SIKA AT WORK

SIKA SOLUTIONS FOR AIRPORTS, RUNWAYS AND TAXIWAYS

CONCRETE PRODUCTION: Sika ViscoCrete®-300, Sika® Antisol®-E
JOINT SEALING: Sikaflex®-402 Airport, Sika® Primer-206 G+P
AUXILIARIES: Joint Backer Rod, SikaForce®-7260 Cleaner, Sika® HandClean Wipes

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PROJECT DESCRIPTION
At a Greek airport, where special conditions exist, due to repairs and extension of an existing surface, there was a demand for concrete admixtures, as well as for elastic sealants (expansion and shrinkage control joints). The joints to be sealed were designed on the new concrete surface of the helicopter parking area, on a repaired surface and on the aircraft taxiway extension.

PROJECT REQUIREMENTS
The concrete mix in airport runways must meet specific requirements in accordance with the Greek Standards ELOT Technical Specification 1501-06-01-01-00: 2009. Concrete in this case performs as a wear and final layer. Therefore, in order to meet these two requirements, it must exhibit:
- High flexural strength
- Resistance to freeze / thaw cycles
- Good anti-slip properties
- Increased resistance to abrasion

Concrete composition is an important factor in meeting the above stated requirements. The configuration of the surface plays also a very important role (laying method) and of course the curing method.

For joint sealing on all surfaces, new and existing ones, the most important property that would judge the approval of the sealant to be used was the fulfillment of the US Federal Specification SS-S-200E.

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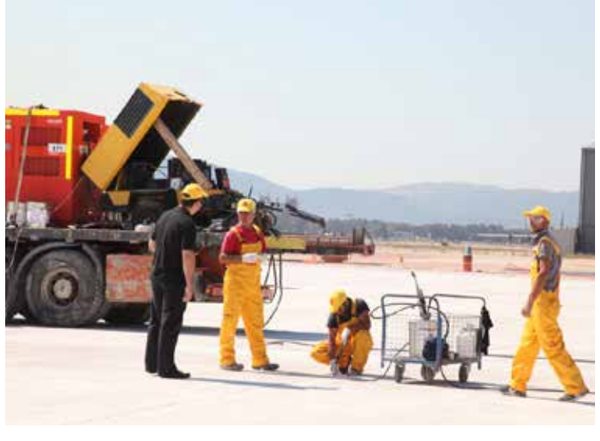
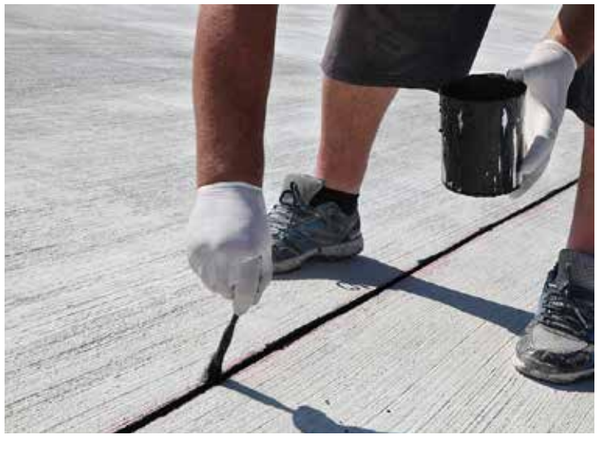
Concrete production
A basic requirement was the design of a C30/37 strength class concrete with a total W / C ratio of 0.49 and a maximum slump of 3 cm at the time of casting. The goal for the concrete mix was not to “spread” after laying, but to maintain its plasticity. Technical support from Sika Greece has contributed to select the optimal composition of the mix, using the most appropriate particle size grading and incorporating Sika® ViscoCrete®-300 High Range Water Reducer / Superplasticizing Concrete Admixture.
For protection against premature drying, Sika® Antisol®-E curing agent was applied in order to obtain designed strengths. Sika® Antisol®-E fulfills the requirements according to ASTM C-309 (Type 1, Class A).





Joint sealing
The surface to be sealed was prepared with the solvent-based primer Sika® Primer-206 G + P, suitable for enhancing the adhesion and durability of the sealed joint.
The sealing of expansion and shrinkage control joints was performed with the 2-component, self-levelling, elastic polyurethane sealant Sikaflex®-402 Airport. Sikaflex®-402 Airport is tar free, resistant to jet fuel according to ASTM D 471, has ± 35% movement capability according to ASTM C 920 and fulfills the requirements of US-S-200E, which was also the basic prerequisite for the application of any sealant to a special use airport. Sikaflex®-402 Airport is the new, improved Sika® solution for sealing applications at airports and in general for floor sealing on large surfaces, with high demands for resistance against fuel and substances released during the taxiing process, offering at the same time fast and easy application. With a simple and economical pump, a 4-person applicator team can easily seal up to 4 km of joints in just one day! The

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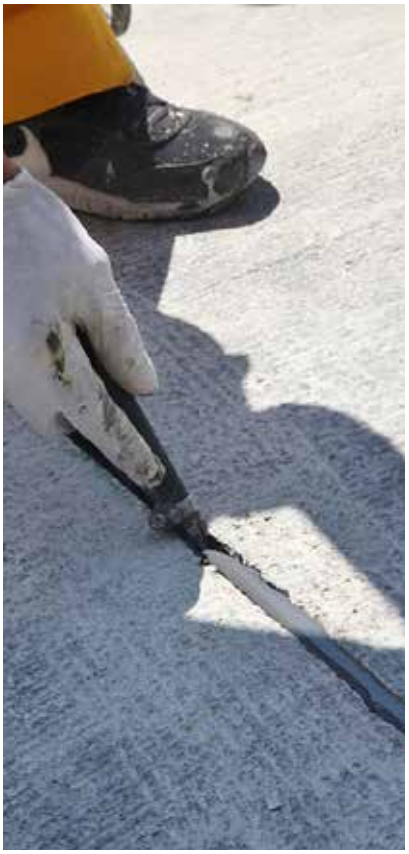
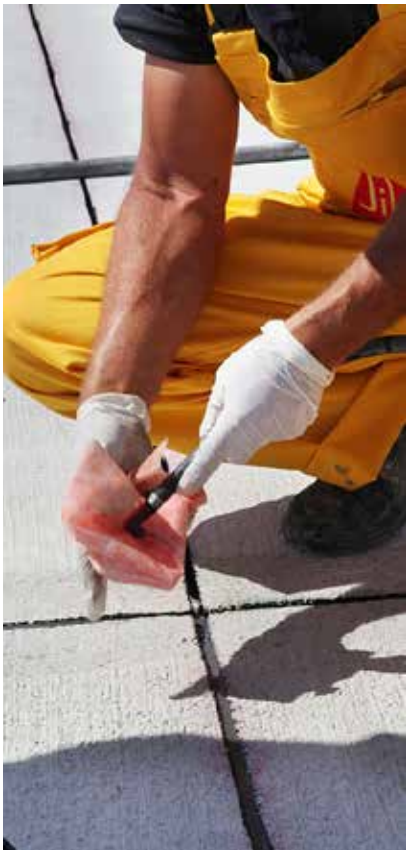
main advantage of Sikaflex®-402 Airport is that it is self-levelling, so neither masking of the joint, nor any subsequent finishing of the joint surface is required. Therefore, considerable amount of time and money is saved, as in this was we achieve reduction of about 1/3 of the total labor cost. Furthermore the self-levelling properties of Sikaflex®-402 Airport reduce the cost of paper tape needed and overall the quantity of sealant thrown away during tooling with a spatula. In addition, Sikaflex®-402 Airport is lightweight, resulting in its final consumption in kilograms in the project being up to 30% less compared to equivalent proposed solutions on the market. The correct dimensioning of the joints was performed by applying the polyethylene, closed cell Joint Backer Rod as a backing material.
The application pump was cleaned using the special cleaner SikaForce®-7620 Cleaner, while removal of fresh product remnants from equipment and other surfaces was performed using the special wipes Sika® HandClean Wipes.

PROJECT INFORMATION
Volume of superplasticizer Sika® ViscoCrete®-300: 45 t
Volume of curing agent Sika® Antisol®-E: 1 t
Volume of sealant Sikaflex®-402 Airport: 4.000 lt
Volume of primer Sika® Primer-206 G+P: 400 lt
Running joint meters: 22.000 m

Application contractor:
ELTERGA S.A.





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