Eco-friendly milk and vinegar based

Paints & Shields

Mineral and Thermo-Refracting for

Energy Saving

PRESENTING THE COMPANY AND THE PRODUCTS

Laboratori Ecobios s.r.l. *is the sole manufacturer and commercial supplier of the multimineral, milk-vinegar water-based paints it has patented in Europe and in the United States, and for which it has developed, quite exclusively, the necessary application techniques and know-how to obtain:*

a) *an impermeable barrier to water-proof patio surfaces and an encapsulating treatment for cement-asbestos surfaces in industrial buildings*
b) *protection for living spaces from heat and water penetration*
c) *energy savings in air-conditioning and heating living-spaces*
d) *ridding homes of damp and mould.*

Ecobios is promoted to families, industry, public buildings, professional decorators and to ordinary retail outlets.

FAMILIES*: home owners' understandable concerns about any deterioration in the condition of their homes can be solved with the milk-vinegar paint "****Solaria Universal****", used either on external or patio walls, which provides a natural form of air-conditioning, saves energy and restores surfaces after water penetration.*

INDUSTRY: *industrial and commercial premises exposed to strong direct sunlight can be protected from the heat with the milk-vinegar paint "****Solaria Universal****" which can be used for: offices, shops, hotels, restaurants, prefabricated dwellings, supermarkets, covered fish and vegetable markets, metal* ***silos*** *for storing water, oil, wine, cereals and other products,* ***tanks*** *for storing L.P.G., gas, diesel, oil and petrol,* ***greenhouses*** *in glass, plastic and with corrugated sheets.* ***Stables*** *and animal pens, iron, wood and aluminium doors and gateways.*

Thermal insulation of commercial and industrial premises creates a more comfortable working environment, thus increasing productivity, it provides natural air-conditioning and saves energy. It is preferable, wherever possible to apply restoration treatment to cement-asbestos mix surfaces than to dispose of them.

PUBLIC BUILDINGS*: Nurseries, schools, local government offices and conference centres and any buildings that serve a public function, in which excess heat creates an unhealthy and uncomfortable environment, will benefit from thermal insulation which avoids heat being transmitted and accumulating inside these public spaces. By shielding the environment from heat, it becomes more comfortable, saves energy and improves productivity in the work place.*

PUBLIC AUTHORITIES*: The refracting properties of Ecobios paints improve visibility of road signs and in tunnels, of particular benefit to airport authorities and ANAS (the highways authority) with significant gains in safety and efficiency.*

ECO – FRIENDLY PAINTS AND THERMO-REFRACTING SHIELDS MADE WITH MILK AND WINE/APPLE VINEGAR USEFUL FOR ENERGY SAVING

The effectiveness of the eco-friendly paints and shields made with milk and wine /apple vinegar is based on the clever application of the electro-hydrogenesis generated by ***combustion cells*** *as it has been largely explained by Professor Bruce E. Logan of the University of Pennsylvania and reported by Andrea Carborene (andrea@carborene.net) on Il Sole 24 Ore of Thursday 15th November 2007.*

Indeed, the Italian research had already arrived at such results, largely described in USA n. 5,482,543 and EPO n. 0621890 Patents of January 1992 in which the multi mineral emulsions were presented as the result of the chemical phenomenon of ***oxide-reduction*** *where two reacting elements, the lactic acid and acetic acid reacted with a poly-acid base, the calcium hydroxide, generating heat and bringing thus the ph value of deriving emulsions up to 11,5.*

The applied research optimized the performances of combustion cells with a ***multi-layer technique*** *for the realization of thermo–refracting shields and coverings useful to totally eliminate the buildings thermal load, allowing then not only the energy saving for the buildings air-conditioning but also protecting buildings against* ***thermal excursions*** *with subsequent long-time preservation and many-years maintenance of the buildings.*

A special consideration deserve the ***photo–catalytic*** *properties of multi-mineral milk and vinegar based emulsions since their* ***"thermal emissivity"*** *tends to "burn" the smog allowing the emulsions to be washed from impurities even by meteoric water. Some other deriving properties are the draining effect from humidity and the blockage of metal oxidation processes.*

At present the technique uses veil glass materials in order to achieve different aims, i.e. from the ***restoration of the old part of towns*** *to the recovery and environmental cleaning up of rusted industrial plants; anyway, this technique is more effectively employed in order to achieve the* ***re-waterproofing*** *and functional recovery of deteriorated bituminous shields by means of eco-paints and thermo-refracting shields which allow to solve both the problem of waterproofing and that one of the deterioration of roof pavements by preventing the heat absorption.*

Moreover, the ***tension-active*** *property of multi-mineral emulsion enables the realization of osmotic plasters, cement screeds and plasters useful in a very different range of applications being them fire-resistant, a-thermal and thermo-resistant.*

Live Naturally.....Think Positively.....Save Energy!!

Laboratori Ecobios s.r.l. is offering the market a kit of products formulated with the milk-vinegar eco-paints Solaria Universal and SUNLIFE to satisfy not only consumers ***implicit and explicit demands*** *but also to meet their* ***unexpressed needs.*** *What's more we have acquired all the vital know-how for preparing and applying these products to create added value for our business clients and their customers.*

Unexpressed needs*: energy saving, improving the quality of life in home living spaces, natural climate control, eliminating the stress caused by heat and artificial air conditioning, saving up to 30% on electricity bills and involving consumers in reducing* CO_2 *emissions into the environment.*

Explicit demands*: this is all about finding solutions to the problems posed by technical experts, building firms and building professionals (B2B). Listed below are all the problems that can be solved with the products in the kit, all containing the* ***milk-vinegar eco-paint SUNLIFE*** *Using the correct application techniques it can:*

- *banish mould and rising damp*
- *restore and/or replace deteriorated bituminous membranes, create water-proofing and thermal insulating films, create draining and insulating coats on paved patios and sun terraces using coatings of glass fibre and non-woven mat and white Portland cement.*
- *used to seal cement-asbestos roofs with products formulated with Solaria Universal, it saves time and money, as well as preventing further pollution from the disposal of cleaning water since Solaria Universal is certified as an ideal sealant that can be used without first cleaning the roof.*

Implicit demands: *good cover, adhesion and quality lasting many years are guaranteed by the certificates issued and presented with the product manual, along with the technical and safety specifications.*

*For **coloration**, absolute priority is given to "**alkaline-resistant pigments**" for their intense colouring potential, both in terms of the higher specific weight of the products and their elevated alkalinity.*

*The efficiency of Solaria Universal and SUNLIFE milk-vinegar emulsions, and in particular the kit of products containing these, is the result of their action as "**multi-mineral organic batteries**" made possible by the principle of **electrohydrogenesis** and optimised by the use of the **acetic acid** and **lactic acid** present in wine vinegar or honey and milk of animal origin.*

*The application know-how **adds value**, with a few simple precautions, to **the techniques developed to the current state of the art,** consisting of a preventative application of Primer Ecobios LIB whose powerful insulating and elastomeric properties make it possible to create an **osmotic film** through which the raised alkalinity of the milk-vinegar eco-paint Solaria Universal and SUNLIFE is "discharged".*

*The effects of this **multi-layer application technique** for the multi-mineral, milk-vinegar emulsions Solaria Universal and SUNLIFE can be summed up as follows:*

- *The alkaline efficiency (ph=11,5) of the organic battery towards the exterior of the surfaces treated makes possible the total refraction of solar radiation, including visible and distant infrared, (see degree dissertation), with the resulting **total reduction in the thermal load** of buildings, which in turn **reduces the heat island effect** in urban areas. Other appreciable efficiencies are the **elimination of temperature fluctuations**, the prevention and self-healing of**micro-cracks and thermal bridges.** The most significant economic and financial benefit is **energy saving,** in addition to the prevention of **premature ageing** in residential buildings and of the need for regular **maintenance for many years.***

- *The dehumidifying and desalinising efficiency of the "**draining coats**" is created by **impregnating** the layers of **glass fibre and non-woven mat** with Primer Ecobios LIB making possible the **photo-catalytic reaction** produced by the multi-mineral milk-vinegar emulsions in contact with air and light. The emulsions are packed in drums in **stable physical and chemical equilibrium**, that can last many years, and this effect is only activated when the paint is applied to surfaces in contact with light and air, producing a*

- *chemical acceleration (**catalysis**) that gives off the moisture in the surrounding environment, as can be seen the applied paint takes on a pink coloration for a few days. This photo-catalytic effect can be further enhanced by the addition, at the time of application, of a suitable dose of white Portland cement.*

- ***The photo-catalytic efficiency*** *lasts many years thus making the paint application more long-lasting. This long-term efficiency can be* ***verified*** *by comparing the temperature difference in surfaces treated with this product from others that are not. The* ***warmer temperature*** *tends to* ***oxidise the organic substances present in smog*** *so that the surfaces may be washed simply by rainwater.*

- *The efficient creation of* ***cold water-proofing membranes****, used for the restoration and protection or the replacement of traditional bituminous membranes is made possible partly by the multi-layer application technique of glass fibre and non-woven mat impregnated with Primer Ecobios LIB but mainly by the heat-reflecting and anti-smog properties of these totally mineral products Solaria Universal and SUNLIFE, that* ***act directly on the agents that cause*** *the deterioration of the membranes themselves.*

- *Solaria Universal and SUNLIFE milk-vinegar eco-paints have been studied in depth by the research centre* ***ENEA Centro Ricerche di Casaccia (RM)****, monitored in degree dissertations for the University of Rome III and they have also attracted much interest from the EU* ***Executive Agency for Competitiveness and Innovation*** *– EACI – that has selected these products for use in the project Intelligent Energy – Europe , "* ***IEE/07/475, Promotion of Cool Roofs in the EU****" in order to check their properties in* ***pilot schemes*** *with the ultimate aim of promoting their use all over Europe, by means of the appropriate legislation.*

Solaria Universal and SUNLIFE

Eco-friendly, multi-mineral, milk and vinegar paints for energy saving.

The eco-friendly paints Solaria Universal and SUNLIFE are multi-mineral emulsions made with milk and wine vinegar with a ph value = 11,5 and specific weight of 1,4 and 1,5 respectively, and with remarkable thermo-reflecting, anti-smog, osmotic, photo-catalytic, fireproofs, dehumidifying features in addiction to abating features of the asbestos fibres contained in the asbestos cement coverings and materials.

The combined use of painting styrene-acrylic products, glass veils of various structure and the combination of fixatives vinyl-based products in the eco-friendly paints enables to make, waterproofing, dehumidifying and covering ***no-thermal films****; waterproofing, heats-insulating and cracks sealing sheathings of residential commercial and industrial buildings as well as of sheet and iron made supports and materials even if rusted and oxidized.*

The main characteristics can be summarized as follows:

Energy saving

The eco-friendly paints applied on the exterior walls, on the terraces and on the roof pavements waterproof, reflect more then 90% of solar radiation and freshens the buildings inside up to 10°C.

The coefficients values of the energy reflection (in the ***visible effect*** *up to 92.28%, the* ***solar effect*** *up to 85.92% and the* ***infrared effect*** *up to 92.32%) owned by the eco-friendly milk and vinegar paints allow* ***the total elimination of buildings' thermal load*** *to solar radiation; increasing the buildings resistance to solar radiation and even causing, in some cases, thermal inversion of pre – existing values phenomena, the realized no – thermal film,enables to save up to the 90% of the energy needed for the* ***summer cooling;*** *further eliminaties the stress deriving from heat and conditioned-air and reduces the emission of* CO_2.

The elevated energetic refraction to the near and distant infrared enables to keep, during winter, the heat in buildings because the eco-friendly milk-vinegar paint tends to oppose the dispersion through the walls; the energy saving rate for the winter heating reaches values up to 30% of the energy that is necessary at present. ***The reduction of energy needs*** *for the air-conditioning either in summer and winter, more than entailing a significant financials resources saving, remarkably contributes* ***to the reduction of CO2 emissions in the environment****.*

A consequence of the buildings' thermal load annulment is that, the eco-friendly milk and vinegar paints protect the buildings materials from thermal ranges between ***-40°C*** *and* ***more than 80°C*** *supporting, thus, the safeguard from the precocious ageing of residential, commercial and industrial buildings and of iron-cement and/or brick –cement fittings.*

A particular mention is due to the effective reduction of the ***heat islands*** *of the urbanized areas which, because of the rise of heat absorbed from opaque materials: asphalt, bituminous sheaths and smog show temperatures of more 5°C upper than the surrounding not urbanized space; opportunely combined with the opaque materials and/or applied on absorbing materials the eco-friendly milk and vinegar paints contribute to the reduction of the heat kept in urban areas.*

The combined osmotic and photo-catalytic properties of the eco-friendly paints milk and vinegar paints enable, under the action of solar radiation, the dehumidification by oxide-reduction of organic substances and the consequent ***crystallization of the thin dusts*** *which, in such a way, are washed and/or dusted from atmospheric agents without damaging buildings surfaces.*

The protective no-thermal film, *created using the eco-friendly milk-vinegar paints,* ***eliminates the causes*** *of the deterioration of the bituminous sheaths applied on the brick-cements pavements of industrial sheds and residential buildings and therefore theoverheating of these ones; the accumulation of heat, in fact, causes* ***the brick-cement garrets arching*** *provoking thermal bridges, sheaths tearing and cracks with consequent water infiltrations and the formation of moulds and condensations in the interior environments; the hot air, in fact, transpires through the sheaths, condenses becoming water when it's cold and, in particular conditions, it freezes wearing out the surface below the sheath.*

Waterproofing films and draining coatings.

The effectiveness of eco-friendly milk and vinegar paints can be directed to the thermo-protection of waterproofing films and sheaths created by means of the glass veils coating between 30 and50 gr. per square meter. in styrene-acrylic elastomeric primer and afterwards finished with the waterproofing product EcobioSun. This proceeding enables to create thermo-protected sheaths and/or to repair the bituminous sheaths needing a conservative restoration.

The draining coatings and no-thermal films are made by means of eco-friendly multi- mineral paint, milk and vinegar coatings and cement blocks, sandwiched between two styrene –acrylic products whose, the first one, electrometric and if necessary reinforced with glass veil fibres, acts as an anchoring product for the eco-friendly paint, while the finishing product contributes to the defence of the treatment itself from atmospheric aggressions. The styrene-acrylic product coatings even if lacking in multi-mineral milk and vinegar emulsions and if necessary reinforced with glass veil fibres can be thermally protected by the eco-friendly milk and vinegar paints and they can be useful for the protection of: wood made houses, plastic made plates and panels; with the multi-layer application technology it is possible to create snow, intense cold and fire resisting films; to dehumidify walls affected by humidity and moulds; thermally insulate metal containers; to restore and recover the oxidized and rusted surfaces of iron fittings , wood and plate harbours, ship decks and metal surfaces needing restoration and thermo-protection.

SUNLIFE

SUNLIFE, *being a* ***problem solving*** *eco-friendly paint, it is addressed to professional operators who can* ***create value for costumers,*** *creating at the same time,* ***value for the company*** *and exalting their professionality.*

SUNLIFE *has been certified by the ENEA, Research Centre of Casaccia (RM) for its energy refraction which value is superior to 90%.*

SUNLIFE, *furthermore, has been the subject, in the academic year 2005-2006, of a thesis examined at the University of Roma III having for subject "the effectiveness of the reflecting materials employ for the* ***reduction of buildings' thermal loads****."*

The thesis starting from the presupposition that, with an air temperature of about up to 30°C, the buildings accumulate heat up to value of beyond 50°C and from the ascertainment that the upsurge of energetic use must be attributed principally to the growing use of air conditioning systems, leading to black out risks during summer months, concluded that ***the economically more relevant energy saving*** *derives from the reduction of the buildings thermal load.*

The thesis has monitored the use of SUNLIFE in the reduction of the buildings thermal loads and, in particular, of the first floor of a building, providing at the thermal insulation of the roof and comparing these values with those of the ground floor.

The job carried out has shown that, if before the thermal insulation of the roof the ground floor had a lower thermal load than the first floor, subsequently it has been noticed a ***thermal inversion*** *of values so that the thermal values of the first floor resulted lower compared to those of the ground floor!*

The amazing result is that SUNLIFE totally ***eliminate the buildings thermal load****; the benefits in terms of life quality, energy saving and safeguard from the buildings' precocious ageing constitute the true* ***added value*** *of a revaluation of the buildings'* ***skin*** *not only in a mere decorative function, but above all, in function of a* ***protective no-thermal film*** *of real estate investments.*

Combined with a simple no-thermal films realization technology, the milk and vinegar emulsion entails a revolution in the real estate finishing sector: as far as it is concerned with maintenance, restoration and commercial and industrial buildings recovery.

The energy saving has been ascertained in the measure of 3% saving on the electric bill in case of insulation of the roof only in porcelain Gres but it is to be considered in double measure in case of sheath covering and ***triple measure*** *in case of sheath covered brick-cement garrets*

The products kit formulated with SUNLIFE enables ***to face the causes*** *of various notable phenomena of building, roofs, roof pavements and sunroofs degrade which needs the most urgent interventions.*

Terraces and roof pavements, especially if dressed with sheaths and made of iron cement, by accumulating heat during summer are subjects to arch, tearing in this way the sheaths and provoking cracks and both ***rain*** *and* ***condensate water*** *infiltration; the "hot air", in fact, transpires through the sheath and condenses in cold conditions becoming water and, in particular conditions, freezes wearing out the surface below the sheath.*

The precocious ageing *of housing, commercial and industrial constructions* ***is irreversible****, if there are no interventions on the deterioration causes, such problem will come back in even more serious terms after some* ***ephemeral*** *restoration interventions.*

The professional operator can provide, using the kit of products made with SUNLIFE:

a) ***To the restoration*** *of the sheaths,* ***closing*** *the micro-cracks or* ***repairing them*** *by mean of a glass veil* ***coating*** *of about 40 gr.; making in this way a waterproofing and elastic film, thermo-protected by the following application of SUNLIFE;*
b) *To carry out* ***fire and frost-proofing treatments*** *through the realization of* ***a no-thermal film with multi-layer technology*** *in order to have a resistance to thermal range from -40°C to +80°C;*
c) *to create* ***dehumidifying plasters and draining overcoats*** *to defeat effectively moulds, condensations, humidity even upward and to restore effectively buildings in precarious conditions with the* ***smart use*** *of the Portland white cement;*

The use of the SUNLIFE kit as indicated in the leaflet and in its specifications card enables to obtain more than a huge energy saving also a better quality of life inside the habitation with the ***elimination of stress deriving from heat****.*

It's important ***to have a different conception*** *about the* ***skin*** *of building both in a* ***protective*** *function and safeguard from the precocious degradation of the real estate itself.*

SOLARIA UNIVERSAL

The most recent and qualified thematic literature points out the importance of the thermo-insulating function of the buildings' inside and outside covering both for a better quality of life and for a significant energy saving.

*The thermo-insulating effectiveness of the **inside covering** enables a significant reduction of thermal needs, reducing, therefore, the utilisation of **low temperature** radial heating systems, as a consequence of a fewer heat dispersion through the walls; while the thermo-insulating effectiveness of the **outside covering** enables the employ at **low regimes** of the air-conditioning system during summer.*

*The consequence of the natural air conditioning of the buildings is that for every **1°C reduction** of the inside temperature there is a **saving rate** of **up to 6%** on air conditioning costs, reducing therefore the CO2 emission in the environment.*

*The protective **no-thermal film** realized with Solaria Universal on the garrets and roof pavements of 1000 square meters industrial sheds, **reduces the inside temperature**:*

1. ***from 3°C to 5°C** in case of asbestos - cement roofs;*
2. ***from 4°C to 8°C** in case of sheathed brick-cement garrets*
3. ***from 5°C to 10°C** in case of garrets in metal and /or zinc sheet;*
4. ***from 3°C to 6°C** in case of traditional garrets in wood and/or tufa mixtures.*

The saving rate on the electric bill is equal to the 90% of the air-conditioning costs and up to 20% of the total ones.

***The non monetary advantages** are those concerned with:*

a) *the safeguard of the real estate from the precocious ageing;*
b) *the effective many years maintenance interventions;*
c) *a better quality of life and the elimination of the **stress deriving** from conditioned-air;*
d) *a better company productivity*

*Particular benefits can be achieved in the **public residential building** sector from the inside, outside and the roof pavements thermal-insulation, using the multi-mineral eco-friendly mil and vinegar paint Solaria Universal both for the considerable **energy consumption saving** and for the **lasting effectiveness** of ordinarily maintenance interventions to be carried out every two years.*

A particular attention is to be paid to the ***asbestos - cement coverings encapsulation*** *as the decree of 9/11/2006* ***enables*** *every owner, holder and/or painting company to provide autonomously to the coverings encapsulation and to the occasional "contact" for restoration purposes; without the intervention of companies members of the special waste disposers Register.*

The employ of the encapsulation cycle formulated with Solaria Universal enables to obtain, ***without producing any waste****, contextually to the encapsulation, the thermal-insulation and crack waterproofing by means of glass veil for the restoration; inside the book are indicated the product prices together with some useful bureaucratic indications.*

Transparent prices and simple technology for the realization of no-thermal film entail advantages for all of us and in all the residential commercial and industrial building sectors, both ***in the preventive phase****, as a "necessary" investment of prevention, and in* ***the following*** *maintenance and/or conservative restoration* ***phase****.*

In the end, it has to be underlined the excellent ***smog resistance*** *of the eco-friendly milk and vinegar paint Solaria Universal because of its* ***photo-catalytic properties*** *due to its* ***high alkalinity value***