

CASE STUDY FOR

THE NORTHEAST INDEPENDENT SCHOOL DISTRICT

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PURAFIL IMPROVES IAQ FOR A TEXAS HIGH SCHOOL



ABOUT THE NORTHEAST INDEPENDENT SCHOOL DISTRICT

The North East Independent School District (NEISD) encompasses 144 square miles in San Antonio, TX. The urban school district includes 63 elementary, middle and high schools, more than 63,000 students and 10,000 staff members. Administrators and teachers strive to meet the district's mission to "challenge and encourage each student to achieve and demonstrate academic excellence, technical skills, and responsible citizenship". NEISD has the most Texas Education Agency rated "Exemplary Schools" for a single district in Bexar County for the fourth year in a row. The District takes indoor air quality (IAQ) of its school buildings very seriously and has received the 2008 National Excellence Award for its IAQ Program from the Environmental Protection Agency's (EPA) Indoor Air Quality Tools for Schools Program.

THE PROBLEM

One wing of a recently rebuilt three story high school was experiencing a substandard ventilation rate and its correction would serve as the model for the district's IAQ progression. The wing has 16 classrooms and three corridors totaling 15,000 square feet and it is designed to accommodate 448 people. Since the outdoor air supply duct was too small and did not provide sufficient airflow, the wing's occupants reported unpleasant odors and at times experienced uncomfortable conditions in classrooms and hallways. Studies of typical classroom space with insufficient outside air shows that the air can have a variety of contaminants such as carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), acetone (CH₃COCH₃), ammonia (NH₃), hydrogen sulfide (H₂S), methyl alcohol (CH₃OH), phenol (C₆H₅OH), formaldehyde (CH₂O) and volatile organic compounds (VOCs). Increasing the outside air flow by purchasing new air handlers or attempting to rework the ductwork would prove costly.

PURAFIL PROVIDES THE SOLUTION

NEISD learned about the Purafil Enersave Program at a meeting of the Alamo Chapter of American Society of Heating, Refrigerating, and Air-Conditioning Engineers' (ASHRAE). The district representatives contacted Purafil and Mechanical Reps, its local representative firm, to ask for their help in restoring the wing's air quality to acceptable levels. NEISD wanted to receive the benefits of conserving energy by reducing the outside air flow into the school while improving the IAQ. Purafil representatives suggested their Enersave Program as it complies with the IAQ Procedure of ASHRAE Standard 62.1. The Enersave program provides contaminant analysis and filtration devices needed to reduce outside air requirements up to 75% without compromising IAQ. In order to meet the stringent requirements of the IAQ Procedure, the NEISD utilized Purafil's combination Purafilter. This replaces existing particulate filters and adds

chemical filtration to clean re-circulated air for significant energy savings without additional capital expenditures. The Purafilter contains Purafil® SP Blend media so it can successfully remove more air contaminants relevant to poor IAQ than carbon-only filters.

CUSTOMER SATISFACTION

NEISD was satisfied with the results from the application of the Purafilter at its high school wing. Also, applying the Enersave Program to improve the school wing's IAQ had several beneficial results. The district did not need to buy new air handlers nor rework the existing ductwork. The malodors from gaseous contaminants were eliminated, and allergen particles in the air were reduced. Presently, several schools within the district, totaling 22 air handling systems, now use the IAQ Procedure and Enersave.

With Purafil filters installed in several new air handling units, NEISD reported an astounding **50% reduction in medical inhaler use by asthmatic students in those schools**. According to the Centers for Disease Control and Prevention (CDC), asthma is one of the primary causes of absenteeism among school children. Five years ago, the National Center for Health Statistics conducted a National Health Interview Survey and the results indicated nearly 13 million school days were missed by children between the ages of 5 and 17 as a result of asthma.

NEISD implemented a district wide IAQ program based on the EPA's "Tools for Schools" program to continually evaluate the IAQ within each school. The district is using the CDC's "Asthma Friendly Toolkit" to provide up-to-date information about asthma and its triggers to teachers and administrators. Also, the district has received technical and managerial support from the Association of School Business Officials (ASBO) International's Indoor Environmental Quality Group. Last year, the district

improved its attendance rate by 0.3% and is experiencing greater student attendance this school year. As a recipient of the EPA IAQ Tools for Schools National Excellence Award, NEISD wants to continue in achieving IAQ success by using proven methods and programs.

Purafil's Enersave Program was successful in removing the reported odors and improving IAQ in these schools. As a result of this original corrective action and the subsequent actions, NEISD now serves as a model for other surrounding school districts. Its award-winning program, and improving health and attendance statistics are benefits that the administration, teachers, parents and students can be proud of and enjoy.

NEISD's Director for IAQ, Gerald Lamping contends, "The Enersave program allows my district to reduce the quantities of outside air contaminants entering our schools from the ventilation air intakes and to clean the re-circulated air of contaminants coming from either internal or external sources. Improvements to the IAQ in classrooms have resulted in better attendance and healthier students in the district."

