



SIKA AT WORK

STRUCTURAL STRENGTHENING OF THE GRAND EGYPTIAN MUSEUM, EGYPT

CARBON FIBER REINFORCING SYSTEM

BUILDING TRUST



GRAND EGYPTIAN MUSEUM, EGYPT

PROJECT DESCRIPTION

The Grand Egyptian Museum (GEM), also known as the Giza Museum, is a planned museum of artefacts of ancient Egypt. Described as the largest archaeological museum in the world, the museum is under construction and is scheduled to be partially open in 2019, exhibiting the full Tutankhamun collection with many pieces to be displayed for the first time. The museum is sited on 50 hectares (120 acres) of land approximately two kilometers from the Giza pyramids and is part of a new master plan for the plateau.

PROJECT REQUIREMENTS

It was necessary to strengthen the roof slab to maintain service ability for such a mega project, and to improve service life and durability to comply with current standards.

Special Requirements:

1. To apply the CFRP strengthening system with thickness of 0.29 mm, taking into consideration the maintenance of the unique architectural appearance and design.
2. Special requirements by the specialized consultant for the CFRP system with a high glass transition temperature to meet the environmental conditions (temperature and UV) for the part located at the top of the roof slab.
3. SIKA® strengthening system to be applied using a wet application method for SikaWrap®. The wet application method is a unique method for applying SikaWrap®, a system that ensures full saturation of the system.

WHY SIKA:

- SIKA® Strengthening complete system covering all the technical requirements including heating curing system and saturating machines.
- Sikadur®-300 Impregnating/laminating resin tests submitted for the glass transition temperature required to be achieved.
- Sika technical support during all strengthening phases.
- Sika certified applicator with experience in such strengthening cases.
- The challenge of having a large area of SikaWrap®, the system to have early curing treatment right after application at a temperature of 80°C for one week, to achieve a glass temperature of 82°C for the lifetime of the SikaWrap®, system insulated.

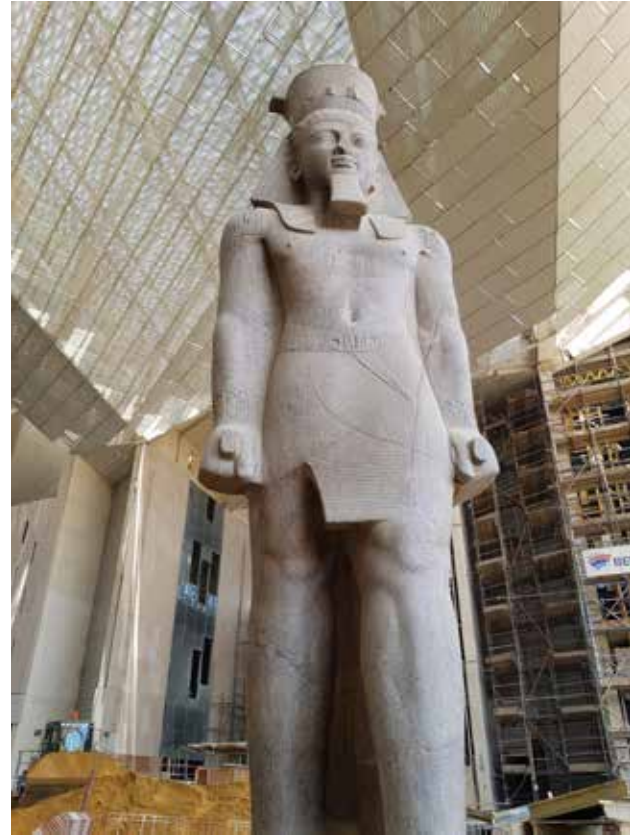
SIKA SOLUTION

SikaWrap®-530 C wet application with Sikadur®-300 Impregnating/laminating resin using a special saturating machine. A special heat curing system was designed to apply a temperature of 80°C on the whole top of the roof slab area for the initial curing period (7 days). The system was designed to have a fully automatic control system to maintain the temperature. The heating elements were designed to ensure that in case of failure of any of them the system can continue working and maintaining the required temperature.

Two electric power sources were provided to avoid any electric cut-outs. Fire resisting heat insulating gypsum boards were used to insulate the whole work area.



GRAND EGYPTIAN MUSEUM, EGYPT



PRODUCTS DELIVERED WITH QUANTITY

- SikaWrap®-530 C 300 m²
- Sikadur®-300 240 kg
- Sikadur®-41 8 tons

PROJECT PARTICIPANTS

Main contractor: besix orascom

Specialized contractor: Contra

Specialized consultant: AACE (PROF. DR. AMR ABDEL-RAHMAN)

Main consultant: Hill - Ehaf

Our most current General Sales Conditions shall apply. Please consult the most current local Product Data Sheet prior to any use.



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