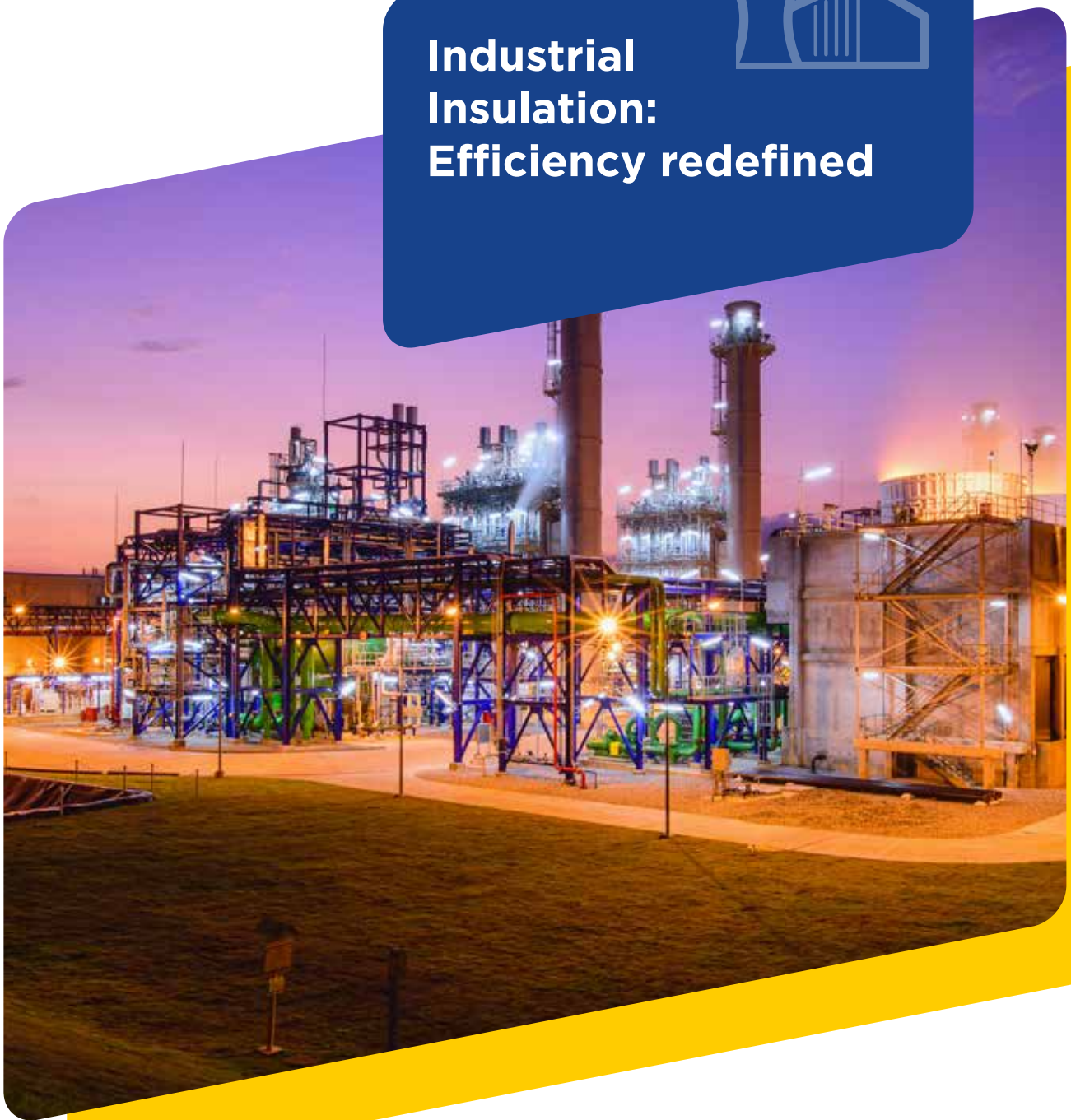
isover
SAINT-GOBAIN

Industrial Insulation: Efficiency redefined



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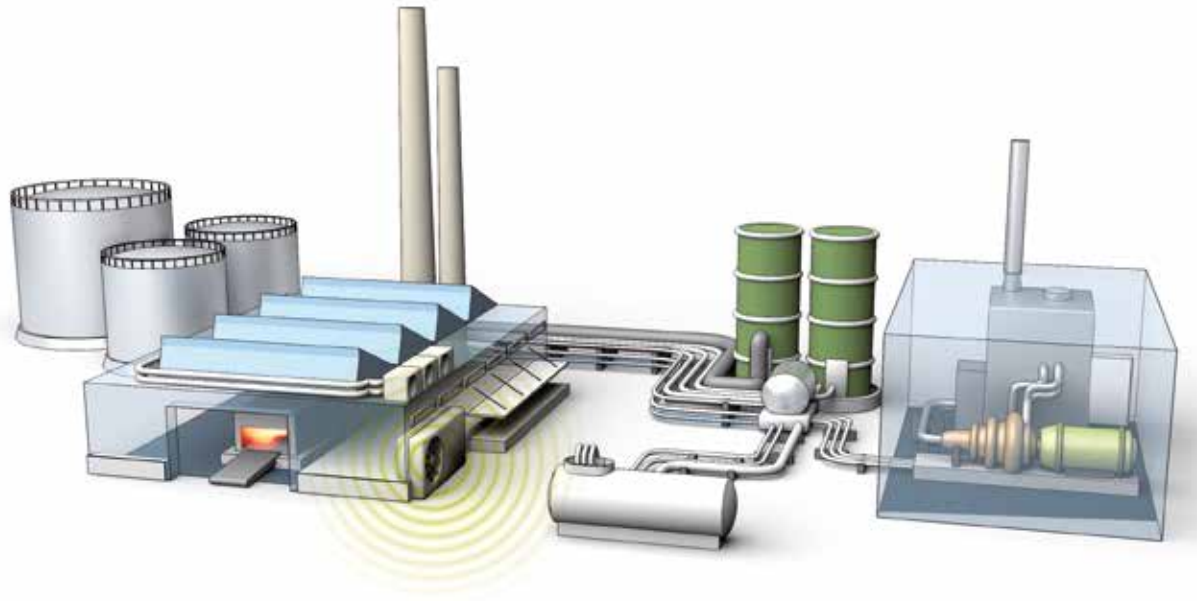
Insulate
INDUSTRIAL FACILITIES



Enhance your industrial efficiency
WITH PROPER INSULATION

The industry encompasses activities aimed at transforming raw materials into finished or semi-finished products using tools, machines, human resources and energy. Although it is a key driver of the modern economy, it also poses significant environmental risks, contributing to energy consumption, greenhouse gas emissions and waste generation.

As production needs increase, industries consume more energy and emit more harmful emissions. Energy efficiency is therefore crucial. Insulation, as a "passive" energy saving lever, addresses many industrial issues, including energy loss, high surface temperatures, corrosion and noise.

INDUSTRIAL INSULATION, A GROWING MARKET DRIVEN BY ENERGY EFFICIENCY AND DECARBONISATION

In today's competitive marketplace, industries ranging from manufacturing and power generation to chemical processing and oil refining are increasingly prioritising insulation. The industrial insulation market is expected to grow significantly, driven by increasing demand for energy efficiency and sustainability. Key regions such as North America, Europe and Asia Pacific are leading this trend, highlighting the need for effective insulation solutions across various industrial sectors.

INVEST IN INSULATION TODAY TO ENSURE YOUR INSTALLATIONS ARE READY FOR TOMORROW

Insulation plays a critical role in energy savings by reducing heat losses, which directly lowers operational costs and conserves resources. Additionally, it helps limit CO_2 emissions, contributing to reducing the environmental impact of industrial operations. Acoustic insulation minimises noise pollution, creating safer and more comfortable working environments. Furthermore, proper insulation prevents corrosion under insulation (CUI), ensuring the longevity and reliability of your equipment. It also enhances overall safety and process efficiency, safeguarding both your assets and personnel.

The scope of industrial insulation encompasses a wide range of equipment, including pipework, tanks, boilers, heat exchangers, and more. Our insulation solutions are designed to meet these diverse needs. We provide tailored solutions that deliver superior performance, ensuring your operations run smoothly and efficiently.

Invest in our advanced insulation solutions to secure a more efficient, sustainable, and profitable future for your industrial installations.

Supporting customers from
PLANNING TO INSTALLATION

At Isover, we work closely with our customers and various stakeholders to best understand the specifics of each project. Our experts support you at every stage of your project.

AS A PLANT OWNER

- Make sure your process runs smoothly at the right temperature
- Ensure the safety of your operators
- Optimise the energy efficiency of your installations
- Be assured of your return on investment
- Do your bit for the environment by reducing CO_2 emissions

AS A SPECIFIER

- Design high-performance insulation systems
- Bring key benefits to your customers
- Address the most stringent regulations (thermal, acoustic & fire performance)
- Meet the specific requirements of the industrial sector

AS A CONTRACTOR

- Implement insulation solutions, approved for the industry
- Install easily and comfortably, whether for maintenance or new construction
- Reduce installation time and labour costs
- Rely on a partner, locally or globally

7 GOOD REASONS TO CHOOSE SAINT-GOBAIN INSULATION SOLUTIONS FOR INDUSTRY

- Save on your energy bills
- Decarbonise your facilities
- Optimise process efficiency
- Ensure the safety of your operators
- Ensure effective noise protection at the workplace
- Prevent corrosion
- Save installation time and costs

Save on your ENERGY BILLS

Rising energy prices amplify the importance of energy efficiency across all sectors. Plant owners and operators face higher expenses for heating, cooling, electricity, and other energy-intensive processes. This is why it becomes essential to prioritise energy efficiency in the design, operation and maintenance of your installations.

INSULATE TO BETTER CONTROL COSTS

While thermal insulation in the industrial sector has for many years been limited to aspects of personal protection and process efficiency only, rising energy prices have a direct impact on operating costs, leading to increased expenses for manufacturers. This is where insulation comes into play as one of the effective ways to improve energy efficiency! By reducing the overall energy consumption of industrial operations, it helps mitigate the impact of rising energy prices, manage costs and maintain profitability throughout the life of the facilities.

INSULATE TO STAY COMPETITIVE

In industries where profit margins are tight, companies that operate more efficiently by minimising energy waste have a competitive advantage, that is, they can offer more competitive prices, attract customers and potentially gain market share.

DID YOU KNOW

Heat loss costs can be calculated with our thermal calculation software ISOVER TechCalc 2.0, based on ISO 12241 and industry standards such as VDI 2055.

MAKE YOUR OPERATIONS FUTURE-PROOF

As one of the energy-saving practices, insulation offers protection against fluctuations in energy prices. By reducing their dependence on energy, manufacturers have better financial resilience and resistance to economic volatility, ensuring the viability of their operations over the long term.

COMPLY WITH UPCOMING REGULATIONS

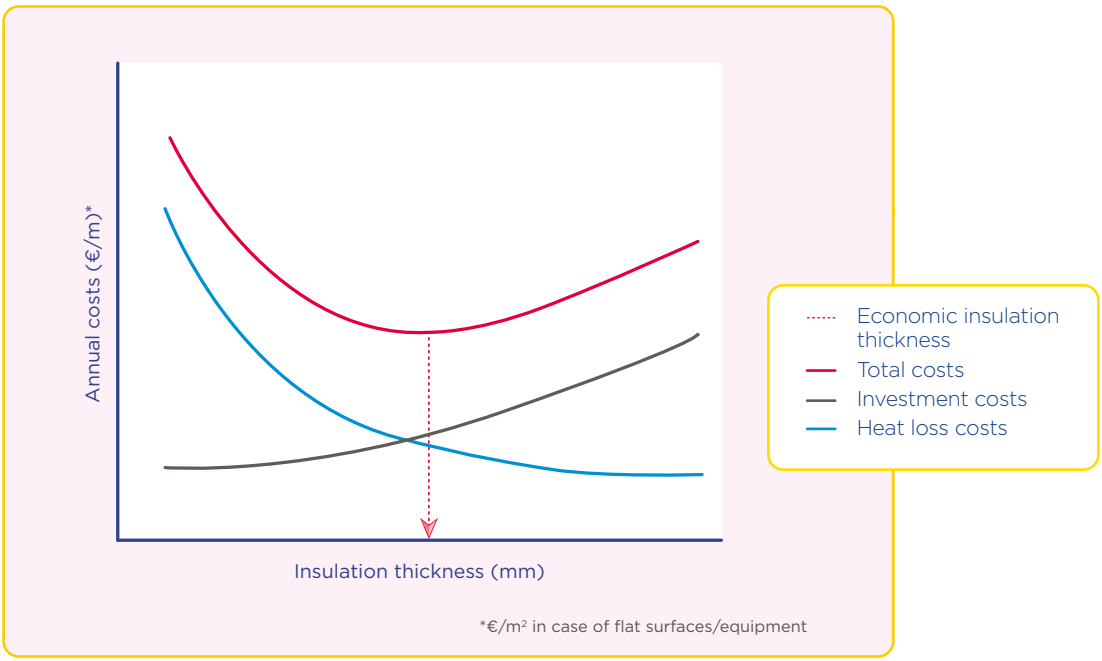
As surprising as it may seem, in industry, unlike construction, insulation is still largely underused, and many industrial facilities still have a low level of energy efficiency. Until recently, no regulations defined the minimum level of performance of insulation to be installed in European industry. But the situation is changing, with the entry into force of the German directive VDI 4610, part 1 (“Energy efficiency of industrial installations - Thermal insulation”) and the European standard EN 17956 “Heating systems and water-based cooling systems in buildings - Energy efficiency classes for technical insulation systems”, which respectively define 7 energy efficiency classes for technical insulation systems.

CALCULATING THE OPTIMAL INSULATION THICKNESS

Where insulation is actually used to save energy, its implementation and thickness depend above all on economic considerations. The calculations consider the initial investment costs linked to the purchase and installation of insulation materials as well as the cost of heat loss.

The cost of insulation increases with the thickness of the insulation, while the cost of heat loss decreases more as the thickness increases.

But there is an optimum point, beyond which increasing the thickness no longer brings financial benefit. The optimal thickness of insulation is the point where the sum of insulation costs and heat loss costs is lowest. This is **the economic insulation thickness.**



The graphic demonstrates how insulation effectively reduces energy costs, making it a powerful tool for improving energy efficiency in industrial applications.

This method is still widely used in industry, with the disadvantage however of being based on assumptions, notably the price of energy, which can be subject to significant fluctuations.

Decarbonise
YOUR FACILITIES

In an era where environmental responsibility is paramount, the industrial sector is under increasing pressure to minimise its ecological footprint. The European Union has set two ambitious goals: reducing greenhouse gas emissions by at least 55% by 2030 and being climate neutral by 2050, with net zero CO_2 emissions. The decarbonisation of industry will therefore play a central role in achieving these goals.

COMBINING STRATEGIES TO BUILD MORE SUSTAINABLY

Reducing the environmental footprint of industrial operations involves implementing a combination of strategies to minimise energy consumption, emissions, resource use and environmental impacts.

These strategies range from energy efficient design, to selecting energy efficient equipment (such as pumps and agitators) or incorporating features that minimise heat loss or gain. At the same time, the integration of renewable energy sources such as solar, wind or biomass can also help reduce dependence on fossil fuels and reduce greenhouse gas emissions.

Additionally, optimising industrial processes, preventive maintenance, waste minimisation and recycling systems, water conservation measures and specific emissions control technologies, can effectively reduce the environmental footprint of industrial operations and minimise the risk of environmental incidents, while maintaining operational efficiency and competitiveness.

REDUCING CO_2 EMISSIONS WITH ENHANCED INSULATION SYSTEMS

Enhanced insulation systems are an effective way to minimise heat transfer and improve thermal performance. The use of high-performance insulation solutions, increased insulation thicknesses as well as additional measures such as double-layer insulation or low-emissivity claddings can further reduce heat loss and energy consumption.

By improving energy efficiency and reducing heating or cooling requirements, insulation proportionally minimises greenhouse gas emissions and reduces the environmental footprint of industrial operations.

EXPLOITING THE UNTAPPED POTENTIAL OF INSULATION

The industrial sector is still lagging behind in terms of sustainable development, particularly compared to the construction sector. For many years, insulation was used only for safety purposes, then to prevent condensation and ensure process efficiency.

More recently, there has been an interest in insulation to save energy, and it is only very recently that attention has been focused on its potential to reduce the sector's carbon footprint.
However, according to a study carried out by EiiF, 14 Mtoe of energy could be saved by improving insulation standards in industry, equivalent to a reduction in EU CO_2 eq. emissions of 40 Mt each year.

Having said this, there is still a long way to go to take advantage of this energy saving potential through improving industrial insulation, increasing thickness and insulating elements that are to date not yet insulated at all (flanges, valves, etc.).

CHANGES IN REGULATIONS WILL ENCOURAGE THE USE OF EFFICIENT INSULATION SYSTEMS

While the implementation of technical insulation and its thickness have so far mainly depended on economic considerations (economic insulation thickness – cf. p.7), the introduction of new energy classes shifts the emphasis from simple energy savings to an overall reduction in emissions.

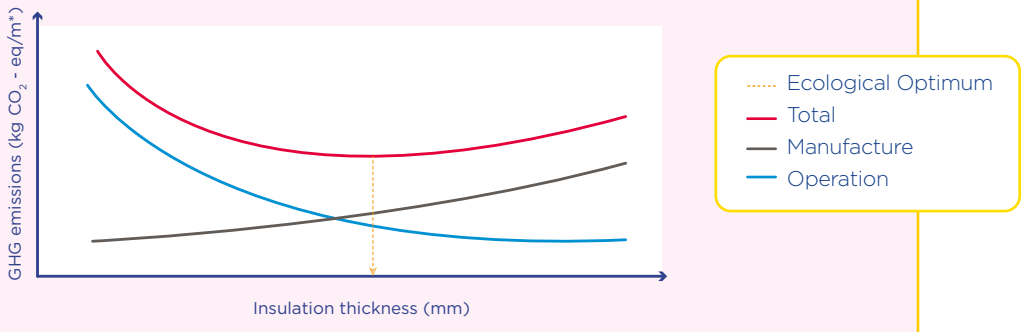
TOWARDS THE ECOLOGICAL OPTIMUM

The new energy efficiency classes are based on a life cycle approach, taking into account not only the heat losses of insulated objects and the corresponding greenhouse gas (GHG) emissions, but also energy expenditure and GHG emissions generated during the production of the insulation.

When classifying different energy efficiency classes, all GHG emissions associated with insulation are determined and a life cycle assessment is established.

GHG emissions linked to the manufacture of insulation increase with the thickness of the insulation. On the other hand, the emissions generated during the operation of the equipment decrease as the thickness of the insulation increases.

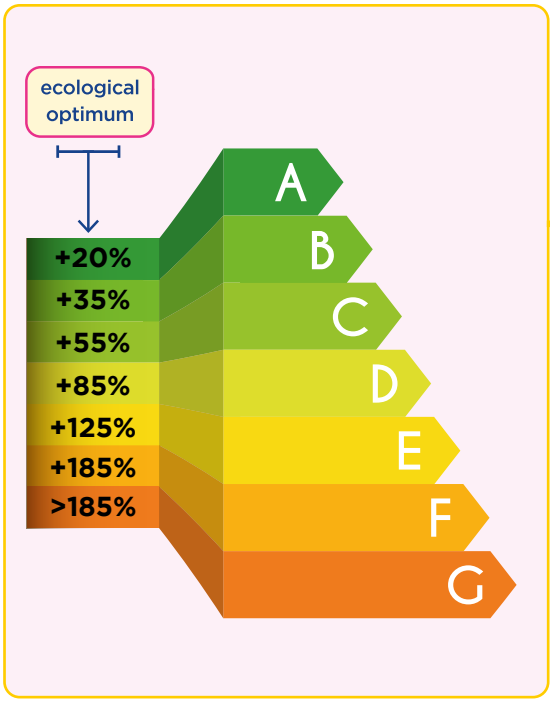
Here again, there is an optimal point, i.e. the point where the sum of GHG emissions from manufacture and operation is lowest. This point corresponds to the optimal thickness of insulation and is called the ecological optimum.



*kg CO2 - eq/m² in case of flat surfaces/equipment

UNDERSTANDING THE NEW ENERGY CLASSES

The ecological optimum is used to establish the energy efficiency classification, from class A being the most energy efficient and with the least GHG emissions to class G which is the most energy consuming and with the highest emissions.



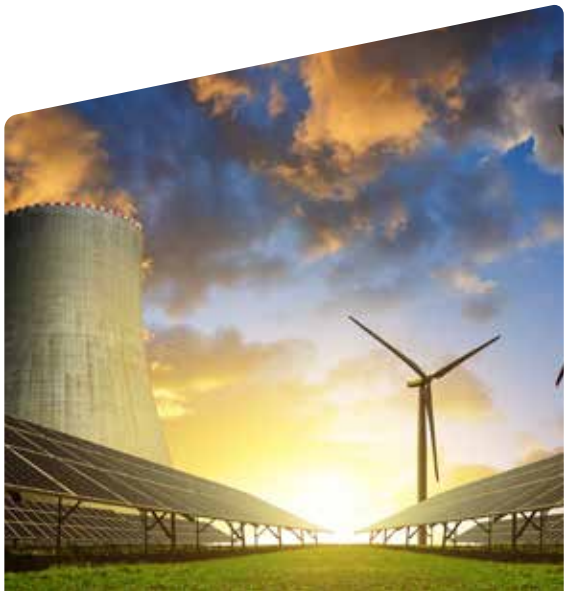
Each class corresponds to a percentage of emissions added to the ecological optimum. To obtain the respective class, these greenhouse gas emission values must not be exceeded.

To establish the energy efficiency classes, standardised boundary conditions were used, as well as average data for insulating materials and common fuels. These boundary conditions are representative of operational installations in Europe, e.g., a lifespan of ten years, 6000 annual operating hours, as well as an average ambient temperature of 15°C.

The main advantage of this classification system is that it is independent of the energy price and makes all installations - existing and new - comparable.

Based on the EN 17956 / VDI 4610 standards, new insulation systems can be planned with progressive energy efficiency requirements, and existing insulation systems can be reassessed, from the best and most sustainable solution in energy class A to inefficient solutions which waste energy and money while emitting avoidable CO_2 emissions.

This approach also makes it possible to anticipate the space required for the respective insulation systems, depending on the targeted energy class, when planning new installations.



Optimise
PROCESS EFFICIENCY

Effective thermal management of industrial equipment is crucial for maintaining product integrity and optimising operational efficiency. Thermal insulation is a key component in this process, helping to maintain desired temperature ranges within the equipment.

PROCESS EFFICIENCY IS THE STARTING POINT

By minimising heat loss or gain, insulation ensures that processes run smoothly and consistently, reducing downtime and improving overall productivity. This focus on efficiency predates modern concerns about energy conservation and sustainability, highlighting the long-standing importance of proper insulation in industrial operations.

THE CHOICE OF THE RIGHT INSULATION SYSTEM DEPENDS ON SEVERAL FACTORS

- **The type of products involved:** Products sensitive to temperature variations, such as chemicals, oils, and food liquids, require stringent thermal control to prevent any alteration of their physical or chemical properties.
- **External climatic conditions:** Climatic conditions impact the internal temperature of industrial equipment. Effective insulation mitigates these external effects, preventing equipment from freezing in low ambient temperatures and overheating in high ones.
- **The type of energy system used:** Common systems to maintain temperature include heating and cooling systems. Heating is typically achieved using electrical resistances, steam, hot water, or thermal oil, while cooling involves heat extraction through compression or absorption systems, using refrigerants to maintain temperature within acceptable limits.

Considering these factors will enable the implementation of optimal insulation solutions, contributing to the sustainability and profitability of industrial operations. Effective thermal insulation reduces heat or cold loss, preserving product quality and ensuring efficient operation. Additionally, it improves energy efficiency and reduces reliance on external temperature maintenance systems.

INSULATION SOLUTIONS FOR ALL APPLICATIONS AND TEMPERATURE RANGES

Our range of insulation solutions offers optimal thermal conductivity for every application, regardless of the operating temperature (-200°C to 700°C). Thermal conductivity is measured across the entire temperature range in accordance with EN 12667 for flat products and ISO EN 8497 for pipe sections. Maximum Service Temperature (MST) is measured according to ISO 18097 for flat products and ISO 18096 for pipe sections.

The thermal performance of our products is ensured through a strict quality control protocol, including both internal and external checks.

Since 2013, all our products in Europe have also been CE marked according to the EN 14303 standard for mineral wool insulation.

Ensure the safety
OF YOUR OPERATORS

In its early days, insulation was first used for safety, to protect operators from burns in the event of contact with hot surfaces. This is still relevant as industrial equipment may contain hazardous materials or fluids or gases at extreme temperatures to which operators could be exposed.

PREVENT BURNS OR FROSTBITE

For equipment handling substances with extremely high or low temperatures, insulation helps regulate the temperature of the external surface, which should not exceed safety thresholds like 60°C or 333ºK. This prevents accidental burns or frostbite for workers who may come into contact with the equipment during routine operations or maintenance activities.

PROTECT FROM HAZARDOUS SUBSTANCES

Insulation can be used to contain spills or leaks of chemicals, acids, or other hazardous substances, minimising the risk of exposure to nearby workers. In environments such as nuclear power plants, insulation contributes to containment barriers.

ENSURE FIRE PROTECTION

Insulation helps protect the interior of equipment and its contents in the event of a nearby fire. This can prevent a rapid rise in temperature inside the equipment, reducing the risk of explosion or the release of flammable vapours.

REDUCE NOISE IN THE WORKPLACE

In some cases, equipment may be insulated to reduce noise levels generated by internal processes, contributing to a safer and more comfortable working environment.

Ensure effective noise protection
AT THE WORKPLACE

Whenever people are working alongside machines or engines, effective noise protection solutions are needed. Noise protection in industry requires noise protection concepts for the protection of the health of employees, to minimise absenteeism, to improve the working climate and to remain in compliance with the directives and regulations in force.

CONTROL NOISE IN THE WORKPLACE TO ENSURE HEALTH AND COMFORT

Not only do machines, powertrains or engines increase noise pollution in industrial halls, factories and workshops, but reflective surfaces also amplify noise and degrade acoustics in industrial operations. In the long run, noise levels in the workplace can contribute to poor concentration, loss of performance and increased absenteeism.

On the contrary, targeted noise protection measures help improve the quality of people's work and the long-term working atmosphere by significantly lowering the noise level.

CREATE AN OPTIMAL ACOUSTIC ENVIRONMENT WITH INSULATION

Fans, compressors, chimney exhaust systems and large motors are important causes of noise problems in industry. In industrial acoustics, the noise source occupies a central place, and one must try to nip annoying noises in the bud. With the help of acoustic barriers, absorbent panels, acoustic cabins and other high quality noise protection solutions, the sound pressure level emitted by machines is reduced, so that it cannot spread further in the production hall or factory.

LEARN MORE ABOUT OUR ACOUSTIC SOLUTIONS:

PAVING THE WAY FOR NOISE PREVENTION IN INDUSTRIAL PIPES

Large industrial sites can be characterised by the presence of kilometres of pipelines which can represent a major source of noise. Noise can arise from the turbulent flow of compressible fluids, changes in pipe diameters, termination of piping at a header or vessel, and noise induced by equipment.

The noise radiated by the wall of a pipe is usually generated by equipment connected to the pipe, such as compressors, pumps, valves or ejectors. These noise sources may cause long sections of pipes to radiate noise because noise will propagate in the pipe with little attenuation.

Acoustic insulation in pipes typically consists of a soundabsorbing and/or resilient material such as mineral wool ("porous layer") on the piping and an outer cover ("cladding"). An optional intermediate mass layer in direct contact with the cladding can also be added to improve the acoustic performance.

ACOUSTIC SPACERS THAT MAKE THE DIFFERENCE

When spacers are necessary to support the cladding, resilient and non-rigid materials should be preferred. However, most commonly used spacers, although resilient, constitute acoustic bridges which reduce the performance of the sound insulation system.

This is why we have developed the Isover TECH dB Spacer, a specific acoustic spacer, to maximise acoustic performance!

DID YOU KNOW

Our innovative Isover TECH dB Spacers significantly reduce acoustic bridges, thus improving the acoustics of the overall solution.

Prevent
CORROSION

Corrosion poses a significant risk for industrial equipment, particularly when processing or storing liquids such as water, chemicals, or petroleum products. It can have several harmful effects on equipment and processes, impacting structural integrity and leading to leaks, spills, or even catastrophic failures.

A DANGEROUS AND COSTLY PROBLEM

Corrosion is not only a risk factor for staff safety and environmental health but also affects profitability due to costly maintenance and repair efforts, sometimes necessitating operational downtime.

Corrosion can also compromise the quality of processed fluids, which is all the more essential for industries handling, for example, food, beverages or drinking water. Industrial equipment is often made of high-alloy austenitic steels, containing elements like chromium, nickel, and molybdenum. These alloys can be susceptible to stress corrosion cracking (SCC), particularly in environments containing chloride ions, which are common in many industrial process fluids.

To mitigate the risk of corrosion, industries implement several prevention and monitoring measures, such as the selection of corrosion-resistant materials during construction, the implementation of protective coatings, and regular inspections.

MITIGATE THE RISK OF CORROSION WITH THE RIGHT INSULATION SOLUTIONS

Water trapped between the insulation and the surface of the equipment can lead to corrosion under insulation (CUI). To prevent CUI, our insulation solutions are designed with specific properties that minimise the risk of corrosion:

- **Low chloride content:** Our insulation materials are low in chlorides to prevent chloride-induced corrosion.
- **Hydrophobic and non-hygroscopic properties:** These properties limit potential water absorption, ensuring that the insulation remains dry and effective.
- **Open cellular structure:** This allows the insulation to dry quickly if it gets wet, without losing its mechanical or insulating properties.

DISCOVER OUR PRODUCTS WITH ADVANCED WATER-REPELLENT PROPERTIES.

The innovative water-repellent technology gives the products very low water absorption values throughout their service life. In addition, the products have very low chloride contents (AS quality, CL- ≤ 10 ppm) for use in contact with austenitic steel structures.

HOW WE ASSESS THE HYDROPHOBIC PERFORMANCE OF INSULATION MATERIALS

The hydrophobic performance of our insulation materials is assessed through a partial immersion test in water for 24 hours according to EN ISO 29767. This method simulates short-term water exposure, as might occur during installation when insulation is exposed to rain. The test evaluates both unheated insulation and insulation subjected to a temperature of 250°C for 24 hours, ensuring reliable performance under various conditions.

ENSURE PROPER INSTALLATION OF INSULATION TO PREVENT CORROSION

Proper installation is crucial in preventing corrosion. Key steps include:

- **Good sealing of joints and edges:** Ensuring all joints and edges are well-sealed to prevent moisture infiltration.
- **Protective coatings on insulation:** Applying additional protective coatings to the insulation to further shield against corrosion.
- **Adequate ventilation:** Ensuring proper ventilation between the insulation and the cladding to prevent moisture build-up and to help dry out any moisture or condensation that may occur.

Additionally, the insulation system should be designed to allow easy access for inspection of the equipment surface underneath. This makes it easier to detect early signs of corrosion, enabling timely maintenance and prevention measures.

By implementing these strategies and utilising high-quality insulation solutions, industries can effectively manage and mitigate the risks associated with corrosion, ensuring the longevity, safety, and efficiency of their equipment.

Save installation time
AND COSTS

Installing insulation in industrial settings requires careful consideration to ensure effectiveness, durability, and safety. The installation process must take into account the specific needs of different types of equipment, such as pipework, vessels, tanks, etc., with each of these components having unique requirements.

INSULATING INDUSTRIAL EQUIPMENT PRESENTS VARIOUS CHALLENGES

In the industry, each configuration is unique, and depending on the site, can be more or less complex to implement, for the reasons below:

- **Complex geometries and configurations:** As for pipework for example, it requires navigating bends, joints, and varying diameters, making it difficult to achieve a tight fit and ensure continuity of insulation. Vessels and tanks, with their large, curved surfaces, demand precise measurement and cutting of insulation materials to fit properly. Ducts and stacks, often long and vertical, pose accessibility issues, making it challenging to apply insulation evenly and securely.
- **Environmental Conditions:** Installers must work in environments with extreme temperatures, which can affect both the performance of the insulation materials and the working conditions. Moisture infiltration during installation can compromise the effectiveness of the insulation, particularly in preventing corrosion under insulation (CUI).
- **Accessibility:** Many industrial installations occur in confined spaces, limiting the movement of installers and complicating the application process. Installing insulation on tall stacks or extensive pipe networks often requires scaffolding or lifts, adding to the complexity and safety considerations.
- **Safety Concerns:** Industrial environments may involve hazardous materials, requiring additional safety measures during insulation installation to protect workers. What's more, installation often needs to be performed while the plant remains operational, necessitating careful coordination to minimise disruption and ensure safety.

OPTIMISE INSTALLATION TIME AND COSTS WITH THE RIGHT INSULATION SOLUTION

Controlling, and if possible, reducing installation time and costs is essential for the insulation of industrial equipment as it boosts overall efficiency and profitability for different stakeholders:

- For **installers,** reducing labour costs through faster installation processes cuts down on man-hours required, leading to significant savings. Additionally, shorter installation times enhance safety by reducing workers' exposure to potential hazards, minimising the risk and duration of safety incidents.
- For **owners and operators**, minimising downtime reduces financial losses by allowing facilities to maintain production schedules and operate at full capacity with minimal disruption.

CHOOSE FROM A WIDE RANGE OF FORMATS, SUITABLE FOR THE MOST DIVERSE INSTALLATION NEEDS

Our industrial insulation solutions are available in the form of slabs, rolls, wired mats or pipe sections, as well as other specific formats.

Slabs are the preferred choice for components with flat surfaces or large radius curved surfaces or for surfaces that require high compressive strength, such as tank roofs.

Rolls can be an interesting choice when it comes to insulating large surfaces in thick layers, to optimise installation time.

Wired mats are often preferred for insulating components where the existence of stiffeners, supports or other components makes the installation more complex. Wired mats are also widely used to insulate industrial pipework, especially for larger diameter pipes.

Our pre-formed pipe sections are the most convenient format for quickly and efficiently insulating small diameter pipes.

EASIER HANDLING WITH OUR LIGHTWEIGHT SOLUTIONS

The use of flexible and lightweight materials, which are easier to handle, is a real asset, especially in difficult to access or confined spaces. We offer a full range of lightweight insulation solutions, from glass wool to our high-performance lightweight stone wool ULTIMATE™, that enhance installation comfort and help you save precious installation time.

SOLVE SPACE CONSTRAINTS WITH OUR THIN SOLUTIONS

Our technical experts support you to define the optimal thickness in relation to the performance required for your projects. Our best-in-class thermal insulation solutions, and in particular those made from our lightweight ULTIMATE™ stone wool, often make it possible to reduce the thickness of the insulation, which can be of great help during installation.

HEALTH AND SAFETY FIRST

Our mineral wools are biosoluble and exempt from any classification on carcinogenic, mutagenic or toxic for reproduction criteria. Our European ranges are certified according to EUCEB and are compliant with all EU regulatory requirements.

INSULATION SOLUTIONS FOR ALL TYPES OF INDUSTRIES

We offer comprehensive insulation solutions tailored to meet the needs of all industries, from power generation to oil & petrochemical, chemical industries, manufacturing industries or food & beverage.

Thermal
POWER PLANTS

Power generation is a critical component of industrial operations, providing the necessary energy to drive machinery, production processes, and support systems.

THERMAL ENERGY, ONE OF THE MAIN METHODS OF PRODUCING ENERGY

Industries rely on various methods of power generation, including renewable sources like wind and solar, as well as non-renewable sources such as coal, natural gas, and nuclear energy.
Thermal power plants are a primary method of power generation in many industries. These plants convert heat energy, typically derived from burning fossil fuels like coal, oil, or natural gas, into electrical power. The process involves heating water to produce steam, which drives turbines connected to generators.

THERMAL POWER PLANTS ARE SIGNIFICANT CONSUMERS OF ENERGY AND EMITTERS OF GREENHOUSE GASES

Despite their key role in the industry, thermal power plants face challenges such as high energy consumption, heat loss and environmental impact. They are considered to be the most polluting type of power plant, reaching emissions values up to 0,95 kg of CO_2 per kWh of electricity produced (in addition to other harmful gases such as CO, SO_2 or NOx).
Yet difficult to entirely replace with greener energy production methods, thermal power plants face increasing challenges in becoming more efficient and sustainable as demands for industrial production continue to increase.

IMPROVE ENERGY EFFICIENCY AND REDUCE EMISSIONS WITH INSULATION

Insulation plays a crucial role in enhancing the efficiency of thermal power plants. By reducing heat loss from boilers, steam pipes, and other high-temperature components, insulation minimises energy waste and lowers fuel consumption. This not only improves the overall efficiency of the power plant but also reduces greenhouse gas emissions and operational costs.
Effective insulation helps maintain optimal temperatures, protects equipment from thermal damage, and ensures safe working conditions, making it an essential component in the power generation industry.

Biomass
POWER GENERATION

Biomass power generation is the process of producing electricity by burning organic materials such as agricultural residues, wood, and other biological substances.

BIOMASS PLAYS A SIGNIFICANT ROLE IN THE RENEWABLE ENERGY LANDSCAPE

It provides a sustainable alternative to fossil fuels, helping to reduce greenhouse gas emissions and promote energy independence. Biomass can be converted into electricity through direct combustion, gasification, pyrolysis, or anaerobic digestion, making it a versatile energy source. The carbon dioxide released during biomass combustion is offset by the CO_2 absorbed during the growth of the biomass, contributing to a closed carbon cycle. What's more, biomass power generation utilises waste materials that would otherwise contribute to landfill mass, reducing overall waste. And finally, biomass can be sourced locally, reducing dependency on imported fuels and enhancing energy security.

The market for biomass power generation is poised for growth due to increasing global focus on renewable energy sources and reducing carbon footprints. Technological advancements are improving the efficiency and cost-effectiveness of biomass power plants, making them more competitive. Governments and international bodies are also implementing policies and incentives to support the development of biomass energy infrastructure.

INCREASE THE PERFORMANCE OF BIOMASS POWER PLANTS WITH INSULATION

Insulation plays a critical role in enhancing the efficiency of biomass power plants. Proper insulation of boilers, combustion chambers, and piping systems minimises heat loss, ensuring that more energy is retained and used effectively in the power generation process.

This not only improves the thermal efficiency of the plant but also reduces fuel consumption and operational costs. By maintaining optimal temperatures and preventing energy waste, insulation helps biomass power plants operate more sustainably and economically.

Concentrated
SOLAR POWER (CSP)

Concentrated Solar Power (CSP) uses sunlight to generate electricity. It uses mirrors or lenses to concentrate a large area of sunlight onto a small area, typically onto a receiver, which collects and converts the solar energy into heat. This heat is then used to produce steam that drives a turbine connected to an electrical generator.

DRIVEN BY THE DEMAND FOR RENEWABLE ENERGY

The CSP market has grown over the past decade due to rising renewable energy demand and technological advancements. Leading regions include Spain, the U.S., and parts of the Middle East and North Africa. As costs decrease and efficiency improves, the global CSP market is expected to continue expanding, supported by policies and incentives to reduce carbon emissions.

CSP, AN IMPORTANT INITIAL INVESTMENT

Concentrated Solar Power (CSP) offers several benefits, including the ability to harness renewable solar energy, reduce greenhouse gas emissions, and incorporate thermal energy storage for continuous power supply.

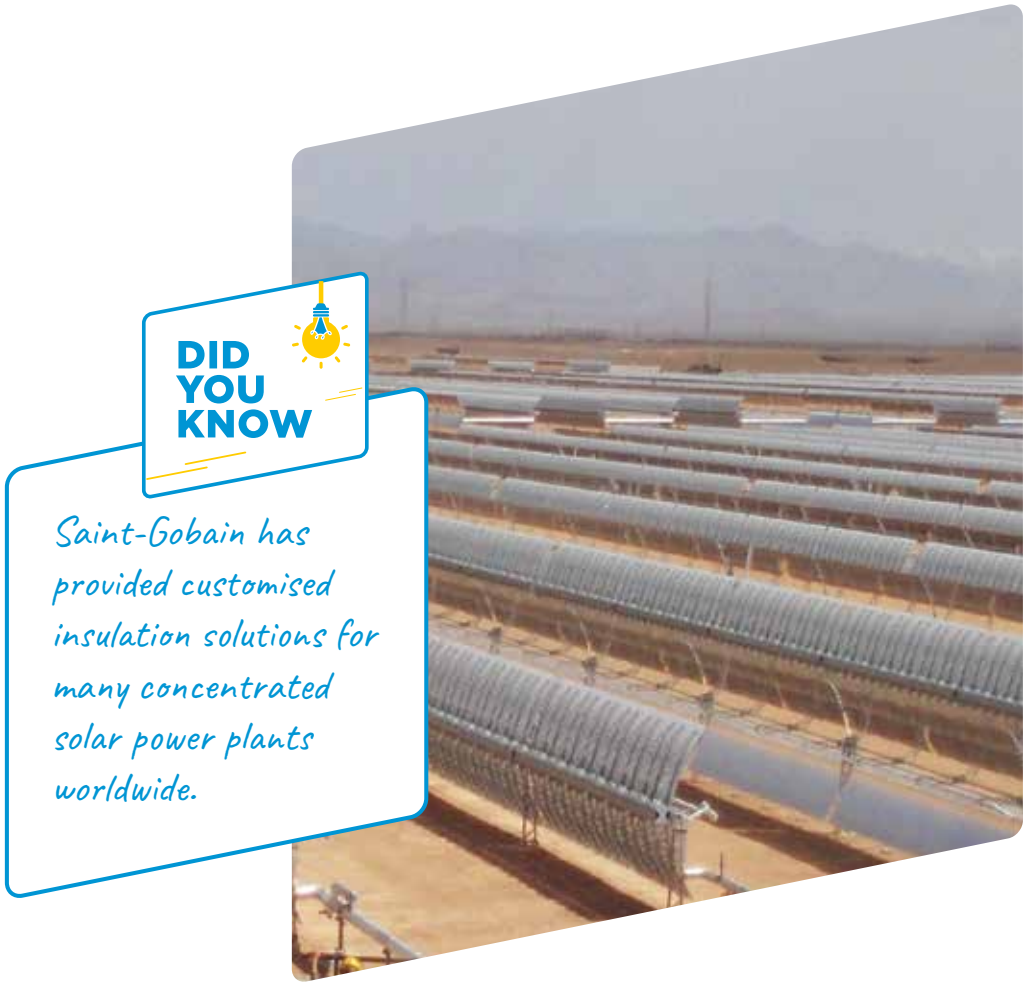
However, CSP faces challenges such as high initial costs, significant water usage in some technologies, reliance on consistent sunlight, and the need for large areas of land.

ENHANCE EFFICIENCY AND PERFORMANCE WITH INSULATION

Insulation is used in several key areas of Concentrated Solar Power plants:

- **Thermal storage systems:** Insulating thermal storage tanks helps maintain the high temperatures necessary for efficient energy storage and retrieval, reducing heat loss and improving overall efficiency.
- **Piping and heat transfer fluid systems:** Proper insulation of pipes and systems carrying heat transfer fluids (such as molten salts or synthetic oils) minimises thermal losses during the transfer of heat from the receiver to the power block.
- **Power block components:** Insulating components like boilers, turbines, and steam generators helps maintain optimal operating temperatures, enhances performance, and reduces energy wastage.
- **Receivers and solar fields:** Insulating the critical components in the solar field ensures the maximum amount of energy is retained and used.

By minimising heat loss and maintaining high operational efficiency, insulation is crucial in maximising the performance and sustainability of CSP plants, contributing to their economic viability and environmental benefits.



Nuclear
POWER PLANTS

In nuclear power plants, energy is produced by the process of fission, during which uranium or plutonium atomic nuclei are split into smaller parts, releasing a significant amount of energy in the form of heat.

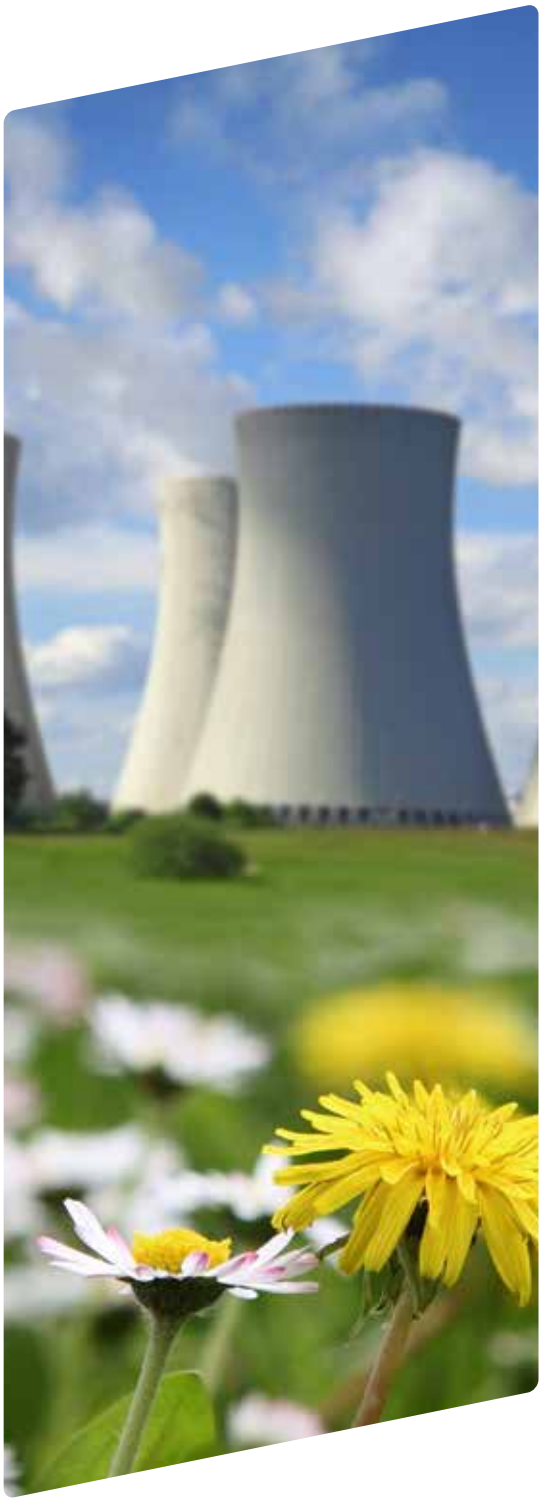
NUCLEAR POWER IS A KEY SOURCE IN THE GLOBAL ENERGY MIX

Nuclear energy plays a crucial role in the global energy mix, providing a reliable and large-scale source of low-carbon electricity. It is capable of producing continuous power, making it a vital component in meeting base-load energy demands and supporting grid stability. It enhances energy security by reducing dependence on fossil fuels and supports long-term energy needs.

The nuclear energy market has remained stable with prospects for growth driven by the need for clean and sustainable energy sources. Countries like the U.S, France and China are leading in nuclear power production. Emerging economies are also investing in nuclear technology to diversify their energy portfolios and reduce carbon emissions.

However, challenges such as high initial costs, management of radioactive waste, safety concerns, regulatory complexities, and the expense of decommissioning pose substantial hurdles.

LEARN MORE ABOUT OUR INSULATION SOLUTIONS FOR THE NUCLEAR INDUSTRY:



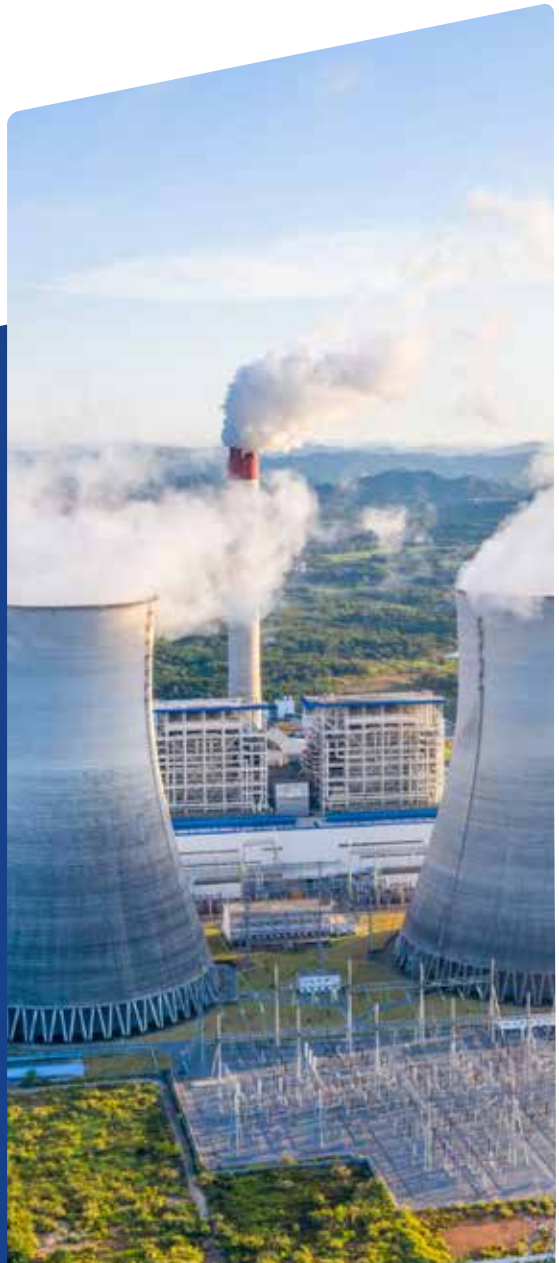
ENSURE OPERATING EFFICIENCY, SAFETY AND EQUIPMENT LONGEVITY WITH INSULATION

System safety and reliability are more important than in any other industrial sector to protect people and the environment. Owners or operators of nuclear power plants have established specific certification procedures for products intended for use in nuclear power plants.

Thermal insulation is used on components and pipes of the primary coolant circuit, as well as for safety relevant systems of the emergency cooling and secondary circuits. Insulation used in the nuclear island comes generally in specially designed metal cassettes, both to prevent the insulation from obstructing the strainers in the event of LOCA (loss of coolant accident), and to facilitate the maintenance of the system.

In the conventional part of a nuclear plant, insulation is used on different equipment, including the steam turbine, generator, condenser, and the cooling system.

In a nuclear power plant, specific specifications apply regarding quality assurance and control, and any materials used. Insulation must be free of chemical impurities, and have very limited concentrations of chlorides, fluorides, sulphates, as these could cause corrosion of equipment or facings, generally made of steel or nickel-based alloys.



BENEFIT FROM A FULL RANGE OF INSULATION SOLUTIONS, APPROVED BY MAJOR INDUSTRY PLAYERS

Our solutions for nuclear power plants are virtually free of organic content and therefore do not contribute to corrosion. Our most flexible and resilient products are perfectly suitable for the use in cassettes. Furthermore, we offer different formats, from loose wool to wired mats, slabs, and pipe sections.

Oil & PETROCHEMICAL

The oil and petrochemical industry encompasses the exploration, extraction, refining, and distribution of petroleum and its by-products, including fuels, lubricants, plastics, and chemicals derived from crude oil and natural gas.

AN INDUSTRIAL SECTOR WITH VARIOUS END USES

The oil and petrochemical industry plays a crucial role in global energy supply, providing fuels for transportation, heating, and electricity generation. It also supplies feedstocks for various industrial sectors, including plastic manufacturing, pharmaceuticals, agriculture (fertilizers).

The industry faces several significant challenges, including environmental concerns related to emissions and pollution, shifting consumer preferences toward sustainable alternatives, and stringent regulatory requirements for safety and environmental protection. It is also subject to high price volatility influenced by geopolitical tensions and market fluctuations.

Nevertheless and despite all these challenges, demand for petroleum products remains robust, particularly in emerging economies where industrialisation and urbanisation drive energy consumption growth.

OPTIMISE OPERATIONAL EFFICIENCY AND SAFETY WITH INSULATION

Thermal insulation is used on many different types of equipment within the oil and petrochemical sector:

- **Pipelines and storage tanks:** Insulation minimises heat loss in pipelines transporting crude oil, natural gas, and refined products over long distances. It also maintains optimal temperatures in storage tanks, preventing product degradation and ensuring consistent quality.
- **Process Equipment:** Insulating equipment such as distillation columns, reactors, and heat exchangers improves thermal efficiency, reduces energy consumption, and enhances process control.

Insulation helps manage surface temperatures of equipment, preventing burns and ensuring safe working conditions for operators.

In addition, insulation protects metal surfaces from corrosive environments, extending equipment lifespan and reducing maintenance costs.

LIMIT THE ENVIRONMENTAL IMPACT WITH INSULATION

By reducing energy consumption and greenhouse gas emissions associated with heating and cooling processes, insulation supports sustainability goals and regulatory compliance. It is integral to mitigating environmental impact within the oil and petrochemical industry. Its application across various operational aspects contributes to cost savings, regulatory compliance, and overall sustainability efforts.

Liquified
NATURAL GAS (LNG)

Liquefied Natural Gas (LNG) is natural gas that has been cooled to around -162 °C, at which point it condenses into a liquid state. This liquefaction process reduces its volume by about 600 times, making it more economical to transport and store.

A CLEANER ALTERNATIVE TO FOSSIL FUELS

The global LNG market has experienced substantial growth driven by increasing energy demand, particularly in Asia-Pacific countries like China, Japan, and South Korea. Technological advancements in liquefaction processes and transportation infrastructure have expanded market accessibility, with ongoing developments in floating LNG (FLNG) platforms and small-scale LNG facilities enhancing flexibility and scalability.

LNG offers significant benefits, including its role as a cleaner energy alternative with reduced emissions compared to coal and oil. It enhances energy security through global accessibility and versatility in various applications such as power generation and industrial use.

However, challenges such as high infrastructure costs for liquefaction plants and import terminals, price volatility influenced by supply-demand dynamics, stringent safety requirements due to its cryogenic nature, and environmental concerns regarding methane emissions pose hurdles.

LEARN MORE ABOUT OUR INSULATION SOLUTIONS FOR CRYOGENIC APPLICATIONS:

ENSURE CRYOGENIC TEMPERATURE CONTROL WITH INSULATION

Thermal insulation plays a key role in LNG storage tanks and pipelines to maintain the ultra-low temperature, minimising heat ingress and evaporation of the stored material. Insulating materials must meet the strictest requirements:

- **Adapt to changing tank volumes:** As the level of stored liquid rises or falls, and cooling and warming processes take place, thermal expansion and contraction will occur in the tank and the insulation must accommodate these movements. To meet this challenge, our CRYOLENE solutions, specially developed for the insulation of cryogenic tanks, have both excellent compressibility and good resilience.
- **Provide best-in-class thermal performance:** Beyond low thermal conductivity, CRYOLENE is delivered in the form of a giant roll which allows the entire height of LNG tanks to be insulated in one piece and thus reduces thermal bridges.
- **Enable efficient installation:** The extended dimensions of the product (up to 40 m long and up to 2.4 m wide) makes CRYOLENE particularly fast to install, reducing installation time by up to 75%.

DID YOU KNOW

CRYOLENE is our range of very resilient glass wool rolls designed to maintain the elasticity of their fibres over time at temperatures ranging from -170°C to +120°C.

Chemical
INDUSTRY

The chemical industry involves the production of chemicals and related products through the transformation of raw materials such as oil, natural gas, minerals, and water. This sector encompasses a wide range of processes and products, including basic chemicals, specialty chemicals, and consumer chemicals used in pharmaceuticals, agriculture, construction, and manufacturing.

GLOBALISATION AND EMERGING ECONOMIES DRIVE DEMAND FOR CHEMICALS

The chemical industry faces several challenges, including stringent environmental regulations aimed at reducing emissions and managing waste. Fluctuations in raw material costs, such as oil and natural gas, significantly impact production expenses. Continuous investment in research and development is necessary to create innovative products and processes that meet market demands and regulatory standards. Ensuring health and safety for workers and communities from hazardous chemicals is a critical concern. Additionally, the industry is highly competitive, with companies striving to optimise production, reduce costs, and innovate to maintain their market positions.

IN THE CHEMICAL INDUSTRY, INSULATION IS ESSENTIAL FOR SEVERAL REASONS:

Insulation in the chemical industry is crucial for optimising energy efficiency, maintaining process control, ensuring safety, protecting equipment, and complying with environmental regulations.

- **Energy efficiency:** Insulation helps maintain optimal temperatures in reactors, distillation columns, storage tanks, and pipelines, reducing heat loss and improving energy efficiency.
- **Process control:** Proper insulation ensures that chemical reactions occur under controlled temperature conditions, which is critical for product quality and consistency.
- **Safety:** Insulating hot surfaces and equipment prevents accidental burns and enhances the overall safety of the workplace.
- **Equipment protection:** Insulation protects equipment from thermal stress and corrosion, prolonging the lifespan of pipes, vessels, and other critical infrastructure.
- **Environmental compliance:** By reducing energy consumption and emissions, insulation helps chemical plants meet stringent environmental regulations and sustainability goals.

Insulation is applied to various components, including reactors, storage tanks, pipelines, and heat exchangers, to minimise heat loss, manage temperatures, and enhance operational reliability. Effective insulation supports the chemical industry's goals of cost reduction, sustainability, and safe production environments.

Manufacturing INDUSTRIES

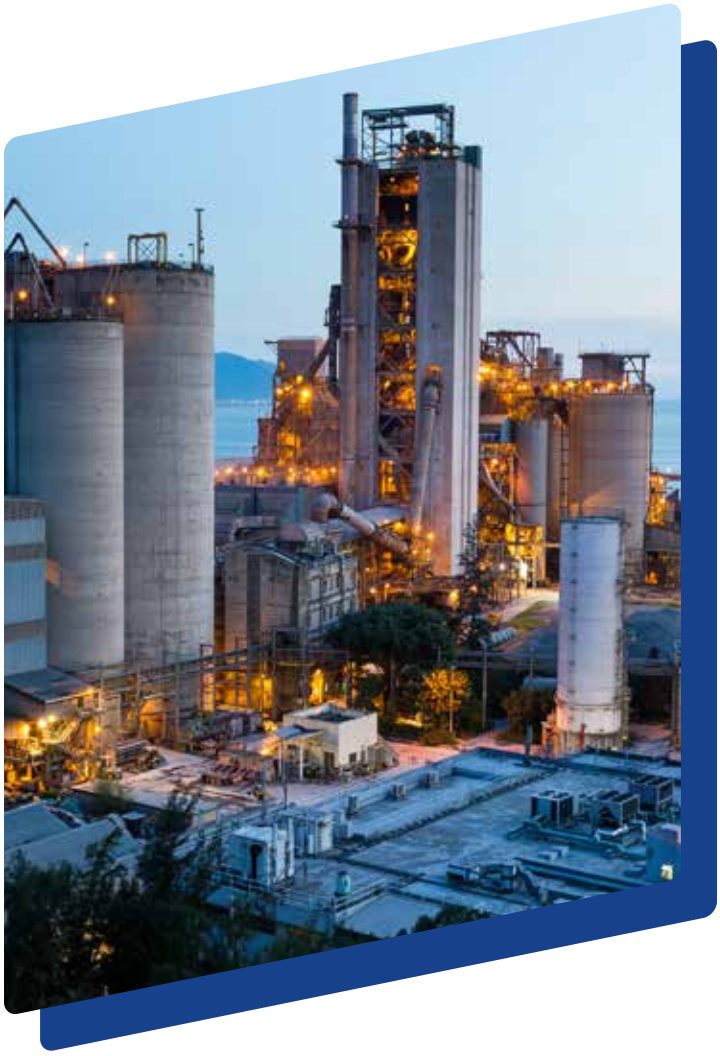
Manufacturing industries encompass a wide range of sectors that transform raw materials into finished products through energy-intensive processes. These industries are critical to the global economy, producing goods ranging from basic commodities to advanced technological products.

MANUFACTURING PROCESSES REQUIRE SUBSTANTIAL ENERGY INPUT

Producing industries encompass several energy-intensive sectors, including steel production, which uses blast furnaces to melt iron ore; cement production, which requires heating materials to high temperatures in kilns; and paper and pulp production, demanding substantial energy for processes like pulping, bleaching, and drying.

ENERGY COSTS AND SUSTAINABILITY REQUIREMENTS CALL FOR IMPROVEMENTS

Manufacturing industries face several challenges. High energy costs are a major concern, making efficiency improvements essential. Environmental regulations require industries to reduce emissions and manage waste responsibly. Continuous technological upgrades are necessary to enhance process efficiency and product quality. Additionally, reliance on raw materials and global supply chains can lead to vulnerabilities and production delays. Finally, there is increasing pressure for sustainability, driving the need for greener technologies and practices.

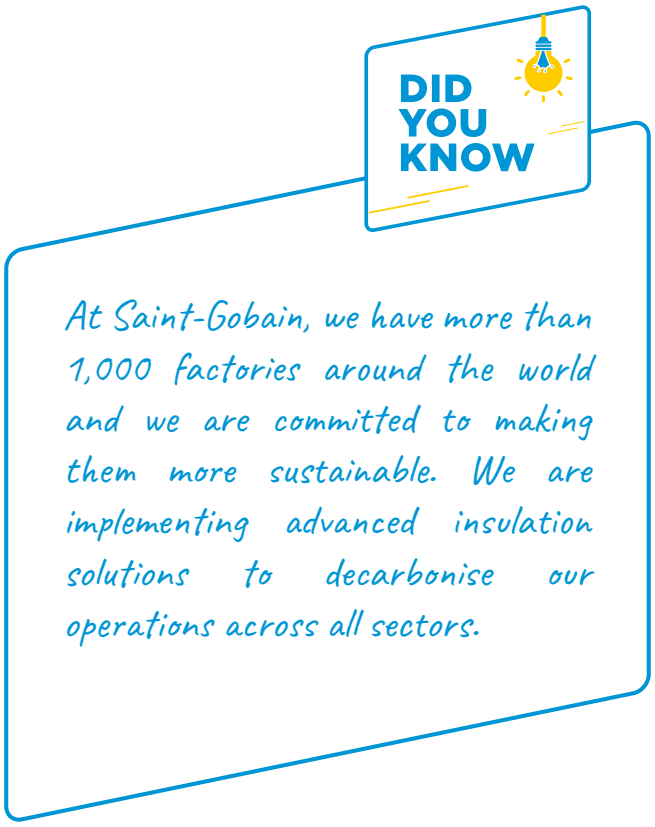


INSULATION BENEFITS ENERGY-INTENSIVE PROCESSES IN MANY WAYS

Insulation is essential to improve process efficiency, achieve energy savings, comply with environmental standards, protect equipment, and ensure worker safety:

- **Process efficiency:** Insulating furnaces, boilers, and piping systems minimises heat loss, ensuring that more energy is retained and used effectively in production processes.
- **Energy savings:** By reducing the amount of energy required to maintain optimal process temperatures, insulation lowers energy consumption and operational costs.
- **Reduced environmental impact:** Effective insulation helps industries comply with environmental regulations by reducing greenhouse gas emissions associated with energy use.
- **Equipment protection:** Insulation prevents thermal stress and damage to critical equipment, prolonging its lifespan and reducing maintenance costs.
- **Worker safety:** Insulating high-temperature equipment and surfaces protects workers from burns and other heat-related hazards, enhancing workplace safety.

The strategic application of insulation supports the industry's drive toward sustainability and operational excellence.



Food & BEVERAGE

The food and beverage (F&B) industry encompasses all businesses involved in processing raw agricultural products into consumable food and drinks. This includes the processing, packaging and distribution of a wide variety of products ranging from fresh products, meat, dairy and baked goods to beverages such as soft drinks, alcoholic beverages and juices.

The main challenges in the food industry are food safety, complex supply chains for perishable goods, sustainability practices, changing consumer preferences, strict regulatory standards and rising costs.
Current trends in the industry include a growing demand for health and wellness products, a focus on sustainability and eco-friendly practices, the adoption of technological innovations, an increase in convenience foods catering to busy lifestyles, and the personalisation of food products to meet individual dietary needs and preferences.

ENSURE PRODUCT QUALITY, SAFETY AND OPERATIONAL EFFICIENCY WITH INSULATION

Insulation plays a critical role in the food & beverage industry for maintaining product quality, ensuring food safety, enhancing energy efficiency, and complying with regulatory standards.
Thermal insulation is used in refrigeration units, cold storage rooms, and processing equipment to maintain low temperatures. Applied to pipes carrying hot or cold fluids, insulation is used to prevent heat transfer and maintain temperature consistency. High thermal resistance is essential to maintain precise temperature control in various applications, from processing lines to storage facilities.

- **Temperature control:** Insulation helps maintain the required temperatures for processing, storage, and transportation, preventing spoilage and ensuring food safety.
- **Energy efficiency:** Reducing heat loss in refrigerated areas and during food processing helps lower energy consumption and operational costs.
- **Compliance:** Proper insulation ensures that facilities meet regulatory standards for food safety and environmental impact.

MEET HIGH HYGIENIC REQUIREMENTS

In such a sensitive environment as food and beverage, the demands on hygiene are understandably high.

In addition to our mineral wool solutions, we also offer closed cell insulation, such as Kaimann elastomeric foam, which is a good option. It is completely non-absorbent and resistant to the growth of mold and bacteria, ensuring that it does not contaminate food products. It also perfectly withstands frequent cleaning and exposure to moisture and chemicals without degrading.

DID YOU KNOW

Our Kaiflex range of elastomeric foams guarantees high hygiene by resisting chemicals and preventing the growth of mould and bacteria without emitting any substances.

INSULATION SOLUTIONS FOR ALL TYPES OF INDUSTRIAL EQUIPMENT

Explore our comprehensive insulation solutions designed for all types of industrial equipment, from pipework to tanks or other equipment.

Pipe INSULATION

Industrial pipes are an integral part of many industrial sectors. Piping systems in industrial settings can be extensive, often running several kilometers within a facility. These systems can include various shapes and diameters, accommodating different fluids, pressures, and temperatures.

INSULATE YOUR PIPEWORK FOR THE OVERALL EFFICIENCY OF YOUR PROCESSES

- **Energy efficiency:** Insulating pipes reduces heat loss or gain, conserving energy used to maintain fluid temperatures, which lowers operational costs.
- **Process control:** Proper insulation ensures that fluids remain at the required temperatures throughout the piping system, maintaining consistent process performance and product quality.
- **Safety:** Insulating hot pipes prevents burns and protects workers from thermal hazards, while insulating cold pipes prevents condensation and potential slip hazards.
- **Condensation control:** Insulation prevents condensation on cold pipes, avoiding water damage, corrosion, and the growth of mold or mildew.
- **Noise reduction:** Insulating pipes can dampen the noise caused by fluid flow and mechanical vibrations, creating a quieter and safer working environment.

Technical features of pipe insulation include low thermal conductivity, fire resistance, moisture resistance and acoustic performances.

INSULATING INDUSTRIAL PIPEWORK CAN BE COMPLEX

Industrial pipe systems are vast and intricate, often extending for several kilometers within a single facility. They feature a range of sizes, from small-diameter lines a few centimeters wide to large-diameter pipelines over a meter wide, as well as complex shapes, including numerous bends, elbows, and fittings to navigate around equipment and structural obstacles.

Space constraints further complicate these networks, as pipes must be efficiently routed through tight, confined areas. Additionally, pipes in difficult-to-reach areas, such as overhead or underground, complicate installation and maintenance.

GET THE BEST PERFORMANCE AND INSTALL COMFORTABLY

The complexity of industrial pipework requires customised insulation solutions to effectively cover the varied diameters and configurations, ensuring optimal performance and energy efficiency throughout the entire system.

We offer a complete range of different solutions and formats to provide maximum installation flexibility, from wired net mats to pre-formed pipe sections.

Our top-tier thermal insulation solutions, especially our U TECH range made of the lightweight stone wool ULTIMATE™, frequently allow for reduced insulation thickness, significantly easing the installation process.

Tank
INSULATION

Tanks are large containers or vessels designed for various purposes, including storing, mixing, processing, or transporting liquids, gases, or other substances. They can be used to hold raw materials, intermediate products, or finished goods.

TANKS ARE USED ACROSS NUMEROUS INDUSTRIES AND APPLICATIONS

In oil and gas, they store crude oil, refined products, LNG, and LPG. Power plants use tanks for heat storage. The chemical industry stores chemicals and raw materials in tanks. Water treatment facilities use them for drinking water, wastewater, and process water. The food and beverage industry stores ingredients and products in tanks. Agriculture uses tanks for fertilizers, pesticides, and water.

MAXIMISE TANK EFFICIENCY WITH THE RIGHT INSULATION SOLUTION

Tanks come in different shapes, sizes and materials (e.g. steel, concrete, plastic or fiberglass), and are used across diverse and varied temperature ranges.

In many cases, they are insulated to meet several goals, including energy savings, temperature control, corrosion protection, process efficiency, improved safety, and sustainability.

As energy prices continue to rise and energy efficiency becomes the watchword, initiatives to optimise energy consumption are increasingly prioritized. For tanks, the savings potential is significant and often underestimated. By insulating them effectively, you can minimise heat loss or gain, reduce heating or cooling needs, and ultimately reduce energy consumption greenhouse gas emissions.

In particular, the insulation of the roof of tanks is often neglected, even though it can considerably improve the energy efficiency and environmental impact of tanks, in the same way as wall insulation.

DISCOVER OUR UNIQUE RANGE OF INSULATION SOLUTIONS FOR TANK WALLS AND ROOFS, FOR ALL TEMPERATURE RANGES.

LEARN MORE ABOUT OUR TANK INSULATION SOLUTIONS:

Other
INDUSTRIAL EQUIPMENT

Other industrial equipment encompasses a wide range of machinery and structures vital across multiple sectors. These pieces of equipment play critical roles in energy production, material processing, and maintaining operational efficiency across industries.

A WIDE RANGE OF EQUIPMENT

Boilers are crucial in power generation, chemical processing, and food manufacturing, providing steam or hot water for heating and industrial processes. Chimneys, found in power plants, refineries, and manufacturing facilities, expel exhaust gases to ensure proper ventilation and air quality. Heat exchangers are used in most types and parts of industrial facilities to transfer heat between fluids, enhancing energy efficiency. Reactors in the chemical and pharmaceutical industries facilitate controlled chemical reactions, while furnaces in metalworking, ceramics, and glass manufacturing generate high temperatures necessary for material processing. Compressors are essential in all industrial processes as refrigeration plays a crucial role in maintaining optimum temperatures for various applications.

INSULATION IS VITAL FOR THE EFFICIENT OPERATION OF INDUSTRIAL EQUIPMENT

Insulation is essential for the efficient and safe operation of various industrial equipment.

- In **boilers and furnaces**, insulation prevents heat loss, maintains energy efficiency, and ensures safe surface temperatures.
- For **chimneys,** insulation reduces heat loss and prevents condensation, which can cause corrosion and structural damage.
- **Heat exchangers and reactors** benefit from insulation by maintaining precise temperature conditions crucial for chemical reactions and heat transfer processes.
- **Compressors** require insulation to help maintain optimal operating temperatures and reduce energy consumption.

Overall, insulation materials must have high thermal resistance, fire resistance, moisture resistance, durability, and ease of installation to ensure the equipment's optimal performance and long-term reliability in demanding industrial environments.

A FULL PRODUCT AND SERVICE OFFER

Get an overview of our product range for industrial applications and discover our dedicated services.

A range of solutions specially designed FOR INDUSTRIAL APPLICATIONS

Industrial operators need insulation solutions that ensure energy efficiency, durability and reliable performance at different temperatures. Whether you are dealing with extremely low or high temperatures, or you need materials with high mechanical resistance, finding the right product is essential to optimise your operations.

COMPREHENSIVE SOLUTIONS, WHATEVER YOUR REQUIREMENTS

We offer a wide range of insulation solutions for industrial applications, based on glass wool, stone wool or elastomeric foams. All our insulation solutions offer excellent thermal insulation for maximum energy efficiency and a reduced environmental impact, as well as effective acoustic protection. Depending on your needs and priorities, you will favour one or the other material.

GLASS WOOL - FOR LOW AND MEDIUM TEMPERATURE SYSTEMS

For applications ranging from -200°C to 400°C, our glass wool products deliver outstanding performance and reliability.

STONE WOOL - FOR HIGH TEMPERATURES AND MECHANICAL RESISTANCE

For environments requiring robust materials and temperatures up to 700°C, our stone wool solutions are ideal.

ULTIMATE™ LIGHT STONE WOOL – FOR MAXIMUM ENERGY EFFICIENCY

For applications demanding superior energy efficiency, easy installation, and space-saving features across a broad temperature range, trust our innovative U TECH range, made of ULTIMATE™ light stone wool.

ELASTOMERIC FOAM – TO PREVENT CONDENSATION

In environments below ambient temperature, where there is a risk of condensation, elastomeric foam is the ideal insulation solution.

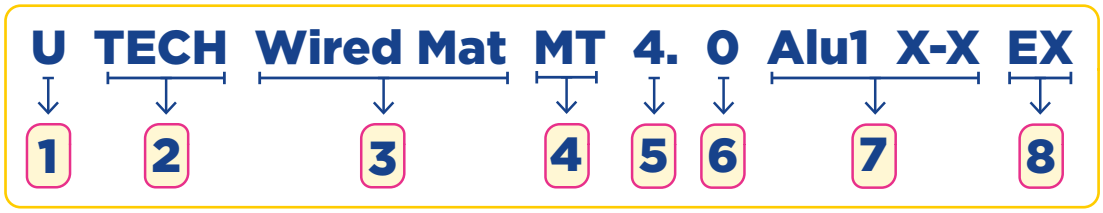
The TECH range – Mineral wool insulation solutions
FOR INDUSTRIAL APPLICATIONS

Whatever your needs – thermal insulation, acoustic insulation, fire safety, compressive strength, vibration resistance, corrosion protection, maximum service temperature, minimum operating temperature, etc., our TECH range combines technical excellence and high performance, all guaranteed by CE marking.

A NAMING CONVENTION TO SIMPLIFY YOUR CHOICE

Understanding the specific requirements of your insulation project can be challenging. That's why we've simplified our product naming system to provide clear, detailed information about each product's format, facing type, technical characteristics, and special applications. This makes it easier for you to select the perfect insulation solution for your needs.

THE TECH NOMENCLATURE – EXAMPLE



1. **Material indication (for ULTIMATE™ only):** The U stands for ULTIMATE™ light stone wool.

2. **TECH:** describes our product range specially designed for industrial applications.

3. **Format:** product supplied as wired mats, slabs, rolls, pipe sections, lamella mat, crimped roll, loose wool...

4. **Temperature range:** indicates the suitability of the product for high temperature ranges:
   - MT - medium-high temperatures from 400 to 680°C,
   - HT - high temperatures > 680°C.

5. **Thermal efficiency level:** provides an indication of the thermal conductivity of the product at different temperatures.

6. **Product version:** indicates the version of the product.

7. **Facing:** Specifies whether the product has a facing, and if so, which one:
   - Alu1, Alu2 Aluminum foil,
   - V1, V2 Neutral glass veil, black glass veil,
   - X, X-X Wired Mat stitched with stainless wire / wired mat stitched with stainless wire and wire mesh.

8. **Special applications:** indicator used to describe special applications requiring specific product features.
   - QN Suitable for use in nuclear facilities,
   - EX Suitable for use in areas with risk of explosion.

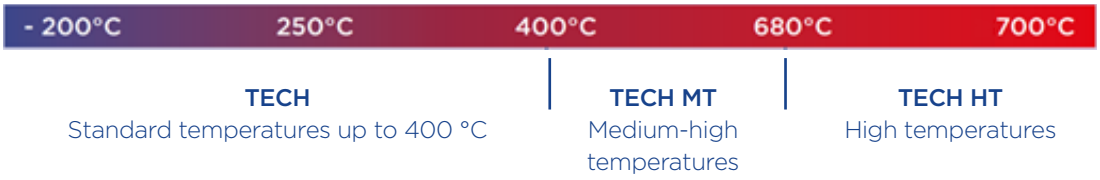
SOLUTIONS FOR ALL TEMPERATURE RANGES

Industrial processes can operate at different temperatures, ranging from very low temperatures to very high temperatures. The process temperature is a key parameter in choosing your insulation solution.

When choosing an insulation solution for use at high temperatures, consideration must be given to the material's ability to withstand loads and vibrations, its dimensional variations, its integrity, etc.

- According to the European standard EN 14303, the maximum service temperature represented by the acronym ST (+) must be determined according to the test standard EN ISO 18097 for flat insulation products and standard EN ISO 18096 for preformed pipe sections. According to these standards, at the maximum service temperature, no test result must exceed the deformation under the load defined in the standard by more than 5% and show evidence of exothermic reactions, causing sintering or collapse of the fibrous structure.
- According to the ASTM C447 standard ("Standard Practice for estimating the maximum use temperature of thermal insulation"), the test is performed without load. As a result, the maximum service temperature differs between 50 and 150°C from the European standard.

We offer a wide range of insulation solutions, each optimised for different applications or temperature ranges, up to 700°C. The maximum service temperature varies depending on the type of mineral wool and the specific characteristics of each product.



DID YOU KNOW

The maximum service temperature of an insulation material indicates the maximum temperature at which the material is able to operate continuously without losing its technical performance.

UNDERSTANDING THE THERMAL PERFORMANCE OF TECH PRODUCTS

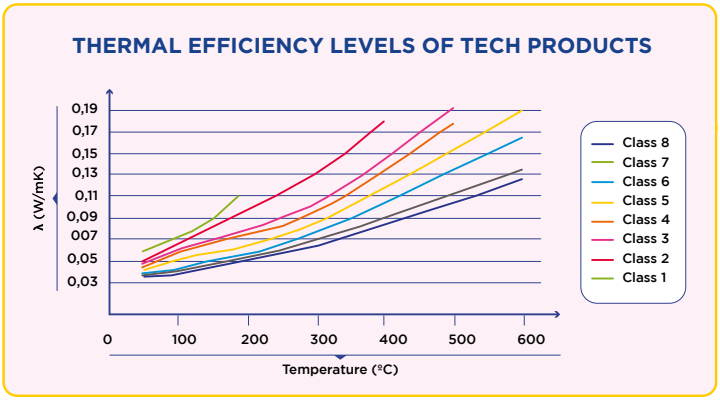
Thermal insulation is essential in industry for saving energy, protecting personnel, maintaining process efficiency, and reducing environmental impact. It minimises energy consumption by preventing unwanted heat flow, ensures safety by lowering surface temperatures, and stabilises processes by avoiding disruptive thermal transfers. Additionally, insulation reduces CO_2 emissions.

The effectiveness of mineral wool insulation, determined by its thermal conductivity, is rigorously tested to meet regulatory standards and deliver optimal performance across all temperatures.

DID YOU KNOW

The thermal conductivity of insulating materials varies depending on the temperature. That is why we declare the thermal conductivity values of our products for different temperatures, which are relevant to the use of the product.

CHOOSE THE BEST SOLUTION, THANKS TO CLEAR AND READABLE THERMAL EFFICIENCY INDICATORS



We have ranked our TECH range products on a scale of 1 to 8, based on their level of thermal efficiency (i.e. thermal conductivity values measured at different temperatures). The performance differs little at low temperatures, while the differences become more significant at high temperatures.

If you are looking for the best performance-cost ratio, here are the solutions we recommend:

- Classes 1 & 2 for process temperatures up to 250°C.
- Classes 3 & 4 for process temperatures up to 400°C.
- Classes 5 & 6 for process temperatures up to 600°C.
- Classes 7 & 8 for process temperatures up to 700°C.

Remember: the thermal efficiency level is indicated in the name of each product!

U TECH Wired Mat MT 4. 0 Alu1 X-X EX

Elastomeric foam, for below ambient TEMPERATURE APPLICATIONS

Made from flexible synthetic rubber, elastomeric foam offers excellent thermal insulation, condensation control, and acoustic attenuation. Its closed-cell structure provides high resistance to water vapour, enhancing its durability and performance, particularly in environments where there is a risk of condensation, and therefore an increased risk of corrosion under insulation (CUI).

THE ELASTOMERIC RANGE FROM KAIMANN, SPECIALLY DESIGNED FOR INDUSTRY

Easy to work with and install, elastomeric foam insulation comes in convenient forms like tubes for small diameter pipes or sheets for flat surfaces or bigger diameter pipes. Ideal for below ambient temperature applications, or applications with high temperature fluctuations, elastomeric foam is also the perfect solution for applications with high hygienic requirements, such as the food & beverage industries.

Kaiflex® HF plus s2

FOR APPLICATIONS WITH A RISK OF TOXIC COMBUSTION GASES

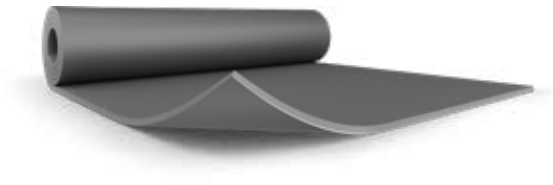
- Free from PVC, chlorides or brominated flame retardants.
- Effective fire protection (classified s2).
- Prevents stress corrosion cracking.

Kaiflex® EPDM plus

FOR EXTREME TEMPERATURE VARIATIONS

- Suitable for equipment that operates in intermittent cold and heat cycles.
- Retains its flexibility and thermal conductivity within a wide temperature range of +150 °C to –50 °C (–200 °C).
- Can be used in outdoor applications.

Kaiflex SL



TO REDUCE NOISE AT THE WORKPLACE

- Sound insulation value of RW = 25 dB.
- Decouples vibrations from structure-borne noise and dampens airborne noise.
- Lightweight and easy handling.

Kaisound

THE MOST FLEXIBLE APPROACH TO SOUNDPROOFING

- Open cell structure absorbing the most problematic frequencies.
- High flow resistance and viscoelastic properties ensure excellent noise reduction and damping results.
- Lightweight and easy handling.

Kaiflex Protect System

FOR THE HIGHEST HYGIENIC REQUIREMENTS

- Designed for use in the food & beverage industry.
- Does not promote microbiological growth.
- Robust, easy-to-clean surface.

Technical support and tools to DESIGN EFFICIENT INSTALLATIONS

Our dedicated team of international and local experts is available to support you with your industrial insulation projects, offering personalised technical advice to identify the most effective solutions for your specific needs. We also provide a range of user-friendly digital tools to simplify the design and installation process, ensuring your projects are completed with precision and efficiency.

TECHCALC 2.0 FOR ADVANCED THERMAL CALCULATIONS

Calculating the thermal performance of complex installations is not an easy task and is often very time-consuming. Whether you are an industrial planner, specifier, or insulation contractor, rely on our TechCalc 2.0 to help you design thermally efficient constructions quickly, easily and with reliable results.

TechCalc 2.0 uses the procedures defined in ISO 12241, ISO 23993, VDI 2055 and the ASTM C680, as the basis for its thermal insulation calculations. The software is the result of decades of practical experience and offers detailed calculation procedures with an easy-to-use interface. It covers a full range of different scenarios, such as:

- Heat flow and surface temperatures
- Required insulation thickness for required heat resistance
- Operating costs and CO_2 savings
- Relationship between energy saving and insulation
- Minimum insulation thickness to prevent condensation
- Multilingual (including English, German, French, Spanish, Italian...)
- Easy to use
- Customisable database (products, climate data, locations, etc.)

SAVE TIME ON QUOTATIONS, WITH QUOTECH

The quotation process often takes a significant amount of time, particularly in industries requiring intricate calculations and product recommendations. Many professionals still rely on Excel, which has clear limitations for complex insulation calculations involving numerous variables and factors.

QUOTECH is designed to simplify and streamline this process by accurately calculating the required insulation materials based on the dimensions and specifications of surfaces, cylinders, pipework, and cuboids. It incorporates a comprehensive database of Isover solutions, specifically designed for industrial insulation.

FOR MORE INFORMATION ON OUR INSULATION SOLUTIONS, WE INVITE YOU TO CONSULT OUR OTHER DOCUMENTS FOR THE INDUSTRIAL MARKET:

You can access them from our website.

Industry Manual

Designing Acoustics in Industry

Insulation Solutions for Storage Tanks

Insulation Solutions for the nuclear industry

Engineered thermal insulation Solutions for cryogenic applications

TIPCHECK energy audits to save energy and REDUCE CO_2 EMISSIONS

TIPCHECK is an energy audit programme for industrial facilities. It was implemented by the European Industrial Insulation Foundation (EiiF), to save energy and reduce CO_2 emissions thanks to insulation.

TIPCHECKs evaluate the insulation systems of existing facilities, planned projects or retrofits, and demonstrate how more efficient thermal insulation could:

- Save energy
- Save costs
- Contribute to a cleaner production through reduced CO_2 emissions

Payback times for insulation investments following TIPCHECK audits are in most cases only 1 to 2 years. Our Saint-Gobain TIPCHECK Experts, through approximately 400 TIPCHECKS, have already identified potential savings of 604,000 MWh, or approximately 37 million €, and equivalent to 134,000 tonnes of CO_2.

Beyond identifying and exploiting energy efficiency potentials, the TIPCHECK thermal energy audit can also help identify process efficiency improvements and personnel safety risks.

BENEFIT FROM THE SUPPORT OF OUR TIPCHECK EXPERTS

At Saint-Gobain, we have several certified TIPCHECK Experts who can carry out TIPCHECK audits, internally or at our customers. To prepare for an audit, the TIPCHECK Expert will request some initial information concerning the installations to be audited: general and detailed drawings, current insulation specification of the areas to be checked, operating temperature of each zone, process diagram, type of energy used (gas, electricity, etc.), energy price.

The audit will then take place in three stages:

1. Field measurements to collect all the data.
2. Based on the data collected, we draw up an inventory of the actual performance of the installations, considering the existing insulation. Then we recommend an optimised insulation system.
3. And finally, we deliver a standardised TIPCHECK report detailing the conclusions of the audit.

TIPCHECK
CASE STUDY

A TIPCHECK audit of two fuel storage tanks located in Las Palmas de Gran Canaria (Spain) was carried out in 2020, to evaluate the energy performance of the tanks. The aim was to determine possible energy losses, reduce energy consumption as well as CO_2 emissions, while maintaining the temperature inside the tank at 50°C minimum.

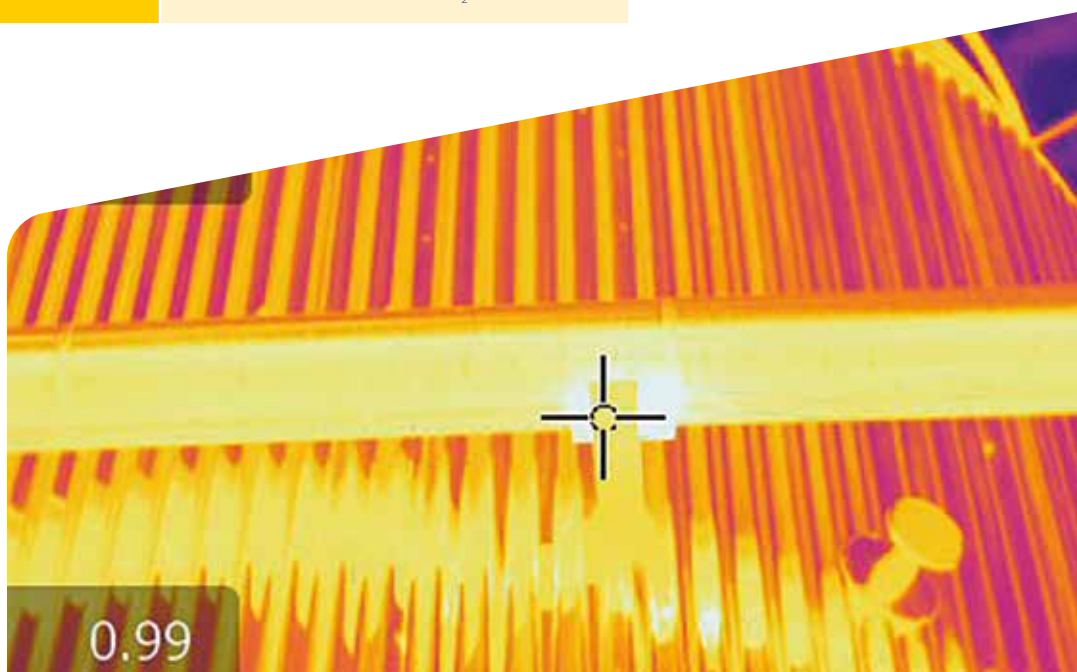
AGING INSULATION LEADING TO HEAT LOSS

After an initial visual inspection of the insulation and the temperatures recorded with a thermographic camera, it was found that many areas of both tanks showed heat loss. In fact, the existing polyurethane insulation had lost a large part of its thermal efficiency.

A NEW INSULATION SYSTEM OFFERING BIG SAVINGS AND A RAPID RETURN ON INVESTMENT

A new glass wool insulation solution was proposed with the ultra-light and flexible TECH ROLL 2.0 ALU2, offering optimal thermal efficiency and guaranteeing energy losses of less than 15 W/m² on all surfaces. The potential annual savings convinced the owner to implement the upgrades. With an investment cost of € 272,500 and a payback of only 1.22 years (14.6 months), the owner decided to implement the upgrades early 2021.

	Annual savings potential
Energy	-5.333 MWh
Cost	- € 224.190
CO_2 emissions	- 1.498 tons CO_2



DISCOVER THE EiiF 2021 STUDY «THE INSULATION CONTRIBUTION TO DECARBONISE INDUSTRY».

SAINT-GOBAIN IS A MEMBER OF EiiF.

Isover and Kaimann are among the 9 founding partners of EiiF, a neutral, non-profit institution, which promotes insulation as a primary method to improve sustainability and profitability. Since its creation in 2009, EiiF has established itself as a resource for industries that need to reduce CO_2 emissions and save energy.

EiiF provides facts and figures and publishes reports, fact sheets and studies showing that the saving potential of industrial insulation is great and exists in all regions and sectors.

OUR SOLUTIONS IN ACTION

Trusted by customers around the world, our insulation solutions for industrial applications are widely used to improve energy efficiency, optimise processes, ensure safety and reduce noise for all types of industrial equipment.

PM3 Sandersdorf-Brehna (Germany)

A wide range of insulation solutions, in one of the most modern paper factories in the world

The construction of a new facility with its own power plant included 13 storage and processing tanks, piping, and various equipment. A huge project for owner Progroup AG, with 8,500 m^2 of tank insulation with our newly developed U TFA 23 (AS) Si felt, at a thickness of 120 mm, 10,000 m^2 of thermal insulation with wired net mats, pipe sections and lamella mats, as well as elastomeric foam from Kaimann for cold insulation.

The challenges included the initial specification requiring stone wool of 60 to 130 kg/m^2, and the guarantee of a maximum surface temperature with a thickness of 120 mm; also time constraints to meet the deadlines and the need to convince decision-makers of the benefits of a customised high-performance solution.

This project was only possible thanks to the technical support provided by the Isover and Kaimann teams throughout the project. Thermal calculations were essential to demonstrate the solution's ability to meet the required surface temperatures, allowing for a distinct comparison of different

Xella Landgraaf (Netherlands)

Improving energy efficiency in the manufacturing industry

GSH Industrial Projects was tasked with improving thermal insulation of the Xella factory in Landgraaf, which specialises in building materials and mineral insulation boards. The focus was on several installations with process temperatures ranging from 80 to 200 °C, such as an autoclave, a steam vessel, a condensation vessel and pipelines.

In close collaboration with Isover and based on thermal analysis, GSH proposed sustainable and cost-effective insulation solutions, with the aim of meeting the Energy Investment Allowance (EIA) criteria of the Dutch government. The project involved optimising insulation thicknesses, initially increasing the budget but offset by the EIA tax benefits. For faster installation, TECH Crimped Roll 2.0 Alu1 glass wool was chosen.

Key benefits include energy savings and reduced CO_2 emissions, as well as long-term financial benefits from EIA, which allowed the company to deduct up to 45% of investment costs from tax profit, an average profit of 11%.

Al Zour LNG Terminal (Kuwait)

The world's largest LNG Terminal, insulated with Cryolene

The Al-Zour LNG terminal in Kuwait is the world's largest LNG tank construction project, involving the creation of eight LNG storage tanks, each with a capacity of 225,000 m^3, on a reclaimed sea site 90 km south of Kuwait City. The simultaneous construction of the eight tanks required perfect coordination, particularly in planning the delivery of the material to the site.

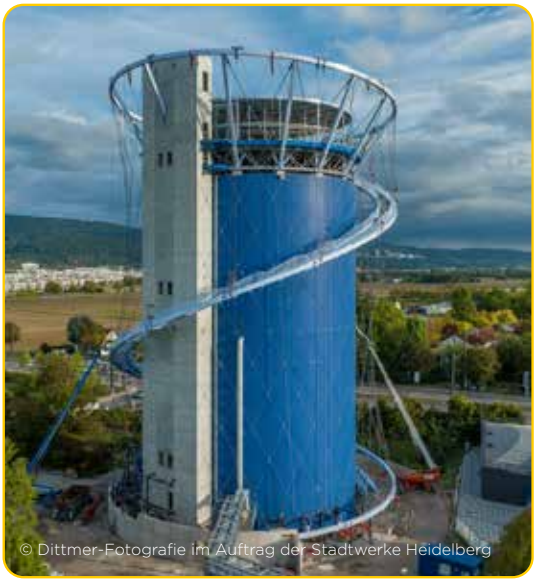
To meet the demanding design specifications of these storage tanks, requiring high compressibility and resilience insulation, our Cryolene solutions were the perfect answer, both for the insulation of the tank walls and the suspension bridges.

As part of this project, more than 640 tons of Cryolene 682 were delivered between 2019 and 2020. Used to insulate tank walls, Cryolene 682 offers excellent thermal, fire and tensile performance, maintaining the elasticity of its fibres at temperatures ranging from -170°C to +120°C. Its dimensions of up to 40 meters in length and 2.4 meters in width meant fewer joints, reduced thermal bridges and a reduction in installation time of up to 75%, improving safety and efficiency on this iconic construction site.

Stadtwerke Heidelberg (Germany)

Insulating a giant heat storage tank

This project involved insulating a new heat storage tank with a diameter of 25 meters and a height of 55 meters. Since 2015, over 200 tons of insulation have been delivered, covering an area of 10,000 m^2. The project required a maximum heat loss of 15 W/m^2 to qualify for government subsidies. An optimised solution was implemented using U TFN 23 (AS) Si in felt form, with two layers of 250 mm for a total thickness of 500 mm.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Main challenges included poor initial specifications, different material options, and the need for easy-to-install, lightweight products due to height access issues. Additionally, the delayed start of construction and changes in delivery dates posed logistical difficulties.

The key to success was the significant reduction in installation time and labour costs. Thanks to its exceptional thermal performance (low lambda value, reduction of thermal bridges thanks to an exclusive design which included fewer joints), and the possibility of delivering this product in a significant thickness, it could be installed in only two layers, compared to four to five layers for standard solutions, thus optimising the dimensions and overall performance.


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The success of this project opens the door to other tank insulation projects, in a context of government subsidies available at least until 2025.

BrandSafway (Belgium)

Reduce noise pollution from an industrial site

Noise pollution in urban areas is subject to strict acoustic regulations: here for homes, the maximum admissible sound level should not exceed 45 dB(A) in the evening and at night. Several houses near a zinc production site in Belgium experienced noise levels between 37 and 46 dB(A), exceeding the permissible limit after a 5 dB(A) penalty, resulting in 51 dB(A). After a detailed acoustic study, an industrial fan and its components were identified as the primary noise source, particularly the ducts with diameters of 1,000 to 1,500 mm.

To reduce noise, the ducts had to be acoustically insulated. As a result, the contractor, BrandSafway, with the support of the Isover Benelux teams, selected an insulation system consisting of 100 mm of U TECH Wired Mat MT 4.0, combined with loose aluminum cladding and acoustically decoupled support rings.

The U TECH Wired Mat MT 4.0 solution offered numerous benefits: 4 to 5 fewer layers to install compared to traditional mineral wool solutions, less weight, no need for additional mass layers or welded support rings, reduced downtime, fewer products to transport, and a 59% reduction in raw materials used, leading to less waste.

Post-insulation noise measurements confirmed compliance with regulatory values, and the noise pollution at the housing level was no longer audible.

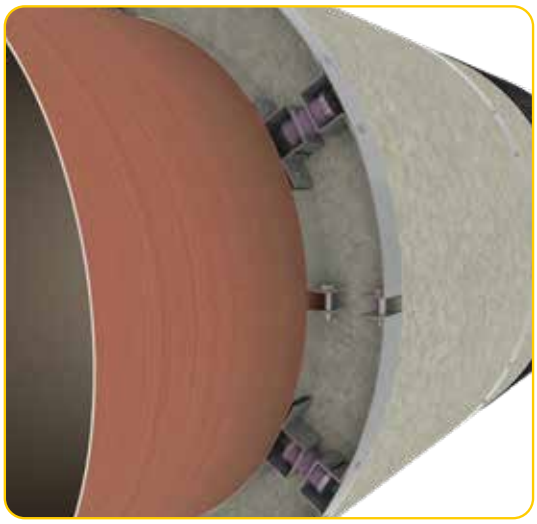
CCPP SUN BA II (Taiwan)

Reducing noise from steam ducts with our revolutionary Isover TECH dB System

The 1,100 MW Sun Ba II Combined Cycle Power Plant (CCPP) in Taiwan represents an important milestone in the country's energy transition from coal and nuclear power to flexible, low-emission gas-fired power generation and renewable energy sources.

Isover designed and supplied the acoustic solution for the steam ducts, meeting strict acoustic requirements. This is where our new Isover TECH dB System made the difference. Implemented in collaboration with John Cockerill Hamon, the Isover TECH dB System, comprising the TECH dB Spacer, the TECH Wired Mat, and the TECH dB Alu mass layer, enables significant noise reduction in industrial applications.

This project is a perfect illustration of co-development and effective collaboration between our teams and John Cockerill Hamon, at every stage of the development. We provided continuous technical support, acoustic calculations, and engineering advice, to meet the technical requirements for noise reduction in steam ducts. It is a complete system approach, and in particular the innovative Isover TECH dB Spacer that has made it possible to obtain noise reduction beyond regulatory standards.



INDUSTRY STANDARDS AND GUIDELINES

Standards and norms are crucial in the planning, design, and installation of technical insulation systems. They ensure efficient operation, economic viability, and safety of industrial installations while guaranteeing their longevity.

Understanding industry insulation
STANDARDS AND GUIDELINES

Various types of standards and guidelines apply to insulation used in industrial applications: international and national standards, such as those from ASTM, EN, and DIN; guidelines like DIN 4140 and AGI Q101; and company or project-specific specifications.

TYPES OF STANDARDS, NORMS AND GUIDELINES

- **National or international standards:** Published by accredited organisations like ASTM, EN, and DIN, these standards typically relate to product performance and are developed by standardisation bodies such as CEN or ISO.
- **Industrial guidelines for insulation:** Guidelines such as DIN 4140 and AGI Q101 facilitate the design and approval of materials by specifying detailed technical requirements.
- **Company specifications:** Major companies like Shell and BP have their own technical specifications for design and maintenance, based on best practices.
- **General or site-specific standards:** Standards specific to projects or sites are often adopted to meet local needs.

All these standards and norms, whether general or specific, are essential for ensuring compliance, efficiency, and safety in industrial operations.

THE MAIN STANDARDISATION BODIES

ISO - International Organisation for Standardisation: ISO is an independent, non-governmental organisation comprising members from the national standards bodies of 172 countries. ISO develops worldwide voluntary standards for products, services, and best practices, fostering global economic efficiency and removing barriers to international trade.

CEN - European Committee for Standardisation: The European Committee for Standardisation (CEN) is an association that unites the national standardisation bodies of 34 European countries. CEN serves as a platform for developing European Standards and technical documents across diverse product types, materials, services, and processes. It supports standardisation efforts across numerous sectors.

ASTM International - American Society for Testing and Materials: ASTM International is globally renowned for spearheading the development and implementation of voluntary consensus standards. With over 12,000 ASTM standards in use worldwide, the organisation plays a pivotal role in enhancing product quality, promoting health and safety, facilitating market access and international trade, and strengthening consumer trust and confidence.

CINI (Committee for Industrial Insulation): Founded in 1989, CINI has evolved into an institute dedicated to standardising industrial insulation techniques across sectors such as oil & gas, petrochemicals, process industries, and the electricity sector.

CE MARKING – A PREREQUISITE ON THE EUROPEAN MARKET

CE marking is essential for technical insulation products within the European Economic Area (EEA), ensuring compliance with EU safety, health, and environmental protection requirements under the Construction Product Regulation (EU) no. 305/2011.

EN 14303, THE KEY STANDARD FOR TECHNICAL INSULATION

Mineral wool products, governed by the harmonised EN 14303 standard ("Thermal insulation products for building equipment and industrial installations"), undergo rigorous testing and quality controls to attain CE marking. This standard specifies product characteristics and test procedures, guaranteeing performance and safety criteria are met uniformly across the market. CE marking enhances market transparency and facilitates product comparison, promoting reliable and compliant insulation solutions throughout Europe.

All our product declarations fully comply with EN 14303 requirements, encompassing dimensional tolerances, thermal conductivities across operational temperatures, and fire reaction classes. They also detail industrial use attributes such as maximum service temperature, water absorption, acoustics, and chemical behaviour.

COMPLIANCE WITH EU REGULATIONS

CE marking signifies adherence to EU regulations, particularly EN 14303, ensuring products are safe and suitable for the European market. Manufacturers certify compliance through risk analysis and periodic testing, with high-risk products undergoing independent safety assessments. The CE mark affirms conformity with legal standards, assuring consumers of product safety and facilitating market access across the EEA.

By complying with CE marking and EN 14303, mineral wool insulation products provide dependable solutions across diverse applications, meeting industry standards and ensuring safety and quality for European consumers.

ASTM – AMERICAN STANDARDS WITH AN INCREASINGLY INTERNATIONAL REACH

ASTM is renowned worldwide for its development and publication of voluntary standards across a wide spectrum of materials, products, systems, and services.

While the American National Standards Institute (ANSI) manages standards in the USA, ASTM's influence extends globally, particularly in regions like the Middle East, Asia, and South America, where its standards are widely adopted in international projects.

The importance of ASTM standards lies in their role in ensuring high-quality and safe products. Manufacturers adhering to ASTM standards can guarantee the reliability and performance of their offerings, crucial for earning consumer trust and maintaining competitiveness in the market. Certification to ASTM standards, often indicated on product labels or packaging, signifies compliance with internationally recognised benchmarks, facilitating market access and enhancing product appeal to global consumers.

In technical insulation, ASTM standards are particularly significant for mineral wool products. These standards encompass material specifications and validate product properties, ensuring that insulation materials perform effectively and safely under diverse environmental conditions. This rigorous adherence to ASTM standards helps maintain consistency and reliability in industrial applications, reinforcing ASTM's global recognition as a leader in setting quality and performance standards.

CINI – GUIDELINES FOR STANDARDISING INDUSTRIAL INSULATION TECHNIQUES

CINI specifications are essential guidelines in the industrial insulation sector, providing a robust framework for designing, installing, and maintaining insulation systems. Widely adopted in the Benelux countries and by international petrochemical firms, these guidelines ensure optimal performance, safety, and cost-efficiency in industrial settings.

CINI standards offer comprehensive guidance on material selection based on thermal properties, durability, and suitability for various industrial applications. They emphasise best practices for installation, including surface preparation, application techniques, and rigorous quality control measures. Regular maintenance is also stressed to sustain system efficiency and safety, with guidelines for detecting and addressing damage.

CINI specifications are applied across sectors such as petrochemicals, power generation, and pharmaceuticals, ensuring insulation meets high safety and performance standards. They support precise temperature control and hygiene in sensitive industries like food production.

They uphold standards of performance, safety, and efficiency, contributing to energy efficiency and sustainable practices across various industrial applications.

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.

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