



# SIKA AT WORK

Wind farm, Korobili, Voiotia, Greece

Grouting: SikaGrout®-3200

Roofing: Sikalastic® MTC system

BUILDING TRUST



# WIND FARM, KOROBILI, VOIOTIA



## PROJECT DESCRIPTION

The project concerns the construction of 9 steel wind turbines GE103-3,2MW manufactured by General Electric, with a production capacity of 3,2 MW each, raising up to 28,8 MW the total capacity of this cluster. Each tower reaches a hub height of 85m and each blade has a length of 50,2m.

The disposition and location of the wind turbines were determined in order to maximize the use of wind energy in the production of electricity with the minimal environmental impact. This wind farm is expected to generate electricity enough for more than 20.000 households in Greece.

## PROJECT DEMANDS

The grouting application of the wind turbines exerted specific requirements, such as:

- Fast early strength development
- High final strength with more than 90 N/mm<sup>2</sup> after 28 days
- Fluid consistency to fill the gap between concrete and steel flange completely
- Average of layer thickness 5 cm
- Fatigue tested
- High adhesion to concrete

Moreover, in order to enhance the durability of the base plates of the turbines, the whole surface had to be waterproofed with a durable system, against aggressive external application.



## SIKA SOLUTION

In order to fulfill all the technical requirements and after extensive testing, **SikaGrout®-3200** was found to be the optimal product for grouting the gap between foundation and tower flange.

**SikaGrout®-3200** was specially designed to withstand the loads that a wind turbine transfers to its foundation. It meets the requirements of the CE marking and thanks to the fatigue report, engineers can be sure of the suitability of the material to the dynamic loads that will experiment during its service life.

In order to enhance the durability of the base, a polyurethane protection and waterproofing system based on MTC technology was applied. **Sikalastic®-601 BC** with **Sika® Reemat Premium** embedment and **Sikalastic®-621 TC** as top coat was selected as the optimum solution.

As wind grouting is an essential work for the tower base, the application has to take into consideration many parameters before, during and after pouring. A specialized and approved by Sika applicator is mandatory to take over the grouting procedure. In order the grout contractor to be approved, a real scale mock- up was manufactured and a ring grouting took place recording all necessary data and following the proposed procedures.







**PROJECT PARTICIPANTS:**

Project owner: **VIOTIA AIOLOS S.A.**

Main Contractors: **NOSTIRA S.A** and **LAVEL S.A.**

Grouting Contractor: **CERS Construction Engineers S.A.**

LAM Waterproofing Contractor: **Domolysis**

Our most recent General Sales Terms shall apply.

Please consult the most recent Product Data Sheets prior to any use and processing.

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