



# Spangereid (Norway) THE UNDER RESTAURANT

BUILT UNDERWATER IN THE OCEAN OFF THE COAST OF NORWAY, IT WAS DESIGNED BY SNØHETTA



The Under Restaurant is a monolithic structure made from reinforced concrete. It is 34 m long and slopes away into the sea down to a depth of 5 m, where it rests on the seabed just off Lindesnes, the most southerly point of the Norwegian coast, around a one and a half hour drive from the nearest airport and five hours from Oslo.

The interior spaces of the restaurant are protected by a 1 m-thick reinforced concrete shell designed to withstand the pressure of the water and the particularly harsh climatic conditions both above and below sea level. The designers decided to leave the exterior surfaces of the construction with a rough, exposed concrete finish to encourage the growth of seaweed and mussels below the waterline and to make the structure seem part of the rocky coastline where it is situated. Thanks to its particular location, the building is also intended to become an observation point to control the surrounding marine environment.

The structure is made from precast modules and is anchored to a block

## IN THE SPOTLIGHT

### ULTRABOND MS RAPID

It is a one-component, deformable, thixotropic adhesive with a high modulus of elasticity made from silylated polymers, characterized by its high initial tack and rapid final hardening. It is recommended for those bonds where a strong initial tack and high mechanical strength are required after a short curing time. It features rapid polymerisation and is especially suitable for bonding cement and cement-derived materials, bricks, stone, wood and wood-derived materials, metals, painted surfaces, ceramics, glass, rigid and flexible plastics.



1. The building was made from precast concrete modules.
2. The 3D tiles in the bathrooms were installed with ULTRABOND MS RAPID.
3. The restaurant on the lower floor.



of concrete. A walkway links the rocky coastline to the entrance of the restaurant, which opens onto an interior space with a surface area of 600 m<sup>2</sup> over three levels descending into the sea. On the top floor, or “zero” floor, there is the reception and cloakroom, followed by a bar at the mezzanine level and then a lower floor where the restaurant, with seating for up to 100 guests, is situated. The dining room has a panoramic window with a double layer of acrylic glass looking out directly onto the seabed.

### WORKING BELOW SEA LEVEL

Because of its special design and complexity, the project required a large range of high quality and technologically advanced products.

The products supplied included CONFIX\*, CONFIX FIN\* and REDIREP 45 RSF\* to repair the concrete, epoxy resin-based products and hi-flow mortars for anchoring elements in place (such as MAPEPOXY BI\*, MAPEPOXY LR\*, MAPEPOXY L\* and NONSETT 400\*), MAPEFIX VE SF for chemical anchors,

MAPEPRIMER M\* epoxy primer for treating concrete substrates with surface moisture, PLANITOP FINE FINISH ultra-fine-textured skimming compound for exposed concrete, RESFOAM 1KM and RESFOAM 1KM AKS\* resin for waterproofing structures subject to intense water seepage and SUPERFLYT\* superplasticising admixture for mortars. ULTRABOND MS RAPID adhesive was chosen for its high sucker effect and rapid setting properties to install the 3D ceramic tiles in the bathrooms.

### TECHNICAL DATA

#### Under Restaurant,

Spangereid (Norway)

#### Period of construction

2018-2019

#### Period of Mapei

intervention: 2018-2019

#### Design:

Snøhetta

#### Client:

Lindesnes Havhotell

#### Installation companies:

Rencon AS, Muremester Arnt

Kristensen AS

#### Main contractor:

BRG

Entreprenør AS

#### Project manager:

Dag Terje

Håland

#### Subcontractors:

Rencon AS,

Muremester Arnt Kristensen

AS

#### Mapei coordinators:

Trond

Helgedagsrud and Alexander

Kristensen, Mapei AS (Norway)

#### Photos:

Tomasz Majewski

Photography, Trond

Helgedagsrud

### MAPEI PRODUCTS

#### Smoothing and repairing

concrete: Conplan Eco

F\*, Confix\*, Confix Fin\*,

Mapeprimer M\*, Redirep 45

RSF\*, Planitop Fine Finish,

Admixture for mortars:

Superflyt\*

Structural anchors: Mapepoxy

BI\*, Mapepoxy L\*, Mapepoxy

LR\*, Nonset 400\*;

Anchoring: Mapefix VE SF

Waterproofing: Resfoam 1KM,

Mapecoat CFS\*, Resfoam

1KM AKS\*

#### Installing ceramic tiles:

Ultrabond MS Rapid

\*These products are

manufactured and distributed

on the Norwegian market by

Mapei AS (Norway)

For further information on

products see [mapei.com](http://mapei.com) and

[mapei.no](http://mapei.no)