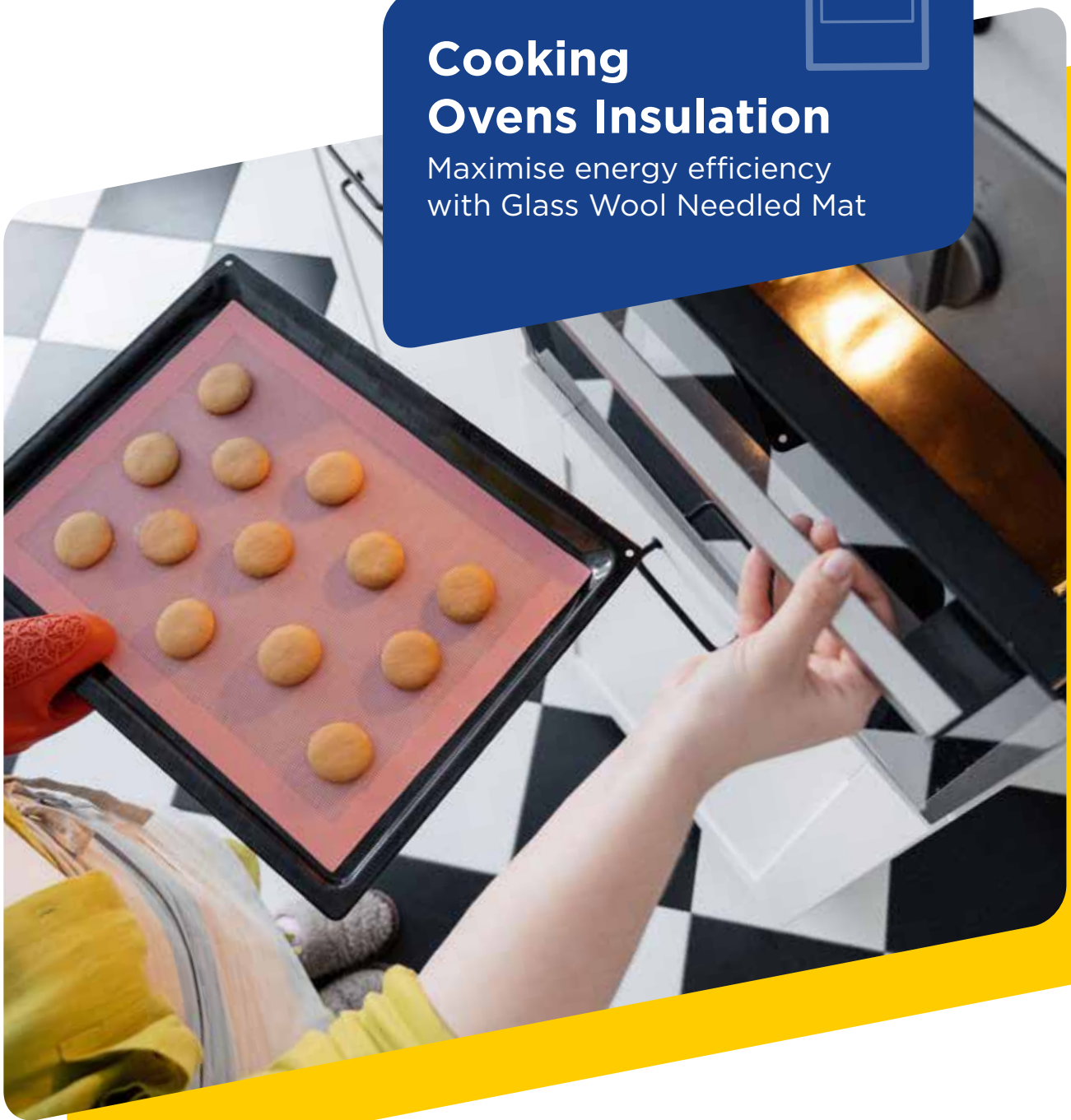
isover
SAINT-GOBAIN

Cooking Ovens Insulation

Maximise energy efficiency with Glass Wool Needled Mat



SAINT-GOBAIN

Insulate
THE OVEN CAVITY

Developing
THE COOKING OVENS OF TOMORROW

Cooking ovens have always been at the heart of every kitchen.

After decades of overconsumption of industrial and ultra-processed foods, we have entered a new era where we are returning to healthier and more sustainable eating habits. The pandemic period has further accelerated this trend, with people spending more time at home and in the kitchen!

Oven manufacturers are responding to this with permanent innovations: smart or connected ovens, with new cycles and features, such as advanced convection, automatic cleaning, integrated microwave, or extra space.

But above all, and to meet the demands of modern families and businesses faced with rising energy costs and aware of environmental issues, cooking ovens must operate not only safely but with **optimal efficiency**.

New cooking appliances come with an energy label showing their energy efficiency class. To target the highest energy classes, oven manufacturers have several complementary options, such as high-performance glass doors, and a **high standard of insulation**.

Indeed, by reducing heat loss through the sides of the oven, insulation optimises appliance efficiency allowing the maximum amount of heat energy to be used to cook. In addition, it reduces fire risk.

Glass Wool Needled Mat can withstand up to 500 °C in continuous service and 550 °C intermittently, keeping dimensions stable. It is therefore perfectly adapted to insulate all kinds of cooking ovens, including self-cleaning, pyrolytic ovens.

Getting the most out
OF YOUR COOKING OVENS:

Choose Glass Wool Needled Mat to enhance your cooking ovens, whether you are a manufacturer or a consumer.

AS A MANUFACTURER

- Be at the forefront of innovation and Ecodesign
- Sell the most efficient cooking ovens
- Optimise the manufacturing process
- Limit waste in the plant

AS A TRANSFORMER

- Take part in Ecodesign projects
- Demonstrate your capacity to innovate
- Be able to propose a large range of solutions

AS AN END USER

- Reduce your energy bill
- Cook comfortably
- Do your bit for the environment
- Be certain of safe use

5 GOOD REASONS TO CHOOSE GLASS WOOL NEEDLED MAT

- Design the most energy efficient cooking ovens
- Go greener
- Make your ovens comfortable to use
- Ensure health and safety throughout the product lifecycle
- Benefit from customisation and easy processing

Design the most energy efficient COOKING OVENS

In a context of climate change and general economic uncertainty, energy sobriety has become an absolute imperative. And the home appliance market is no exception here. Modern ovens - like other household appliances, must be as efficient as possible, while consuming as little energy as possible.

THE EU ENERGY LABEL

In 1994 the EU began to gradually introduce the EU Energy Label for household appliances, in order to provide a clear and simple indication of a product's level of energy efficiency. For consumers, it helps them make informed choices. For manufacturers, it is an incentive to innovate and encourage the use of more energy-efficient technologies.

As the energy efficiency of products has steadily improved, more and more products now occupy the top classes and the label has become less differentiating (e.g. the difference between A++ and A+++ is less obvious to consumers). This is why the current energy classes from A+++ to D are being replaced by a new, simpler scale from A (most efficient) to G (least efficient). Some product groups have already been 'rescaled' since 2021, others – including cooking ovens – will follow in the years to come.

INSULATION PLAYS A KEY ROLE IN THE ENERGY EFFICIENCY OF OVENS

For a manufacturer, insulation is an effective way to make cooking ovens more energy-efficient and to aim for the highest energy classes.

Glass Wool Needled Mat has outstanding thermal performances, at temperatures up to 550 °C. Designed to fit perfectly to the oven cavity, it effectively reduces energy consumption of the oven by limiting thermal losses through its sides.

Made of glass wool, **Glass Wool Needled Mat** offers equal or better thermal performance compared to alternative insulation solutions such as stone wool or ceramic fibre, but at a significantly lighter weight! Therefore, since there is less insulating mass to heat, **Glass Wool Needled Mat** contributes to better energy efficiency of the device.

DID YOU KNOW

The EU legislation for energy labels and Ecodesign has been estimated to bring energy savings of approximately 230 million tonnes of oil equivalent (Mtoe) by 2030.
For consumers, this means an average saving of up to €285 per year on their household energy bills.

Source: European Commission

Go GREENER

The global demand for more efficient and sustainable products to reduce energy and resource consumption is constantly increasing. In this context, the EU has put in place several effective tools to improve the energy efficiency and sustainability of products.

EU initiatives for energy efficient and sustainable products

The Ecodesign Directive	The Energy Labelling Regulation
The Ecodesign Directive provides consistent EU-wide rules for improving the environmental performance of products, such as household appliances, information and communication technologies or engineering. The directive sets out minimum mandatory requirements for the energy efficiency of these products.	The Energy Labelling Regulation may complement those Ecodesign requirements with mandatory labelling requirements.

Source: European Commission

These initiatives help to remove the worst performing products from the market and support industrial competitiveness and innovation by promoting better environmental performance of products.

MEET ECODESIGN CRITERIA BY INSULATING YOUR COOKING OVENS WITH GLASS WOOL NEEDLED MAT :

- **Drive energy efficiency:**
  - The excellent thermal properties of the product minimise heat loss through oven walls, thereby limiting energy consumption and CO_2 emissions.
- **Save materials & resources:**
  - Manufactured from up to 80% recycled glass wool, it reduces the need for sand extracted from quarries and helps protect biodiversity.
- **Limit waste generation:**
  - Not only is the product 100% recyclable, but it can be custom cut to keep waste to a minimum.
  - Sustainable packaging options such as reusable plastic boxes limit packaging waste.

DID YOU KNOW

To provide detailed information on the environmental footprint of our solutions, we perform Life Cycle Assessments (LCAs) of our products and have issued Environmental Product Declarations (EPDs) for many of them.

Make your ovens
COMFORTABLE TO USE

Modern kitchens are evolving from simple utilitarian spaces to living spaces where people meet, or even where they work. Open kitchens, for example, are becoming more and more popular, as they eliminate the barrier between the living space and the cooking space.

COMFORT REQUIREMENTS ARE INCREASING

In this context, comfort occupies an increasingly important place in kitchens, whether in terms of design or furniture, or in terms of the use of household appliances.

For cooking ovens, comfort once again rhymes with efficiency, i.e., reaching temperature as quickly as possible, reducing cooking times and facilitating cleaning.

But also to avoid odours and all kinds of emissions that could emanate from the various components of the oven.

USERS ARE NOT EVEN AWARE OF THE PRESENCE OF INSULATION

To ensure that it is completely odourless and neutral, it is important to choose the right insulation solution.

Glass Wool Needled Mat was specifically developed for sensitive applications such as cooking ovens: it contains no binder which would cause odours or emissions during heating cycles throughout the entire life of the oven.

Ensure health and safety throughout
THE PRODUCT LIFECYCLE

The health and safety of our customers is an absolute priority for us, whether for those who handle our products, or for the end consumers who will live with them.

GLASS WOOL NEEDLED MAT ENSURES SAFE AND COMFORTABLE INSTALLATION

As all ISOVER glass wool fibres, **Glass Wool Needled Mat** is bio-soluble and exonerated from any classifications on carcinogenic, mutagenic, or toxic for reproduction criteria. It is certified according to EUCEB and RAL and therefore complies with all EU regulatory requirements.

GLASS WOOL NEEDLED MAT IS EMISSION FREE

With service temperatures in cooking ovens of up to 500 °C and peak temperatures of up to 550 °C, it is essential that the insulation remains stable and effective, without releasing organic compounds after the first heating cycle or pyrolysis.

In order to eliminate any risk related to organic materials, and although all ISOVER products fulfil low emission requirements, **Glass Wool Needled Mat** has been developed specifically without binder - its mechanical strength being ensured thanks to the needlefelt technique.

This enables compliance with the most stringent requirements of oven manufacturers, which in many cases go beyond regulatory levels, in terms of VOC emissions.

DID YOU KNOW

More than 2500 scientific publications have demonstrated that mineral wool fibres are safe to manufacture, install and live with. This has been recognised by health authorities at an international level e.g. REACH regulation.

Benefit from customisation
AND EASY PROCESSING

Each process is unique, depending on the specifics of the oven manufacturers. Our wide range of densities, thicknesses, formats and facings allows us to create tailor-made solutions to suit your individual needs.

CO-DEVELOP TOGETHER WITH OUR CUSTOMERS

For manufacturers, we provide custom ready-to-use parts with specified dimensions and stamped areas. They can be installed easily and will adapt perfectly to the oven cavity.

For transformers, we supply products in rolls that can be easily reprocessed.

Each solution is the result of close collaboration between our customers and our R&D teams. Thanks to our technical support and our testing resources, we help you develop the cooking solutions of tomorrow!

EASY INSTALLATION AND LOGISTICS

Thanks to their flexibility and elastic fibre structure, our **Glass Wool Needled Mat** solutions easily adapt to the shape of the cooking oven, providing optimum insulation, including around the corners of the cavity.

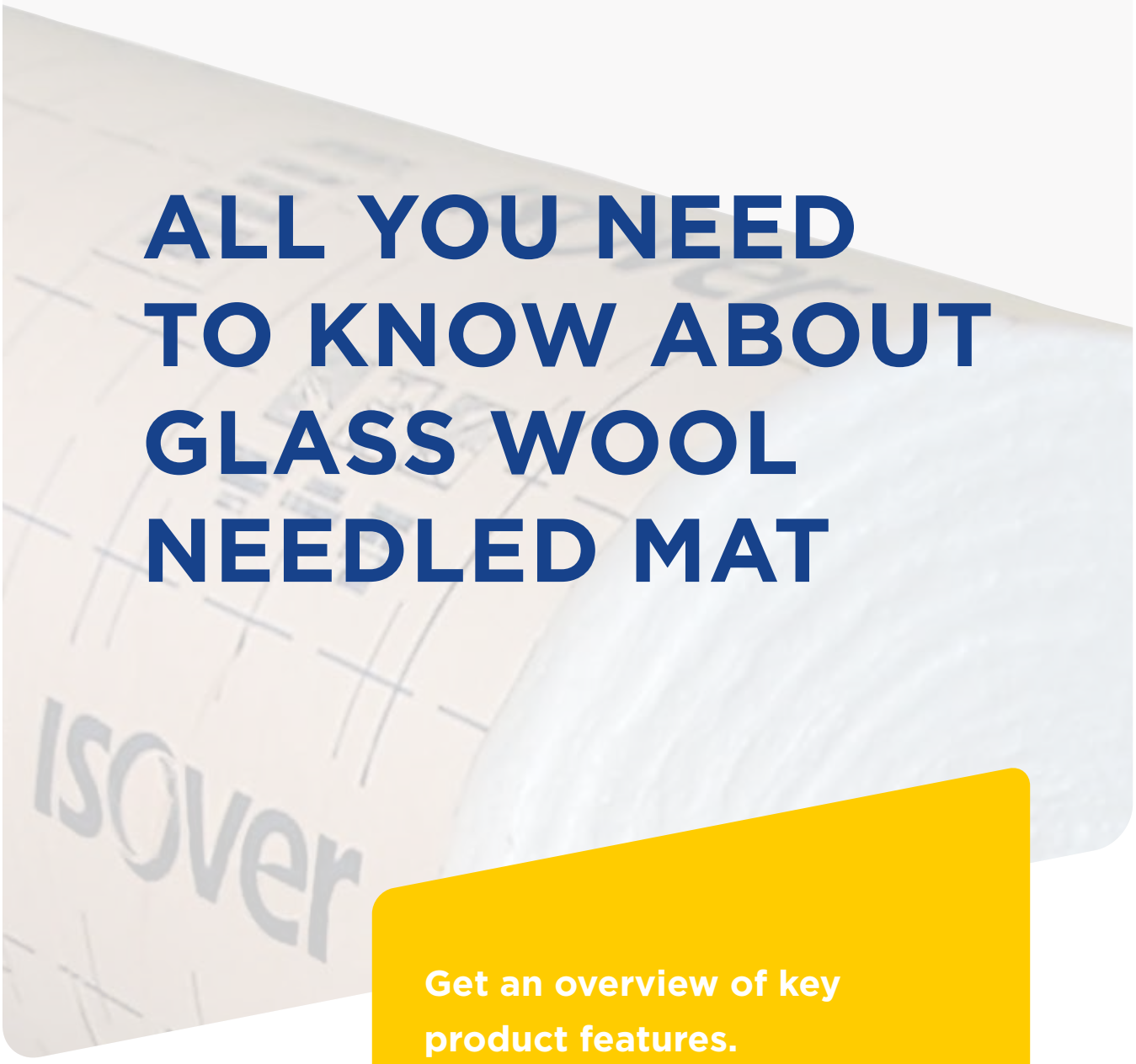
They are grip-friendly and generate little dust.

They can be installed manually or using robots.

DID YOU KNOW

Thanks to close collaboration with the world's leading manufacturers of household appliances, we have developed a broad knowledge of customer needs, in terms of technical performance, working methods and logistics.

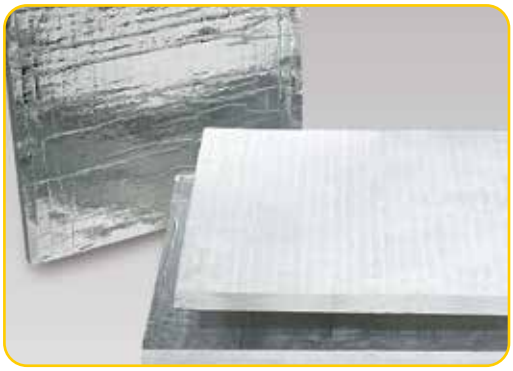
ALL YOU NEED TO KNOW ABOUT GLASS WOOL NEEDLED MAT



Get an overview of key product features.

Glass Wool Needled Mat
AT A GLANCE

Glass Wool Needled Mat is a thermal insulation felt made from glass wool, mechanically consolidated by means of needling.



Thermal conductivity (acc. EN 12667)

T	[°C]	10	50	100	150	200	250
λ	[W/(m.K)]	0.030	0.035	0.041	0.049	0.057	0.066

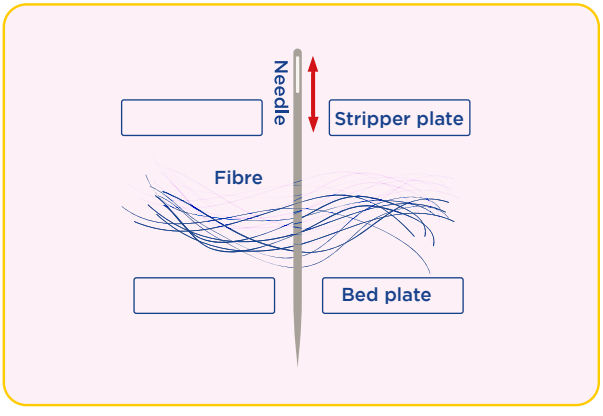
Maximum service temperature:

- 500 °C in continuous service
- Up to 550 °C maximum by intermittence

Delivery form:

- Thicknesses: 10 to 40 mm
- Available in rolls or custom panels
- Panels can be cut to size and stamped with a customised design
- Packaging: closed polyethylene bag for rolls / pallets and cardboard for stamped slabs

Action of a barbed needle



DID YOU KNOW

During the needlefelt process, mineral wool fibres are mechanically entangled by barbed needles, to form a dimensionally stable, compact felt.

ABOUT US

Discover the Saint-Gobain Group, and read more about Saint-Gobain Technical Insulation, the world leading supplier of sustainable insulation solutions.

MAKING THE WORLD A BETTER HOME

Saint-Gobain designs, manufactures and distributes solutions for the construction, mobility, healthcare and other industrial application markets. Developed through a continuous innovation process, they provide wellbeing, performance and safety while addressing the challenges of sustainable construction, resource efficiency and the fight against climate change.

This strategy of responsible growth is guided by the Saint-Gobain purpose, “MAKING THE WORLD A BETTER HOME”, which responds to the shared ambition of the women and men in the Group to act every day to make the world a more beautiful and sustainable place to live in.

SAINT-GOBAIN

Aligned with this commitment, Saint-Gobain Technical Insulation has been delivering sustainable insulation solutions to customers since 1937. Across all technical markets - from Marine to Industry, HVAC, automotive and household appliances - and with a worldwide presence deployed locally, we support our customers at every step of the project, from design to installation. This means customising our approach based on specific needs. This means adding value through high levels of comfort, health, safety and performance. This also means helping limit environmental impact of each project, while managing costs.

With expertise in an array of insulation materials, we are constantly pushing the limits of our solutions. These unwavering R&D efforts also enable us to reduce the carbon footprint of each product, whether through high levels of recycled content, recyclability or lower energy consumption.

Drawing on a unique combination of global resources, local deployment and multi-material expertise, Saint-Gobain Technical Insulation strives to always be more efficient and responsible. Together with our customers, we are making this an everyday reality.

Saint-Gobain Technical Insulation

PUSHING THE LIMITS OF SUSTAINABILITY TOGETHER.

Saint-Gobain ISOVER

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