



# NEMO DOLPHINARIUM

IN THE UKRAINIAN CITY OF ODESSA  
SAFE, HIGH PERFORMANCE  
PRODUCTS WERE EMPLOYED TO  
RENOVATE A DOLPHINARIUM



Odessa, a city in southern Ukraine in a strategic position overlooking the Black Sea, has a natural multicultural vocation. Its brief but intense history, a story of rousing economic successes and ruinous falls from grace, has been characterised by its lively cosmopolitan outlook with the ability to attract the greatest minds and some of the greatest interpreters from the world of art and literature.

The Nemo Resort&Spa, a cultural and spa complex was built along the Langeron beach in 2005, in a contemporary architectural style that enhances this splendid promenade.

Apart from the dolphinarium, the complex is also home to an oceanarium, a beach, a hotel with several restaurants and a dolphin therapy centre.

The dolphinarium, designed and constructed according to international standards to safeguard and respect these wonderful marine mammals, complies with all the required standards. It is home for South American sea-lions, common sea-lions and bottlenose dolphins, one of the few species that thrives in captivity.

Because of the rapid deterioration of the structure the dolphinarium had already been renovated on a previous occasion, but this intervention was not particularly successful, so a more thorough intervention was carried out in 2015, with Mapei's



best products playing a key role. Work started in November 2014 and was completed on the 14<sup>th</sup> of May 2016. It included a complete renovation of the pool (measuring 26 m in length, 15 m in width and 5 m in depth) and the spectator stands overlooking the pool.

### REPAIRS TO THE CONCRETE AND WATERPROOFING SYSTEM

To renovate the damaged concrete elements in the spectator stands and pool, MAPEFER 1K was used to provide anti-corrosion protection for the steel reinforcement and MAPEGROUT FAST-SET was used to repair the deteriorated areas of concrete in the substrate.

PLANICRETE was the admixture selected for the filling mortar to improve its adhesion and mechanical performance.

ADDITIX PE, an extremely light powder product with synthetic fibres increasing the viscosity and thixotropy of epoxy- and polyurethane-based resin products, was used to make the epoxy repair mortars, which were also applied on the vertical surfaces.

MAPEPROOF SWELL, specially formulated to make waterproof, elastic seals in cracked reinforced concrete and pre-cast components, was used on the areas and elements with infiltrations of water. The essential product used to waterproof the surfaces in the pool – also because it is certified as being

suitable for contact with drinking water – was PURTOP 1000, a two-component, solvent-free, pure polyurea-based membrane, which is applied by spray with a high pressure bi-mixer pump to form waterproof coatings on site.

PRIMER EP RUSTOP two-component epoxy primer was applied on the metal components and features and PRIMER SN epoxy primer on cementitious substrates, while EPORIP two-component, solvent-free epoxy adhesive was used for the construction joints and to monolithically seal cracks in the surface of the screeds.

When PURTOP 1000 is used in pools, such as in this case, a special finishing cycle must be applied. Within 24 hours of applying this product, a coat of PRIMER P3 two-component, solvent-based polyurethane primer must be applied, followed by MAPEFLOOR FINISH 451 two-component, aliphatic, elastic polyurethane finish. The last step was to seal the expansion joints with MAPEFLEX MS45 one-component, rapid-hardening, thixotropic, silylated polymer-based hybrid sealant and adhesive, with high modulus of elasticity, recommended also for damp substrates and joints subjected to movements of up to 20%.

Products of excellence for an intervention destined to withstand the rigours of time, to the complete satisfaction of the client and these cetaceans that are once again swimming in surroundings that are as good as new and completely healthy.





**TECHNICAL DATA**

**Nemo Dolphinarium,**  
Odessa (Ukraine)

**Year of Construction:**  
2005

**Period of the Mapei Intervention:** 2015-2016

**Intervention by Mapei:**  
supplying products for concrete repair and for waterproofing the pool substrates

**Client:** Odessa City Council - Dolphinarium Nemo

**Main Contractor:** Uspech-Plus. LLC

**Mapei Distributor:**  
Uspech-Plus. LLC

**Mapei Co-ordinator:** Egor Rudenko, Mapei Ukraine LLC

**MAPEI PRODUCTS**

**Concrete Repair:** Eporip, Mapefer 1K, Mapegrout Fast-Set, Planicrete, Primer SN, Additix PE

**Waterproofing operations:** Primer EP Rustop, Triblock, Purtop 1000, Primer P3, Mapefloor Finish 451, Mapeflex MS45, Mapeproof Swell

For further information on products see [www.mapei.ua](http://www.mapei.ua) and [www.mapei.com](http://www.mapei.com)

**IN THE SPOTLIGHT**

**PURTOP 1000**

It is a two-component, solvent-free pure polyurea membrane applied by spray with a high-pressure, bi-mixer type pump, to form waterproof coatings directly on site. It is suitable for contact with drinking water according to the Italian Ministerial Decree DM 174/04.

Thanks to its high chemical resistance, exceptional flexibility and tear strength, PURTOP 1000 is suitable for waterproofing membranes on storage tanks, basins and hydraulic works in general. Moreover, due to its resistance to aggressive substances, rapid application and drying time, exceptional flexibility, excellent tensile and tear strength, perfect adhesion to the structures, PURTOP 1000 is also suitable for waterproofing the type of structures that requires a high-performance waterproofing membrane.

