

# CASE STUDY FOR THE MINDSPACE COMPLEX IN MUMBAI



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## PURAFIL PROVIDES DATA CENTER CORROSION CONTROL FOR A MAJOR US FINANCIAL INSTITUTION



### ABOUT MINDSPACE

The Mindspace complex is a booming commercial area located in Malad, a northern suburb of Mumbai, (INDIA). In the late 1990s, the 125 acres transitioned from a landfill into one of the city's largest commercial centers. With its prime location in Malad, just eight miles away from downtown Mumbai – the centre of international business in India – the Mindspace houses top business process outsourcing and multinational corporations such as IBM, Intel, Vodaphone, Duetsche Bank, Amazon, Toyota, Oracle and GE. Purafil's customer, a top global financial institution houses offices, data centers and server rooms in the Mindspace complex.

### THE PROBLEM

Before its development into a business center, the land at the Mindspace served as a disposal field. Also adjacent to the commercial complex, is a large drain carrying industrial waste effluents towards the nearby Arabian Sea.

The high levels of corrosive gases emanating from the land such as hydrogen sulfide (H<sub>2</sub>S), nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>) and mercaptans accelerated corrosion causing damages and frequent failure of companies' electronic equipment.

Purafil's end-user, a global financial institution, stores important and sensitive data in its facilities; over time the frequency of electronic equipment breakdowns and failures, along with the associated maintenance requirements, were jeopardizing not only the continuous operation of the facility, but also their customer's data. After researching various solutions, the end-user contacted Purafil's local representative, Thermax, Ltd. to provide the solution.

### PURAFIL PROVIDES THE SOLUTION

Purafil's representatives started off by measuring the corrosivity levels of the atmosphere within Mindspace facilities. The quality of the air within the complex was found to be at GX level, which is the most severe class of corrosion according to the International Society of Automation (ISA) Standard 71.04-1985, *Environmental Conditions for Process Measurement and Control Systems Airborne Contaminants requirements*. In fact, the measured reactivity rate was more than 20,000 angstroms (Å, 10-10 meter, 0.1 nanometer) per 30 days, which was more than 60 times the specified rate of <300 Å/30 days. (See ISA Classification of Reactive Environments on the next page).

Some of the commercial control and server rooms encompassed 100,000 sq. ft. or more, and required huge traditional filtration systems. Those systems typically require large spaces to house the units and ultimately have higher

installation costs. In order to optimize the process, Purafil and its representative provided customized Deep Bed Scrubbers (DBS) as well as Corrosive Air (CA) Systems to remove the contaminants. The CAs, which are gas phase air recirculation units, were installed in the server rooms, while the rooftop DBSs provided clean pressurization air to the control rooms. Both types of units provided up to 99% removal efficiency, allowing the customer to reduce its installation costs, save space and achieve the gas removal efficiency necessary to prevent the harmful and costly effects of corrosion. The units were filled with Purafil® SP and Purafil® SP Blend Media. Purafil SP and SP blend dry-scrubbing media have high removal capacities for multiple contaminant gases.



PURAFIL® DBS INSTALLED ON THE ROOFTOP OF THE MINDSPACE



PURAFIL® ONGUARD 3000 MONITOR (OG3)

Purafil also provided the award-winning OnGuard® technology to measure in real-time the atmospheric reactivity level of airborne molecular contaminants, as well as temperature and relative humidity within the Mindspace facilities.

## CUSTOMER SATISFACTION

Since 2006, over 30 Purafil units with more than 70,000 pounds of media have been ordered by this customer. Purafil and its representative have provided the technical expertise and equipment needed to operate and maintain controlled environments meeting the ISA standards.

Other major financial institutions and multinational corporations in Malad have since used Purafil services to provide them with clean air solutions. As a result, electronics failures due to corrosion, as well as the costs associated with materials replacement, maintenance and loss of services have been subsequently reduced at the Mindspace commercial complex.

## COMPLIMENTARY SERVICES

Purafil offers Media Life Analysis (MLA) as a complimentary service to all of its end-users. In order to prevent gas breakthrough or unnecessary media replacement costs, periodic sampling of the media is essential. Purafil's local representative regularly takes media samples from the media filled modules or from the bulk-filled units and sends the samples to Purafil. Laboratory technicians analyze the media and send a certificate of analysis that provides the media's projected service life.



## ISA Classification of Reactive Environments

ISA STANDARD S71.04-1985	ONGUARD OG3 CORRELATION	EFFECTS
Class G1: <300 Å/30 days	Class G1: <10 Å/24 hours	Mild: Corrosion is not a factor in determining equipment reliability.
Class G2: <1000 Å/30 days	Class G2: <33 Å/24 hours	Moderate: Effects of corrosion measurable and may be a factor in determining equipment reliability. ENIG and ImmAg PCB surface finish failures.
Class G3: <2000 Å/30 days	Class G3: <66 Å/24 hours	Harsh: High probability that corrosive attacks will occur. OSP and ImSn PCB surface finish failures.
Class GX: >2000 Å/30 days	Class GX: <67 Å/24 hours	Severe: Electronic/electrical equipment not expected to survive due to corrosive attack.