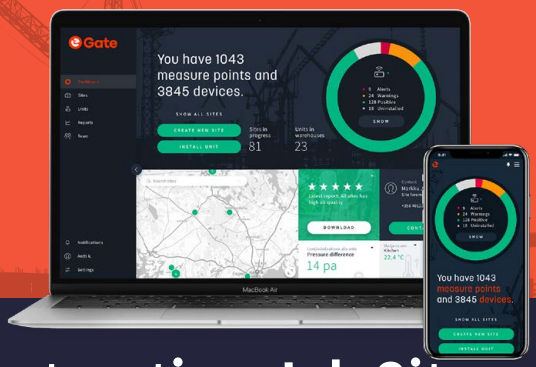
eGate
Smart Building Innovation

eGate DUST Monitoring



Remote Monitoring of Dust at Construction Job Site

eGate Dust monitoring helps building contractors keep the job site clean, detect hazardous dust, and alert for dust barrier leaks.

Dust control is a significant challenge in many construction projects for both the workers' health and the general cleanliness of the job site. eGate dust monitoring solution uses wireless IoT sensor data to monitor dust levels in real-time. Based on the live data about the job site cleanliness, hazardous dust, and dust barrier status, the job site management can optimize the site conditions for the highest quality of work and optimal environment for workers' health.

Features

- Monitor construction job site dust levels for general cleanliness
- Monitor the level of hazardous dust and alert OSHA limits for exposure are exceeded
- Monitor differential pressure to detect failures in the dust barrier
- Measures PM1, PM2.5, PM10, and PM40(total dust) particle size with one sensor

Benefits

- Cover 3 monitoring applications with one solution: cleanliness, hazardous dust, and dust barriers
- Get real-time IoT sensor alerts, an online dashboard, and reports
- Access cloud-based data anytime & anywhere; with a mobile phone, desktop, job site info screens
- Comply with OSHA rules for a healthy work environment
- Get a real-time alert if dust barrier pressurization fails

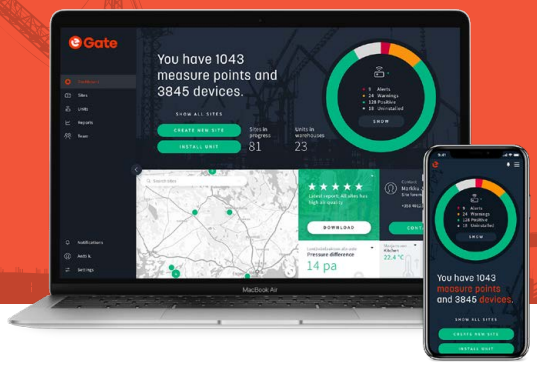
eGate DUST40 – for dust monitoring

eGate DUST 40 IoT sensor measures air particles in multiple different size categories simultaneously. It uses the latest particle count and particle size distribution method with Laser Diffracted/Scattered Light. It is connected to the cloud database via LoraWAN and onsite gateway. In addition, the sensor measures ambient Temp/RH values.

eGate KOMBI-DP – for differential pressure monitoring

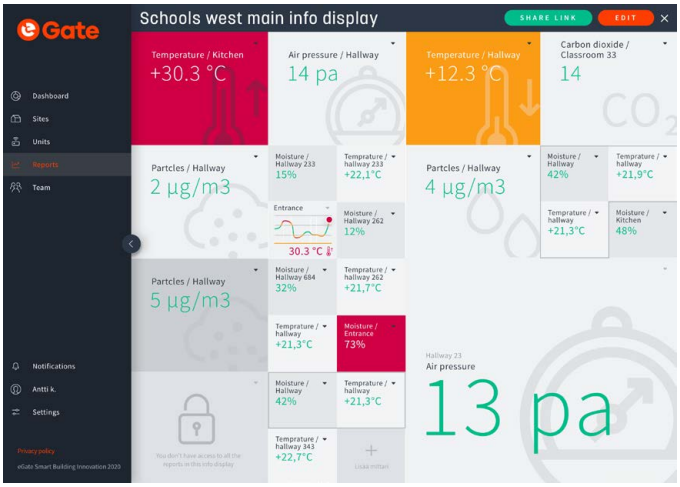
eGate KOMBI-DP IoT sensor measures differential pressure (DP) and ambient Temp/RH values. It uses a flow-through sensor to measure the pressure difference between two spaces. A thin plastic tube is extended from the sensor connector to the other side of the wall so that the sensor can monitor the pressure difference between the two spaces.

eGate
Smart Building Innovation



Dust Controls Done Properly Improve the Bottom Line

Proper dust control can have a significant impact on project profitability. Because of the extra cleaning effort, the unbudgeted project expenses and delays are much more prominent if the contractor responds to complaints only after the project. Preparing detailed dust mitigation solutions during the planning stages is less costly and less disruptive. The cost of the construction dust to peoples' health can further exceed any available budget as the results can be deadly. Monitoring the dust control system in real-time during the project will help avoid any surprises at the end and save money.



Hospital Construction Requires Dust Controls

CDC requires Infection Control Risk Assessment (ICRA) to prepare before any construction project in a healthcare facility. A dust control plan is a part of this assessment. Therefore, many contractors are already using dust barrier walls to isolate the work areas and prevent airborne dust from dispersing.

The Perfect Couple for Real-Time monitoring – Dust Sensor & DP Sensor

Differential pressure (DP) sensors are installed in the dust barrier walls. They monitor the negative and positive pressure balance between the clean and dusty areas. If the pressure differential drops below the desired threshold, the DP sensors will send an alert or can even trigger the ventilation machines to adjust power automatically. In a well-designed DP monitoring system, each of the walls that face different pressure on the other side should be monitored with a separate DP sensor.

On the clean side of the wall, the dust sensors will monitor the actual cleanliness. This will ensure that, even if the dust barriers stay properly pressurized, no dust will get into the clean side from any other sources or paths.

Solution Components

- eGate DUST40 – dust IoT sensor
- eGate KOMBI-DP – differential pressure IoT sensor
- Wireless gateway
- eGate Cloud platform (SaaS) analytics, dashboard, and alerts

eGate Smart Building Innovation
info@e-gate.io www.e-gate.io