

Clear the Air on London Underground

TSSA Briefing – Autumn 2025



Top lines

- The tube is the vibrant, beating heart of London, facilitating millions of passenger journeys every day. However, poor air quality means that the Underground network in the capital is now one of the dirtiest in the world.
- The Mayor has rightly made air quality above ground a priority, but so many of us – from people on their commute and children on the way to school, to London Underground workers supporting those vital services – breathe the dust below, day-in and day-out.
- Our London Underground members have reported being able to taste it in the atmosphere and see it gradually accumulate on surfaces throughout their working day.
- TSSA's Clear the Air campaign is calling for a concerted push to clean up London Underground – tackling the dust and raising air quality standards in workplaces and public spaces.

Background

- London Underground has been named the dirtiest metro system in the world.ⁱ
- The air quality issues arise from the steel particulate matter kicked up by trains as they move along the track, especially as they brake.
- Not all tube lines are affected equally – for instance, the Victoria, Central and Northern lines are amongst the worst affected.ⁱⁱ
- Measuring the health effects of particulate matter is difficult, and establishing a causal link between symptoms and poor air quality can be hard, especially because the nature of the particulate matter on the Underground is different to that on the surface. However, it is widely established that excessive exposure to dust – especially smaller respirable particulate matter which can get into the blood stream (PM_{2.5}) – is dangerous.ⁱⁱⁱ
- If not causation, there has been some correlation found between sickness absences and workers exposure to PM_{2.5} on the tube, especially for drivers and customer service staff.^{iv}
- The Control of Substances Hazardous to Health Regulations (2002) Act sets acceptable levels of exposure to particulate matter in the workplace. These regulations are enforced by the Health and Safety Executive (HSE).
- According to the HSE, acceptable levels for inhalable and respirable forms of particulate matter are 10 and 4 mg/m³ respectively.^v
- London Underground is a workplace, but it is also a public space. While there are clean air standards for the outdoors, there are no similar overarching indoor air quality regulations for public spaces outside of the HSE standards or building construction regulations.

How dirty is the air on the tube?

- TfL acknowledge that there is a need to reduce dust on London Underground^{vi}.
- Currently, under current air quality monitoring regimes, air quality on the tube has been found to comply with HSE standards^{vii}.
- However, the Institute for Occupational Medicine (IOM) has said that these standards 'are unsafe and it would be prudent to reduce exposures as far below these limits as is reasonably practicable', instead recommending 5 and 1 mg/m³ for inhalable and respirable particulate matter, respectively.^{viii}
- HSE regulations also fall well below World Health Organisation standards.^{ix}
- Some tube lines have also been found to be IOM compliant, which is positive, but there is still much work to do.

- For instance, academics at Kings College found concentrations of PM_{2.5} to be worse than metros in Beijing, Guangzhou, Los Angeles, Mexico, New York, Seoul, Taipei, Sydney, and Barcelona.^x
- Of the tube's £61.5m cleaning budget^{xi}, £2m (3% of the budget) is given over to tackling dust.^{xii}
- In recent meetings with TfL, TSSA reps were informed that there are only 2 teams of 8 people – 16 people in total – responsible for cleaning the tube with vacuum cleaners. Between them they are able only to clean 140-200km of the tube's 402km of track per year. TfL are exploring the trial of a cleaning train which could clean the entire network in a year.
- Trials of ventilators will begin in December, though we understand there is now currently only budget to purchase 10.
- While TfL carries out some monitoring at stations, it happens annually for 4-hour periods. Monitoring equipment is costly and requires highly skilled researchers to operate, making more robust monitoring prohibitively expensive. There are no low-cost monitors for an underground environment.

Let's clear the air

TSSA is calling for the following from London Underground and legislators –

- **Clean the tube** – increase the cleaning budget from £2 million to invest in modern cleaning equipment, air filtration, and ventilation, and ensure air quality monitoring is done regularly, at appropriate times of day, with investment into research and development of cheaper, reliable monitoring technology.
- **The HSE standards are not fit for purpose** – the IOM describes these levels as 'unsafe'. We are calling on the Health and Safety Executive to harmonise their clean air regulations with the more robust Institute of Occupational Medicine standards.
- **London Underground is a Public Space** – as a workplace, London Underground is governed by HSE air quality regulations, but it's also a public space. Outside of the HSE regulations, and building regulations, there are no overarching regulations for indoor air quality in public buildings. It's time for general indoor air quality standards.

More information

For more information or to arrange a meeting, please contact TSSA Political Officer, Sam Browse, on browses@tssa.org.uk.

Endnotes

ⁱ <https://www.thetimes.com/uk/article/toxic-tube-lines-mean-london-underground-is-worlds-worst-for-air-pollution-85jmq3s7>

ⁱⁱ Ibid.

ⁱⁱⁱ <https://iris.who.int/bitstream/handle/10665/345334/9789240034433-eng.pdf>

^{iv} [Occupational exposure to particulate matter and staff sickness absence on the London underground - ScienceDirect](#)

^v <https://www.hse.gov.uk/pubns/priced/eh40.pdf>

^{vi} <https://tfl.gov.uk/corporate/about-tfl/improving-air-quality-on-the-tube#:~:text=We%20take%20a%20targeted%20approach,including%20mobile%20backpack%20vacuum%20cleaner>

^{vii} Ibid.

^{viii} <https://www.iom-world.org/media/1656/position-paper.pdf>

^{ix} <https://iris.who.int/bitstream/handle/10665/345334/9789240034433-eng.pdf>

^x <https://www.kcl.ac.uk/news/new-study-reveals-high-levels-of-pollution-on-london-underground>

^{xi} <https://tfl.gov.uk/corporate/transparency/freedom-of-information/foi-request-detail?referenceId=FOI-2478-2122#:~:text=For%20London%20Underground%2C%20the%20spend%20on%20cleaning,cleaning%20costs%20for%20the%20financial%20year%202021%2D22>

^{xii} <https://tfl.gov.uk/corporate/about-tfl/improving-air-quality-on-the-tube#:~:text=We%20take%20a%20targeted%20approach,including%20mobile%20backpack%20vacuum%20cleaner>