

Measurement Report

Measurement Information

Date 23 Sep, 2025
Time 12:00 AM - 08:23 PM
Timezone Europe/Berlin

Device Information

Device Name FA:75:1B:20
Device ID F4:12:FA:75:1B:20
Last Calibration 26 Aug, 2024

Exposure Limits

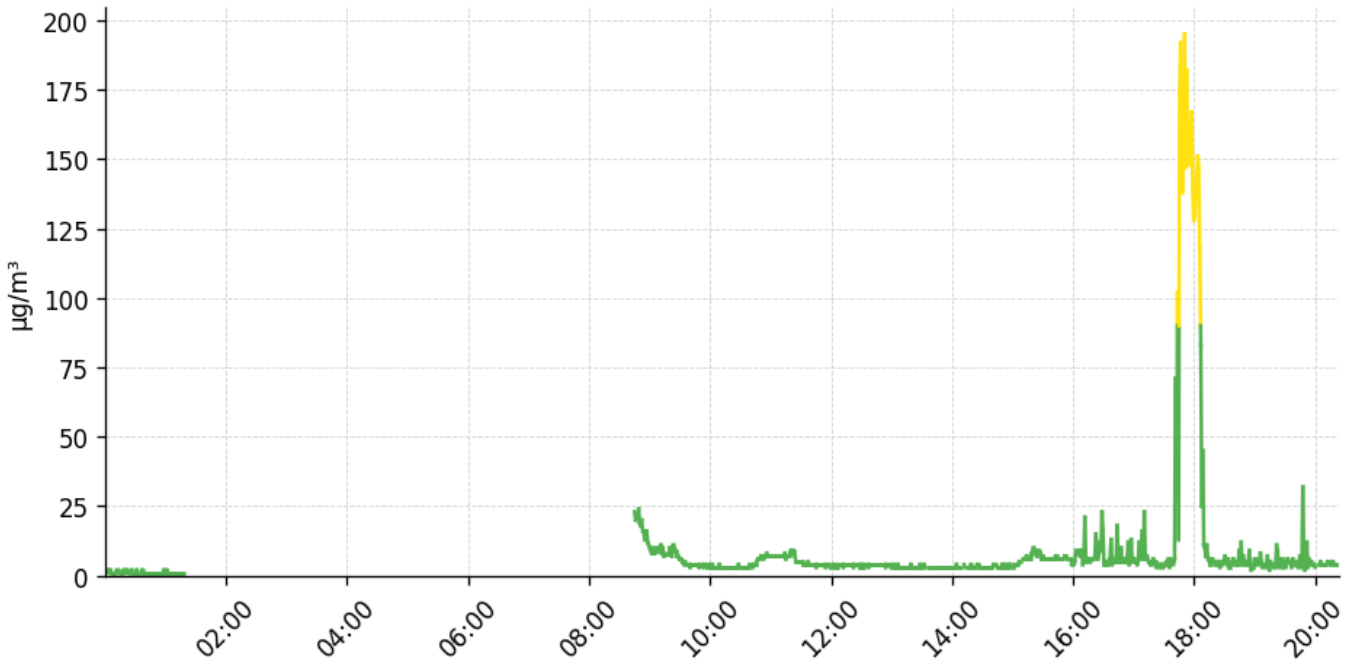
Country	France	Allowed short-term period duration	15 minutes
Material	General Dust	Shift length	8 hours
8h-TWA warning	90 µg/m ³	Number of allowed short-term periods	4
8h-TWA limit	900 µg/m ³	Minimum interval between short-term periods	60 minutes
STEL limit	1800 µg/m ³		

Issued by: Peter Fox

Notes:

Measurement Report

Respirable Dust - Direct Readings



Timezone: Europe/Berlin
General Dust - Respirable Dust (µg/m³)

There are no logged events available for this time period.

Peak	Average	Percentage of time in yellow zone	Percentage of time in red zone
195 µg/m³	9 µg/m³	3 %	0 %

2%

15 of 900 µg/m³

8h-TWA dose

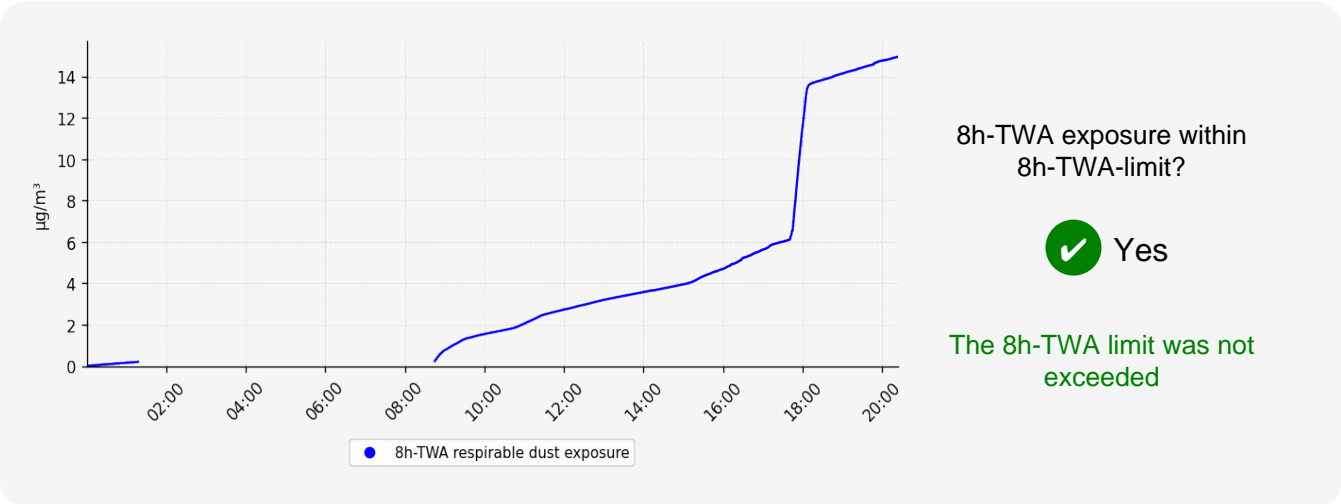
0/4

Number of short-term periods

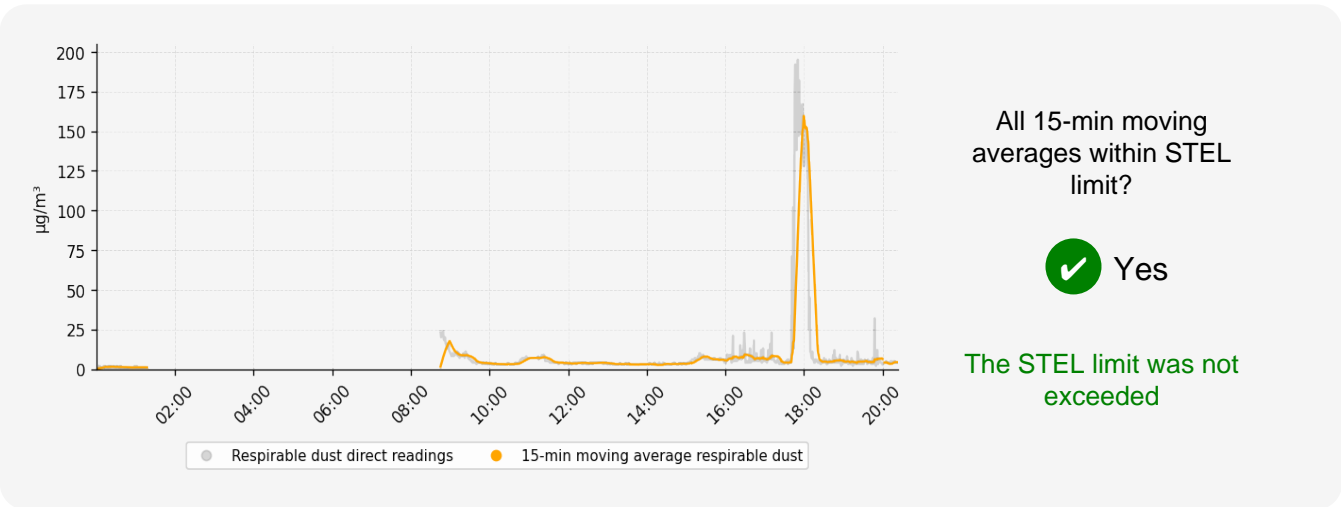
Exposure Analysis

✓ This measurement series shows that the conditions were **COMPLIANT** with workplace safety regulations.

8h-TWA exposure vs. 8h-TWA limit



15-min moving average vs. STEL limit

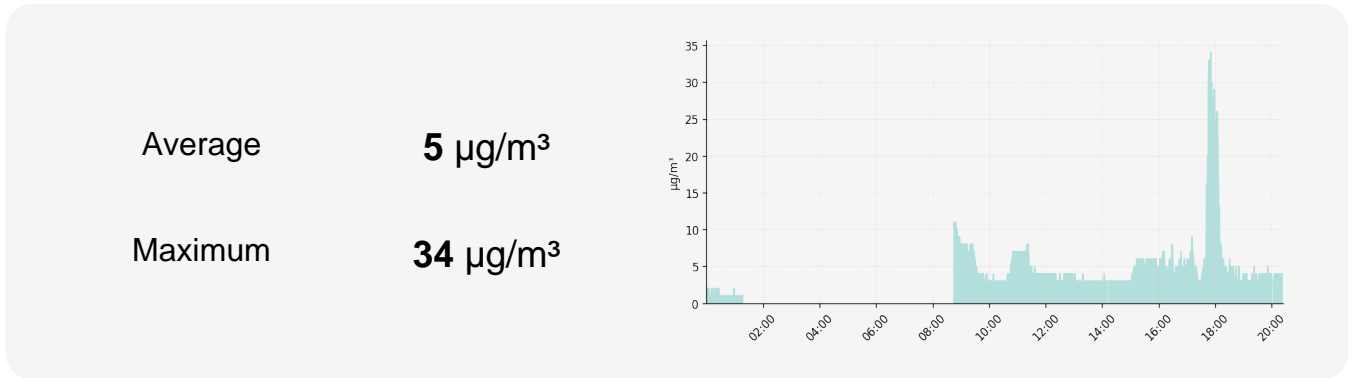


Short-Term Periods

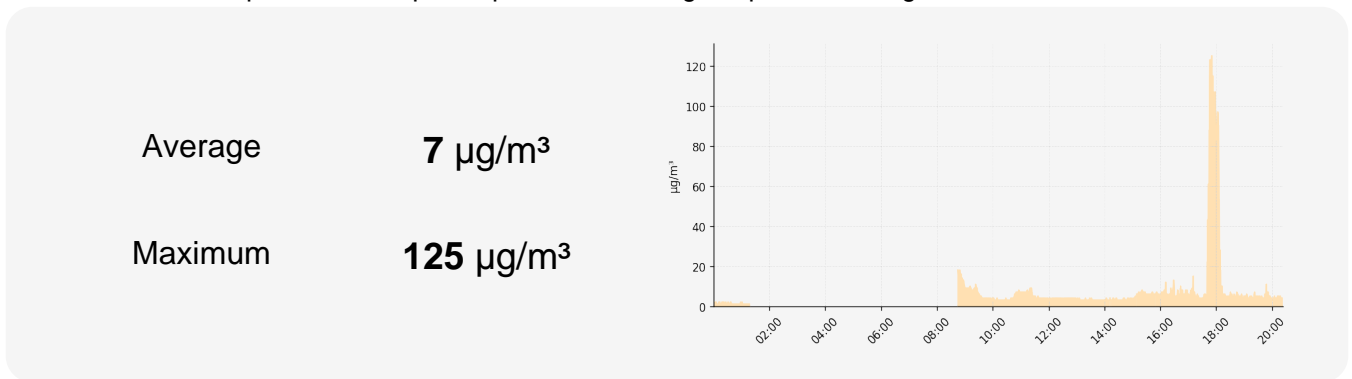
<p>Number of allowed short-term periods</p> <p>Maximum of 4 short-term periods</p> <p>✓ Yes</p>	<p>Allowed short-term period duration</p> <p>All short-term periods ≤ 15 minutes</p> <p>✓ Yes</p>	<p>Minimum interval between short-term periods</p> <p>60 minutes between short-term periods maintained</p> <p>✓ Yes</p>
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PM Distributions

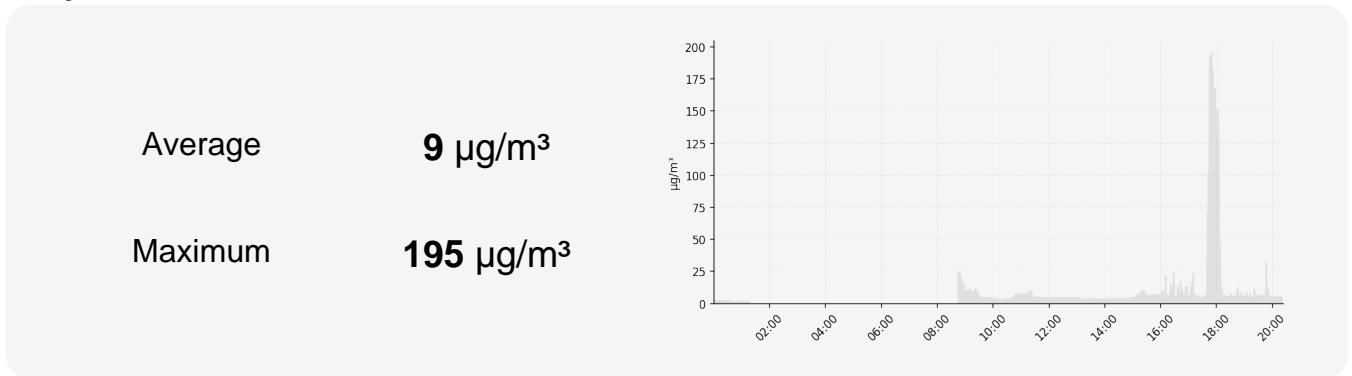
PM1 Includes all particles $\leq 1 \mu\text{m}$, which may enter the bloodstream.



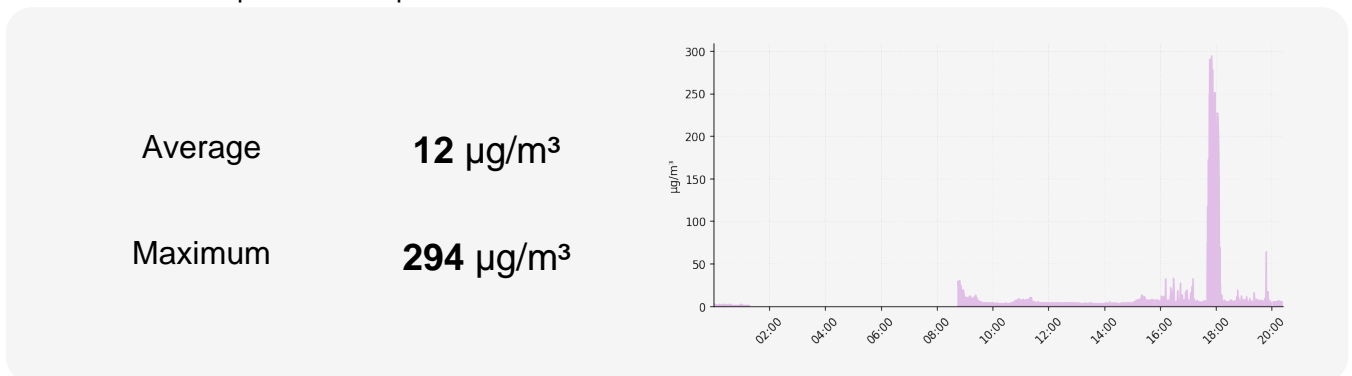
PM2.5 Includes all particles $\leq 2.5 \mu\text{m}$, capable of reaching deep into the lungs.



Respirable Dust fine dust particles that can penetrate deep into the lungs, reaching the alveoli.



PM10 Includes all particles $\leq 10 \mu\text{m}$



Information

Material and Health Information

Mixed respirable dust is designed to measure a broad range of airborne particulate matter, making it ideal for environments where different dust types are present. This includes industries like **construction, woodworking, manufacturing, mining, and metalworking**, where dust from materials such as **cement, wood, metal, and general industrial processes** can mix. The setting ensures a balanced sensitivity to various particle sizes, providing a practical risk assessment for workplaces with **complex dust compositions**. Exposure to mixed dust can lead to serious **respiratory issues** such as chronic bronchitis, lung inflammation, and an increased risk of **occupational lung diseases** like pneumoconiosis or COPD. Ensuring proper dust monitoring and protective measures is essential to safeguarding workers' long-term health.

8h-TWA Limit - the time-weighted average limit

Regulations usually define occupational exposure limits using an 8-hour Time-Weighted Average (8h-TWA). This is the maximum permissible average concentration of dust over a standard 8-hour workday and applies regardless of actual shift length.

For example, if the 8h-TWA limit is 1,000 µg/m³, the 8-hour average must not be exceeded. In a 4-hour shift, the remaining hours count as zero exposure, so the worker may be exposed to 2,000 µg/m³ during those four hours without breaching the limit. In a 16-hour shift, the allowable average would fall to 500 µg/m³ to stay within the 8-hour framework.

It ensures that workers are not exposed to harmful dust at levels that, while seemingly low at any given moment, could become dangerous over time due to prolonged exposure.

$$TWA_{current} = \frac{\sum_{n=0}^{end} \text{Samples}(n)}{8h}$$

STEL - limit for 15-min moving average exposures

The Short-Term Exposure Limit (STEL) is designed to protect workers from brief periods of high exposure. To assess this, exposures are calculated using a 15-minute moving average. At no time may this average exceed the STEL limit.

A short-term period begins whenever the 15-minute average rises above the long-term limit (TWA) and ends only once it falls back below it. Even if the exceedance lasts only a few minutes, the entire period is counted as at least 15 minutes. To comply with regulations, no short-term period may exceed 15 minutes in total duration.

By default, a maximum of four short-term periods are permitted during a single work shift, with at least one hour of lower exposure required between them.

Both TWA and STEL are essential for workplace safety compliance and help determine when protective measures, such as improved ventilation, personal protective equipment (PPE), or work rotation, are necessary. By monitoring these values, employers can better protect workers from both long-term health risks and short-term risks.