



**From Pliny the Elder to...Mapei: how to create an international "spa" in the hearth of Alps**

# BORMIO SPA FACILITY

**T**he mountainside, woods, sunshine, snow and good water. An age-old tradition in which local customs and popular Alpine tradition mix together to create a unique setting providing an extremely modern range of tourist attractions, which never clash with the lively schedule of cultural events. All this can be found in Bormio (a town located in the province of Sondrio, Lombardy Region on the Italian Alps), and Mapei, which every year during the Mapei day event holds its own celebration in this beautiful Alpine city, certainly knows it. One of the very special things about this area is unquestionably its water. The medicinal properties of Bormio's fresh spring waters have been known since ancient times and have always attracted a very special brand of tourism: people looking to combine the pleasure of a mountain trip with the exceptional curing waters pouring out of the Rhaetian Alps. There are actually nine sources flowing out of the foothills of these Alpine mountains, and on average their waters have a heat excursion of between 38-41 degrees, reaching a peak in the winter-spring period and a minimum in summer.

The local inhabitants have always taken advantage of what nature has to offer and even back in Roman times they enjoyed its therapeutic benefits. The Latin author Pliny the Elder wrote about it in the first century in his "Naturalis Historia" (Natural History) and at the beginning of the sixth century, the politician and writer Cassiodoro also referred to Bormio's hot springs, recommending their excellent healing effects. Way back in 1895 the so-called local "Social Communes" (Bormio, Valdidentro, Valdisotto and Valfurva) were authorised to use one of the hot spring sources ("Cinglaccia"), which between 1913 and 1920 was managed by Terme Bormiese (now known as Bormio Terme). From the original small bath house to the present-day, modern and fully-equipped health, beauty and fitness centre, this facility has gradually turned into an authentic well-being centre at the very top of the international Alpine market in terms of innovation and facilities for all the family. Thanks to plenty of hard work and investments, at the beginning of 2000 the hot springs area was once again transformed into an authentic spa facility of international standing. One of the new areas recently opened

to the public is particularly fascinating and beautiful. We are talking about the new Thermarium unit, which was built drawing on Mapei's most technologically cutting-edge products.

## **New Thermarium**

This area, which opened at the end of 2007, is composed of a large panoramic 60-seat sauna, a Bio Sauna aromatised with essences of natural plants, a new Turkish bath, relaxation areas, solarium and hot tub incorporating a well-being pathway leading through to the outside pool.

The flower in the buttonhole of this Thermarium, truly enhancing the already notable range of facilities and treatments offered by Bormio Terme for getting back to complete health and fitness, is unquestionably the spectacular panoramic sauna, where, in a state of complete relaxation, bathers can enjoy a unique view directly across the ski slopes and magnificent surrounding mountain peaks.

The emotional showers must be tried out at all costs: three different jets of water of varying intensity and temperature featuring cleverly mixed aromas and colours, which envelop all the

*These pages show some striking images of how Bormio Spa Resort now looks: elegantly immersed in nature and with sophisticated interiors devoted to the entire family's well-being.*

senses at the same time. There is a small extra fee to pay in addition to the ordinary entrance fee when using this new and splendid facility.

### **Mapei Comes into Play**

Work on extending the facilities began in February 2006. Despite the biting temperatures and surfaces covered with icy snow, the excavation and casting works were carried out to the very limits of what could successfully be achieved. The contractor, Busi Costruzioni, and everybody involved in the works, starting with the Andreani company from Sondrio, came under considerable pressure from the client to meet the schedule for completing the works. Fortunately, the deadline was met and everything was completed by 6<sup>th</sup> August 2006, a few days ahead of schedule.

In 2007 building work continued in conjunction with the G.A.L. firm from Bormio; the engineer, Stefano Vitalini, who worked for the previous phase of the works, was placed in charge of the works, with Bormio Terme Spa as the customer. The new upper pavilion was then completed, including the other wonderful facilities such as the Turkish baths, sauna, bio-sauna, and hot and cold Finnish-style baths. The Mapei products used draw on the same methods successfully employed in the past and once again the installers came from the Andreani company from Sondrio, which, as always, proved it was up to the task of completing the works in accordance with the set schedule.

### **Outdoor Pools**

Most of the foundations for the outside pools were in a very poor state due to the rain, snow and ice.

The first important operation to be carried out was the removal of the old screeds at the bottom of a number of the pools. The concrete walls and bottom were then carefully cleaned ready for later applications.

Considering the tight schedule to be met and extremely low temperatures, it was decided to use MAPECEM PRONTO, ready-to-use pre-packed mortar for fast setting and drying (24 hours) screeds, for the new screeds on the bottom of the outdoor pools. The thicknesses







*Above: the indoor pool before being tiled and after the works were completed.*

required were all over 4 cm and the screeds were reinforced by electrically welded mesh. At certain points where the old screeds were cracked but still mechanically sound, it was decided, on the other hand, to seal the cracks using EPORIP two-component epoxy adhesive. This product was poured inside the cracks from which all the dust had been removed and then covered with quartz while it was still wet, ensuring the cracks in the old substrates were carefully sealed.

The walls of the pools were also smoothed and levelled ready for the application of the waterproofing system and coating. The smoothing was carried out using NIVOPLAN, a levelling cementitious mortar for walls of thicknesses of between 2-30 mm. To improve adhesion and mechanical resistance, the mortar was mixed with PLANICRETE, a synthetic rubber latex for cementitious mortars. Each steel and PVC part inside the pools, including the entrance steps, some components of the lights and water tubes were installed and sealed using ADESILEX PG4, a two-component thixotropic epoxy adhesive with modified rheology for structural bonding. After preparing the pools, they were waterproofed using MAPELASTIC SMART, an highly flexible two-component cementitious mortar that can be applied using a brush or roller for waterproofing concrete surfaces, such as foundations, retaining walls and swimming pools, and for providing protection against aggressive agents.

MAPELASTIC SMART was suitably strengthened using an alkali-resistant FIBREGLASS MESH making the waterproofing system more resistant to the kind of stress generated in the substrate. To ensure the waterproofing system is watertight even at its most critical points, such as corners, edges and changes in the angle of inclination, expansion joints, etc., MAPEBAND, an alkali resistant rubber tape with felt, was applied where necessary.

The cycle of works on the outdoor

pools was completed by installing the covering. The pools were covered with PVC sheets, except for the top skirting around the pool, where it was decided to install slabs of Serpentino di Valmalenco natural stone over the PVC. These slabs were bonded using KERAPOXY two-component epoxy adhesive.

The same KERAPOXY adhesive was also used to bond the underwater steps in place. A ceramic flooring was planned to be installed all over the outside area around the facility's pools (beaches and walkways). The screeds in these areas were in good condition and so, after carefully cleaning the services, MAPELASTIC

was again directly applied to waterproof the substrate. MAPELASTIC was again strengthened with a FIBREGLASS MESH to ensure perfect waterproofing, and all the corners, edges, joints and changes in slope, etc. were waterproofed with MAPEBAND. After the MAPELASTIC had suitably cured, the ceramics were set in place using KERAFLEX MAXI, a high performance deformable adhesive with excellent bonding properties, extended open time and no vertical slip (N.B. this product has been replaced on the Italian market by Keraflex Maxi S1 with Dust Free technology). The tiles were grouted using ULTRACOLOR





PLUS, a high performance, fast setting and drying, anti-efflorescence mortar, water-repellent with DropEffect® and anti-mould with BioBlock® technology. Finally, the expansion joints along the ceramic flooring were sealed using MAPESIL AC, a mildew resistant, acetic-cross-linking silicone sealant for sealing expansion joints of  $\pm 25\%$  expansion of their initial size. To make the joints just the right thickness, so that the sealant can make full use of its properties, a MAPEFOAM polyethylene foam cord was first placed at the base of the joint.

#### Indoor Areas: Bathrooms, Locker Rooms, Pedestrian Areas

Work in the indoor areas involved waterproofing and installing tiles. The substrates in the bathrooms, locker rooms and pedestrian areas in general were clean, dry, mechanically sound and ideal for installing a new floor. After carrying out the usual cleaning of the surfaces, MAPEGUM WPS (in conjunc-

tion with MAPEBAND), a fast-drying, liquid flexible membrane, was used for waterproofing all the different premises. The porcelain tiles were in all cases installed on the wall and floor surfaces with KERAFLEX MAXI. The joints were grouted using ULTRACOLOR PLUS, while the expansion joints were sealed with MAPESIL AC.

#### Top Floor Indoors:

##### Turkish Baths, Saunas, Pools

This area includes the Turkish baths, saunas and wellness pools. The vertical and horizontal surfaces of the various premises were waterproofed using MAPEGUM WPS. However, since it was planned to install some special decorative mosaic coatings, in this case ADESILEX P10 + ISOLASTIC was chosen, a system including a cementitious adhesive with no vertical slip, ideal for installing mosaics since it is manufactured in an extremely white powder capable of bringing out the different

colours of the mosaic itself and making grouting easier. Here, too, grouting was carried out using ULTRACOLOR PLUS water-repellent anti-mould mortar. Finally, the works were completed by decorating and protecting all the fraction joints using MAPESIL AC (after applying PRIMER FD).



#### TECHNICAL DATA

**Terme di Bormio**, Province of Sondrio, Italy

**Work:** extension and renovation of thermal baths facilities including laying indoor and outdoor floor and wall coverings

**Works years:** 2006-2007

**Customer:** Bormio Terme Spa

**Contractor:** Busi Costruzioni

**Installation Company:** Andreani

**Project:** Studio Colui (Eng. Roberto Tunino)

**Work Management:** Eng. Stefano Vitalini

**Mapei Distributor:** Andreani

**Mapei Coordinator:** Marco Cantachin (Mapei SpA)

**Mapei Products:** the products mentioned in this article belong to the "Products for Ceramic Tiles and Stone Materials," and "Building Speciality Systems" ranges.

The technical data sheets are available on the "Mapei Global Infonet" DVD or at the web site: [www.mapei.com](http://www.mapei.com).

Mapei's adhesives and grouts conform to EN 12004, EN 12002 and EN 13888 standards. Almost all the Mapei products for laying ceramics and stone materials are also GEV-certified.

**Adesilex P10 (C2TE, EC1 R):** white high performance cementitious adhesive with no vertical slip and extended open time for glass, ceramic and marble mosaic coverings.

**Adesilex PG4:** two-component, thixotropic, epoxy adhesive with modified-rheology for bonding Mapeband, Mapeband TPE, PVC braces, Hypalon and for structural bonding.

**Eporip:** two-component epoxy adhesive for bonding new to old concrete and monolithic sealing of cracks in screeds.

**Fibreglass Mesh:** alkali-resistant fibreglass mesh for reinforcing interior and exterior leveling compounds.

**Keraflex Maxi (C2TE, S1):** deformable, cementitious adhesive with no vertical slip and extended open time, particularly suitable for the installation of large sized porcelain tiles and natural stone. N.B. This product has been replaced by Keraflex Maxi S1 with Dust Free technology.

**Kerapoxy (R2T):** high performance two-component acid-resistant grout and adhesive with no vertical slip for installing and grouting ceramic tiles and stone material.

**Mapeband:** alkali-resistant rubber tape with felt for cementitious waterproofing systems and liquid membranes.

**Mapecem Pronto:** pre-blended, ready-to-use, quick-setting and drying (24 hours), controlled-shrinkage mortar for screeds.

**Mapefoam:** closed cell polyethylene foam cord for the correct sizing of movement joints. It is available in coils where the length is proportionate to the diameter.

**Mapegum WPS:** flexible, liquid membrane for waterproofing bathrooms and internal shower stalls.

**Mapelastic Smart:** two component, high flexibility cementitious mortar, applied by brush or with a roller, for waterproofing concrete surfaces such as foundations, retaining walls, balconies, terraces, bathrooms and swimming pools, and for protection against aggressive chemical agents.

**Mapesil AC:** one-component mildew-resistant acetic cross-linking silicone sealant, available in 26 colors and transparent.

**Nivoplan:** levelling mortar for internal and external walls and ceilings for thicknesses from 2 to 30 mm.

**Planicrete:** synthetic-rubber latex for improving the cementitious mortars' bonding and mechanical strength.

**Primer FD:** primer for silicone sealants on porous (concrete, wood) or difficult (plastic material, metals) surfaces.

**Ultracolor Plus (CG2, EC1):** fast-setting and drying, high performance, anti-efflorescence, water-repellent grout for joints from 2 to 20 mm. With DropEffect® and anti-mould with BioBlock® technology.

