DAMS
CONSTRUCTION TECHNOLOGY
FOR LARGE HYDROPOWER PROJECTS
DAM
CONSTRUCTION TECHNOLOGY
FOR LARGE HYDROPOWER PROJECTS

durability

research & development

technical services
from design to construction site

new construction

repair work

Mapei, technology for large projects

Mapei in the world
An increase in the world’s population and the natural ambition for a better standard of living has made the design, construction and management of dams an increasingly important subject. Dams allow water to be controlled and managed for irrigation purposes, thereby encouraging the cultivation of vast areas of land. It also creates a permanent barrier along a natural waterway allowing hydro-electric energy to be generated, which is still the main source of renewable energy. The construction of a dam and its relative basins radically changes the lives of thousands, and sometimes even millions of people. It has a profound effect on the routines and customs of entire populations, as well as their standard of living. It may be used to control the level of a water course to prevent hydro-geological disasters and to promote new ways of transporting goods.

A dam is a fundamental element in establishing a new balance between man and the environment, as well as determining strong growth in social and economic conditions. Although the design and construction of a dam is an important stage, the dam also needs constant monitoring throughout its entire life cycle to avoid incidents such as overflows, clogging of its run-off channels, erosion of the foundations and even collapse. The same care and attention required for the construction of a dam is also necessary when carrying out maintenance operations by adopting appropriate repair procedures.
THE PRIMARY COMMITMENT FOR SUSTAINABLE DEVELOPMENT

Over the years, Mapei has made the reliability of their products a key focus point: ensuring increased DURABILITY means preventing or at least delaying further interventions on the structure, and encourages SUSTAINABLE DEVELOPMENT.
durability

CHIOTAS DAM
ENTRAQUE (CUNEO) - ITALY
research & development

PRODUCTS FORMULATED FOR BETTER PERFORMANCE, IMPROVED SITE SAFETY AND A REDUCTION IN THE CONSUMPTION OF ENERGY

GIOVERETTO DAM
VAL MARTELLO (BOLZANO) - ITALY

SAINT CLAIR HYDROPOWER PLANT, OUTLET AND PENSTOCK TUNNELS
CHATILLON (AOSTA) - ITALY
Mapei products are the result of our commitment to excellence in research, with the goal of developing innovative formulas that may be integrated into complete application systems that are very effective in terms of results. Particular attention is paid to the use of substances that are fully compatible with the health and safety of all those working on site. Mapei systems are manufactured all around the world using renewable energy sources and limiting the consumption of virgin raw materials, with full respect for the environment.

Mapei has always been highly committed to research, with 5% of annual turnover channelled into investments in R&D. Mapei has 18 main Research Centres and research personnel account for 12% of the total workforce.
Mapei has always been a favoured partner for designers and specialists from this sector. Through our network of technicians, we provide solutions to problems around the world. This approach has fuelled the company’s growth. Operating in terms of problem solving means being prepared to get involved with a hands-on approach. It means incorporating stimuli from external sources and making them our own, but also the ability to constantly innovate, research and experiment.
We have made Technical Services one of our strong points. Each day, we are present with qualified technicians on sites in more than 128 different countries around the world. By working alongside teams from large contracting companies, we are able to demonstrate our experience of correct system installation methods and provide our expertise.
Dams may be constructed using rocks and earth (embankment dams) or concrete. Concrete dams may be divided into two categories: gravity dams (made from RCC), and arch dams (made from normal concrete).

Mapei develops and supplies technologically advanced products and systems used in the construction of various elements for the construction of dams, particularly dam walls, water channels and hydraulic tunnels.
ADMIXTURES FOR CONVENTIONAL CONCRETE
ADMIXTURES FOR RCC
ADMIXTURES AND FIBRES FOR SHOTCRETE
ADMIXTURES FOR HIGH STRENGTH CONCRETE
ADMIXTURES FOR INJECTION SLURRIES
PRODUCTS FOR MECHANICAL EXCAVATION AND CONDITIONING
WATERPROOFING SYSTEMS
TREATMENTS FOR FACING WALLS JOINTS
MORTARS

GERDP - GRAND ETHIOPIAN RENAISSANCE DAM PROJECT
BLUE NILE RIVER - NORTH-WEST ETHIOPIA

DAMS CONSTRUCTION TECHNOLOGY FOR LARGE HYDROPOWER PROJECTS
The long life span of a dam often imposes repair work to be carried out in order to maintain and guarantee the overall efficiency of the structure. Sometimes upgrading is required to withstand a variation in working conditions.

Over the years, Mapei has developed a range of products that offer a valid solution to each problem that may arise.

The experience gained by Mapei makes them a reliable partner in this sector.
PIODA FEEDING AND COMPENSATION BASIN
VAL MASINO (SONDRIO) - ITALY
SAN GIACOMO DAM
VALDIDENTRO (SONDRIO) - ITALY

REPAIR MORTARS
STRUCTURAL STRENGTHENING
ADMIXTURES FOR CONCRETE
WATERPROOFING SYSTEMS
TREATMENTS FOR FACING WALLS
JOINTS

MAPEI
Mapei, technology for large projects

- Admixtures for conventional concrete
- Admixtures for roller compacted concrete
- Admixtures for high strength concrete
- Admixtures for injection slurries
- Accelerating products for shotcrete
- Mineral admixtures
- Structural synthetic fibres
- Joints and waterstop
- Sealants
- Anchoring mortars and resins
- Concrete repair systems
- Structural strengthening
- Crack injection systems
- TBM systems
- Systems for traditional excavation (drill & blast)
- Consolidating systems
- Waterproofing systems
- Surface protection systems
- Resin and cementitious flooring systems
- Dams construction technology for large hydropower projects
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* Sibelon PVC Membrane is a CARPI TECH property trade mark
The dialogue between Mapei set-ups worldwide and building professionals strengthens the group and helps everyone have their share of the developments. Mapei continues to grow by building on the knowledge and relationships from both within and outside the company.