

MARBLE HILL NUCLEAR STATION

New Washington, Indiana, U.S.A.

The Xypex system was applied to the tendon tunnels which are circular tunnels located directly beneath the nuclear containment structures. Application also included the sealing of 244 metres (800 lin ft) of cracks and faulty construction joints. In addition, a major Xypex waterproofing and repair program was carried out at the Auxiliary Building. The lowest level is approximately 30 metres (100 ft) below grade and is subjected to severe hydrostatic pressures. Because the work at Marble Hill was so extensive, certified Xypex applicators worked at the site steadily for almost two years.



NUCLEAR WASTE STORAGE FACILITY

Rokkasho, Aomori, Japan

The Xypex crystalline system was applied to all slabs and stub-wall of this low-level nuclear waste storage facility. Radioactive waste from nine power companies in Japan will be stored at this site. The total floor area of the structure is approximately 300 metres (990 ft) long and 90 metres (295 ft) wide. As additional storage space is required, construction will continue in lifts up to a height of four stories. Each slab will receive the Xypex treatment. The Xypex system was chosen for use after extensive testing carried out by the Japan Atomic Energy Research Institute (JAERI). Due to the sensitive nature of nuclear waste and environmental concerns, only the highest quality materials were specified for this project.



HIGH TEMPERATURE GAS REACTOR

Oarai, Ibaraki, Japan

Xypex products were specified by the Japan Atomic Energy Research Institute (JAERI) for use at this multi-purpose gas reactor. Areas of application included the entire floor area at the lowest level of the building. This level is where the helium reactor core will be installed. Temperatures in the reactor will be as high as 1,000 degrees centigrade. The general contractor for the project was Obayashi Construction Co., one of the leading constructors in Japan.



FUKUSHIMA DAIICHI NUCLEAR STATION

Japan

Xypex Concentrate was applied to the floor and walls of the waste fuel storage pool facility to ensure the total impermeability and durability of the concrete.



J-PARC SYNCHROTRON

Tokai-mura, Japan

The Japan Proton Accelerator Research Complex (J-PARC) is a new high intensity proton accelerator using MW class high power beams up to 50 GeV, the highest beam power of any accelerator in the world. Because of the sensitivity of this synchrotron and the radioactive processes involved, protecting it from outside moisture & chemical elements was vital. The site is subject to a high water table and is adjacent to the ocean – presenting contamination challenges that could affect the accelerator's sensitive functions. Xypex crystalline technology, due to its effectiveness, resistance to the marine environment, and its compatibility with the radioactive process, was specified by major firms involved in the construction coalition that built the accelerator – a 3.5 km circular tunnel encased in concrete up to five meters thick. Xypex Concentrate was used on the mud slab and Xypex Dry-Pac was applied to the preformed horizontal keyways and non-expansion vertical construction joints. In a two-coat application, sixty tons of Xypex Concentrate was then spray-applied to the exterior walls and roof slab, covering a total area of 50,000 square meters.



WOLSUNG NUCLEAR POWER PLANT

Wolsung-Kun, Kyung-Buk Province, South Korea

Cracks were repaired in intake and discharged conduits used for cooling waters at nuclear generation plant. The clear well water reservoir was also treated. The designer, Atomic Energy of Canada Limited, specified Xypex to prevent sea water in the cooling water conduits from attacking the rebar in the structure. The repair was completed in 1980.



CSCN CHINA SPALIATION NEUTRON SOURCE *Guangdong Province, China*

This project is similar to Japan's J-PARC project. This is China's most advanced scientific facility for studies in the fields of material science and technology, life sciences and new energy. It is one of four largest in the world, rated behind U.S. and Japan, and 4 times the capacity of the British. In this project, the use of membrane at the exterior face of the basement wall totally failed and due to the high requirement for the facility, all the membrane was chipped out and replaced with Xypex Concentrate coatings. Negative repairs were also used on area where replacement of the membrane was impossible. Project was completed 2018.



YOKOHAMA SUBWAY STATION *Yokohama, Japan*

Xypex products were used to waterproof concrete in the subway station located beneath this 70 storey landmark tower, the tallest building in Japan. The station is on the Minatomirai line between Tokyo and Yokohama. It is located four floors below ground level and is subject to considerable hydrostatic pressure.



MINATO-MIRAI CENTRAL STATION CONDUIT *Japan*

Xypex Concentrate was spray-applied to the walls of this 170 m utility tunnel which is used for the cable and lines carrying gas, telephone and electrical power. Xypex Concentrate was also used in a sandwich application on the concrete slab and Xypex Patch'n Plug was used to repair holes, joints and cracks.



PANAMA CANAL REHABILITATION

Panama

Prior to hand over the Panama Canal to the Panamanian hands, Xypex was selected to rehabilitate the gatun locks and culverts in 1995, which continued throughout 1996. Chamber walls and culverts used to divert water when raising and lowering the level of the locks were treated to protect from the harsh marine environment. Xypex Admix was used in the concrete shotcrete mix for the rehabilitation of the gatun locks chamber walls to help preserve the existing structure by slowing down the aging process of this 80+ year old structure.



DEE WHY SEAWALL RESTORATION

New South Wales, Australia

Following the devastating storms during 1998, the force of the sea finally took its toll on a 70 year old seawall. With only a small portion of the seawall left in a salvageable condition, the NSW State Government and Warringah Council allocated funds for the rebuilding process. Durability was one of the utmost concern in the design of the new seawall which required the use of 1,200 m³ of concrete. Xypex Admix was used in all concrete mixes of the project. According to the design consultant, Patterson Britton & Partners, the addition of Xypex Admix had a positive effect on the strength and shrinkage results of the coloured concrete. The 28 day compressive strength average was 60 Mpa while the 56 day drying shrinkage averaged was 540 micro strain. Completed in January 2000.



VANCOUVER SEABUS FLOATING DOCKS

Vancouver, BC Canada

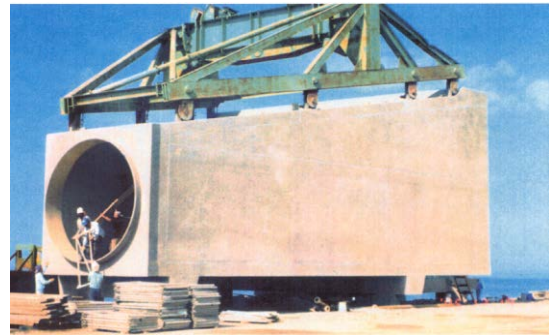
Concern over the salt water corrosion of post-tensioned cables, resulted in the consultant recommending that Xypex Concentrate coating be applied to the bottom surface of these floating docks. Project was completed in 1976. From 1985-1994, yearly inspection by scuba divers has confirmed that the Xypex application continues to provide the necessary protection. Inspection was documented by All Seas Enterprises Ltd., British Columbia, Canada.



SHOAIBA DESALINATION FACILITY

Red Sea, Saudi Arabia

Involved 150,000 m² application of Xypex Concentrate and Modified to inside surface of large pre-cast in-let and out-let culverts. Units were then submerged in the Red Sea. Xypex treatment provided waterproofing and protection from harsh marine environment.



THREE GORGES DAM - MUYUCAO TUNNEL

Yichang, Yubei Province, China

The Muyucao Tunnel is the main tunnel leading to the work site of the Three Gorges Project, China's world renowned water conservation project. The Engineering Department of the Three Gorges Construction Headquarters chose sections of the tunnel to determine the effectiveness of XYPEX technology for crack repairs and leak stopping capability. Although working against very high hydrostatic pressures and severe water flows, project engineers determined that the Xypex remedial applications were greatly successful, a determination which then lead to the introduction of Xypex technology to the general Three Gorges Project construction program.



GATUN LOCKS – PANAMA CANAL

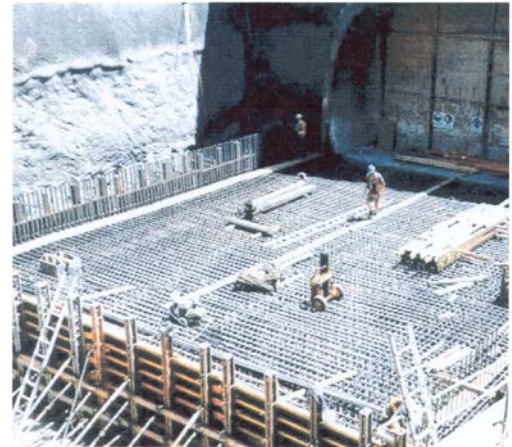
Panama

Xypex Admix was used in shotcrete repair mortar to all culvert surfaces to waterproof and protect the 80+ year old concrete from harsh marine environment.



DOMAIN TUNNEL/YARRA CROSSING-STAGE 1 + 2 Melbourne. Australia

Xypex Admix C-1000NF was used to waterproof the concrete pavement and lining of the Domain Tunnel which goes under the river in the section of Yarra Crossing Stage 1. In Stage 2 of the same tunnel (cut & cover construction) Xypex Concentrate and Modified coatings were used on wall segments. Xypex DS1 Concentrate was used on the horizontal surfaces of the concrete pavement and roof segment. This project was on-going as of year 2000.



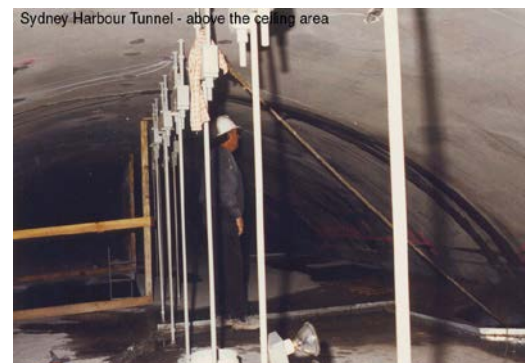
AYRTON SENNA TUNNEL COMPLEX Sao Paulo. Brazil

This tunnel complex passes under lagoon in Ibirapuera Park. A 2 coat application of Xypex Concentrate and Modified was applied over the 30cm thick shotcrete to a length of 2,800 meters in two separate tube segments in the tunnel. Xypex Patch'n Plug was used to seal all water seepage against moderate hydrostatic pressure. The contractor was Constram Engenharia, total area applied was 8,000 m² and completed in January 1996.



SYDNEY HARBOUR TUNNEL Sydney, Australia

Extensive hairline crack repair undertaken with Xypex for this tunnel which is under the sea when other products failed to seal water seepage. Two work crews spent approximately three months in the tunnel using both Xypex Patch'n Plug and Xypex Concentrate to stop leaks. 52 products were tested for the repair and Xypex was the only one that was successful. This repair work was an on-going joint venture repair project between Transfield (Australia) and Kumagai Gumi (Japan) back in 1991.



JACKSONVILLE ELECTRIC AUTHORITY WHARF STRUCTURE

Wharf Pilings, Florida, U.S.A.

Wharf pilings, U-beams, and the concrete topping for wharf deck all used Xypex Admix to protect concrete from the harsh marine environment. Over 82,000 kg of Admix C-1000NF (No Fines Grade) at a dosage of 1.5% of the cement content of premix concrete has been utilized on this project. The Engineer/Designer of the project was Black & Veatch Inc., and constructed by Gate Concrete Products Inc. in 1994.



CRONULLA MARINA

Sydney, Australia

Xypex Admix C-1000NF was used to waterproof the 100mm thick slab in a severe marine tidal splash zone with a concrete cover of 40-45mm. Sample cores taken in 1998 and 2013 for examination by Building Research Centre of the University of New South Wales shows the concrete remains in good condition, free of defects, cracks or rust. Chloride content at 40mm depth was compared and discovered a 92% reduction of chloride ion after 19 years. Using Fick's 2nd law based on 0.4% chloride content, the concrete is estimated to have another 129 years of life before it will develop corrosion. If adding the 19 years from year of completion in 1994, the estimated life span is 148 years. If taken at the depth of 45mm, by the same calculation, the estimated life span is 164 years before corrosion will begin.



VISITORS MARINA, DARLING HARBOUR

Sydney, Australia

Xypex Admix C-1000NF was used to waterproof and prevent the ingress of chlorides to the prestressed, precast concrete floating dock to ensure a longer life for the structure. This project was developed as a part for the Olympic 2000 by the City of Sydney. The contractor was Sea Slip Pty Ltd. and the project was completed in 1999.



JOHN G. SHEDD AQUARIUM

Chicago, Illinois, U.S.A.

Xypex products were used at the prestigious Shedd Aquarium in Chicago, a project that has become well known because of the complexity of its construction and because it includes the world's largest enclosed artificial ocean. Xypex products were used specifically in the cold-water marine mammal pavilion which consists of 5 large saltwater pools, including a 7.5 million litre (2 million gal) main exhibition tank, surrounded by sloping rockwork and natural trails. The large exhibition pool, which is the home of the Beluga whales, received a two coat application of Xypex Concentrate and Modified to all exterior walls and mud slabs. Two coats were also applied to walls and slabs of the other saltwater pools. Total area treated was approximately 11,150 m² (120,000 ft²).



PULAU SEMAKAU WHARF

Singapore

After the completion of the wharf deck, numerous hairline cracks developed on the surface of the wharf deck. Xypex Concentrate slurry coat treatment was approved to be used to repair the concrete hairline cracks on the surface of the wharf deck after a petrographic examination on several Xypex treated cored samples evidently showed that the growth of Xypex crystals had sealed the hairline cracks. Another advantage was that the colour of Xypex matched the concrete colour after treatment, thus there was no need for further furnishing. The main contractor was TOA Corporation & Sum Cheong Joint Venture. The owner was the Ministry of Environment of Singapore. Completed January 2000.



EL FARO AQUARIUM

Mar del Plata, Argentina

The Xypex crystalline system was used on the first of several phases planned for this aquarium project at Mar del Plata, a resort city southeast of Buenos Aires. When completed, the aquarium will be the 2nd largest in Argentina. The Xypex work consisted of the waterproofing and protection of tanks, including the dolphin pools, and communication channels. These concrete structures, which are to be filled with sea water, received a two coat application of Xypex Concentrate.



ROTHESAY SEA DEFENCE

Rothesay, United Kingdom

Southerly winds combined with a rising tide increase the flood tide and tunnel water up the Firth of Clyde causing a tidal surge. This led to a 5 year flooding cycle, but due to climate change, flooding now occurs nearly every year, meaning a solution was urgently required. Argyll & Bute council appointed consultants to design a solution, this involved the construction of a double wall with a maximum height of 1.5 meter. To ensure the durability of the double stone faced wall, the in situ concrete infill utilised Xypex Admix as a waterproof system to protect the re-bar from corrosion in the harsh marine environment



PORT OF GUAYAQUIL

Guayaquil, Ecuador

During April and May of 2004, the Ports Administration of Ecuador retained Xypex to assist with the repairs of the dock surfaces. The surfaces had characteristics that required Xypex Admix C-2000 to render the concrete impermeable against liquids and other aggressive substances. The Xypex treatment also protected the reinforcing steel and thereby helped prolong the life of the structure.



VICTORIA AND ALFRED SITE

South Africa

Admix C-1000 NF is being used to waterproof two tunnels as part of a massive redevelopment of Cape Town Harbour. The two tunnels are to be located below the water channel and used to join several man-made islands. Xypex Concentrate is also being used as a Dry-Pac in pre-formed construction joints.



BUND SIGHTSEEING TUNNEL***Shanghai, China***

The Bund sightseeing tunnel, which is open to traffic, passes under the Huangpu River. The tunnel is located beneath the television tower in the Pudong Development District. Xypex products were used to waterproof this tunnel.

**HEATHROW AIRPORT-TERMINAL 5 TUNNEL*****United Kingdom***

A combination of Xypex products was used to repair and waterproof the main service tunnel connecting Terminal 5 at Heathrow Airport with other terminals. Repairs with Xypex Concentrate and Xypex Patch'n Plug were so successful that Xypex Admix was specified on all remaining cast-in-place concrete. Over 5 tonnes of Xypex Admix C-1000 NF has been used to date on this project.

**88 WOOD STREET TUNNEL*****United Kingdom***

The joints of the pre-cast unit, and the basement core on level 4 of this service tunnel suffered water ingress. During the repair of the tunnel, water ingress measured 3500 litres/hour and the entire area was under 44 millimetres of water during the rainy season. All joints were treated with Xypex Patch'n Plug, Xypex Dry-Pac and Xypex FCM. Xypex Admix C-1000 NF was then used in the new concrete fill.



METRO WARSZAWAKIE – CITY HALL UNDERGROUND RAILWAY STATION

Warsaw, Poland

This is the first underground railway station in Poland to be waterproofed using Xypex products. Foundation plates, floor slabs and construction joints at the main tunnel were waterproofed with Xypex Patch'n Plug, Concentrate Dry-Pac and Concentrate coating. The foundation and floor slabs, walls and construction joints at four exit tunnels were likewise waterproofed. This project was completed in October, 1999.



ANKARA SUBWAY

Ankara, Turkey

This subway system was waterproofed with a membrane system and experienced extensive shrinkage cracks with leakage. 11,000 linear meters of cracks were repaired with Xypex Patch'n Plug and a two coat system of Concentrate and Modified was applied to 5,600 m² of the concrete surface. This project was completed in 1994 by a Polish applicator (Konex).



MRT NORTHEAST LINE C706 – BUKIT TIMAH SUBWAY

Singapore

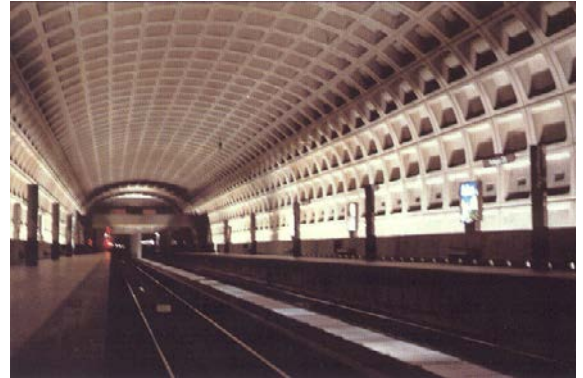
Xypex Admix was approved for use in the MRT by the Land Transport Authority (LTA) of Singapore during the construction of the MRT Northeast Line Contract 706 project. The criteria leading to Xypex Admix being the preferred choice, amidst waterproofing membranes and other waterproofing admixtures, was its superior concrete durability and waterproofing performance, and ease of use in construction. The main contractor was Hyundai - Zublin Joint Venture, the project completed in 2001.



WASHINGTON D.C. METRO SYSTEM

Washington D.C., U.S.A.

Xypex Concentrate was specified by Bechtel Corp. and the Washington Metropolitan Transit Authority for use at various locations of the metro area subway system, including sections in Central Washington D.C., Bethesda (Maryland), Chevy Chase (Maryland), and Alexandria (Virginia). Areas of application included tunnel sections, large shotcrete vaults, passageways, mechanical rooms, equipment vaults, elevator shafts and various areas in metro stations. It was also used extensively to repair defective concrete against strong hydrostatic pressure.



CARACAS METRO – PHASE III

Caracas, Venezuela

After using another crystalline product in the Phase II portion of this project, the Phase III portion switched to the Xypex system for better protection. Approximately 150,000 m² (1,600,000 ft²) of concrete segments which form the tunnel ring, were treated with Xypex Concentrate at this major new extension to the Caracas Metro System. The Xypex Concentrate was applied to the segments using the dry-shake method. The powder was spread over the fresh concrete by means of a sieve and then incorporated into the concrete with a sponge finishing tool. Each segment was then vapor cured for 8 hours.



OKACHIMACHI TUNNEL

Tokyo, Japan

Xypex was selected to waterproof various areas of this tunnel which forms a section (495 meters) of the artery created for Japan's famous Bullet Trains linking the Tokyo and Ueno Stations. Design was under the supervision of East Japan Railway Company and the tasks involved the expansion of the Tokyo Station and the construction of high speed track through the most congested business district of Tokyo demanding the most sophisticated civil engineering skills and techniques. The construction was performed by Kumagai Gumi Co., Ltd., one of the foremost tunnel contractors in the world. Kumagai Gumi have used the Xypex system successfully in many projects previously.



WARSAW METRO – RATUSZ STATION***Poland***

Xypex waterproofing treatment to floor slab (sandwich application) and to the ceiling of ground floor of subway station and exit tunnels.

**COPENHAGEN METRO*****Denmark***

Xypex waterproofing treatment to tunnel entrance way, manholes, station roof and station walls. Xypex was successful in preventing leakage with more than 6 meters of head pressure.

**KIEV SUBWAY*****Ukraine***

Repair to cracks and other defects utilizing Xypex Concentrate and Patch'n Plug.



JANIO QUADROS & SEBASTIAO CANARGO

Sao Paulo, Brazil

The shotcrete lining of two parallel tunnels were treated with 2,600 m² of Xypex Concentrate & Modified. Xypex Patch'n Plug was used to repair more than 1,700 defects in the concrete.



NIKKO-KENSEI ROAD TUNNEL

Japan

This 50 year old, 775 m long road tunnel was damaged by excessive leakage and corrosion due to acid rain. Xypex products used to repair the joints and cracks.



INNER CITY BYPASS

Brisbane, Australia

Xypex Admix C-1000 NF used in pre-cast roof elements. A total of 3,000 m² of concrete was treated with the Xypex Admix.



ZAWADA MILL DAM***Poland***

Xypex treatment was used to repair leakages caused by hydrostatic pressure. The conduit contains both pipes and electrical cables.

**UTILITY TUNNEL*****Bratislava, Slovak Republic***

Excessive leakage required extensive crack repair to over 5,700 lin. ft. (about 1,738 lin. m.) using Xypex Patch'n Plug, Concentrate and Modified.

**AOMORI WASTE WATER CONDUIT*****Aomori City, Japan***

Xypex Concentrate was applied to existing deteriorated concrete box culvert. Admix was then used in new tunnel lining.



SUSTEN PASS TUNNEL

Berne, Switzerland

This 30 year old, 105 m long tunnel was repaired using Xypex Concentrate and Modified White. Old concrete was removed and replaced with shotcrete.



KLEPPE WATERWORKS

Kleppe-Bryne, Norway

The tunnels and tanks at this underground waterworks project exhibited leakage in various area due to cracks and concrete defects. All leakage was successfully eliminated by repairing with Xypex products together with the application of a Xypex slurry coating to the surface.



RINKAI ROAD TUNNEL

Tokyo, Japan

This Tokyo road tunnel, located on the shoreline of reclaimed land is up to 30 m below sea level. A special 'U' shaped wall was initially constructed with the ceiling slab installed later. Xypex crystalline technology was selected instead of the traditional membrane method. Xypex Concentrate was used to waterproof the tunnel and ventilation shafts and a special technique including Xypex was used to seal the joints.



NAZARABE HIRAYAMA TUNNEL

Japan

Xypex Crystalline Technology and Xypex Concentrate proved successful in sealing the 3 mm cracks in this 1,413 m tunnel, where significant leakage was occurring. Larger cracks and rock bolts were also repaired, using normal Xypex repair procedures. All leakage was stopped.



METROPOLITAN MASS TRANSIT SYSTEM

Antwerp, Belgium

Xypex products were used to seal the entrance and exit portals on all 13 stations. Differing construction methods in the tunnel and station portions allowed strong ground-water ingress at the joints and Xypex was specified for use after extensive testing. Work was carried out at depths of 65 – 185 ft. below the water table.



NII ROAD TUNNEL

Japan

The concrete of this 30-year-old, 1,290 m tunnel was subject to continuous leakage and freeze-thaw cycles. Repairs, using conventional membrane systems had repeatedly failed. Xypex Crystalline Technology and products were then selected to treat all problem cracks. The application was successful and the leakage was finally stopped.



PARIS METRO***Paris, France***

Xypex products were used to seal cracks, joints and water infiltration in various areas of the new and old subway tunnels and stations in this system. The success of these repairs was a major factor in the selection of Xypex by the city of Antwerp for use in their remedial program.

**RAILWAY TUNNEL*****Paris, France***

Xypex products were used to waterproof and protect the walls and ceiling of this railway tunnel.

**SHANGHAI METRO TURNAROUND*****Shanghai, China***

The tunnels and the exit walls and floors of the Longdong Road turnaround were waterproofed with Xypex Concentrate.



SYDNEY AIRPORT TUNNEL-M5 MOTORWAY***Sydney, Australia***

Xypex was used to meet the concrete waterproofing specifications for the freeway (road) tunnel which runs below the Cooks River beside Sydney's Mascot Airport. The project involved two contracts – one for 5000 m³ (Cooks River trough section) and another for 1200 m³ (Turella Shaft Tunnel).

**VUOLI TUNNEL-VUOSSARI HARBOUR*****Finland***

Xypex Admix C-1000NF was used to waterproof and protect the 50mm thick shotcrete lining on the rail and road tunnel under the Helsinki harbour. The mix –design used 470 kg of Portland cement per m³ and the admix was dosed at 1.1% (5 kg) per m³.

**SHANGHAI CHANGSHU SUBWAY STATION*****Shanghai, China***

Because previous systems had failed, Xypex crystalline technology was specified to stop water from entering into this subway station. Xypex Patch'n Plug and Xypex Concentrate were used to repair cold joints between the ceiling and wall and to repair cracks throughout the walls of the structure.



NEIVA/FLORENCIA ROAD TUNNEL

Colombia

This tunnel is situated on the Neiva/Florencia road and was treated with approximately 3000 kg of Xypex Concentrate to stop water penetration.



KARKHEH DAM

Iran

Xypex Patch'n Plug and Xypex Concentrate were used to repair and waterproof the tunnel of this Dam.



RIVER SOTKE TUNNEL

Estonia

Xypex Concentrate was used to waterproof the walls and ceiling of this river tunnel. Xypex Patch'n Plug was used to repair cracks.



PENNSYLVANIA TURNPIKE***Pennsylvania, U.S.A.***

Xypex Admix was used in pre-cast median barriers and retaining walls to provide waterproofing, freeze-thaw durability and chemical resistance from road salts. Over 160 km (100 miles) of barriers and 8 km (5 miles) of retaining walls were treated. 680 metric tons (1.5 million pounds) of Xypex Admix was utilized over a 5 year period.

**AOMORI BAY BRIDGE*****Aomori City, Japan***

The Aomori Bay Bridge, measuring 25 meters in width and 1,219 meters in length, is exposed to salt from the ocean causing damage to the precast concrete girder box main beams. Xypex was applied to the floor of the main beam from the inside of the girder box to render the structure impervious to the harsh marine environment. Project was completed in 1992.

**BRIDGES ENROUTE TO KIEV AIRPORT*****Kiev, Ukraine***

The sidewalks, precast beams and sub-deck surface of the three bridges leading to the airport from Kiev were treated with one coat of Xypex Concentrate and one coat of Xypex Modified. Total area treated was 1,350 m², completed in 1998.



HUKOU BRIDGE

Jiujiang, China

The 4 lane Hukou bridge over Lake Panyang is 3 km from the Yangtze river and is the longest bridge on the expressway between Jiujiang and Jingdezhen. Xypex products were used to repair and waterproof the barriers, construction joints and guy-rope locations of the bridge structure.



BADALING EXPRESSWAY OVERPASSES

Beijing, China

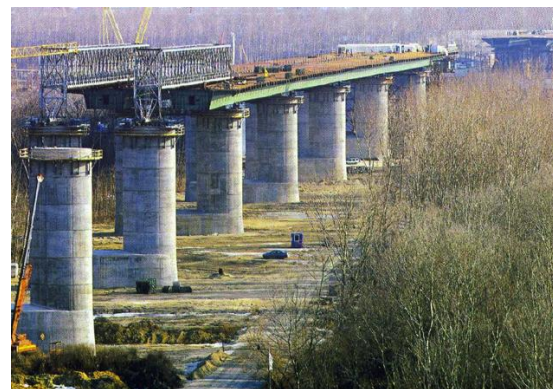
The Badaling Expressway, which includes three overpasses, leads to the world famous Great Wall of China. The surfaces of these overpasses were waterproofed using Xypex Concentrate and Xypex Patch'n Plug repaired the cracks. Bridge experts lauded the success of the Xypex application.



M8 SUPER HIGHWAY RIVER DANUBE BRIDGE

Dunavecse, Hungary

Xypex Concentrate was applied to the concrete base rings of bridge pillars prior to the pillars being submerged in the Danube river. The Xypex treatment of these pre-cast components provided waterproofing and protection. Xypex Patch'n Plug was used to repair defects in the pillars and the seal joints between the rings.



UMI BRIDGE***Papua New Guinea***

This bridge structure on the Markham Valley Highway showed signs of leeching and water permeation on the soffit of the deck, resulting in fine cracking of the concrete. Xypex Concentrate and Xypex Gamma Cure were selected not only because of their superior waterproofing capabilities but because they could be applied under adverse weather conditions and bridge service would not be interrupted.

**BRIDGE OVERPASS*****Zilina, Slovakia***

During the construction of a by-pass road around Zilina, Xypex was proposed and implemented to protect the concrete parapet against the aggressive effects of salt used on icy roads. The parapets were treated on both sides of the bridge – a total of 1500 m.

**BRIDGE PARAPET*****Czech Republic***

Xypex Concentrate was used to protect the concrete parapet of this bridge against water penetration and against the destructive effects of the salt used in the winter months.



NEW JERSEY D.O.T. BRIDGE PROJECTS

Highstown, New Jersey, U.S.A.

Admix C-1000 was incorporated in concrete for 8 separate bridges under the Department of Transportation to provide protection from freeze-thaw effect and road salts. Application include: bridge decks, parapet walls, and relief slabs. A total of 49,000 lbs. (22,300 kg) of concrete was dosed at a 2% dosage rate per the weight of cement.



BRIDGE DECK REPAIRS

La Crosse, Wisconsin, U.S.A.

Xypex was used to repair this bridge deck which is under the authority of the State of Wisconsin Department of Transportation. Repairs included dry-packing 92 meters, (300 lin ft) of cracks and a one coat application of Xypex Concentrate over the entire surface. This bridge is on the main truck route between Minneapolis and Chicago, and therefore is exposed to very heavy traffic. Even though much of the original coating has since worn off, inspections of the underneath side of the bridge confirm no evidence of any water seepage. This confirms that the Xypex crystalline formation is firmly established within the pores and capillary tracts of the concrete itself.



HIGHWAY 51 BRIDGE REPAIR

Madison, Wisconsin, USA

Xypex Admix C-2000, mixed at a rate of 2% by weight of cement, significantly reduced the problem of cracking on the bridge. As a test, one parapet wall was placed using Xypex Admix while a second wall was cast without the Xypex. The Xypex treated concrete had 50% fewer cracks than the reference parapet wall.



ZHUZHOU RAILWAY “GUDA” BRIDGE

Zhuzhou, China

The “Guda” bridge was built in 1969. Weather conditions over 30 years caused serious carbonation on the main part of the bridge. The concrete cracked badly and was restricting the bridge’s use. Xypex Concentrate and Patch’n Plug were used to repair the cracks and prolong the lifespan of the bridge.



KAUNAS BRIDGE

Kaunas, Lithuania

The support columns of the old bridge were treated with Xypex Concentrate which was also used on the entire undersides of the two new bridges.



WUHU RAILWAY BRIDGE

Hangzhou, China

Delamination, pitting, and irregular cracks occurred on the concrete beams of this bridge. Xypex products were used to repair and waterproof the beam and rectify the problems. The application was very successful and resulted in the issuance of a ‘Certificate of Competence’ by the Hangzhou railway administration as regards ‘Xypex repair techniques for railway reinforced-concrete-beams’.

