



Boston's new sewage system on Deer Island represents a 3.4 billion dollar investment and is part of an environmental rehabilitation project in Boston Harbour.

The Deer Island plant handles the sewage of 43 adjoining municipalities. It is one of the largest, most modern sewage treatment plants in the U.S.A. and meets the latest U.S. standards. Started in 1989, the giant project is being undertaken in stages and will be fully operational by 1999.

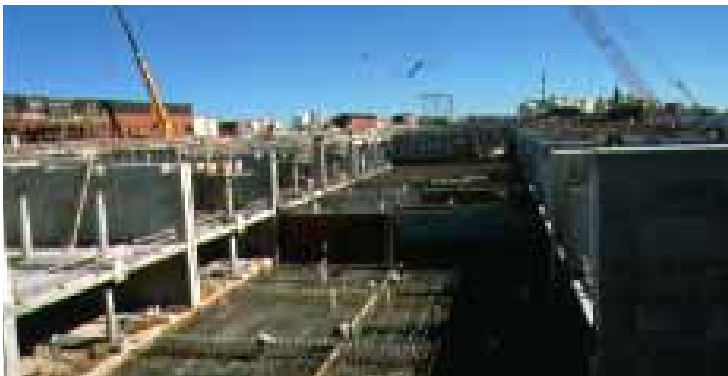
In addition to sewage treatment, the plant also serves to convert sludge to fertilizer and prevents harmful emissions. The plant's effect is felt already; water quality



VANDEX WATER-PROOFING FOR MAJOR SEWAGE PLANT IN BOSTON, U.S.A.

has improved to the extent that dolphins and seals have returned to the harbour area as regular visitors.

Throughout 1996, interior surfaces of settling tanks, secondary clarifier tanks, ceilings, and shafts totalling 42,000 m² (450,000 sq.ft) have been coated with VANDEX SUPER waterproofing slurry. Most of the surfaces were sprayed using Carrousel peristaltic pumps (daily output about 700 m² (7,500 sq.ft) per team). To prevent premature drying, the fresh VANDEX SUPER surfaces were sprayed with a dissipating resin curing agent. In addition to surface applications, VANDEX SUPER was applied in dry shake form on top of walkway slabs. About 5 tons of VANDEX UNI MORTAR 1 Z were used in substrate preparation for repair and waterproofing of cracks and honeycombs.



Sewage plant construction site. (Photo: Kevin Kirwin; courtesy Massachusetts Water Resources Authority).

VANDEX SUPER application with fine-grain mortar gun. Bayport Sewage Plant, Houston, Texas, U.S.A.



Project: Residuals Treatment Facilities, Phase I, Secondary A & B **General contractor:** George Hyman, Inc. (Clarke Construction), Boston, MA **Engineers:** Camp, Dresser & McKee, Inc., Cambridge, MA **Vandex applicator:** P. J. Spillane Co., Everett, MA

Project: Secondary Clarifier Batteries, A & B **General contractor:** J. F. White, Inc., Boston, MA **Engineers:** Malcolm Pirnie, Inc., Boston, MA **Vandex applicator:** P. J. Spillane Co., Everett, MA

Project: Secondary Reactor Batteries, A & B **General contractor:** J. F. White, Inc., Boston, MA **Engineers:** Malcolm Pirnie, Inc., Boston, MA **Vandex applicator:** Chapman Waterproofing, Boston MA

Deer Island Sewage Plant, Boston, U.S.A., 1996.
(Photo: Kevin Kirwin; courtesy Massachusetts Water Resources Authority).



Located about 20 miles south east of Houston, Texas, in a dynamically growing industrial area in the U.S. sunbelt, the Bayport sewage treatment plant underwent a significant expansion in 1996.

The increase in the amount of industrial waste water in recent years made a major extension of the Bayport sewage treatment plant inevitable. In addition to technological improvements, a settling tank measuring 43 meters

VANDEX SUPER waterproofing slurry, proven in sewage systems for many years.

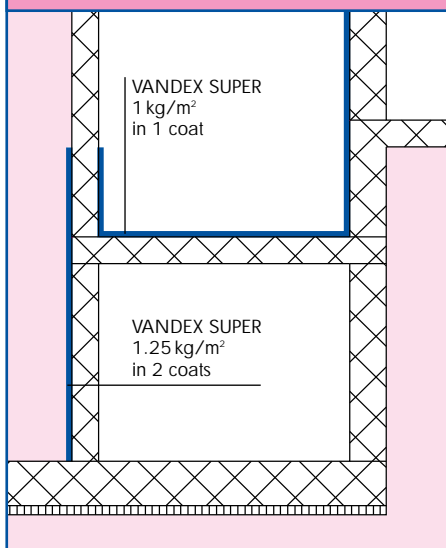
The VANDEX SUPER was applied by spray on a total of 13,000 m² (140,000 sq.ft) of internal tank surfaces, from February to July, 1996, using a fine-grain mortar gun. In addition, waterproofing reglets were provided internally on all tank floor/wall joints, with VANDEX UNI MORTAR 1 Z.

INDUSTRIAL SEWAGE PLANT IN HOUSTON, TEXAS

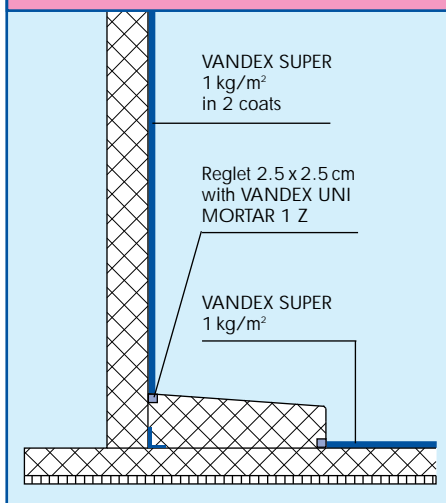


Aeration tank at Bayport sewage plant, Houston, Texas, U.S.A.

Deer Island Sewage Plant Cross section



Bayport waste water treatment plant Cross section



(140 ft) in diameter and a large aeration tank holding nearly 60 million litres (16 million gallons) were undertaken in an expansion program in 1995 - 96.

The open aeration tank is divided into five sections and was built in prestressed concrete construction (base slab and walls). The major part of the prestressed base slab has a thickness of 25 cm (approx. 10 inches).

For protection of reinforcement and prestressing cables, the engineers in charge specified a penetrating waterproofing and protection slurry on all internal surfaces to prevent corrosion from waste water. Chamberlin Waterproofing, Houston, waterproofing specialists, opted for

VANDEX UNI MORTAR 1 Z

Waterproofing and Repair Mortar for Sewage Plants

- increased sulfate resistance
- for open sedimentation tanks and open channels

Application

VANDEX UNI MORTAR 1 Z serves to repair and coat open tanks and channels in sewage treatment plants as well as on horizontal or vertical concrete surfaces subject to heavy mechanical stress.

Properties

VANDEX UNI MORTAR 1 Z is waterproof (tested up to 7 bars), resistant to frost and heat after curing while remaining permeable to water vapour. VANDEX UNI MORTAR 1 Z is resistant to residential sewage.

Specifications:

Setting: approx. 5 - 6 hours
Compressive strength: 45 N/mm² 28 days
Bending tensile strength: 7 N/mm² 28 days
Modulus of elasticity: 2.45 x 10⁴ N/mm² 28 days

VANDEX SUPER see page 3

Project: Gulf Coast Waste Disposal, Bayport Group IB Facilities **General Contractor:** Pepper-Lawson Construction Co., Pasadena, TX **Engineers:** Malcolm Pirnie, Houston, TX; GHC Engineers, Denver, CO **Vandex applicator:** Chamberlin Waterproofing, Houston, TX