

# Case TITAN Cement ACS600 IGBT upgrade keeps TITAN at the cutting edge



TITAN is an independent cement and building materials producer with over 100 years of experience in the industry. Based in Greece, the Group owns cement plants in nine countries and operates in four regions: Greece & Western Europe, the USA, Southeastern Europe and the Eastern Mediterranean. Throughout its history, TITAN has combined operational excellence with respect for people, society and the environment. In 2014, the Group sold 16 million metric tons of cement and cementitious materials, 3.9 million cubic meters of ready-mixed concrete, 14.2 million metric tons of aggregates, and various other building materials like concrete blocks and dry mortar.

### **No production interruptions allowed**

At TITAN's Thessaloniki plant in Greece, ABB variable speed drives control the motors of the rotary kiln, the induced draft (ID) fan and a bag-filter (BF) fan. Those drives have a high priority in maintenance and servicing, since any malfunctions can interrupt production for a duration that cannot be

handled. ACS600 drives have been serving the plant's production line for more than a decade, being thoroughly maintained to achieve their maximum uptime.

### **Keeping technology on the cutting edge**

However, as time and technology advance, there are always points to reconsider about existing equipment: How can we supply spares at a reasonable cost? How can we obtain the new features available in the latest drives, but not for the existing ones? Is it worth replacing entire drives just for improved inverter technology? These points were thoroughly examined and assessed by TITAN's electrical department manager, Panagiotis Rodinos, in his quest for increased performance and advantages with minimum cost and downtime. After all, TITAN Group heavily invests in technology upgrades in a constant effort to keep their assets in top shape.



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### A fast, efficient solution to modernize drives

IGBT upgrade service for ACS600 drives proved to be the best solution for the TITAN Thessaloniki plant's critical drives. This service upgrades the inverter's bridge to the latest technology with a compact kit installation, while leaving the rest of the drive (incoming sections, supply units, DC link) untouched. The decision to upgrade was made for all four drives installed at the rotary kiln, ID fan and BF fan applications.

Time was a challenge in this case. There were only four days available for the service, after which the drives had to be back in operation. IGBT upgrade is an advanced service that needs to be executed with extreme care and strict methodology by ABB-certified engineers. The local ABB drives service department and electrical maintenance personnel from TITAN Thessaloniki worked closely together to prepare every detail before service execution, ensuring that the work was done in the most efficient way in the safest environment, without any unexpected surprises that could interfere with the plan.

### Professional execution for a perfect outcome

ABB's drives service team was completely dedicated to this upgrade project, working to deliver drives without any defects and always keeping track of what had been completed and tested, as well as what remained to be done.

TITAN personnel supported this effort, providing a safe and isolated environment, specific tools and documentation to allow components and modules to be swapped quickly. The existing ACS600 inverter modules were stripped down to their components and rebuilt with the new IGBT upgrade components. Eventually, all the drives were individually inspected, tested with no-load and load tests being released them to operations.

### Panagiotis Rodinos, electrical department manager of TITAN's Thessaloniki plant, says:

"The reliability of the equipment is a significant key to our decisions, concerning maintenance and upgrading schemes. The particular project was carefully planned in detail in order to achieve an advanced level of task execution within a strict time frame and adhering to rigorous safety requirements. Our expectations stand for long-lasting operational excellence. The project's result was crowned with success."

### Customer benefits

<b>Increased operational reliability</b>	Existing drives are modernized to the latest technology, improving and enhancing them to maintain reliable operation
<b>Quick installation</b>	ACS600 IGBT Upgrade kits offer all necessary parts for replacing old components with new output bridges, without altering the drive cabinet. Inverter bridge upgrades for high power drives are done within a short time, with a minimal risk
<b>No production losses</b>	An IGBT Upgrade can be carried out in line with a production's own shutdown schedules
<b>No re-commissioning required</b>	As drives' software remains untouched, there is no need for re-commissioning.

For more information, please contact your local ABB representative or visit:

[www.abb.com/drives](http://www.abb.com/drives)

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