



DOLPHINIA DOLPHINARIUM IN NOVOSIBIRSK

HIGH-QUALITY BUILDING MATERIALS FOR A CHALLENGING ENVIRONMENT

In 2016, in the territory of the Novosibirsk Zoo, a facility which is absolutely unique for Siberia was opened: the Dolphinia Center for Oceanography and Marine Biology. It includes an oceanarium with one of the largest collections of inhabitants of the Russian seas and oceans, and a dolphinarium where performances of Indo-Pacific bottlenose dolphins, beluga whales, South American sea lions and the Pacific walrus take place. The total surface area of the premises is over 8,000 m². The complex comprises 11 pools and aquariums with a total water volume of about 2.7 million liters.

The "Dolphinia" hall can accommodate 650 visitors. The special design of the dome made it possible to create the right balance of daylight for the inhabitants of the center.

In February 2017, a center for swimming with dolphins opened in the facility and became the favorite entertainment place for children and adults.





MAPEI SOLUTIONS FOR THE POOLS

During the construction of the Dolphinarium, special requirements were set regarding the quality of the materials used for waterproofing and building the aquariums and pools, because of the aggressive effect of salty seawater on the facilities. The use of several Mapei solutions in the pools ensured not only the durability of structures and their resistance to aggressive agents, but also environmental safety for the fishes and marine animals.

During the works, the Mapei technicians faced a number of complex problems. It was necessary to select suitable materials that could guarantee quality anchoring of embedded elements in the basins, reliable waterproofing of substrates, proper preparation of surfaces

before installing ceramic tiles and mosaics, and durable grouting of joints.

The anchoring of the embedded parts in the basins was carried out using MAPEFILL 10, a high-flow, non-shrink, cementitious anchoring grout. This product, which is manufactured and distributed in Russia by ZAO Mapei, forms high-strength mortar with excellent resistance to frost and water.

12 tons of TOPCEM PRONTO ready-to-use, normal-setting, controlled-shrinkage mortar with high thermal efficiency were used to build quick-drying screeds for the pools.

MAPEBAND rubber tape with alkali-resistant fabric was used for waterproofing corners between adjacent walls and between walls and floors before applying MAPELASTIC two-component, flexible cementitious mortar for water-

proofing the basin of the pool used for the shows, as well as the substrates in the pools for swimming with dolphins and those for walrus and seals.

Substrate levelling on the walls of the swimming pool was carried out using NIVOPLAN PLUS, a levelling compound which is manufactured and distributed in Russia by ZAO Mapei, which was admixed with PLANICRETE synthetic rubber latex to improve its adhesion and mechanical properties.

As for the installation of mosaic and ceramic tiles in various areas of the facility, ZAO Mapei proposed several high-performance solutions. ULTRALITE S1, deformable, lightweight cementitious adhesive with no vertical slip, long open time, Low Dust technology and extremely high yield, was applied in the basin of the pool for swimming with dolphins



ABOVE. The pool used for shows was completed using MAPEBAND and MAPELASTIC for waterproofing the substrates and GRANIRAPID for bonding ceramic tiles.

RIGHT. The substrates of the pool for swimming with dolphins were treated with NIVOPLAN PLUS+PLANICRETE and MAPELASTIC, before installing ceramic tiles with ULTRALITE S1.

IN THE SPOTLIGHT

TOPCEM PRONTO

It is a pre-blended, ready-to-use mortar with normal setting and controlled shrinkage, based on a special hydraulic binder and graded aggregates. It is ideal for forming unbonded and bonded screeds on new and existing slabs in interiors and exteriors prior to installing wood, PVC, linoleum, ceramic tile, natural stone, carpet or other floor coverings in areas where fast-drying screeds are required in order to complete floorings in a short time. TOPCEM PRONTO is characterized by high thermal conductivity which makes it particularly suitable for laying heated screeds. Screeds prepared with TOPCEM PRONTO in accordance with the specifications described in its technical data sheet are classified as **CT-C30 -F6-A1_n**, in compliance with the European standard **EN 13813**.



and in the adjacent areas.

GRANIRAPID two-component, deformable, quick-setting and drying cementitious adhesive was used to bond ceramic tiles on the surfaces subjected to heavy loads, such as in the area adjacent to the pool for shows and the walrus pool, as well as in the dolphinarium hall.

KERABOND cementitious adhesive was used to install ceramic tiles in the remaining areas of the facility, after admixing it with ISOLASTIC elasticity latex to form a highly deformable mix with extended open time.

ULTRACOLOR PLUS anti-efflorescence mortar with water-repellent DropEffect® and mould-resistant BioBlock® technology was selected for grouting tile joints in the basin of the pool for walrus and seals and in the adjacent area, as the product is able to offer high protection against mould.

This article was taken from *Mir Mapei*, no. 22, the magazine published by ZAO Mapei, whom we would like to thank.



TECHNICAL DATA

Dolphinia Dolphinarium,
Novosibirsk (Russia)

Period of construction:
2014-2016

Period of the Mapei intervention: 2015-2016

Client: LLC "Aquatoria"

Design: JSC "Engineering"

Main contractor:

LLC "PSO ASK"

Installation company: LLC
"PSO ASK"

Mapei distributor:
TRITON (New Construction
Technologies)

Mapei coordinator: Eugene
Lebedev, ZAO Mapei (Russia)

MAPEI PRODUCTS

Anchoring works: Mapefill 10*

Preparing the substrates:

Topcem Pronto, Nivoplan
Plus*+Planicrete

Waterproofing the pool basins:

Mapelastic, Mapeband

Bonding mosaic and ceramic tiles: Ultralite S1, Granirapid,
Kerabond + Isolastic

Grouting joints: Ultracolor Plus

*These products are manufactured and distributed on the Russian market by ZAO Mapei.

For further details on products visit www.mapei.com and www.mapei.ru