multistage surface pumps made entirely of cast stainless steel.

The surface pumps are capable of delivering performance up to 100 bar pressure and are constructed from CF8M stainless steel castings (ASTM acronym for corrosion-resistant castings having an approximate correspondence to AISI 316 / EN 1.4401 wrought material). For extreme industrial applications, versions made entirely from duplex and superduplex stainless steel castings are also available.

Manufacturer: Caprari SpA - I-41123 Modena MO - Via Emilia Ovest 900, phone: +39 059 897611, www.caprari.com

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ADVANCED COURSE ON STAINLESS STEELS. METALLURGY-EXPERIENCES - APPLICATIONS. IV EDITION

(Corso avanzato sugli acciai inossidabili. Metallurgia - Esperienze - Applicazioni. IV EDIZIONE)

7 - 9 - 14 - 16 - 21 - 23 November 2023

Centro Inox organizes, in collaboration with AQM (Technical Services Center for Companies) and with the sponsorship of Federacciai, the Italian Institute of Welding and Politecnico di Milano, the fourth edition of the Advanced Course on Stainless Steel. The aim of this six-day course is to provide a detailed technical preparation on these materials. The topics covered, compared to the previous edition, have been updated and supplemented with innovative topics. The first and last day will be held in person at the AQM headquarters, while the other days will be run remotely. Practical application aspects will be given ample space, as well as theoretical ones, thanks to the connection with AQM laboratories.

Days and topics covered:

7 November 2023 - FROM METALLURGY TO PROPERTIES

9 November 2023 - TECHNICAL DELIVERY CONDITIONS: LONG, FLAT, WELDED TUBES - INSPECTION DOCUMENTS - REGULATORY REFERENCES

14 November 2023 - FINISHES AND TREATMENTS

16 November 2023 - WELDING AND JOININGS

21 November 2023 - CORROSION: CAUSES, TYPICAL MORPHOLOGIES, OPTIMAL SELECTION CRITERIA

23 November 2023 - SUSTAINABILITY AND INNOVATION/PRACTICAL APPLICATIONS IN THE AQM LABORATORY

Registration is online at the AQM website. The complete programme is available on Centro Inox website: www.centroinox.it

For further information and registration:

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AQM Srl - phone: +39 030 9291784

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INTERNATIONAL STAINLESS & SPECIAL STEEL CONFERENCE 2023 (International Stainless & Special Steel Conference 2023)

Zurich (Switzerland) - 12÷14 September 2023

The Circle Convention Center Zurich Airport (Switzerland), will host the International Stainless & Special Steel Conference 2023, organ-

ised by SMR EVENTS.

The global stainless and special steels industry will gather, from 12 to 14 September 2023, to discuss the current state of the global stainless and special steels industry and all relevant issues that will affect business in the near future.

For further information:

<https://www.smr-events.com/event-details/stainless-special-steel-conference-2023.html>

ACCADUEO 2023

(ACCADUEO 2023)

BolognaFiere, Bologna - 11÷13 October 2023

The 16th edition of ACCADUEO will take place at the exhibition centre of Bologna from 11 to 13 October 2023 (Hall 25/26). For three days, the capital of Emilia-Romagna will be transformed into a meeting and exchange square on the main issues related to ecological transition. Centro Inox will be a patron of the event and present with an exhibition space.

For further information:

www.accadueo.com

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THE SAFE STORAGE OF LIQUID FOODSTUFFS

(Lo stoccaggio sicuro delle sostanze alimentari liquide)

In the food industry, the storage of various liquid substances is also a key step: the materials with which the equipment is constructed must be such that it does not compromise the quality of the food. In this regard, we report in this article some achievements of a company in the Cremasque area. The choice of stainless steels generally falls on austenitic stainless steels, AISI 304L (EN 1.4307) or AISI 316L (EN 1.4404), depending on the substance, but also on alloys with a higher resistance to corrosion than the above-mentioned materials in the case of specific and heavier applications. The materials constituting the handrails and the portholes are similar to those chosen for the specific tank, while the gangways are always made of AISI 304L.

Realization: Farck Srl - I-26010 Pianengo CR - Via Roma 94, phone: +39 0373 74144, farck@farck.com, www.farck.com / **Stainless steel produced by:** Aperam Stainless Services & Solutions Italy Srl - Massalengo Division - I-26185 Massalengo LO - Loc. Priora 4, phone: +39 0371 49041, info.italy@aperam.com, www.aperam.com

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