Spin the bottle ...

glass

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SIEMENS

Utilizing potentials. Efficiently, reliably, and based on tradition.

Innovative technology and a long-standing tradition – the close connection of these two values makes Siemens a strong partner for the glass industry.

For more than 150 years, Siemens has been active in the glass industry. This long and successful tradition, along with our close connection to glass as an industrial product, is the motive force and the basis for the commitment that sustains our present-day cooperation with the glass industry in the fields of automation, drive, and energy technology. We offer a comprehensive portfolio, specifically integrated for the glass industry in the "Industry Suite Glass." We thoroughly observe the current trends and key requirements in order to offer spot-on solutions tailored to the demands of your industry.

Be it float glass, hollow glass, ultrathin glass, glass wool and fiber, cast glass, or special glass – with Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) we can offer numerous benefits for you to profit from. A high degree of standardization shortens the period of time until commissioning, simplifies maintenance, and reduces expenses. To further press these developments ahead, we cooperate with plant manufacturers (EPC), mechanical engineers (OEM), and system integrators (SI).

Plant availability.

Quality.

Energy efficiency.

Supply chain management.

… to your success.

Challenges and chances.

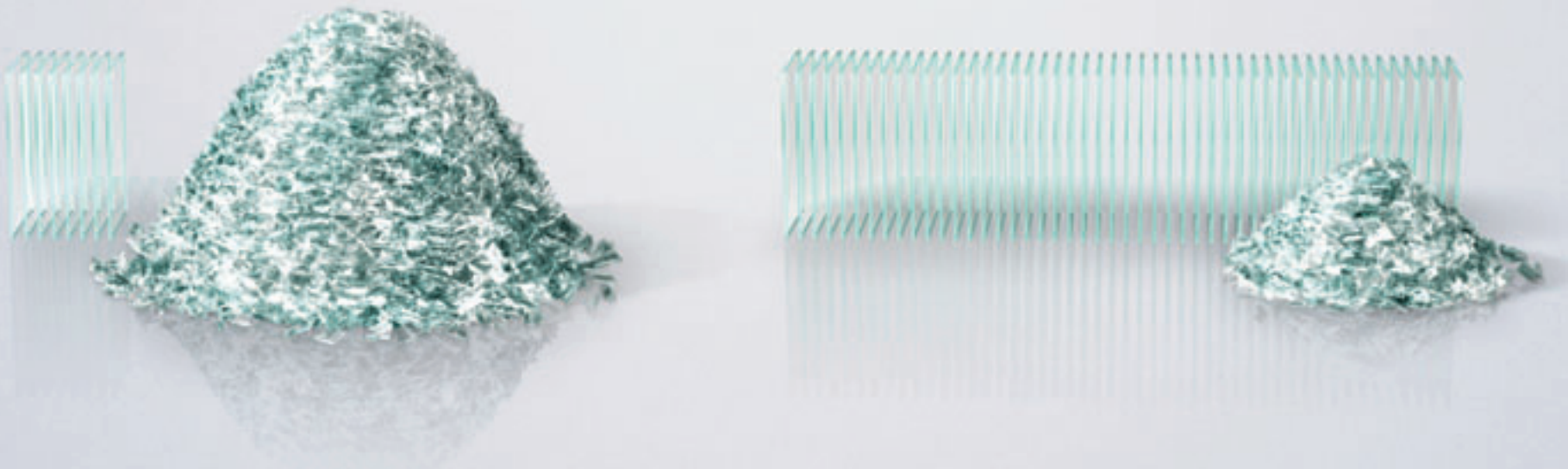
Trend recognition is one thing, transforming trends into real opportunities and standardized solutions is another. But it is possible. Backed by an experienced trendsetter for the glass industry.

Glass markets are booming in Asia and in Eastern Europe – with the construction industry being the mainspring for the glass industry. On the other hand, established markets in Europe and Northern America are confronted with growing competition and extreme cost pressure. Increasing international competition and substitution products like PET and composite packaging materials lead to tightened cost pressure – a tendency that is exceedingly dramatic with hollow glass.

How to react to these trends? How to deal with rising energy prices that rule the markets increasingly? What is the answer to growing resource scarcity and the soaring demand for energy-saving end products? We give such matters a lot of thought, and we see these trends as an opportunity to develop best solutions – today and in the future.

The construction industry in Eastern Europe and Asia fuels the production boom in the float glass industry.

The production of auto glass requires highest quality standards in production and development.



Plant availability.

Churning out productivity – often much too easily said, but exactly our aim: permanent availability of all assets. So that you do not even have to think of it.

Permanent availability, reduced wastage, and optimum quality – the prerequisites for success in the production of float glass are totally clear. For us, these factors are the motive force on our ongoing quest for new solutions – solutions that do not only allow you to run your equipment day and night but also to reduce rejects and, thus, produce most efficiently.

A safe and, where needed, even uninterruptible electric power supply is indispensable for efficient manufacturing processes. We offer maximum safety and process quality from the batch through the hot end to the cold end:

a reliable energy supply system, precise process instrumentation, low-maintenance motors and drives, and continuous automation that enables the integration into MES/ERP solutions.

The migration and integration capabilities of our products assure the availability of your assets, even after future conversions of production. You can always be sure that your equipment meets the current market requirements.

A reliable energy supply for all plant components is the basis for efficient glass production. Conversions of production due to changing market requirements must be performed in minimum time and without any quality loss. An unexpected stoppage in any segment of the glass industry is intolerable.

An automation network of all technological segments within your plant lets you react quickly to changing market requirements. It enables you to produce the demanded products at constant quality and as fast as can be. Besides quick response, the long-term value added and, thus, the efficient and constant utilization of every single resource is essential to market success. An up-to-date asset management, which does not only reference the core process but also takes the management of performance and equipment into consideration, allows you to look at the entire "utilization history" of every single investment, including the conservation of value and preventive maintenance in order to avoid failures.

Increased plant availability along the entire production chain, from batch production ...

... through the hot end and up
to the cold end, ensures highest
product quality.

Quality.

In glass production, high standards apply throughout the production process. Quality is paramount at every single production step.

No matter if float glass, hollow glass, or ultrathin glass production, highest technical standards apply throughout the entire process. Frequent product innovations in the glass market result in strict quality control and maximum precision during production. In close cooperation with our customers, we design tailored solutions – solutions that make your processes more transparent and reproducible; solutions that enable a verifiable documentation of your quality standards. Based on the combination of process and automation expertise, we offer solutions that permit you to maintain reproducibility, output, and, above all, high quality throughout the entire production process. Supported by the process control system SIMATIC PCS 7, which was specially designed for the process industries, all subprocesses are ideally harmonized and monitored.

Energy efficiency.

Our aim for the glass industry: a production process that is as energy-efficient and as environmentally sound as the end product.

Glass production is a highly energy-intensive process. Effective production is a must in oder to remain competitive.

Rising commodity prices and energy costs, the reduction of NO_x emissions, the efficient use of resources, energy-efficient and environmentally sound applications – these requirements are major trends in the glass industry. In close cooperation with our various partners and our customers, we face these trends with expertise and industry-specific knowledge, and we develop solutions for glass production and subsequent processing that result in energy-efficient production and at the same time yield higher productivity.

Energy recovery, combustion optimization, and energy-saving drive technology – this is the future of plant optimization.

In view of rapidly growing energy costs, economizing on energy becomes more and more rewarding, in particular for energy-intensive lines of business like the glass industry. Hence, ideas for optimal energy recovery or even for internal power generation as an alternative are integral elements within the Siemens range of solutions for a future-oriented glass production. Moreover, we also offer tools for effective energy management. A detailed analysis of load and consumption based on information gained from both the process control and the energy supply systems allows for the prevention of peak demands and an efficient energy control that keeps costs as low as possible without affecting the production process.
As electric and fossil energy account for a large part of the operational costs, such an investment proves highly profitable within a short time.

Fossil and electric energy account for a considerable proportion of the operational costs. Hence, the reduction of energy consumption is an important measure.

Even the hollow glass production demands reliable electrical power supply and optimized energy consumption.

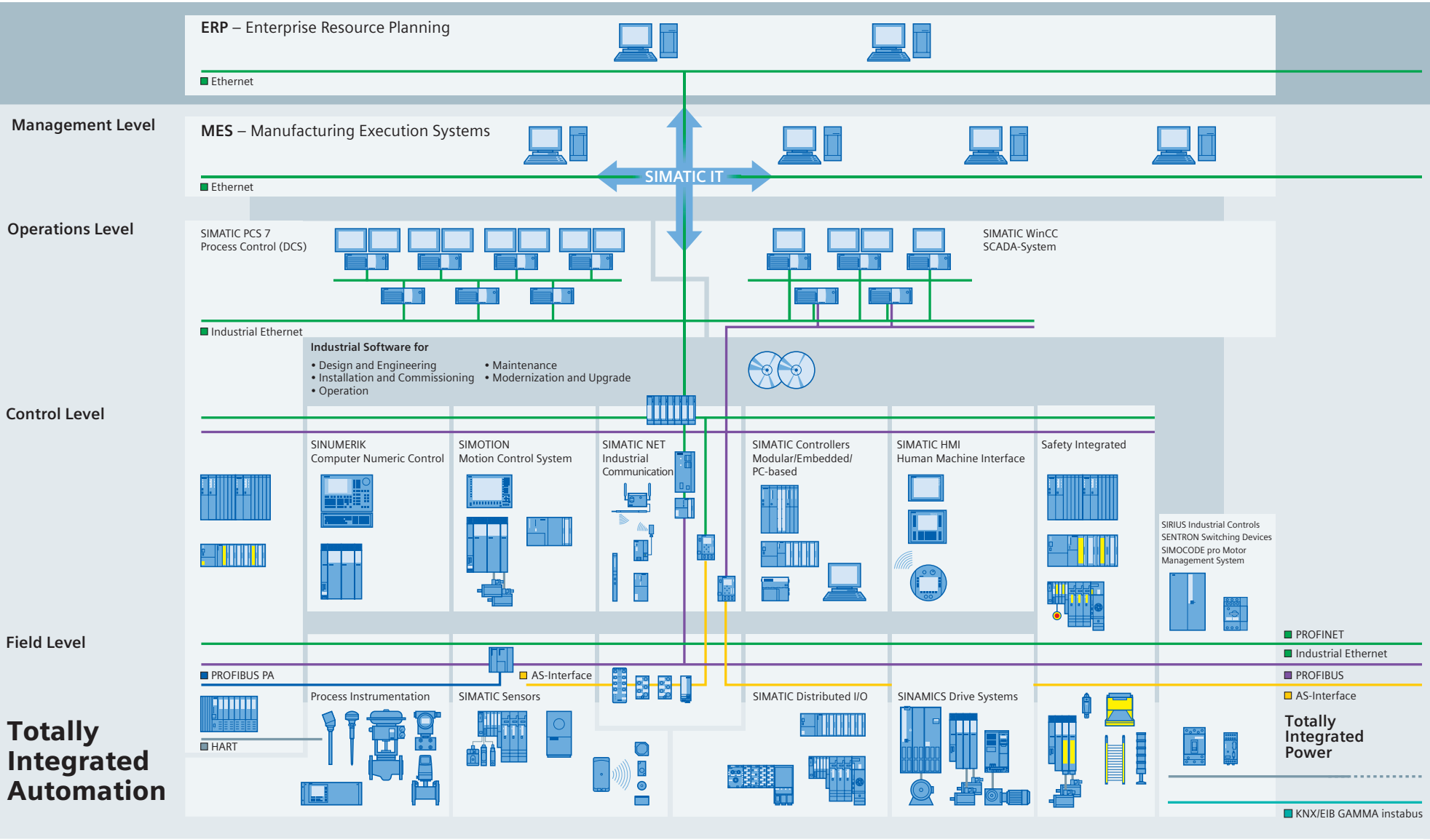
In glass wool production, energy efficiency in both production and utilization are closely connected.

Supply chain management.

Today, markets are shifting faster than ever before. Perfectly coordinated processes are essential for quick reactions.

Short response times and flexible methods of production are the key to remaining competitive in today's markets. Thanks to our process knowledge for the glass industry, we are able to offer integrated and efficient solutions for workflow optimization and process control – from the processing of raw materials up to the end product. So product innovations can be implemented as quickly, precisely, and safely as possible. In a time of rapid innovation, a quick response to market requirements will assure a lasting competitive advantage. Therefore, we closely cooperate with OEMs to steadily maximize the yield with particular regard to current orders – with integrated and efficient networking from automation up to the processing of orders.

Our integrated solutions allow you to efficiently produce exactly what the market requires in the course of a furnace cycle – decisively quicker than your competitors can.



Totally Integrated Automation

Plantwide Integrated Solutions.

Based on Totally Integrated Automation (TIA) – with its successful components from the SIMATIC range of products, SINAMICS drives, SIMOTION motion control systems, and the process control system SIMATIC PCS 7 as an integral part – Siemens implements automation solutions that integrate all processes in glass production. The economic demands towards glass production and processing are tough, which results in extraordinary high automation requirements. With TIA, we are able to adapt our system features to these requirements accurately.

With Totally Integrated Power (TIP) we additionally offer continuous solutions for an efficient distribution of electrical energy in industrial buildings and facilities. This concept, with its standardized components, bears decisive advantages for all members of the respective project in all project phases – for the building investor, for technical firms, and for operators.

For more information, please visit www.siemens.com/glass

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