OIZOM
REDEFINING RESOURCES

CASE STUDY
Industrial EHS

Sidwal Improved Workplace Safety & Product Quality with Oizom's Real-Time Dust Monitor

INTRODUCTION: Enhancing Operational Efficiency in the Leading Refrigeration Industry

Sidwal Refrigeration Industries Private Limited, a pioneering force in mobility-centric HVAC solutions and a proud subsidiary of the Amber Group, has consistently upheld its reputation for engineering excellence and operational integrity. With a diversified portfolio spanning railway air-conditioning, metro systems, defense vehicles, and telecom cooling, the company operates in highly regulated, performance-sensitive domains.

To preserve the uncompromising quality of its products and ensure a safe, healthy environment for its workforce, Sidwal identified the need for a reliable solution to monitor airborne particulate matter (PM) at its manufacturing facility. With the dual objective of maintaining top-tier product standards and protecting employee well-being, the company opted for Oizom's AQBot PM-a smart, continuous air quality monitoring device built for industrial dust surveillance and real-time mitigation.

SIDWAL

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THE CHALLENGE: Dust Risks to Safety, Product Quality, and Operations

Sidwal's manufacturing unit in IMT, Faridabad, involves various machining and assembly operations, and ongoing construction activity generated high levels of particulate matter. The facility faced multiple challenges:

1. **Lack of Real-time Monitoring:** Manual air quality assessment methods were insufficient in capturing dynamic changes in PM levels throughout the day.
2. **Indoor Air Contamination:** PM infiltration into production areas risked product contamination and impacted operations.
3. **Worker Health Hazards:** Prolonged exposure to high PM concentrations could lead to respiratory issues and compromise occupational health.
4. **Regulatory Compliance:** Sidwal needed to maintain air quality within the thresholds defined by local and international standards.
5. **Operational Efficiency:** Dust accumulation was impacting the performance of HVAC systems and increasing equipment damage, leading to higher maintenance costs.
6. **Lack of Smart Alerts:** The lack of real-time smart alerts hindered timely preventive and corrective actions during peak dust level events

To address these concerns, Sidwal required a compact, intelligent, and reliable Particulate matter monitoring solution with threshold-based buzzers, smart alerts, and integration with data visualization software for actionable insights.

THE SOLUTION: AQBot PM – Real-Time Industrial Dust Monitoring with Smart Alerts

Oizom deployed the AQBot PM, a compact and rugged air quality monitoring system engineered for industrial environments. The device was strategically installed at the site within Sidwal's manufacturing facility on 2nd December 2024.

They Chose Oizom for:

1. **Real-Time Dust Monitoring:** Enabled immediate visibility into PM level spikes, especially during peak construction activity.
2. **Threshold-Based Buzzers & Smart Alerts:** Allowed on-ground staff to act swiftly when dust levels exceeded safe thresholds.
3. **Compact & Scalable Design:** Easy installation process without disrupting ongoing operations.
4. **Industrial-Grade Precision:** Lab-calibrated sensors ensured accurate, reliable measurements in an industrial setting.

INSTALLATION DETAILS

1 UNIT
of
AQBOT PM

5. **Scalability for Future Expansion:** The system's modular design fits into Sidwal's long-term plans of scaling dust monitoring across other plant areas.
6. **Advanced Software Integration:** The intuitive dashboard offered by Envizom provided real-time data visualization, historical trends, and downloadable reports for easy compliance reporting and informed decision-making.

By choosing Oizom's continuous air quality monitor, Sidwal aimed to maintain ambient air quality, protect workforce health, and enhance operational efficiency throughout the construction phase.

THE TRANSFORMATION: From Reactive Oversight to Proactive Environmental Management

Sidwal's deployment of AQBot PM led to a tangible transformation in how air quality was managed at the manufacturing site. The impact was immediate and multifaceted:

1. **Improved Workplace Safety and Health:** With real-time PM data, safety officers could identify high-risk zones during construction activity and implement control measures such as installing temporary enclosures, increasing localized ventilation, or rotating shifts to limit exposure.
2. **Process Optimization:** Insights from Envizom revealed that PM spikes typically occurred during heavy machinery operation. They used this data to reschedule sensitive manufacturing tasks away from peak emission times, ensuring minimal interference with critical production.
3. **Data-Driven Control:** Dust hotspots identified through AQBot data enabled Sidwal to fine-tune housekeeping schedules, directing cleaning efforts more effectively. Additionally, HVAC systems could be adjusted based on real-time PM levels, optimizing energy use while maintaining clean air.
4. **Predictive Maintenance Enablement:** AQBot's continuous monitoring helped identify dust-prone zones, allowing maintenance teams to service vulnerable equipment before particulate build-up led to functional failure.
5. **Informed Decision-Making:** The Envizom platform became a central tool for environment and safety planning at the site. Its user-friendly interface empowered the team with regulatory compliance and investment in sustainability.

Installing AQBot PM at the site empowered Sidwal to reduce workers' health risks and boost operational efficiency. The real-time insights helped the team proactively minimize unplanned downtime, safeguard capital-intensive machinery, and maintain seamless production continuity.

BROADER IMPACT: ESG Excellence and Efficiency Boost

Sidwal's deployment of Oizom's air quality solution not only addressed immediate concerns but also contributed to their long-term sustainability and business goals:

1. **Proactive Maintenance:** Data-driven alerts allowed maintenance teams to respond before dust impacted system performance.
2. **Boosted ESG Profile:** Demonstrating proactive air quality management aligned with their ESG commitments, elevating Sidwal's brand image among eco-conscious clients and stakeholders.
3. **Enhanced Decision-Making:** With Envizom's analytical dashboards, environment and operations managers could make informed decisions to reduce environmental impact while maximizing productivity.

CONCLUSION: A Partnership for Precision and Progress

By installing Oizom's AQBOT PM integrated with Envizom, Sidwal Refrigeration Industries Pvt. Ltd. has taken a proactive leap in workplace safety, environmental compliance, and operational excellence. The ability to continuously monitor air quality, receive smart alerts, and access real-time data insights has empowered Sidwal to maintain air quality at optimal levels and uphold its reputation for quality, innovation, and care.

This collaboration marks a step forward in integrating environmental intelligence into industrial operations, demonstrating how data-driven monitoring can pave the way for smarter, safer, and more sustainable manufacturing.

Oizom is a company specializing in environmental monitoring solutions. They offer products to monitor air quality, weather conditions, and other environmental factors. Utilizing advanced sensor technology and data analytics, Oizom aims to provide actionable insights for construction, industrial compliance, and community awareness. Their solutions can be applied in various sectors including government, industries, and community initiatives.