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Bill Stetson,
Edgeboro
International, Inc.

Vapor Intrusion Mitigation for a North Brunswick Gymnasium

Rubber-like, synthetic gymnasium flooring manufactured from approximately 1960 to 1990 has been found to release mercury vapors under certain conditions. This occurs due to a catalyst in the material known as phenol mercuric acetate (PMA.) At room temperatures, PMA can degrade and release colorless, odorless mercury vapor. Any materials that come in contact with the flooring, including concrete, will emit mercury vapors indefinitely,



Project Size: 3,300 SF
Application: Vapor Intrusion
Environmental Contractor:
Distinct Engineering Solutions,
Inc.
Installer: Edgeboro International,
Inc.
System: Geo-Seal 100

The New Jersey Department of Health made recommendations to New Jersey School Districts concerned with potential exposure. Existing flooring was assessed to determine levels of mercury vapor, and the environmental contractor, DESI (Distinct Engineering Solutions, Inc.) first recommended Mercon X to encapsulate the exposed concrete and contain the vapors. However, it became apparent after further testing that they needed another approach to further mitigate vapor intrusion released by mercury in the concrete slab as the vapors remained above MCL (maximum contaminant level.) At one North Brunswick school in particular, a different solution had to be found.

“There were concerns that vapors were coming in through the floor and the concrete even though they were actively venting the area - which was not occupied,” says Bill Stetson, Project Manager, Edgeboro International, Inc.,

Installation of Geo-Seal Base
& Core over existing slab



Exposed mercury contaminated
slab to receive the Geo-Seal 100
VI Barrier



who were responsible for the installation.

A total of 3,300 square feet of EPRO's Geo-Seal 100 was used to protect the area and was sprayed directly to the floor. Geo-Seal is an innovative sub-slab vapor intrusion barrier system that eliminates vapor intrusion for brownfields or any environmentally-impaired site. Fully tested and proven highly effective against VOC vapors such as chlorinated solvents and petroleum hydrocarbons, as well as methane gas, Geo-Seal earns wide approval among various regulatory agencies.

"We needed a product that could perform to the necessary standard and that was also compatible with the flooring above it," says Stetson. "The engineer relied on our expertise and EPRO's guarantee to ensure that installation was as effortless as possible - and a success."

Further testing was conducted after the Geo-Seal application was complete. Mercury vapor concentrations via direct reading instruments and utilizing the NIOSH 6009 method after the barrier was complete resulted in non-detectable mercury vapor concentrations within and adjacent to the North Brunswick school gymnasium.

"The actual testing was a success and no vapors were detected afterwards," says Stetson.

The project was completed in December 2021. DESI was the environmental contractor and the certified EPRO installer was Edgeboro International, Inc., who have been installing GeoSeal systems since 2012.