

Granite® Comfort

Organic coated steel offering improved thermal comfort inside buildings

The European Directive of May 2010 on the energy performance of buildings aims to reduce, by 2020, overall greenhouse gas emissions by at least 20% below 1990 levels. The already very low energy consumption of a nearly zero-energy building should be covered by energy from renewable local sources.

Research has shown that the impact on the lifecycle of a standard building is most significant during the use of the building and can represent up to 80% of the overall impact in terms of primary energy consumption or the impact on global warming (CO₂ emissions).

ArcelorMittal is of course focusing on developing sustainable products and solutions to improve the energy efficiency of buildings and reduce their environmental footprint. As such, Granite® Comfort is part of our new Nature range of organic coated products, which are completely free of environmentally harmful chromates (hexavalent chromium and heavy metals), whether in surface treatments or in primer and finishing coats of paint.



Granite® Comfort is a steel substrate coated with several layers of paint containing specific pigments that appreciably improve thermal comfort inside buildings, particularly in hotter climates.

These pigments reflect a large amount of infrared solar radiation, which is what causes the roof or the building envelope to heat up. The external walls are therefore kept cooler, with the result that less heat enters the building.

Granite® Comfort does much more than improve the interior comfort of a building, however. It also prolongs the building's life by markedly lowering the surface temperature of the roof, which guarantees colour fastness over time and reduces thermal stress on the insulation, thus slowing the ageing process.

Applications

Primarily intended for the envelope of buildings located in very sunny climates: roof and façades.

Advantages

- Increased thermal comfort inside the building
- Lower annual energy bills
- Longer lifespan of the building

Main properties

Nominal paint thickness	25 microns
Gloss (Gardner 60°)	Usual: 30 GU
Total solar reflectance	≥ 25%
Clemen scratch resistance	≥ 2 kg
Adhesion of the coating (T-bend)	≤ 1 T
Resistance to cracking on bending (T-bend)	≤ 2 T
Corrosion resistance (salt spray test)	360 hours / RC3 category in accordance with EN 10169 (from 2 to 5 (the best))
UV resistance (QUV test)	Use of paints and resins RUV3 in accordance with EN 10169 (from 2 to 4 (the best))
Fire classification	A1 in accordance with EN 13501-1

Dimensional feasibility

	Thickness	Min width	Max width
Granite® Comfort	0.4 - 0.8 mm	600 mm	1250 mm

Discover our new product collection, Nspired by Nature

Colour palette

White – and all its various shades – is of course the most reflective colour, but thanks to Granite® Comfort not every roof has to be plain white to provide optimum solar reflectance.

The Granite® Comfort range is mainly based on dark colours, which are normally less reflective but are a popular choice in the construction industry, especially for roofing applications.

All colours are available on request, but we have selected four that come with a guaranteed total solar reflectance (TSR) of 27%. TSR is the percentage measure of the amount of solar energy reflected from a given surface.



T8717 Testa di moro



T6300 Verde Navarra

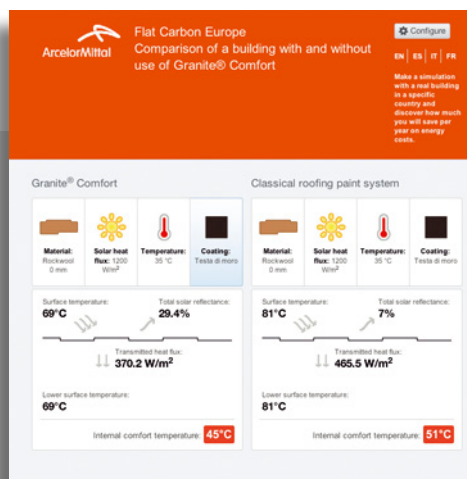


T5008 Azul Baracaldo



T7016 Anthracite grey

Granite® Comfort Naturally energy efficient



Simulation tool

An interactive tool is available at www.arcelormittal.com/industry/granitecomfort to enable you to work out all the benefits that Granite® Comfort can offer you. You can modify the various parameters to simulate the situation that most closely matches your own, for example:

- to calculate the effect on the thermal performance of a sandwich panel with and without Granite® Comfort;
- to calculate the annual energy savings that are possible by using Granite® Comfort.

Would you like a customised simulation?

Our technical teams are available to provide you with customised, specific simulations that take account of all the calculation parameters particular to your building and its environment.

Please do not hesitate to get in touch for more information on this product by contacting our technical and commercial teams directly or by sending an e-mail to: fce.technical.assistance@arcelormittal.com

Credits

Images: Philippe Vandenameele, Ubiquity, Aware, Jeroen Op de Beeck

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