



# SIKA AT WORK

## Democritus Nephrology Center, Komotini, Greece

Roofing: Sikalastic® liquid applied membranes

Elastic bonding: Sikafloor® Level & SCHÖNOX® DUROCOLL

Tiling: SikaCeram®

Sewage tank protection: Sikagard® system

BUILDING TRUST



# DEMOCRITUS NEPHROLOGY CENTER, KOMOTINI



## PROJECT DESCRIPTION

The Democritus Nephrology Center is a state-of-the-art Chronic Dialysis Unit, located on the Provincial Road of Komotini - Iasmos - Xanthi, in Komotini.

## PROJECT DEMANDS

The Democritus Nephrology Center is housed in a modernly designed and fully air-conditioned building of 1.200 m<sup>2</sup>.

During the construction of the Democritus Nephrology Center, various systems were required, such as systems for laying elastic floors and waterproofing system for exposed roofs.

Regarding the floor laying system, the application of vinyl floor system was the best choice, in terms of its resistance to static & rolling load (beds and chairs with wheels, cabinets, all types of furniture), but also to provide protection for patients, attendants and staff from falls.

Regarding the waterproofing of the exposed roof, the system should exhibit very good resistance to air pollutants and UV radiation (exposed roof), high elasticity, crack bridging ability and good adhesion to the substrate.

Finally, a protection system featuring high chemical resistance was required for the wastewater treatment tank.



## SIKA SOLUTION

**Waterproofing of exposed roof:** The waterproofing system in exposed roofs, in addition to the basic function of waterproofing the whole building structure, must also withstand environmental stresses, such as ultraviolet radiation, rain, hail, ice, e.t.c. For the waterproofing of the ~ 1.300m<sup>2</sup> surface roof, the **Sikalastic®** cold applied, liquid membrane system was used.

Cold applied, liquid membrane roofing systems offer many advantages, such as flame and heat free application, complete adhesion of the waterproofing membrane to the substrate, the formation of a single seamless surface, e.t.c. Especially, systems based on MTC (Moisture Triggered Chemistry) technology are rain and moisture resistant waterproofing systems, just ten minutes after their application. This means that they are practically applied regardless of the prevailing weather conditions.



The polymer modified, elastic, bituminous emulsion **Igolflex®-181 GR** was first applied to the properly prepared concrete substrate as a water vapor barrier. Afterwards, XPS thermal slabs were laid, onto which cementitious mortars was applied, so as to form a proper substrate. The two-component, water-based epoxy primer **Sikafloor®-161** was applied to the properly prepared cementitious based layer, so as to stabilize and improve the adhesion of **Sikalastic®** liquid membrane systems. The 1-component, liquid, polyurethane waterproofing membrane **Sikalastic®-612** was then applied. **Sikalastic®-612** is based on MTC technology, which is activated by moisture but is not affected by it during curing. It features high elasticity over a wide temperature range (-20 °C to +80 °C) and unique resistance to yellowing, due to the effect of ultraviolet radiation. In addition, as it forms a single, uniform layer (joint-free membrane), it becomes a top choice for roofs where mechanical equipment is based or have a complex geometrical design.

**Sikalastic®-612** was applied in 2 layers, incorporating **Sika® Reemat Premium** glass fiber mat between the layers. **Sika® Reemat Premium** ensures the correct application thickness of the base coat, enhances the crack bridging properties of the system and increases its mechanical properties.

Finally, the 2-component, hybrid, polyurethane, glossy top coat **Sikalastic®-701** was applied to the system. **Sikalastic®-701** is an aliphatic polyurethane, with good resistance to UV, yellowing and environmental aging, while in addition it forms a roof surface with a high solar reflectivity index.

**Vinyl floor laying:** For bonding vinyl floor over a ~650m<sup>2</sup> surface area a specially developed system was used, which comprises of the self levelling, cementitious mortar **Sikafloor®-300 Level**, the 1-component water based primer **Sikafloor®-01 Primer** and the very low emission, fiber reinforced, strong dispersion adhesive **SCHÖNOX® DUROCOLL** was used.



**Sikafloor®-300 Level** is suitable for finishing and smoothing interior substrates on domestic and non-industrial surfaces, before laying a variety of floor covering systems, such as vinyl, which require a completely flat substrate. The use of the water-based resin primer **Sikafloor®-01 Primer** contributed to further reduction of the absorbency and improvement of the adhesion with the adhesive that would follow.

**SCHÖNOX® DUROCOLL** is a dispersion adhesive that forms a strong elastic groove, which counteracts to dimensional changes of the covering, features very high final strength, develops adhesion strength with the substrate within a short time, while is suitable for shampooing according to RAL 991 A2. Its important advantages include its certification according to EMICODE EC1 plus in terms of emissions of volatile organic compounds.



Tile laying: Laying & grouting of tiles was performed with **SikaCeram®** tile adhesives and tile grout. The high performance, cementitious white tile adhesive **SikaCeram®-243 UltraFlex** was used for the floor are. **SikaCeram®-243 UltraFlex** is a specially formulated deformable tile adhesive, suitable for surfaces with frequent and intense stress.



**SikaCeram®-241 Flex** high performance, cementitious white tile adhesive was used for wall surfaces. **SikaCeram®-241 Flex** is a highly thixotropic, reduced-slip tile adhesive with extended open time.

All surfaces, wall and floor, were grouted using the 1-component cementitious grout **SikaCeram® CleanGrout**. The special additives contained in its composition attribute antibacterial properties and resistance to mold growth. Its special pigments maintain its color stability, while making it water repellent and abrasion resistant.

Sewage tank protection: **Sikagard®-720 EpoCem®** & **Sikagard®-63 N** system was used for an 80m<sup>2</sup> surface tank associated with wastewater management. **Sikagard®-720 EpoCem®** is a three component, epoxy modified cementitious, thixotropic, fine textured mortar for levelling and finishing of concrete, mortar or stone surfaces, offering additional protection of substrates in highly aggressive chemical environment. It is impervious to liquids, but permeable to water vapor, and requires a minimum waiting time before applying other Sika® epoxy-based products.

The two-component, epoxy-based, chemical-resistant protective coating **Sikagard®-63 N** was applied to the suitably formed substrate. **Sikagard®-63 N** coating features good mechanical and chemical resistance, forms a high layer thickness and is impermeable against aggressive media.

**PROJECT PARTICIPANTS:**

Owner: **DEMOCRITUS NEPHROLOGY CENTER**

Application of roofing, tiling & tank protection systems: **Green Building**

Application of vinyl floor: **ARTFLOOR Saroglou - Velkos**

Commercial Partner: **Surfaces 2 modern materials**







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