

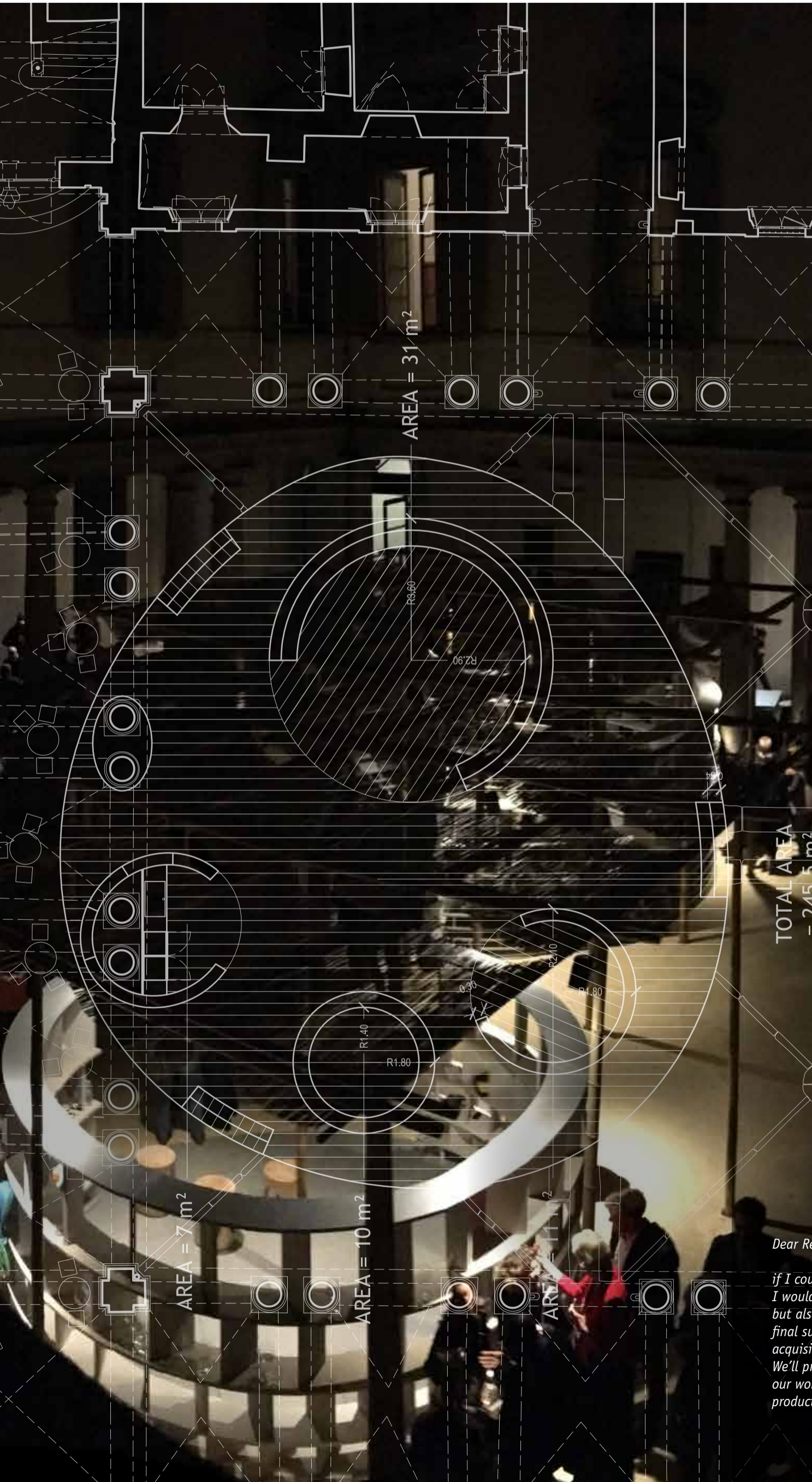
INNOVATION FOR ARCHITECTURE

by ETERNO IVICA socio ANIT



Via Austria, 25/E - 35127 Padova - Italy

www.eternoivica.com



AREA = 31 m²

AREA = 7 m²

AREA = 10 m²

TOTAL AREA
= 245,5 m²

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Dear Readers,

if I could reassume the pages of this new number in only one word I would say: result. Result not only from an economic point of view, but also as consequence of a series of actions and intuitions, whose final sum produces a positive trend, fruit of new discoveries and acquisitions.

We'll present you some of these dicoveries that are making exiting our work in these months, we hope you'll appreciate this new products for a developing of your market.

Riccardo Griggio

Resilient underlay

Time response of impact sound material under screed load



ING. MICHELE VALOTTO
Technical Manager of Eterno Ivica,
Acoustic Engineer

After several laboratory studies that lasted for several years, in November 2015 was published in an authoritative scientific journal called "Construction and Building Materials" an interesting article entitled "Time-depending performance of resilient layers under floating floors" (M. Caniato, F. Bettarello, L. Marsich, A. Ferluga, O. Sbaizero, C. Schmid). The authors are part of the Department of engineering and architecture at the University of Trieste and AcusticaMente study of Conegliano (TV). Corresponding author is Mr. Ph.D. Marco Caniato.

The long-awaited article exposes the results of recent laboratory tests that have been conducted for the first time on a large amount of insulation material currently on the market. The research has allowed to give an initial response regarding some debated questions, namely: if there is a correlation between compressibility and creep; if acoustic and mechanical properties of the polymer sheet is subject to decay over time; if the density, form and any surface coupling may affect performance.

Tests have allowed us to measure in various ways the well known key parameters characteristic of a impact sound materials: the dynamic rigidity, that defines the ability of a resilient layer in damping vibrations; the compressibility, which refers to the ability of a material to maintain its elasticity even after a high dynamic load; the creep which informs us of the durability of a material subjected to a constant load of long duration.

As is well known, dynamic stiffness and creep tests are conducted by playing a sound operating condition (although strict, since it is applied a distributed load of 200 kg/m²), while the compressibility test runs by simulating the application of a high dynamic loads, considerably higher than expected (up to 5 tons on a sample size 20 cm x 20 cm). While suggesting a complete reading of the article in its original language, we can here highlight some major conclusions that should be taken into account by all actors of the building process:

- Compressibility and creep are two parameters totally independent of each other; knowing the first, it's impossible to determine the second. Furthermore, for different materials, the use of compressibility to hypothesize creep behavior, leads to an underestimation of the deformations under the load of the slab. In some cases, the underestimation is really high.

- There is a mathematical relationship that binds the creep to compressibility ratio, so it is important to conduct the test of creep for each impact sound deadening released, despite being onerous both in economic terms and in terms of time.
- Impact sound deadening characterized by low density or poor cohesion are subject to high levels of creep.
- The coupling of a polymer sheet with a more compact (as a membrane or a sheath) reduces the acoustic performance of the product as it does increase its dynamic stiffness.
- The shape surface of contact of the resilient layer with screed, influences product performance. At first analysis, it appears that the contact surfaces, wavy or non-continuous point can result in a performance gain. Materials with flat surfaces are less efficient.
- Values of creep below 12% lead to a worsening of results over time less than 3dB entity. This value is believed to be more than acceptable for normal applications.
- Some sound insulation materials on the market are subject to a sharp collapse during the final phase of laboratory tests. In other words, during the first 3 months of cargo, their thickness is drastically reduced, leading to a reduction in their capacity for sound insulation.

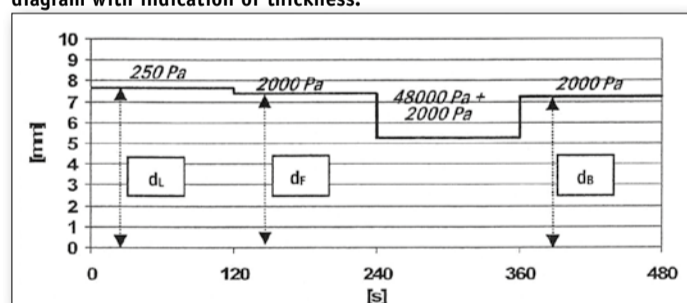
In the face of previous conclusions, in the article the researchers hope that the tests of dynamic stiffness, creep and compressibility are made mandatory in the near future, both by the technical standards and by national mandatory regulations.

Not only that, but given the fluctuating stability over time industrial production processes, these tests should be repeated every preset time, so that the end user can be certain that the laboratory results are as much as possible conform to the characteristics of the production lot actually sent on site.

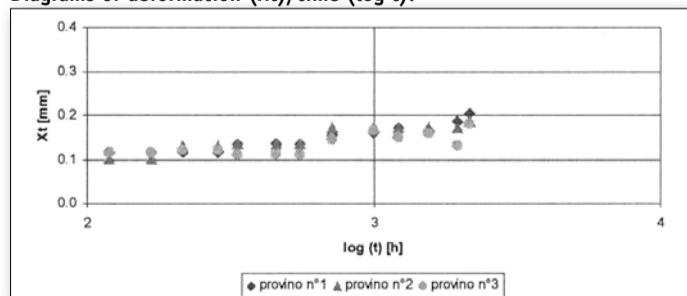
Behavioral observation of impact sound deadening materials laid since the entry into force of the D.P.C.M. 12/5/97 has now shown that the parameter dynamic stiffness is not alone for the complete characterization of acoustic insulation to an attic. We hope that the article subject of this short review will contribute to the spread of a new culture of sound insulation of floors.

... dynamic stiffness and creep tests are conducted by playing a sound operating condition...

Example of loading and unloading cycle diagram with indication of thickness.



Diagrams of deformation (Xt)/time (log t).

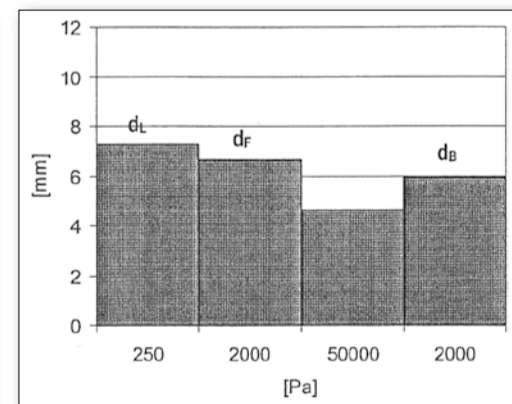


t [h]	log t [h]	X _{t1}	X _{t1}	X _{t2}
168	2.225	0.12	0.10	0.12
216	2.334	0.12	0.13	0.12
288	2.459	0.12	0.13	0.12
336	2.526	0.14	0.14	0.11
456	2.659	0.14	0.14	0.11
552	2.742	0.14	0.14	0.11
720	2.857	0.15	0.17	0.15
1008	3.003	0.16	0.17	0.17
1224	3.088	0.17	0.17	0.15
1560	3.193	0.17	0.17	0.16
1968	3.294	0.19	0.17	0.13
2160	3.334	0.21	0.19	0.18

Statement of changes in thickness under different loads and its graph.

campione N°	d _L [mm]	d _F [mm]	d _B (*) [mm]
1	7,61	6,96	6,30
2	7,81	7,01	6,36
3	7,33	6,85	6,09
4	6,99	6,36	5,74
5	7,22	6,54	5,77
6	7,01	6,45	5,70
7	7,21	6,52	6,04
8	7,25	6,49	5,67
9	7,23	6,62	5,82
10	7,06	6,45	5,72
Val. medio	7,27	6,63	5,92

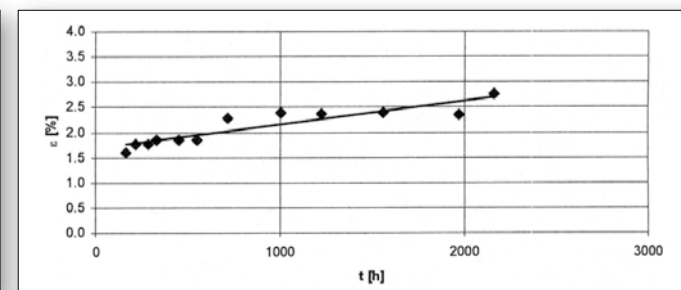
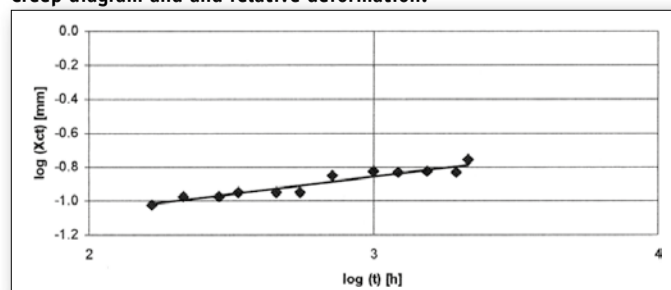
(*) Lo spessore è stato misurato dopo un tempo di 120 secondi dallo scarico.



Statistical values and factors of the Finley's equation.

a	r ²	m	b
-1.485	0.9	0.033	0.210

Creep diagram and and relative deformation.



Long period deformation values and relative deformations.

X _{t 7 anni} [%]	ε _{t 7 anni} [%]
0.35	5.1x

More innovations on energy efficiency in buildings

Eterno Ivica participates at Klimahouse as CasaClima Partner and gets a mention on the industry COMFORT SYSTEMS with the product Ecotex TXT.

by the editorial staff

Klimahouse Bolzano international fair has become an important appointment for those concerned with rehabilitation and efficiency. This year has shown a general consensus on a wide range of professional, recording important numbers: more than 450 exhibitors, over 37,000 visitors, with peaks of more inflows on days reserved for operators, and many different initiative during the days of the fair.

Klimahouse attracts and involves architects, engineers, professionals and institutions as it combines the search for innovative solutions in the field of energy-environmental insulation and comfort, with a high-level formative conference aspect.

Especially this year the International Congress CasaClima "Design and function" was extremely successful, because was an opportunity for Exchange and offered the possibility to combine synergies, knowledge and different experiences of scientists, architects and engineers creating new and important stimulus for industry sector. In this particular edition the greatest concentration occurred in deepening the relationship of energy certification and design quality, which sets new goals in the construction sector for planning quality and to be much more closer to natural rhythms.

Eterno Ivica fully recognizes in these matters since its foundation: all its objectives are geared to innovation and excellence in the development of high quality products and efficient services.

In this regard, after a long and constant training, from December 2016 Eterno Ivica, with acoustic TXT, boasts the title Partner CasaClima for its great technical expertise and constant engagement in research and sustainable development.

Businesses partner of CasaClima stand out for their act responsible and for the common goal in creating a world for tomorrow. With the determination to transform production and services sectors, Eterno Ivica helps in supporting the mission

of Klimahouse: "living healthy and environmentally-friendly places".

To become a Partner CasaClima, Partner CasaClima courses should be made, which are intended to illustrate the idea of energy and sustainability concept CasaClima.

The technical training course within the company lasted more than a year and saw the recognition of competent and qualified figures to take advantage of roles and titles that guarantee then, when advice, features needed in energy efficiency, environmental sustainability and quality of life of users and transparency.

With line TXT Eterno Ivica has reached an important goal in the construction industry by offering quality design closer to natural rhythms, and in line with those that are our guidance towards innovation and excellence in the development, the continuous research to maintain high product quality and proven efficiency in services.

In honor of this during the event Klimahouse Bolzano was held the awards ceremony of the seventh edition of Klimahouse Trend, prize aimed at companies most innovative in rehabilitation and energy efficiency in buildings, which this year has provided, in addition to the usual 6 awards, 6 mentions addressed to products and systems at the fair.

The Scientific Committee, considered the dossier of candidature presented by companies and did inspections in the stands, finally choosing products that combine technical solutions, materials or construction systems that impact in the construction of a building by the highest standards of environmental sustainability.

For the sector "COMFORT SYSTEMS" mention went to Eterno Ivica srl for the mattress ECOTEX TXT, made by using recycled materials, with polypropylene suitable for insulation of floors and walls. The product that comes from recycled raw material and fully recyclable at the end of life of the building, is proofed by a polyethylene film pre-glued to one side. The perfect continuity of the material is guaranteed by the presence of a large Selvage on two sides.

Big awards so for companies that, like Eterno Ivica, put as their primary purpose the planet where we are guests.

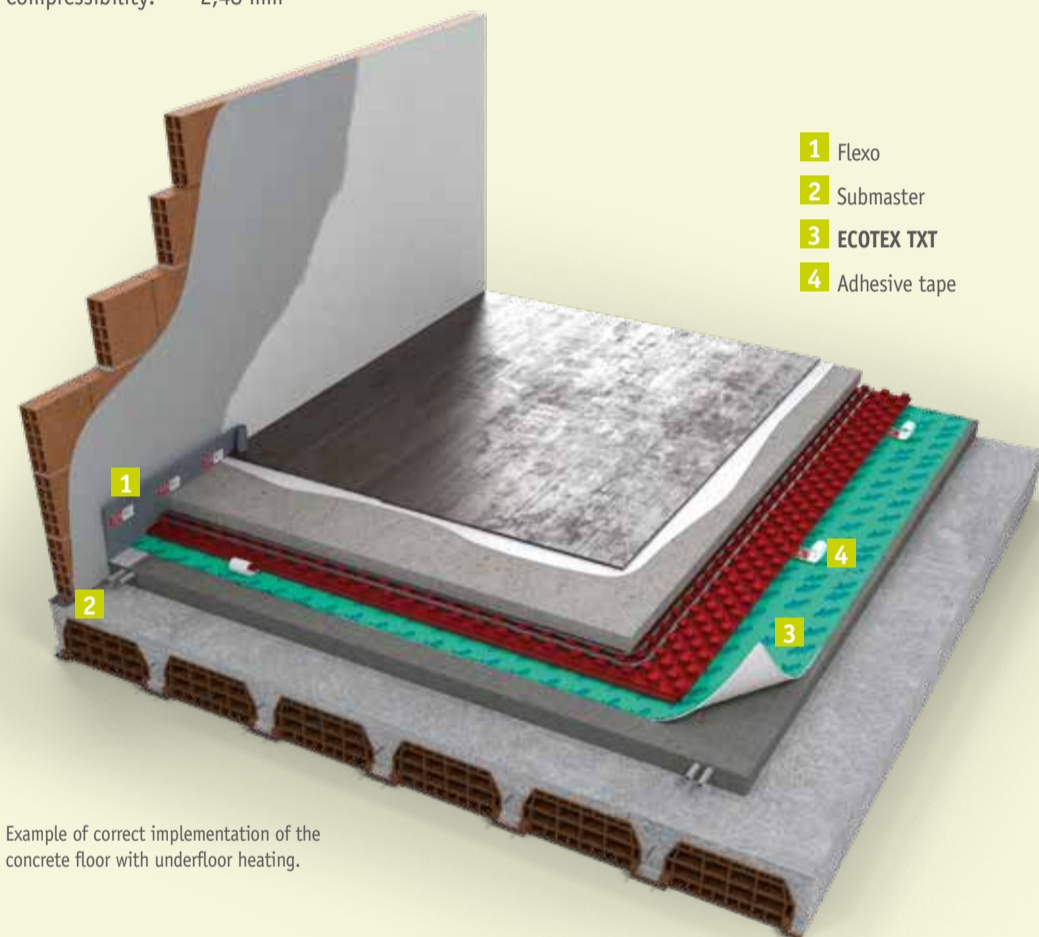
SOUND INSULATION FROM UNDER SCREED

Sound insulation from under screed ECOTEX TXT thickness 7 mm is made from noils of white colored fabrics, obtained from a mixture sanitized and sterilized filaments of cotton, linen and wool, maintained slabs of dimensions 1.20 m x 2.00 m by means of adhesive polypropylene. The product is derived from recycled raw material and totally recyclable at the end of its life. The product is made waterproof by means of a polyethylene film pre-glued on one side. The perfect continuity of the material in work is ensured by the presence of a wide selvage on two sides.

Dynamic Stiffness: 34 MN/m³

Creep: 5,1%

Compressibility: 2,48 mm



Example of correct implementation of the concrete floor with underfloor heating.

TECHNICAL FEATURES

Format	Dimensions	Thickness	Weight	Dynamic Stiffness	Creep	Compressibility	Thermal conductivity	The resistance factor to water vapor
panels	1,20 m x 2,00 m	7 mm	1,30 kg/m ² ± 10%	s' = 34 MN/m ³	5,1%	2,48 mm	λ = 0,0358 W/mK	μ = 195 · 10 ³

INSTRUCTIONS FOR INSTALLATION

The laying will happen with the polyethylene film facing upward, combining the panels, with only the overlap of the selvages, which will be subsequently sealed with adhesive tape of a width of 10 cm included in delivery of the product. Before laying ECOTEX TXT sp. 7 mm, one must actualize the disconnection perimeter with the appropriate FLEXO polyethylene clamp, which will be placed along the perimeter of the room without leaving the thresholds of the entrances and French windows. The FLEXO strap should be cut only after laying the floor finishing. The whole floor area must be covered by the mantle subflooring, leaving no point of contact. We recommend the installation of an overlying slab reinforced with sand-cement to a thickness of 6 cm. In presence of the heating system in the floor, this will be installed only after the laying of ECOTEX TXT thickness 7 mm.

EXAMPLES OF APPLICATION:

- 1 concrete floor thickness 24 + 4, light screed thickness 8 cm, subflooring ECOTEX TXT thickness 7 mm, panels for underfloor heating, screed sand-cement sp. 6 cm, floor finishing.
- 2 floor in concrete thickness 20 cm, lightweight screed thickness 8 cm, subflooring ECOTEX TXT thickness 7 mm, panels for underfloor heating, screed sand-cement thickness 6 cm, floor finishing.

Example	Level of trampling L'nw (value in work)	Apparent sound reduction index R'w (value in work)
1	L'nw = 58 dB (ceramic) - L'nw = 55 dB (wood)	R'w = 54 dB
2	L'nw = 50 dB (ceramic) - L'nw = 47 dB (wood)	R'w = 58 dB

The values have been influenced by the characteristics of the structure. Contact our technical department for specific projects.

KLIMAHOUSE
trend
2016

UN DIPLOMA PER IL COSTRUIRE ECOSOSTENIBILE

MENTIONE

SISTEMI COMFORT

ECOTEX TXT

dell'azienda **eternoivica** PADOVA



Fiera Bolzano S.p.A.
Il Presidente
Armin Hilpold

Il Presidente della Giuria
Fabrizio Bianchetti

FIERABOLZANO MESSEBOZEN

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ARRETIPO



AERATION SYSTEMS WITH NOISE REDUCTION WITH BEST PERFORMANCES OF SOUND INSULATION FOR FACADE.

Acoustic silencers for domestic ventilation with the best sound insulation performances for facade of the category. The acoustic silencers of the range RUMOR BLOCK have been created to meet all dimensional requirements, practical and acoustics. The **RUMOR BLOCK** silencers allow an air passage of 100 cm² as per UNI CIG 7129/2015 and are patented.

The RUMOR BLOCK silencers are available in various types, all inspection free:

- 8 models RUMOR BLOCK-CASE - Characterized by smallest size commercially available and with noise reduction values from 49.6 dB to 57 dB.
- 2 models of tubular diameter 160 mm to be placed near the perimeter wall. The tubular silencers RUMOR BLOCK have a unique feature on the market: the insulation is extended to the whole thickness of the wall with certified values reaching up 48 dB, the highest in the sector. In particular, the Windproof tube 160 it's able to slow down air speed maintaining unchanged the air passage section.

RUMOR BLOCK

VENT INTERVIEW

new entry

Eterno Ivica has acquired the historical brand RUMOR BLOCK



By March 2016 Eterno Ivica has detected the historical brand RUMOR BLOCK, Acoustic Silencers to be applied to ventilation holes, to the kitchen hoods and to ducts in the inner baths. The extensive experience and expertise in the field of ventilation is assured, having created and patented models of gratings for ventilation holes in plastic, metal, modular, or foldable with springs.

Nevio Savorani, ex titolare dell'azienda Rumor Block nonché inventore dei singoli prodotti, ora acquisiti da Eterno Ivica.

This experience has allowed the creation of innovative products, in compliance with UNI CIG related to ventilation holes air passage for kitchens and respecting the DPCM 12/5/97 passive acoustic requirements of buildings.

Rumor Block is a product of Vent line, a new range of products under development by **Eterno Ivica** that will deal with acoustic silencers and ventilation.

We asked to speak with **Nevio Savorani**, former owner of the company, to understand what are the characteristics and peculiarities of Rumor Block products and here below we report the complete interview.

When and how Rumor Block was borne, for which needs and what was the initial idea? what are the various solutions for?

The RUMOR BLOCK line was founded in 2008, made also to comply with the rules of the 12/5/97 DCPM for the ventilation holes on the external walls of the buildings, which are necessary for the change of air, but from which then even the noise from outside started to enter. The main idea was to create various types of small acoustic silencers and thicknesses to facilitate installation even in confined spaces.

What are the main features of the Rumor Block solutions?

Key feature is the retention of airflow in compliance with UNI CIG (Italian Committee for Gas) and

indices of noise reduction of facade not less than 40 dB, as required by standards. In our products the features outweighs the competitors: we obtained very good results and reached 57 dB.

Why it can be defined as innovative? What solutions would you propose for a better management of resources in a house?

Rumor Block can be considered innovative because it meets the criteria and the current rules through resource management techniques: in the first box-like shape the silencers holes were misaligned but were subsequently patented 2 other tubular models ø 160, designed to meet needs of practicality, fast installation by making a simple cut of the perimeter wall and keeping noise reduction values up to 48 dB, the highest in the market.

What solutions for the renovation?

Other tubular silencers PIUMA TUBES have been produced and patented, named to avoid noise transmission through the air ducts of the kitchens or bathrooms between two different housing units, or to soundproof the ventilation ducts. Being flexible, these tubes can be inserted in already existing ducts, even installed since 90's and not silenced at that time. Our silencers are assembled in kits, appropriately designed and supplied with telescopic extension tube, grate and AIRPLAK diffuser, to ensure correct airflow according to regulations. The grids are part of the kit and are different

from the traditional ones on the market as they have a patented side separator airflow, to slow the speed of the otherwise annoying air. In this way customer will not close the ventilation holes as often happens. They are provided in various colors: white, sand and copper. Another accessory is the perimeter AIRPLAK air diffuser which ensures comfort and a pleasant environment with its design.

What are the products most interesting for the Italian market?

The silencer of greatest interest is the PIUMA TUBE 160, that combines low cost with efficiency reaching a noise reduction index of 48 dB. Other accessories that may be interesting for Italian market are under development, to improve the range of our acoustic solutions.

Regarding the decision of selling the company, what are the expectations towards Eterno Ivica? Are you pleased with this choice?

RUMOR BLOCK products were intentionally marketed through advertising on the web. This brought immediate results in the early years, but with the crisis of the construction sector and the lack of knowledge on national scale of our products, the decision was made to transfer them to a company able to develop their diffusion all over Italian market. Eterno Ivica will for sure develop and market these excellent products with its dynamic and efficient structure.

KIT PIUMA TUBE 160

REQUIRE THE BEST FOR YOUR LIVING SPACES



1

1 Airplak 100 with mouth

2 Piuma Tube 160

3 Grid Ø175 with mouth

2

3

The sound-absorbing element PIUMA TUBE has the same size of the rigid tube to soundproof throughout its length.

The acoustic reductions are certified and are connected to 4 lengths:

- 1. cm 30 $D_{n,e,w} = 42 \text{ dB}$
- 2. cm 35 $D_{n,e,w} = 45 \text{ dB}$
- 3. cm 40 $D_{n,e,w} = 46 \text{ dB}$
- 4. cm 45 $D_{n,e,w} = 48 \text{ dB}$

Our range of silencers PIUMA TUBE extends to holes of any diameter, both in KIT or to be inserted in tubes already existing.

PAYSAGE

We met Novella B. Cappelletti, director and editor of PAYSAGE, international journal of landscape architecture and urban design.

Paysage was founded in 2005 in Milan, aiming to fill a gap regarding the project design and cultural landscape in Italy which, in our view, until then, had not a precise reference and exclusive design in this particular area.

Could you tell us what are the principles of your reality

The starting principles come from awareness of wanting to create a product understandable to different ranges of readers with different cultural levels, although the different categories operating in the same sector. Inspired by the themes of the European Landscape Convention, has given rise to a veritable MOOK, hybrid between a Magazine and a bOOK, for both its major content both for its large size. Always with the goal of creating an innovative format the magazine investigates and research many new fields of discipline coining for the occasion of new types: from technological landscape of greenery from street furniture to the landscape into light, from slow-landscape at the park-green, from the rural landscape at city play. And it is precisely in the context of emerging sectors that comes attention to VERTICAL GREEN or green hi-tech, a development of landscape architecture that promotes a new frontier of building, new experiences of archi-nature, they see the landscape into architectural structures.

What is your philosophy and how was the development in the market?

Our philosophy is inspired in summary form I would say to "share": this has allowed us to gain credibility and authority. It was a long job, punctual and hardworking, but in the end I think I can say that we were understood and recognized by the market, I hope for the professionalism that we try to put in our business. In essence, the business objectives of our company are only the result of our way of working for an initiative both cultural and technical and design: we believe that it is essential that a commitment of utmost seriousness, efficiency and care, which for us is the primary goal. We wanted to introduce a change in style, with a magazine which companies and readers could "trust" and that he could "rely", transparent management and proposal.

What role does PAYSAGE has in the world of architecture, landscape and construction? What are the main features of your initiatives?

We are very focused on our activities but without a doubt we have won in a few years the important role to be among the most prestigious magazines in the design of the contemporary landscape, evi-

denced by the recognition that the Lombardia region assigned to us in the course of EXPO 2015 as "Eccellenza Lombardia". A major claim that makes us proud of our work, confirmed also by operators and professionals value: this confirms to us that today we are driving more and more responsibly, which means keeping up the commitment in our professional research and increase it more and more.

How PAYSAGE can be defined an innovative magazine? Which competitive features does it have?

Paysage relates in a direct and comprehensible way not only to professionals but to all readers the quality characteristics of projects that would otherwise remain "less accessible" to the public and certainly less known. It offers a collection of outputs relating on public space, a space of collectivity: a theme that should touch the sensitivity of everyone, because caring for the environment improves the quality of life of all. It illustrates each project with a great deal of evocative images, of great visual impact, which describe comprehensively and specific projects, but also represent a first access to the understanding of a project by overcoming the barrier of different languages in different countries, because as the great schools of communication tell, the alphabet is just one of the possible way to communicate. The headboard also explores the theme of green project in traditional themes mixed sections with innovation, constantly evolving.

Not only a sector Magazine, but also a reality that organizes events, exhibitions and much more. What are your strengths?

I think our strength is our verticality: we concentrate as part of landscape architecture and try to develop this sector in his diversified aspects. In this perspective we have become the only accredited body for the formation of the National Council of Architects, Planners and Landscape architects in the landscape architecture sector, always with the objective of building training meetings that will be moments of depth disciplinary and cultural benefit to the sector.

What are the topics that most interest the professionals?

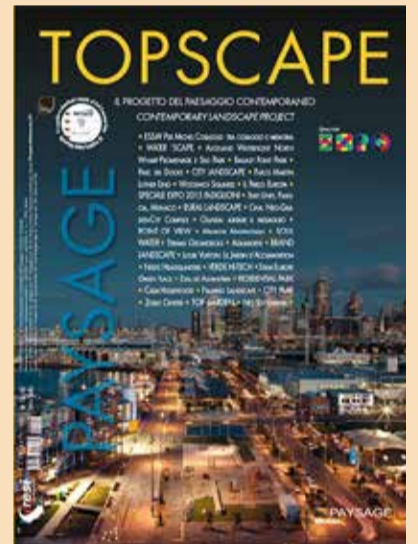
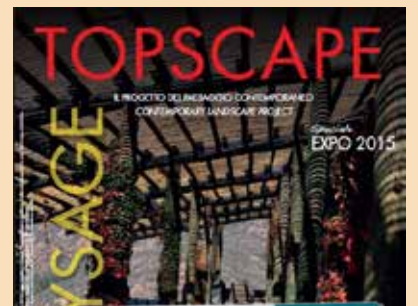
Italian professionals are discovering more and more potential in landscape design but in Italy we still miss important opportunities. Italian professionals need right now a big confidence boost, their undisputed ability is often overshadowed by a system



that does not help them and a somewhat too academic preparation that do not form them in order to attack the international labour market. Italian schools are very focused on the history of the project or the project in its cultural sense and that makes all our Universities a jewel of this country, but the young are less ready on latest topics, like "leadership, marketing, strategy" are key issues for development in any area and for any professional.

What forecasts and plans for 2016 and 2017? new ideas and predictions for the future?

For 2016 and 2017 we launched a major campaign entitled "Landscape4all": a real awareness campaign on promotion of the landscape as a mean of improving the quality of life in all respects and in the most diverse spheres of human life. Landscape4all, therefore, represents the theme that PAYSAGE will decline throughout the 2016 by promoting its largest interpretation: landscape for everyone and everywhere, demonstrating how it is possible to insert a green part in every aspect of life and space, both in public or in private, showing there is no place of dwelling and living that cannot accommodate a green part aimed at better comfort of human settlements. With the World Climate Conference clear message of "here and now", PAYSAGE proposes a change of paradigm in the development of landscape architecture as a priority, an opposing view to the way we do business and design today, in favor of a contemporary project that sees the landscape construction in first place, as an environmental benefit and a social moderator. Our greatest commitment is always the spreading and strength of the magazine, in addition to the event planned in June 2016 BRAND & LANDSCAPE - associated with the 21st Triennial in Milano, that we consider one of the most important events of this year. We have initiated some contact with political representatives of Parliament for introducing legislation providing for development to an area that is not less important than architecture, but rather should be pivotal to any serious development policy for a country like Italy, which makes the beauty his main point of attraction. In summary I might conclude by saying that in the future our slogan is "work, work, work! There is still so much to be done!".

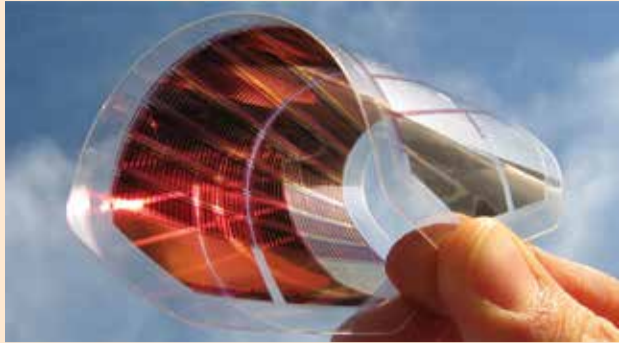


eternoivica

Eterno Ivica presents the first guide to raised outdoor floors, a complete and technical volume that, thanks to the easy consultation, reveals itself as valuable tool for professionals, enriched by new products and new accessories.

Made in Eterno Ivica.





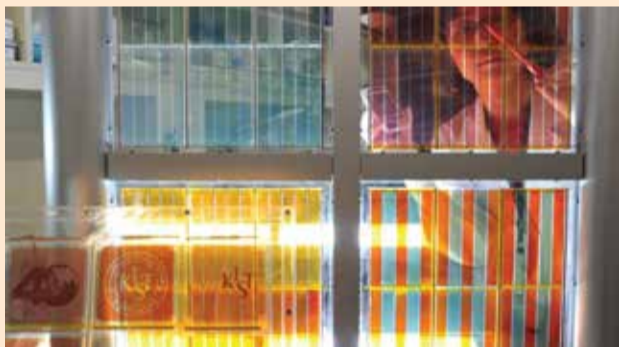
The enormous flexibility, strength of an organic solar cell



The new Swiss Tech Convention Center at EPFL (École polytechnique Fédérale de Lausanne, Lausanne) shows a facade with stained glass panels composed of colored solar cells based on the technology of Grätzel



Detail of photovoltaic glazing



Solar cells organic dyes



The application of inkjet technology at realizing PLED

Third generation PhotoVoltaics

Despite the world of photovoltaics has been dominated for years by inorganic semiconductors such as Silicon-based devices, we are seeing the development of a new generation of cells.

We are talking about the organic solar cells or **OPV (Organic PhotoVoltaics)**, a "young" technology based on organic materials for eco-friendly, like natural polymer photoactive part or carbon-containing small molecules. They have low production costs, a readily available material, great flexibility and versatility: this is why they are among the most promising cells in future developments.

Not surprisingly, their progressive reduction of costs of production and the efficient performances, candidates them as main photovoltaic technology in the years to come.

Optical processes that develop within these devices are the typical traditional photovoltaic cells and include the absorption of photons by solar radiation, the formation and transport of excitons, dissociation of these and the transport of charge the same electrodes resulting in the production of electricity.

Thin-film photovoltaic cells direct evolution: these devices promise to find application in a variety of fields ranging from Aeronautics to the automotive industry from industrial to residential.

No exception the architecture, within which we are already witnessing the evolution of BIPV (Building Integrated Photovoltaics) towards more innovative solutions, among which we record the already installed photovoltaic glazing of the EPFL of Lausanne Congress Centre.

To be mentioned, alongside the economic and ecological advantages, also its disadvantages such as low efficiency, stability and durability; to overcome these drawbacks that limit the performance of organic cells, it is interesting to point out that is having a good development a type of "hybrid" dye solar cell coloured/metal oxide. These "hybrid" solar cells are also referred to as fotoelettrochimiche or cells sensitized by dyes, as they exploit the properties of some organic dyes to generate current when they are hit by solar radiation: in a nutshell they reproduce a process very similar to that of photosynthesis.

Combining an organic component (color) with an inorganic (metal oxide), you can achieve greater efficiencies while maintaining relatively low costs.

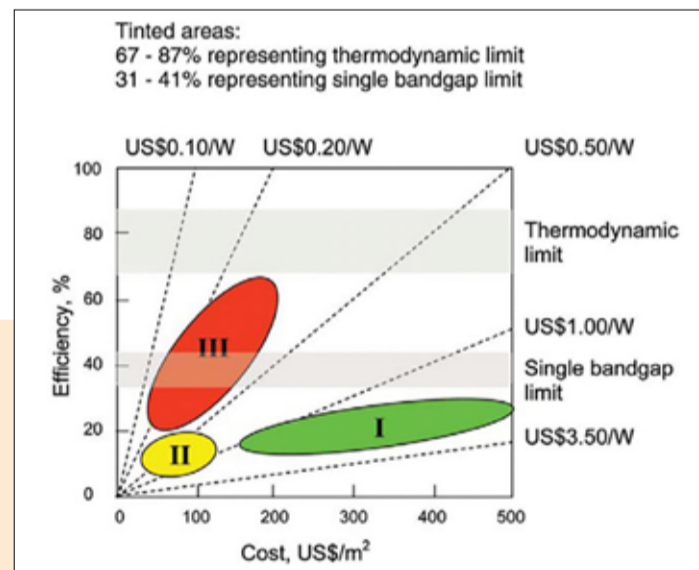
This type of cells has already been identified as the most suitable for the realization of future passive houses, allowing the conversion of the housing buildings in photovoltaic generators able to produce most of the energy needs.

The most common moulding techniques are the ink jet printing and the screen printing, by which the organic materials or hybrids, once deposited, take the form of actual films that can be over a thousand times thinner than silicon wafer.

A big advantage is that these processes are additive, that is, only the material you need is deposited, with savings in material by more than 90% compared to ordinary methods, further reducing the environmental impact.

The materials are also compatible with film or plastic rolls which can be produced on transparent and flexible substrates with significant advantages in costs, transportation, material savings and ease installation.

While waiting to see an increase in the competitiveness of organic PV towards other renewable energy sources already widespread, we leave to you designers imagine what innovative applications these devices could find in building and architectural field in the years to come.



Efficiency and cost projection of first, second and third generation photovoltaic technologies

Carlo Favero Falconi

Thesis in energy engineering
academic year 2015/2016

Third-generation photovoltaic technologies:
introduction to organic solar cells



NEWS

WATER TAMERS.

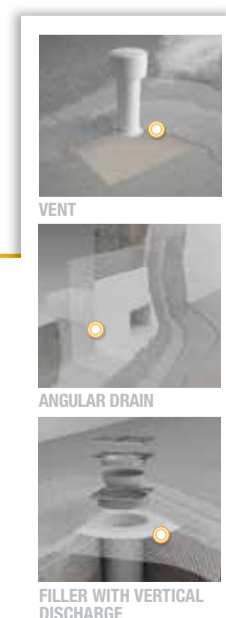
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The Liquid System is an innovative and revolutionary solution thanks to the process of thermal fusion between the handkerchief in TNT or glass fiber and the flange of the filler. Each product in the Liquid range allows to avoid possible cracking and consequent harmful infiltrations of water caused by the detachment due to incompatibility between the impermeable layer and the liquid plastic which forms the product, thereby ensuring a real continuity in the waterproofing.

For use with all types of two-component liquid waterproofing and cement, the system has a Liquid extended range of accessories that make it compatible with all applications and for all problems.

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ETERNO ADJUSTABLE SELF-LEVELING SUPPORT WITH BI-MATERIAL HEAD

Mawipex experience...

Number one of the studs in Italy and prescribed by manufacturers of tiles, **Eterno Ivica** plot is also popular in Belgium. "The fact that we have managed to penetrate successfully on a stable market in just one year means that tilers are sensitive to our product", says Danny Molenberghs, Director of Mawipex.

TEXT: KRISTOF DAMS
PHOTOS: MAWIPEX

by the editorial staff

Mawipex is a leading actor in the construction industry and building materials. The company is part of **Tectum Group** with its head office located in Genk and a branch in the Netherlands, plus large warehouses both in Genk (18,000 square meters) both in Rilland (10,000 square meters). This allows the company to respond in real time to different customer requirements and ensure maximum efficiency in product deliveries.

HEAD AUTO QUESTION

Pim Dequecker, sales manager of Mawipex, explains: "we usually have the following reaction: why didn't we know this existed?" However, the concept is very simple. We also have a model fixed-head, but to thermostatic head, for more complex roofs, is the horse parade of Eterno Ivica.

With other brands, it must always be perform all kinds of operations to adjust the height, as drag a stabilizer under the plot. That requires a lot of time. With the Eterno Ivica plot, just simply lay the tile on the plot to thermostatic head and adjust the height. That is a huge timesaver for the installer! And when the tile is not completely stable, you can adjust with the help of the red key.



FLAT ROOFING SPECIALIST

Mawipex has a specific approach to the market of the surrelevés floors. "We are explicitly a flat roofing specialist", said Danny Melissa. "All our staff are trained to know all facets of flat roofs. And they are many, because we take care of everything that is related to these flat roofs: support up to the ultimate finish. "Nowadays, the space created by the 'cinquieme façade' is used optimally: green roofs, solar panels, dovescotes, guards grab, etc."



COMPLETE SUPPORT

Due to its specific expertise, Mawipex can also provide appropriate assistance. Mawipex helps the client from A to Z for the design of its roof. "What to avoid potential obstacles from the beginning. Another service offered by Mawipex: calculation software. It turns out to be very convenient to calculate the number of plots and the height of the different models using the degree of slope of the roof.

Pim Dequecker: "we have a software in which we can incorporate site plans. We do this in the first place for traders themselves said. We train them so that they can, via a Web-based application, the calculation for the setter or the individual. Allowing to earn much "time and avoid a lot of frustration."



EVOLVE TO A "GLOBAL PACKAGE"

With studs, Mawipex made his first not in the tile market, but however has big ambitions. Synergy develops between the market of flat roofs and tiles, notes Danny Melissa: "tile companies also note that the flat roofs in Belgium market evolves. Roofs become functional.

It installs of boilers and solar panels, but also green roofs and terraces.

We want to best serve our target groups, and the final objective is to propose a comprehensive package. As one who travels in a trade of tiles to a roof deck will be also interested in other opportunities. As for example a green roof, found more nowadays in construction stores or garden centers.

However, this solution may also well be proposed through tile outlets. Flat roofs and tiles to form a win - win solution."



GROUP TECTUM

Mawipex is anything but a small player in the world of building materials.

This company is part of the Tectum whose headquarters is located in Genk. Mawipex also has a sister company in the Netherlands and has large warehouses in Genk (18,000 m²) and Rilland (10.000 m², in Zeeland in the country-) Lower). Allowing the company to react quickly and guarantee fast deliveries.

AMBITIONS

Mawipex can therefore rely on a solid foundation to achieve its ambitions, namely: carve out a solid place on the Belgian market of the studs. Danny Melissa: "this requires work (what we do), a good product (that we have) and especially an advanced knowledge of flat roofs (that we have also certainly). "We do this in our own way: as a supplier of comprehensive solutions for flat roofing."

SUPPORT FROM A TO Z

Mawipex supports the customer from A to Z. Pim Dequecker: "the project of residential construction in Ninove is a fine example. Collaboration with DSP Stone Age of Ninove and Conducto of Thames perfectly illustrates the use of studs Eterno and Eterno complementary products, such as profiles. Calculations for this project (under completion) have, as we had hoped it, proven to be accurate."



ROOF AND FLOOR

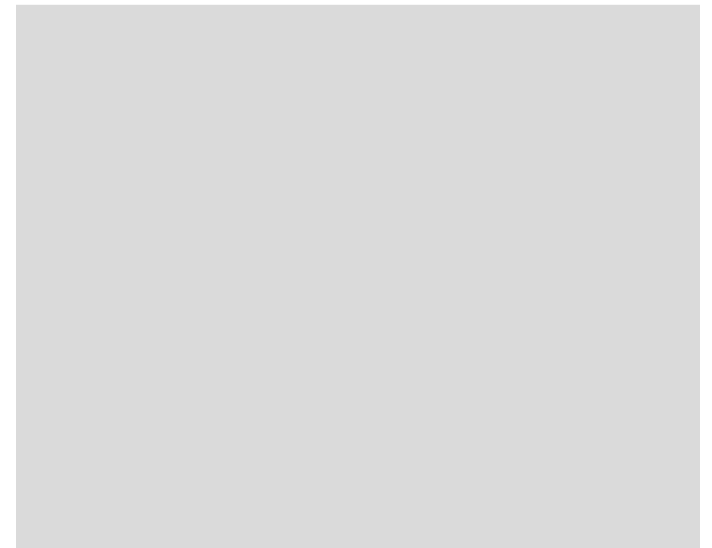
"On the roof, we were faced with a difference in level: a strong gradient of 3-4%, ranging from 20 to 2 cm." Self-regulating heads, we managed to create a horizontal surface. We also used profiles to clips, to clip the tiles in the plan. These are now nicely aligned on the side."

"On the ground floor, the plots remained visible because of the difference

level. We were able to resolve this issue by using upper and lower profiles Eterno Inox (see photo).

Mechanical fastening of ceramic tiles on the side of the terrace helped to conceal the studs. In addition, it has used the single adjustable plot, Star T, adjustable from a height of 10 mm."

"Our solutions have delighted the architect. I myself also made on-site to see if everything unfolded properly. "Such is indeed the objective pursued by the plots and profiles Eterno: facilitate life on construction!"



Eterno Ivica project partners A Matter of Perception "Tradition & technology", in collaboration with MoscaPartners and DAMN°, at Palazzo Litta-Milan-12 to April 17, 2016. **32,000 visitors in 6 days**

A Matter of Perception

Tradition and Tecnology - Milano, Palazzo Litta 2016

After the success of last year, MoscaPartners is back with DAMN° to occupy and transform Palazzo Litta during Milan Design Week with some of the greatest exponents of international design. Eterno Ivica was there participating.

by the editorial staff

The third edition of 'A Matter of Perception' has seen renewed cooperation for the second year between MoscaPartners and DAMN° in the realization of a collective exhibition on the theme of **Tradition and Technology** which was held during the Fuorisalone in 5VIE District at Palazzo Litta.

The courtyard of the Palace, core of the event, has been reinterpreted by architect **Diébédo Francis Kéré**, born in Burkina Faso and active today in Berlin with his own studio.

The installation is a conceptual elaboration of the typical African village, encircled from a raised platform, surrounded by a landscape of reeds grown locally.

The installation wont be a cozy place, an aggregation, a place where you could rest and relax between an event and the other during the Salone del Mobile, meeting friends and colleagues.

And so it was, reaching a peak of 32,000 visits in six days.

The work of Kéré placed at the center of the broad concept of humanism: Kéré builds with people, puts man and his needs at the Centre of his architectural work.

Fundamental themes are relations and human relations, hospitality, elementary rights, personal growth, the emancipation and development of the residents, community empowerment, encouragement to the proximity to nature and its rhythms.

And that's just what we saw reflect from the Hall of Palazzo Litta: circular stone structures were positioned on a platform surrounded by a bed of reeds and sheltered by a canopy made from single bamboo canes.

The structure of the Pavilion is open and transparent, is welcoming, is a real invitation to the meeting, and physical contact with others, to stop, take some time to dedicate to the relationship with the other.

Radiates warmth, and that's something that we have to relearn very fast.

"We need to open up to others and welcome them wholeheartedly, despite the diversity". This resonates very suitable especially in these times with the predicament we are facing during these years.



Within the installation you perceive their surroundings, "you see the environment and the environment sees you." You stay in touch with the place, although with friends or colleagues; the Pavilion is open, does not emit stiffness, is informal, just like it should be the mind of the human being: open, flexible, ready to change.

"I want the visitors to feel comfortable", says Kéré. And installation is a reference to its origins of Gando in Burkina Faso: "My native village is a landmark for public architecture that I designed, you feel part of the community and of the surrounding landscape", said the architect.

For your project we put in search of ideal expression of common material in order to reinterpret the constructive method more primitive, to assemble, stack, and work the stone: it was desired to rethink in an innovative and daring.

Six varieties of precious stones have been selected from the quarries the company asked for the supply of stones.

The stones chosen have warm and sandy tones just to evoke the colors and textures of Africa, the most advanced technologies have been used to shape each individual element, designed individually. The special processing from life to three circular stone pavilions, which have the uncanny ability to detect material in unusual characteristics: lightness, transparency and sinuosity.

Although the stone is here worked to send us transparency and lightness really always is stone, and the weight of the material with which they built the three pavilions represented a difficult challenge to solve, especially thinking about a temporary installation that had to be assembled and disassembled in a few days.

More than 10 thousand tons of "sinuosity"...

But the structural elements of Eterno Ivica, (over 2000 SE3 to cover an area of 250 square meters, posed with woodeck floor system and assembled with steel joists) have simplified and solved the difficulty of the challenge with extraordinary effectiveness.

Only with a so flexible solution and with the possibility of supporting considerable weights it was possible to achieve the beautiful rounded platform designed by the architect.

Even with this project Eterno Ivica has demonstrated professionalism, product quality and maximum efficiency in the industry.



Watch the video
FUORISALONE