

# DERBIGUM ENERGY SOLUTIONS



"You can't deal with climate change without dealing with existing buildings."

Richard Moe - President of The National Trust



# Innovation is a part of our DNA

## Sustainable products

# Derbigum did not wait for Kyoto.

For more than 20 years now, Derbigum has been intensively engaged in the research and development of new and sustainable products. As of today, the company continues to seek alternative compositions for its products, integrating raw materials that lead to lower CO<sub>2</sub> emissions. Global warming and the CO<sub>2</sub> problem are currently at their peak. In response, Derbigum is proud to present a range of sustainable products. A world first, Derbigum now produces products that are free of solvents and volatile organic compounds (VOCs).

### Greennovation

# Recycling without any loss of quality

Since 1999 Derbigum has recycled some 4000 ton of bitumen per year. This material suffers no loss in quality – you can compare it to gold which is melted down and recast – and is thus perfectly suited for the production of new membranes. Derbigum strives to realize a 100% utilization of recycled and organic materials during production. This combination ensures that the final product is, in turn, completely recyclable.

## 60 years durability

# Derbigum roofs retire at 60

Whereas other roof coverings need replacing after just 15 years, Derbigum membranes are still going strong after 30 years. The application of a new layer will even increase the lifespan to as much as 60 years! This has been demonstrated by independent studies. After this long lifecycle, the old roof coverings can again be processed into first quality roofing membranes.



With DERBIGUM, the building owner is choosing from the best in class in environment in Europe. Derbigum allows the building owner to opt for sustainability and ecology.



# DERBIGUM ENERGY SOLUTIONS

## Derbigum Energies guides you from A to Z

"Derbigum Energies" is a group of energy specialists within the DERBIGUM Group offering customized solutions to reduce energy consumptions, produce renewable energy and reduce the carbon footprint of buildings. Derbigum Energies will follow you during the entire project, from evaluation to delivery.





## Make an energy audit

The audit leads to a very objective comparison of all components such as insulation, compactness, passive solar gains, comfort, energy production and investment costs.

Derbigum Energies uses a specialized software package that simulates the thermodynamic behavior of your buildings over a full meteorological year. The demand for energy and comfort can be determined for any specific time of year. The technical equipment is also integrated in the model and the heat generated by them included in the simulation.

The results are checked and confirmed by an independent study bureau.





# DERBIBRITE NT : the passive cooler

### Solution 1 : Install a passive cooler on your roof

#### Save energy

Save €2 per m<sup>2</sup> per year on your energy bill and considerably improve the comfort of your employees.

Roof surface temperatures can get as high as 80 °C on dark colored roofs. They age faster as they absorb an enormous amont of energy and radiate heat to the inside of the building.

The white reflective Derbibrite NT reflects up to 76% of the sunrays, resulting in decreased indoor temperatures by several degrees.

#### Easy to maintain

- 100% water repellent thanks to the new easyclean nanotechnology
- · easy to clean
- white that stays white thanks to modified acrylic coating
- guaranteed long-term reflective properties

### Durable

- Derbibrite NT will last at least 30 years (as with all Derbigum roofs)
- less heat absorbed means less aging



- no impact on the pH level of water
- perfect for collection of rain water
- considerably lower CO<sub>2</sub> emissions thanks to reduced use of air conditioning
- 100% recyclable





#### An example: METRO Cash & Carry

With 655 stores in 29 countries, METRO Cash & Carry is an international leading player in selfservice wholesale. The METRO Cash & Carry store in Berlin installed 13.500 m<sup>2</sup> of Derbibrite NT on their roof.

"Last year we installed 13.500 m<sup>2</sup> Derbibrite NT on our roof. Temperature inside the building has been lower ever since. During work we really feel the difference; the working comfort has increased."



# DERBIBRITE NT : More output for photovoltaic panels

### Solution 2 : Install photovoltaic panels on DERBIBRITE NT

### More reflected light

Derbibrite NT's white reflective coating improves the yield of crystalline and CIGS solar panels. You get more kWh per kWp installed.

The sunrays reflected on Derbibrite NT bounce on the panels for significant increases in energy production.

### Proven durability

The Derbibrite NT will last longer than your photovoltaic installation.

- high traffic resistance
- easyclean surface
- 100% recyclable
- 30<sup>+</sup> years durability

### Lower surface temperatures

The Wp capacity of a solar panel increases as the PV module temperature decreases. Derbibrite NT cools your roof and increases the efficiency of your solar panels. See the graph below.





Module temperature



# DERBISOLAR<sup>®</sup>: The building integrated PV solution

### Solution 3 : Install a building integrated PV solution

DERBISOLAR® combines a highly durable roofing membrane, DERBISOLAR BASE®, with integrated amorphous photovoltaic solar cells for generating electricity.

Derbisolar base is a greennovation developed by Derbigum. It is a polymer bitumen membrane with an exclusive white reflective acrylic coating that is baked into the reinforcements. This guarantees a very long durability and ensures a constant high yield output of the solar panels.

The amorphous photovoltaic cells are adhered to the hi-tech Derbisolar base. The adhesive has a 20 year warranty. Derbigum is a world leader in the field of amorphous solar panels adhered to recyclable roofing membranes.



#### Possible DERBISOLAR combinations:



On DERBISOLAR BASE® tracks of 1200 x 100 cm



### 9 reasons to choose Derbisolar :

 Lightweight and flexible : minimal impact on the supporting structure (cells weigh only 3.5 kg/m<sup>2</sup>).



2 No perforation of the roof : no risk of leaks.



3 Less impact on the orientation of the roof : the cells are positioned horizontally.



4 Better performance, even in diffused lighting conditions : with the integrated triple junction technology, the cells are capable of bridging overcast periods.



5 Less sensitive to partial shade : bypass diodes ensure balanced production.



6 **Does not cast a shadow :** allowing optimum use of the surface.



7 **Highly resistant :** the cells are built into composite materials as opposed to glass.



8 **Discrete :** perfect integration with the roof covering and invisible from the ground.



9 **Temperature :** lower loss of productivity at high temperatures.



More info on www.derbisolar.com



# DERBIGUM : a reliable and experienced partner

### More than 75 years of experience and know-how

Derbigum began in Belgium as a family business in 1932. Derbigum has grown to become a well-respected global group specialized in roofing and waterproofing. Derbigum is now also very active in greennovation of buildings by offering customized solutions to reduce energy comsumptions, produce renewable energy and decrease the carbon footprint of buildings.

### A few figures:

- 3 production facilities: 2 in Belgium (Lot & Perwez) and 1 in the USA (Kansas City)
- 380 employees worldwide
- 600 million m<sup>2</sup> of roofs covered throughout the world
- 10.000 references over 30 years old
- 4000 tons of recycled material per year

### **Derbigum Energies**

- 9 MWp in solar panels per year
- more than 100 projects per year
- active in 12 countries
- 30 energy specialists on 2 continents

### A few of our references:

D'leteren - Skyshop Zaventem - University Ghent, campus "De Sterre" - Viangros - Vlaamse Media Maatschappij - Daikin - Volvo trucks - Honda Europe -Creneau - Kim's chocolate - Jogrex - Volvo - Sint-Elizabeth Hospital - Sint-Victorinstituut - Lamborghini car dealer -Novelis - Metro - Henkel Schaumweine - König - Bosch Rexroth - Velux - Smiths Medical - Unicoop - shopping center - Ipercoop - ABB - Henkel - Glaxo - Whirlpool Europe SRL - Italpack - Italscania - Peroni Spa - Telecom - Nexlogic - KPN Orange - Yamaha Motor Distribution - Fokker Elmo - Greif - Industrial packaging - Case - Western Reserve Univ -Carnegie Mellon University - Life Care Hospital - Tumwater Office Building - Baxter Health Care - White Memorial Hospital - Wells Fargo Bank - BMC Truss Manufacturing - Macy's Department Store - Baxter Health Care - Ulsa Zoo - Anheuser Busch, Inc. - Chelsea Foods...

"Derbisolar on your roof is the best investment in the future of your company."

"The decision for Derbisolar marked an important point in my career as an entrepreneur."

"Derbigum showed me that my company's flat roof could generate income."

"We opted for Derbisolar's solar energy and roof covering in one. The best investment ever."

"That is real entrepreneurship: a smart approach to energy. Derbisolar is good for the environment and good for my budget."

"Investing in Derbisolar has paid dividends for our company!"



Derbigum provides customized innovative and sustainable solutions for roofs and buildings to save energy and costs, produce renewable energy, increase the sustainability as well as decrease the carbon footprint of buildings.



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