Building our Environment Together

Delegation China, 2008

SAINT-GOBAIN

Agenda

- Message from the CEO
- Home and Living Environment
  - Materials for buildings and environment
  - Materials that promote renewable energies
  - Water treatment and air purification materials
  - Materials for cleaner vehicles
- The Principles of Conduct and Action

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Message from the ECO

As the world leader in products for the construction market, Saint-Gobain has set its sights on providing innovative solutions to two key challenges of the future: environment protection and energy saving. As the following pages illustrate, the wealth and diversity of Saint-Gobain's businesses enable it to bring concrete answers to these challenges.

Keenly aware that the future of the planet is in the hands of each and every one of us, we are fully committed to making respect for the environment an ever more central part of all our manufacturing activities and services.

Pierre-André de Chalendar

Chief Executive Officer of Compagnie de Saint-Gobain

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Home and living environment

Products and services that help save energy and preserve the environment

Buildings are responsible for a quarter of CO2 emissions in Europe. Studies show that hot water, home appliances and lighting only account for 25% of a building's average energy consumption, while heating alone accounts for the remaining 75%.
The main cause of this imbalance is inadequate insulation. A building's energy efficiency hinges mainly on he quality of its insulation.
This involves changes in the approach to construction methods and the use of renewable energies.

Materials for building and the Environment

Insulation, the environment's greatest ally

Saint-Gobain is the world leader in Insulation through its **Isover** brand, we offer insulation systems specifically designed for roofs, walls, partitions, floors, pipes, and ventilation ducts. Many of these applications use **glass wool**, a material that has a very limited environmental footprint over its entire life cycle. Although these products are hidden from view, they are all around us, helping to preserve the environment.

60% of European homes Built pre-1975	Current European standards	European standards in 2010	Low-consumption homes
Annual cost to heat 100 sq. m.			
€ 1700	€ 800	€ 300	€ 100

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Materials for building and the Environment

Insulation, the environment's greatest ally

- Glazing is essential to the **efficient insulation of a building**

The thermal insulation provided by low-emission double glazing is three times more efficient than that of standard double glazing.

Saint-Gobain's Flat Glass Sector has designed the SGG PLANITHERM ULTRA N glass, which boasts one of the lowest heat loss ratings worldwide.

Triple glazing could become the insulation solution of the future.

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Materials for building and the Environment

Insulation, the environment's greatest ally

- Other thermal **Insulation systems**

Saint-Gobain's external thermal insulation systems (SG Isover, SG Gypsum, SG Weber and SG Technical Fabrics) offer an exceptional insulating system for buildings.

For roofs, Isover's Integra system combines high-performance insulation with a Vario Duplex weather-responsive membrane.

The fireproof properties of mineral wool, plaster and cast iron pipes contribute significantly to the safety and comfort of homes.

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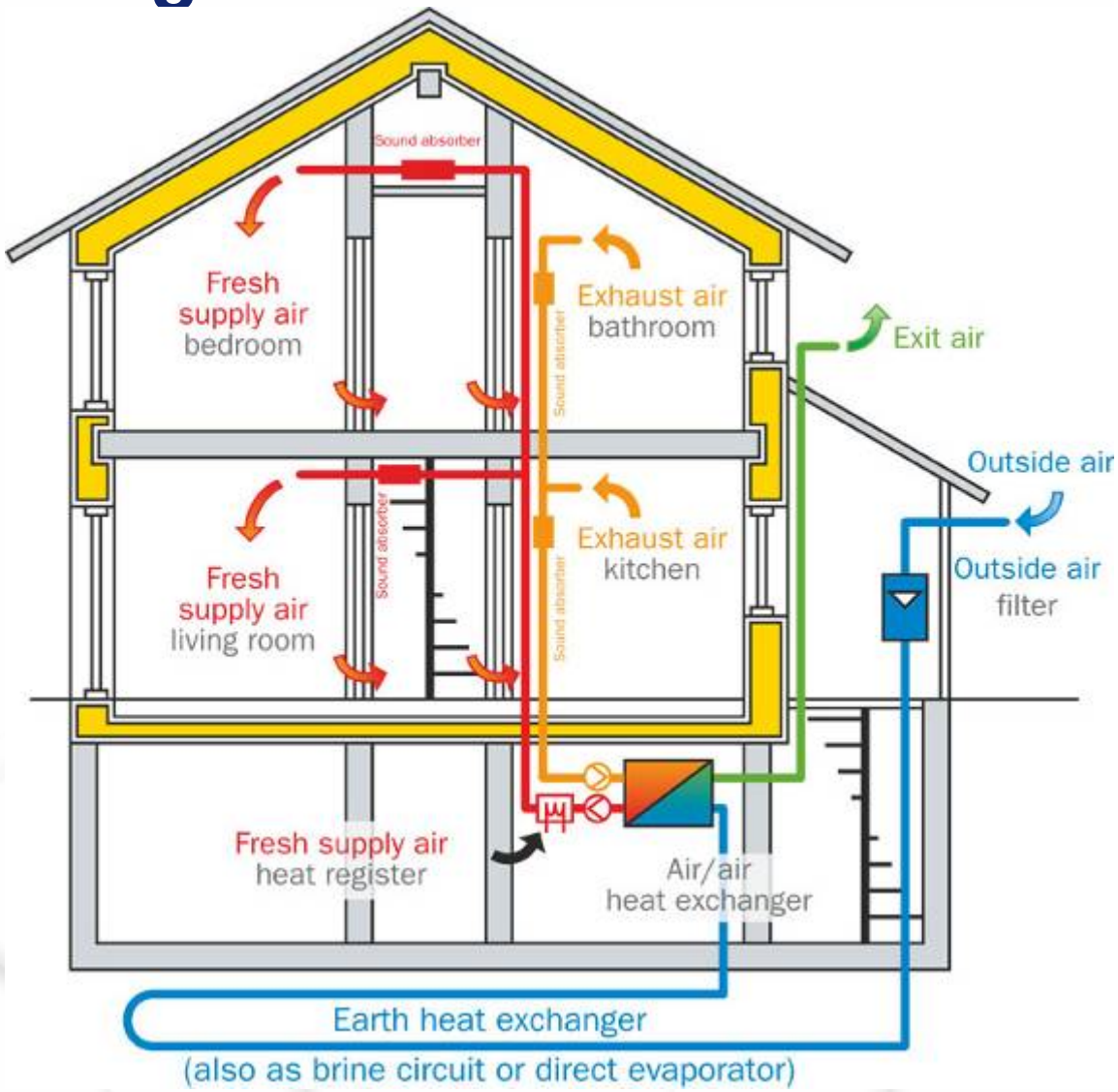
Materials for building and the Environment

Isover has launched the "**Multi-Comfort House**" concept

Thanks to carefully selected high-efficiency components including optimal thermal insulation, superinsulating windows and heat recovery systems, Saint-Gobain's Multi-Comfort House can almost do without any form of active heating. The house's main heat sources are two renewable and inexhaustible natural energies – the sun and heat recovered from recycled air.



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Materials for building and the Environment

Isover has launched the "**Multi-Comfort House**" concept

The House consumes only 1.5 liters of fuel per square meter per year for heating. In comparison, old buildings require approximately 20 liters and new houses based on traditional models consume 6-10 liters.

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Materials for building and the Environment

Major steps forward for acoustic comfort

A building that is well insulated against heat and cold, thanks to the combination of Saint-Gobain products, is also well insulated against noise.

High performance acoustic insulation products

Using Saint-Gobain products means benefiting from energy savings, thermal and acoustic comfort, and interior air quality. A combination of mineral wool and plasterboard yields optimal insulation performance. Furthermore, All products can be fully recycled at the end of their lifespan.

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Materials for building and the Environment

Major steps forward for acoustic comfort

IN HOMES **AND CARS**

The Flat Glass Sector develops acoustic insulation products for homes and for cars.

Half of the noise heard inside vehicles comes through the windshield. By using acoustic glass, Saint-Gobain significantly improves comfort by dampening outside noise. In recent years, Saint-Gobain has been responsible for most of the progress achieved in this area.

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Materials for building and the Environment

Major steps forward for acoustic comfort

IN BUILDINGS

Reducing the noise caused by drainage systems is the concern of Saint-Gobain PAM. All of its drainage pipes for buildings are made from cast iron, which generates less noise than PVC pipes. The noise caused by cars when they drive over manhole covers is a common source of noise pollution. Saint-Gobain PAM has been at the forefront of considerable progress in this area thanks to the Pamrex product and it absorbent, hardwearing and durable elastomer seal.

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Materials for building and the Environment

Sustainable management of wood is gaining ground

Wood is widely used in the home improvement and construction industries, in the form of parquet flooring, shutters, windows, stairs, and facades. However, wood is also a fragile natural resource that should be preserved.

Saint-Gobain takes the sustainable management of wood into consideration in the wood products it designs and markets. All of the wood is sourced from sustainable managed forests.

WOOD PROTECT

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Materials for building and the Environment

Energy-efficient lighting

Light Emitting Diodes (LEDs) will eventually replace traditional incandescent bulbs.

SAPPHIRE SUBSTRATES
THE SOLUTION OF THE FUTURE

Saint-Gobain develops other products that contribute to energy savings, in particular sapphire substrates, which are used when manufacturing LEDs for display and light applications. The light that they produce is close to that of natural daylight but they consume five times less energy and last 100 times longer than traditional bulbs.

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Materials that promote renewable energies

Solar energy, an alternative to fossil fuels

Saint-Gobain contributes to the development of alternatives to fossil fuels, and particularly helps promote the wider use of renewable energies.

In 2006, Saint-Gobain and Shell launched a joint venture, Avancis, to manufacture photovoltaic cells that convert solar energy into electricity using a new thin-layer based technology.

The Group is already a major supplier of products for the photovoltaic industry, including SGG DIAMANT and SGG ALBARINO high-efficiency glass.

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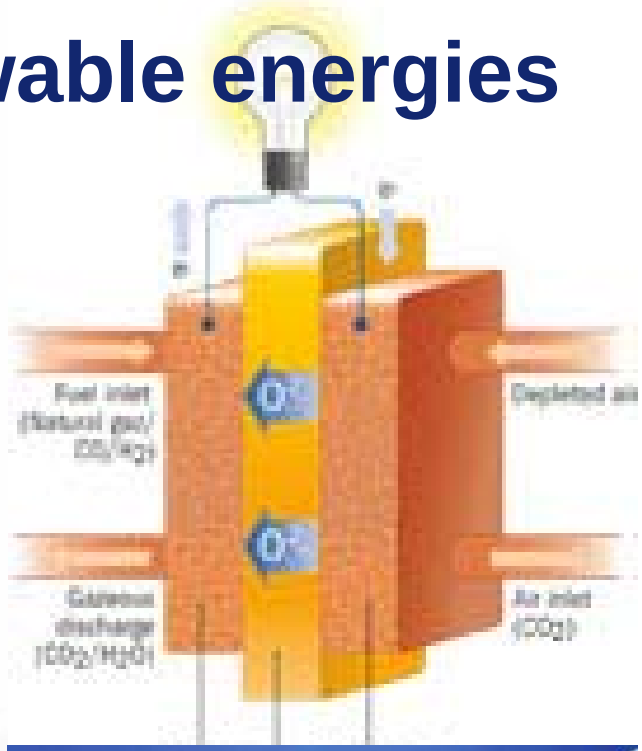
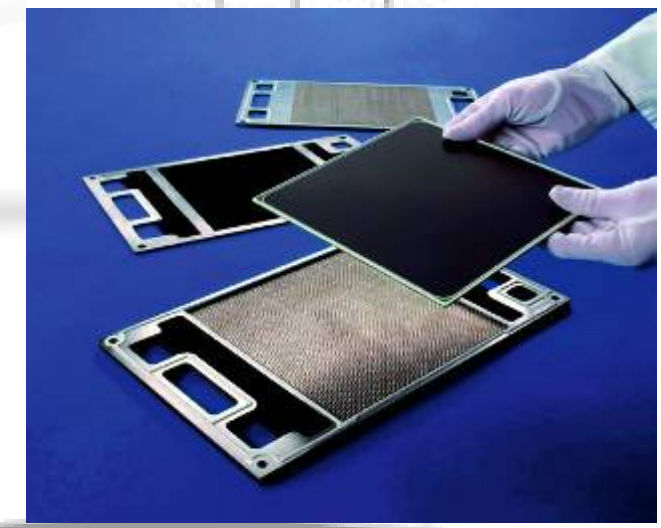
Materials that promote renewable energies

Fuel cells – improving energy efficiency

Saint-Gobain is designing new technologies with high energy-efficiency potential

Solid-oxide fuel-cells (SOFCs) use functional ceramic layers to convert chemical energy directly into electrical power and heat. Combined heat and power system (CHP) can achieve energy efficiencies of around 80%, compared to 30% to 30% for traditional gas-and coal-fired power plants.





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Water treatment and air purification materials

Facilitating water supply and treatment

Saint-Gobain is designing new materials in cast iron and quartz, as well as groundbreaking new systems.

THE BENEFITS **OF CAST IRON**

The intrinsic properties of cast iron, the base material of Pipe Division products, make it a natural choice for addressing issues of water preservation and quality. Cast iron pipes are naturally impermeable and guarantee the continued drinkability of water while preventing any leaks. When used to collect wastewater, it prevent soil pollution and ensure that a maximum amount of wastewater is treated and recycled.

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Water treatment and air purification materials

Facilitating water supply and treatment

THE ADVANTAGES **OF QUARTZ**

In domestic water treatment, Saint-Gobain supplies transparent quartz tubes for the ultra-violet treatment of wastewater, drinking water and swimming pool water. These tubes destroy bacteria without using environmentally dangerous chemicals.

The High-Performance Materials Sector has developed a photocatalytic air purification filter called Quartzel, which destroys organic matter and is complementary to indoor filtration technologies used to clean air.

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Materials for cleaner vehicles

Improved automotive, glazing and lighter materials

Vehicles are heavy CO_2 emitters. To reduce these emissions, Saint-Gobain produces high-performance windshields and particulate filters for diesel engines.

Compared to a car equipped with a classic windshield, Saint-Gobain Sekurit's athermic windshield reduces air-conditioning by 20% and lowers energy consumption by 3%. It thus cuts CO_2 emissions by 200kg for every 100,000 km.
Tinted and reflected glass, as well as the thin automotive glass, help car manufacturers to produce lighter vehicles that consuming less fuel.

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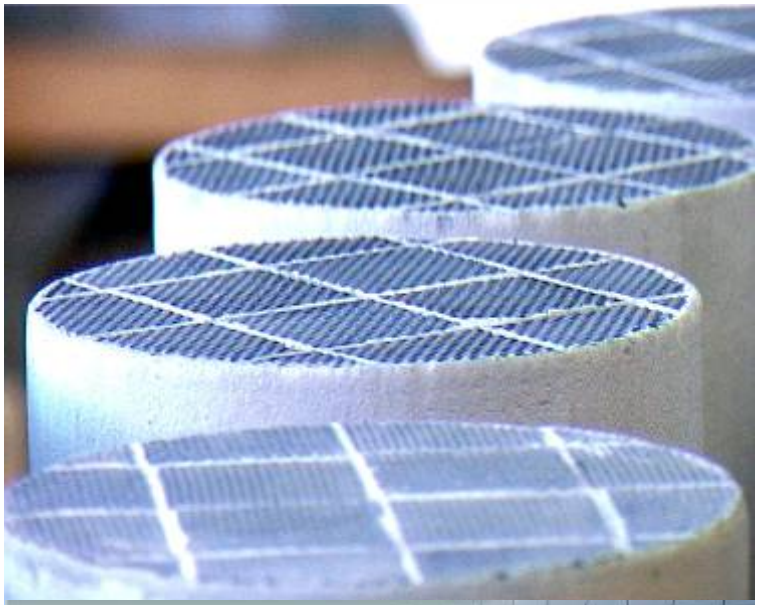
Materials for cleaner vehicles

Particulate filters

Saint-Gobain's particulate filters help reduce CO2 emissions.

Diesel-powered vehicles emit less CO2 than those with gasoline engines.

Now thanks to the particulate filters, diesel emissions producing very fine soot can be trapped. Saint-Gobain started up a production line making silicon carbide particulate filters for diesel engines – Ceraclean. This technology cuts out 99.99% of the soot particulates emitted by engines. Our products have already been selected by Ford and Volkswagen for several of their models in Europe.



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The Principles of Conduct and Action

Saint-Gobain’s development is based on the Group’s Principles of Conduct and Actions, which were formulized and adopted by the Board of Directors in January 2003. The application of these Principles is a requirement for belonging to the Saint-Gobain Group.

Five of the principles concern individual conduct and four of them concern professional conduct, including caring for the environment.

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Saint-Gobain and the Environment

Caring for the environment

Saint-Gobain Group companies proactively endeavor to protect the natural environment.

All facilities, regardless of location, implement site management methods that allow measurable environmental performance standards to be set, and actual performance to be regularly evaluated and checked against the applicable standards.

Saint-Gobain and the Global Compact

Saint-Gobain wishes to make clear that it belongs to a global community of corporate citizens who uphold the key values of respect for human rights, environmental protection and anti-corruption.

We joined the Global Compact in July 2003.