INOSSIDABILE 180

June 2010 Quarterly



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

Summary

For more detailed information please contact directly the names indicated at the end of each notification

PAGE 3

LETTER TO PROFESSOR GABRIELE DI CAPRIO (Lettera al professor Gabriele Di Caprio) Dear Professor, dear Engineer...dear Gabriele, I was still wearing the aircraftman uniform when, during the

period of my national service, I had one of my first job interviews with you. In fact, immediately after my degree, Centro Inox was one of the contacts I had made for the purpose of evaluating job offers and opportunities.

After several interviews, I made the choice I had however already thought to myself.

As a matter of fact, since I had no working experience, I did not consider that job in itself and the opportunities it might offer me for the future. So, I did not choose the kind of activity I wouldYes, I chose you not only because you were the nicest inter-

....res, I chose you not only because you were the nicest inter-locutor I had ever met up to then, but also because you had been able, in our few meetings, to instil a blend of mixed-up sensa-tions in me, in which I was able to find reliability, exactness, concreteness and simplicity.

All what you told me during those first interviews, as well as conveying these sensations, was enlivened by your deep, fresh, and inexhaustible enthusiasm.

Since I was not able to make up my mind, I decided then to rely on my instinct, which steered my choice to the decision of beginning my professional activity with you. We have been working together continuously for almost thirty years... and the working together continuously for almost thirty years... and the sensations that guided me then were the right ones! The char-acteristics of your personality that had so deeply impressed me have always and steadily remained unchanged. Over time, I had also the opportunity to appreciate both your professionalism and your specific competence, your ability and willingness to convey your "knowledge", as well as your respectful conduct, your insight, your diplomatic behaviour, and all the gifts through which your were able to manage any circumerupe advence with which you were able to manage any circumstance, always with the deeply rooted politeness and elegance that characterized our behaviour.

your behaviou: There are so many, too many, circumstances that come into my Inere are so many, too many, circumstances that come into my mind or events I could tell, which would evidence, more than words, what I am writing, but I can neither list them all in this letter, nor would I be able to properly describe all the profes-sional and human nuances I keep deep in my mind and in my heart. I only want to tell you that your merit in making an asso-ciation like ours - which is recognized and held in high esteem both in Italy and abroad - continuously grow and develop is great, as great as the gratitude I wish to express for all what you have wanted and have been able to transmit me

Now, you have gone away forever, but I will always see you here with us, with your little moustache, and your beautiful and cheerful blue eyes smiling at life. I want to remind you as you were, and this is the memory of you that all those who work in Centro Inox, and I, will always keep. Good-bye, Professor

Fausto Capelli

COVER/PAGES 4/5

CHOCOLATE: THE SECRET INGREDIENT IS STAIN-LESS STEEL

(Il cioccolato. L'ingrediente segreto è l'inox) Chocolate is a food obtained from the beans of the cocoa tree, or

Theobroma Cacao. This tree has age-old origins, and according to specific botanic studies, it presumably grew already more than 6,000 years ago in the basin of the Amazon and Orinoco rivers. The seeds (or beans) of this tree, which represent the basic raw material in chocolate production, come to the factory packed in sacks and are stored in silos by means of a pneumatic conveying system. The cocoa beans are then submitted to a complex processing cycle, which transforms them into cocoa paste, processing optimized and the so-coal pasts and butter are the products that are obtained after the first stage of the production process and represent the so-called "semi-finished" products. Chocolate is, in fact, the end product resulting from these two semi-finished components, and it is obtained by adding sugar and other different ingredients, such as milk, hazelnuts, almonds and other kinds of flavours. The blend of all the different ingreand other kinds of flavours. The blend of all the different ingre-dients gives origin to a specific chocolate "recipe". The end product is then moulded and shaped in the most diverse forms. Stainless steel is extensively used in this market area, especially in the storage phase. The factory these pictures refer to makes use of 2B surface finishing EN 1.4301 (AISI 304) stainless steel tanks of different volumes and weights, welded through a TIG welding process. These stainless steel tanks, the weight of which ranges from 900 to 4,000 kg, are completely insulated by means

of a mineral wool layer. All of them are equipped with jackets ensuring warm water circulation on the side and bottom walls, while other tanks are equipped with gate mixers. Inside the tanks stainless steel sheets have a thickness ranging from 2 to 3 mm, while the external sheets are from 1.5 to 2 mm thick. The choice to use stainless steel in the food and beverage area fully complies with the provisions included in the Ministerial Decree issued on March 21, 1973, recently amended and updated on October 27, 2009, which regulates hygiene-related matters in this area, and lists the materials that can come into contact with food.

Tanks manufactured by: Azzini SpA – Via IV Novembre 58 – I-26015 Soresina CR, phone +39 0374 343952, fax +39 0374 343505, info@azzini.it, www.azzini.it / *Factory*: ICAM Spa – Via Caio Pinio – I-22030 Orsenigo CO, info@icamcioccolato.it, www.icamcioccolato.it

PAGES 6-7

MARCEGAGLIA: A GROWING LEADERSHIP IN THE STAINLESS STEEL SECTOR

(Marcegaglia - Sempre più leader nel settore dell'acciaio inox) Focusing on the stainless steel sector, Marcegaglia stands out today as the world's top producer of welded stainless steel tubes. More than 70 state-of-the-art manufacturing lines employ high-frequency, laser, TIG and plasma welding technologies. Marcegaglia develops its stainless steel product range in Italy, with 3 plants, in Brazil and in the US

In particular in Italy, the plant in Forli, with a capacity exceeding In particular in taily, the plant in Forn, with a capacity exceeding 250.000 t/year, is the biggest stainless steel welded tube plant in the world. The Group headquarters are based at Gazoldo degli Ippoliti and host coil cold-rolling, annealing and pickling lines and the Service Centre dedicated to sheets, strips, flat bars and cold-formed sections. Last, but not least, we can count on the Contino plant with its production of stainless steel drawn bright bars. Marcegaglia produces also in Russia, where we have opened a new plant in Vladimir, and in China with large investments in carbon precision tubing and stainless steel pipes. Marcegaglia Ru (Russia) is well underway in the project of building and equipping a plant for the production of stainless building and equipping a plant for the production of stainless steel products in the city of Vladimir, some 180 km East of Moscow. Marcegaglia Ru aims to become the leader in Russia within the stainless steel transformation segment, focusing on the first step in welded tube production and, in a second step, as a large service centre for flats. Production is expected to start in the second quarter of 2010, and the investment will be completed second quarter of 2010, and the investment will be completed by 2011. Sales of 35,000 tons are foreseen in 2012. Marcegaglia China spreads over a land of 714,000 square meters located in Guangling Industrial Park, Yangzhou and corporate offices in Shanghai. The amount of the investment is estimated in 120 million euros and the production will start in the second half of 2010. At steady state, the plant output will reach in the first step 150,000 t/year of high quality products. Marcegaglia 2012: 500 thousand tons of stainless products

manufactured worldwide.

 Product range: austenitic and ferritic grades, nickel alloys, super austenitic and duplex materials.

- Dimensional range: Coil production: two cold-rolling mills, two annealing/pick ling lines up to 1,500 mm width, with thickness from 0.6 up to 6.0 mm. Sheet and strip service centre
- Slit flat bars (from 10x2 up to 200x12 mm) and cold formed sections
- Round tubes: from 5.0 mm O.D. up to 508 mm O.D. and thickness from 0.4 mm up to 6.0 mm. Box sections: from 10x10x1.0 mm up to 250x250x6.0 mm. Drawn bright bars from 5.0 up to 30 mm, centerless ground bars up to 200 mm
- Application Sectors: automotive (exhaust system, hydroform-
- ing, frames), construction: mechanical & building, ornamental building & furnishing, process pipes for fluids (food & dairy industry, drinkable water & press fitting, water treatment, pulp & papers, chemical, pharmaceutical, oil & gas), mechanical applications (pumps & cylinders, elbows & fittings, heat resistances), heat treatment (heat exchangers, evaporators for sugar industry, pressure vessels, boilers).

MARCEGAGLIA - Via Bresciani 16 – 146040 Gazoldo degli Ippoliti MN - phone +39 03766851 – fax +39 0376685625, inox@marcegaglia.com, www.marcegaglia.com

PAGES 8-9

RADIOACTIVITY AND COMPULSORY RADIOMET-RIC CONTROLS: TAKING STOCK OF THE SITUATION (Radioattività e obblighi dei controlli radiometrici: facciamo il punto della situazione)

The accidental fusion of radioactive materials/sources unlawfully included in metal scraps is a problem that has been raised on an international scale since the 1980s. In the last few years, the problem of radioactivity has become topical again in the iron and steel industry, "thanks" to some events occurred in Europe. This time, however, this problem has moved to another level of the production chain as it does not concern metal scraps any longer but instead real radioactive iron and steel products. The extension of this problem to basic iron and seet products has moved the alarm threshold upwards, and to cope with this issue, Law Decree n° 23 was issued on February 20, 2009 ("Imple-mentation of Directive 2006/117/Euratom, on the supervision and astration & Schernstein & Schernstein and astratic Schernstein and astrat and control of shipments of radioactive waste and spent fuel") and was published on the Italian Official Gazette n° 68, March 23.2009

Under Art. 157 "Radiometric supervision and control on materi-als or <u>semi-finished metal products</u>" it is clearly stated that also the subjects which, for industrial or commercial purposes, carry out import activities of semi-finished metal products, are obliged to make radiometric supervision and control inspections. The Law Decree came into force on April 7, 2010.

This article was written in cooperation with dr. ing. F. Bregant - Federacciai. Photos: Saphymo Italia Srl and TQ Technologies for Quality Srl

PAGES 10-11

THE "ECOKEY" PROJECT FOR WASTE COLLEC-TION AND RECYCLING: STAINLESS STEEL IN THE SERVICE OF ECOLOGY

(Il progetto "ECOKEY" per la raccolta differenziata: l'acciaio inox al servizio dell'ecologia) "Ecokey, la chiave ecologica della raccolta differenziata" (Ecokey, the ecological key to waste collection and recycling) is a environmental awareness action launched in the town of Terni, thanks to the cooperation of the local public authorities and institutions with the entrepreneurial world, which provides first for the installation of differentiated stainless steel containers Instruct and the material of the international matter and the materials, paper, glass and aluminium for recycling. The characteristics of stainless steel, and in particular its hygienic and cleaning properties, make it the most suitable material to be used for this specific "ecological" purpose. The hygienic properties of stainless steel are ensured by some typical characteristics of this material. First of all, its corrosion resistance intended both as resistance against deterconsolin resistance menue both as resistance against deter-gents, solvents, sanitization agents, and disinfectants used for removing deposits, dirt, etc., and resistance against the aggres-sion or the stains produced by some particularly acid products with which stainless steel may come into contact. In addition, the adherence of bacteria and other harmful micro-organisms is prevented owing to the smooth and non-porous surface of stainless steel

Another characteristic that guarantees the hygienic properties of this material is represented by the low bacterial retention capacity of stainless steel after the cleaning cycles. Finally, in terms of environmental impact, stainless steel is a completely recyclable material, and being a metallic material with one of the longest lifecycles, it effectively allows manufacturing products fully

mecycles, in circlevery anows maintaining products may complying with the environmental sustainability concept. *Project promoted by*: Cooperativa sociale ZeroDue – Via XX Settembre 133 – 1-05100 Terni - *Supported by*: Amministra-zione comunale di Terni - *In cooperation with*: Asl 4, ASM, azienda ospedaliera Santa Maria e ThyssenKrupp Acciai Speazienia ospeciaria variata variate e Tryssenktupp Accial Spe-ciali Temi / *Project design*:dott. Emanuele Fausti, mob. +39 3355238818 / *Stainless steel supplied by*: ThyssenkTupp Accial Speciali Temi SpA – Viale B. Brin 218 – I-05100 Temi, phone +39 0744 490282, fax +39 0744 490879, marketing.ast@thyssenkrupp.com, www.acciaiterni.it

STAINLESS STEEL CLOTHS: FROM INDUSTRY TO

ARCHITECTURE, PASSING BY DESIGN (I tessuti inox: dall'industria all'architettura passando per il design)

Metal cloths in general, and stainless steel cloths in particular, are extensively used for different architectural and furnishing applications, owing to the outstanding characteristics of this applications, owing to the outstanding inflatedensities of this material from the point of view of aesthetics and design, and to its typical high resistance and durability over time. For this spe-cific purpose EN 1.4306 (AISI 304L) stainless steel is normally used, and primarily ultra-bright EN 1.4401 (AISI 316), Stainless steel cloths are manufactured in a variety of weaves, which differ from one another. By interweaving wires only (as in the case of Decor cloths) or wires and ropes (as in the case of Reflex cloths) in different diameters, it is possible to manufacture an extremely wide range of different products.

The end product can be supplied whether in panels or rolls, as

INOSSIDABILE 180

well as with customized patterns capable to meet any requirement, thanks to its incredible variety of application opportunities both in interiors and outdoor applications. In a recently built café of Milan, for example, the counter and the ceiling, as well as several lighting elements, have been lined with ornamental panels made of EN 1.4306 (AISI 304L) stainless steel Free Wire

cloth (**pictures 1,2,3**). Another application example for interiors are the partition panels made of EN 1.4401 (AISI 316) stainless steel Reflex.01B cloth and the wall lamps made of EN 1.4306 (AISI 304L) stainless steel Free Wire cloth manufactured for a boutique which was

Steel Free Wite clour manufacture 1 to a bounder which was lately opened (pictures 4,5,6). Manufacture: Tessiture Tele Metalliche Tacchi S.a.s. di Tacchi M. & C. – Via P. Schiavio 8 – I-22020 Erno di Veleso CO, phone +39 031 918925, fax +39 031 918936, tacchidesign(@) phone 759 051 916925, tax 759 051 918950, tacchitdesign(@) tacchittm.it, www.tacchittm.it / *Pictures 1,2,3*: Shine Caffe, Milan – *Designers*: arch. Satta, arch. Spina / *Pictures 4,5,6*: Gianni Boutique di Cisari Barbara & C., Mondovi CN – *Project Designer*: arch. Cisari

PAGE 12

ONE-HUNDRED NEW ASHTRAYS IN THE CITY OF VERONA: THE ADVANTAGES OF STAINLESS STEEL (Cento nuovi posacenere nella città di Verona: i vantaggi

(Cento nuovi posacenere nella città di Verona: i vantaggi dell'acciaio inox nell'arredo urbano) Stainless steel was chosen for manufacturing one-hundred new ashtrays to be installed in the city of Verona in conjunc-tion with an environmental awareness campaign. The first hirty ashtrays have already been placed in the main streets of the old town, while the others will be positioned in the other areas of the city and in proximity of the public offices. This initiative is aimed at improving urban sanitation and at making the citizens aware of the need to ensure environmental protection. The reasons of the successful outcome of this ini-tiative have to be attributed above all to the use of stainless steel and to its outstanding technical characteristics. First of all, the high durability of this material, which reveals itself in particular through its corrosion resistance in different weather and environmental conditions. In addition, owing to its high-performance mechanical characteristics (i.e. ultimate strength, yield point and surface hardness), stainless steel can be considered a particularly strong material. Moreover, in connection with its durability, stainless steel does not require any particular maintenance intervention, and therefore maintenance costs are minimized, thus allowing perfect part/product performances throughout the whole lifecycle. Last but not least, stainless steel positively and effectively responds to any act of vandalism, as it can be easily cleaned from stains and marks without changing its aestheticcal properties and without being damaged by surface attacks. *Initiative promoted by*: Comune di Verona – *In coopera-tion with*: Amia / *Austenitic stainless steel produced by*: ThyssenKrupp Acciai Speciali Terni SpA – 05100 Terni – Viale B. Brin 218, tel. 0744.490282, fax 0744.490879, viae B. Blin 216, fel. 0/44.490262, iax 0/44.490879, marketing.ast@thyssenkrupp.com, www.acciaiterni.it / Ash-tray manufacture: Camini Wierer S.p.A. – Via Fontanelle 5 – I-37055 Ronco all'Adige VR, phone +39 045 6608330, fax +39 045 6608300, info@caminiwierer.com, www.caminiwierer.com

PAGE 13

ENLISTED IN THE NAVY: STAINLESS STEEL IN THE SERVICE OF DEFENCE

SERVICE OF DEFENCE (Arruolato in marina: l'inox al servizio della difesa) Its name is ASIST-TRACK (Aircraft Ship Integrated Secure and System Traverse), and it is an "intelligent" docking system developed for military helicopters landing on the deck of a ship. Military naval defence is a highly technological and extremely advanced area continuously searching for innovative materials and solutions. And strainless cited could not foil to provide its and solutions. And stainless steel could not fail to provide its contribution in this area, too. This intelligent docking (called in the nautical jargon "free deck") system allows carrying out both the approach and the landing operations on the deck of a moving ship without requiring any personnel assistance and aid. In fact, during the landing stage, the HPSE (Helicopter Position Sens-ing Equipment) system of the ASIST continuously and precisely monitors the aircraft position, which can be visualized by the pilot on the screen through a series of signals and alarms. The helicopter transfer from the deck to the hangar is carried out by means of a monorail or a double-rail welded inside a light modular track (LTW – Light Weight Track) integrated in the deck of the ship. The track is made of extruded type XM-25 or type 630 stainless steel sections, both types complying with ASTMA-564

specification. These sections, which are specifically conceived and designed for this purpose, consist of bars of pre-established length obtained through a hot-extrusion process. The choice of these two stainless steel types depends essentially on two specific needs: availability of a material that in a marine environment is capable to resist against corrosion, and availability of a material ensuring an optimal mechanical strength in order to counteract the considerable strains the elements of the structure are submitted to. To effectively meet these specific requirements, all extruded bars have undergone a heat treatment to achieve minimum ultimate strength values equal to 930 N/mm2, and have been submitted to corrosion tests before being delivered to the customer. Finally, the bars have been submitted to a pickling and passivation process, and to a surface sandblasting process.

Supply of hot-extruded sections: Siderval Sp.A – Via Roma 39/C –1-23018 Talamona SO, phone +39 0342 674111, fax +39 0342 670400, siderval@siderval.it, www.siderval.it / ASIST-TRACK system design and production: Indal Technologies Inc. Mississauga, Ontario – Canada

PAGE 14

THE "SUMMA" PROJECT

(Progetto "Summa"

This page aimed at giving visibility to an initiative launched by the monthly auto magazine "*Quattroruote*", called "*Summa*", a project in which Centro Inox has participated as a techno-logical partner. The purpose of this project was the development and the construction of a *"laboratory" car*, as a result of careful market analyses and of evaluations of the currently valiable carried out by readers and experts. The name itself given to the project, "*Summa*", explains that this car prototype sums, gathers and combines a range of positive values in terms of functionality, technology, ecology and safety. This car belongs to the B-C segment (about 4 m length) and has been built using the most advanced state-of-the-art tech-nological solutions currently available or to be exploited The participation of Centro Inox in this project as a partner participation of Centro Inox in this project as a partner has mainly focused on the use of stainless steel for manu-facturing the chassis of the car. Centro Inox has put all its expertise achieved in the automotive industry in the past years in the service of this project, requesting – and obtain-ing - the possibility to avail itself of the cooperation of two ing - the possibility to avail itself of the cooperation of two of its member companies, which supplied the material. The results achieved by the "Summa" project have been released through several publishing initiatives and media events (the monthly magazine Quattroruote, the website of Quat-troruote, and Quattroruote TV). This project was officially pre-sented during the meeting "L'Auto che preferisco 2010" (The Car I Prefer 2010), held in Milan on January 27, 2010. Centro here, the other metherer methicsted in the quest Car I Prefer 2010), held in Milan on January 27, 2010. Centro Inox, together with the other partners, participated in the event with a stand in which some examples of structural elements for the automotive industry were exhibited, as well as some issues of the magazine INOSSIDABILE focused on this area. Issues of the project was presented at the stand of Quattroutet, during the *Geneva Motor Show* held on March $4\div 14$, 2010, to the international press and to the numerous visitors of the exhibition, along with a 1:4 scale model of the prototype car.

PAGE 15

9th INTERNATIONAL STAINLESS & SPECIAL STEEL SUMMIT

The event is organized by Metal Bulletin Events and SMR – Steel & Metals Market Research – and supported by Centro Inox and other several partners. It will take place at the Westin Excelsior Hotel in Rome from 7 to 9 September. The official language will be English.

September, 7 - Session I: Stainless Steel Flat Products

09:00 Welcome address Phillip Price, Metal Bulletin, UK -Warkus Moll, SMR, Austria 09:05 Opening remarks Fausto Capelli, Managing Director,

Centro Inox, Italy 09:10 Innovation is the key Harald Espenhahn, ThyssenKrupp

Acciai Speciali Terni S.p.A., Italy 09.40 Size matters in welded tube and pipe? – Perspectives

of the market leader - Antonio Marcegaglia, Marcegaglia 10:10 The Italian market – a success story Ernesto Amen-

duni, President, Centro Inox, Italy 11:10 Acerinox - the gentle giant Bernardo Velazquez, Aceri-

nox, S. A., Spain 11:40 Distribution – a challenge without frontiers Roberto

Vender, Gruppo Inox Spa, Italy Vender, Gruppo Inox Spa, Italy 12:10 Honouring ceremony for the Stainless Steel Exec-utive of the year 2010 14:00 Chairman's opening remarks Phillip Price, Metal Bul-

letin UK 14:05 Outokumpu's focus on end-use markets Juha Ran-

tanen, Outokumpu Oy, Finland 14:35 Stainless steel in catering systems Chris Zweifel, Franke Foodservice Systems, USA

14:55 Stainless steel in exhaust systems Remy Behra, Faurecia Exhaust Systems, France

Tetra-Pak Packaging Solutions S.p.A., Italy

15:35 Stainless steel in architecture Claudio Danesin, Per-masteelisa Interiors, Italy 15:55 Stainless steel in food equipment Pete Dow, ITW Food

Equipment Group, USA 16:10 Q & A with all consumers

17:00 Roundtable Discussion Harald Espenhahn, Rantanen, Antonio Marcegaglia, Gianandrea Sassoli, I Naranjo, Jean-Yves Gilet - Moderator: Markus Moll Sassoli, Rafael 17:50 Close of day one

September, 8 - Session II: Raw Materials

09.00 Chairman's opening remarks Markus Moll, SMR Ostor Charlin in Sophing Trianas Mon, Orike Steel and Metals Market Research, Austria
09:05 Nickel – A partner for the stainless steel industry for almost 100 years Jim Lennon, Macquarie Capital (Europe) Ltd,

09:35 Scrap – the flexible link in the stainless steel value

chain Michael Wright, ELG Haniel Metals Ltd., UK 10:05 Stainless steel scrap – challenges in a volatile market environment Tobias Kämmer, ORYX Stainless, German

11:00 The global outlook for ferro-chrome Adam Panayi, Metal Bulletin Research, UK

11:30 Vanadium & Sustainability in metals recycling Christian Hauler, Treibacher Industrie AG, Austria

12:00 Award Ceremony for the best raw material price forecast 2010

13:15 Departure for Field Trip: Thyssenkrupp Acciai Speciali Terni and Società delle Fucine

Workshops (alternatively to field trip): - 14:00 ÷ 15:00 Technology & Productivity - 15:30 ÷ 16:30 Risk Management & Financing

September, 9 - Session III: Stainless Steel Long Products & Special Steels

09:00 Chairman's opening remarks Phillip Price, Metal Bulletin, I

09:05 Innovative solutions for challenging applications of stainless steel long products Markus Moll, SMR – Steel and Metals Market Research, Austria

09:35 Cogne investing in high value market segments

Roberto Marzorati, Cogne Acciai Speciali, Italy 09:55 Seamless tube and pipe: being successful in a highly challenging market segment Alvaro Videgain, Tubacex, S. A.

11:00 The Rodacciai Group – a flexible partner for stainless steel distributors and end-users Alessandro Fraccia, Rodac-.p.A., Italy

11:30 Stainless steel hot rolled flat bars: A crucial component for innovative products Eduardo José Carregueiro, Böllinghaus Stahl, Portugal

13:30 Chairman's opening remarks Wolfgang Emmerich, Böhler Uddeholm, Austria

14:00 Innovations for special steel solutions Karl Haase, DEW - Deutsche Edelstahlwerke, Germany 14:30 Uddeholms unique value proposition to the tool making industry Gert Nilson, Uddeholms AB, Sweden 15:00 SuccessFul in the crisis? – The long road to recovery Andreas Schaff Stahl Gröditz Germany

16:00 Large Forgings Production: Future challenges from the energy market Massimo Calderini, Società delle Fucine

s.r.l. Italy

16:30 Innovative tooling solutions for customers Daniel O'Leary, Crucible Industries LLC, USA 17:00 Roundtable Discussion Benedikt Niemeyer, Roberto

Marzorati, Dennis Oates, Karl Haase, Wolfgang Emmerich, Massimo Amenduni - Moderator: Markus Moll 17:50 Close of day three and end of conference

For information and registration: www.metalbulletin.com/events/iss

PAGE 16

A TRIGENERATIVE SOLAR POWER PLANT AT THE COURT OF THE GRAND DUKE OF TUSCANY (Una centrale solare trigenerativa alla corte del granduca di Toscana)

The project of building a trigenerative solar power plant originates from the need to combine an ever-growing demand for energy with the necessity to develop and apply new technologies capable to exploit renewable energy sources, such as solar energy. The archi-tectural shape of the power plant is a sphere supported by a group of pillars, the structure of which resembles a "Diamond". The first prototype has been installed in the Medici's park of Pratolino, in the outskirts of Florence. The peak power of the plant totals 11kW. The energy produced by this plant allows lighting the visitors' guided tours through the park as well as the cyclopean statue of the Giant of the Apennines sculpted by Giambologna. The integrated solar energy production and storage system includes three spheres containing low-pressure metallic hydride tanks providing for the energy storage of hydrogen. The spheres are suspended by means of four cables, each consisting of 19-wire 8 mm diameter spiral ropes made of EN 1.4401 (AISI 316) stainless steel. The geometrical shape of the Diamond is that of a 4 m-radius spherical geode with a grid-structure formed by tubular bars made of EN 14404 (AISI 316L) stainless steel, with a 101,6x4 mm circular section, and by solid metal 132 mm-diameter spherical junctions made of EN 14305 (AISI 303) stainless steel. The "skin" of the Diamond is formed by 80 glass panels housed in the triangular meshes of the structural grid. 38 panels are equipped with photovoltaic cells and are used for energy production. The connection between the frame of the panel and the bars is ensured by a solid stainless steel ele-ment shaped as a chair. The equipment of the electric power plant is installed under the Diamond inside the equipment room. The is installed under the Diamond inside the equipment room. Ine equipment room has a pentagonal layout and is formed by a dual-slope pavilion lined with glass panels supported by a stainless steel frame provided with 60x60x4 mm and 50x50x4 mm square sec-tion stainless steel posts, which from the vertexes of the pentagon meet in the centre leaning on a 320x10 mm round-section pillar. *Project*: Enel Engineering and Innovation Division and University of Pisa / *Customer*: Enel Spa / *Structure project*: prof. ing Maurizio Froli, ing. Gerardo Masiello

CENTRO INOX

Acceano The Italian Stainless Steel **Development Association** Piazza Velasca, 10 - 20122 Milano - Italy Telephone +39 02 86450559 -+39 02 86450569 Fax +39 02 860986

redazione.inossidabile@centroinox.it www.centroinox.it