



A Practical Guide to RPE for LEV Service Engineers

1. Why This Matters

If you're an LEV service engineer, you're no stranger to dusty environments. Whether you're poking around filters, servicing ductwork, or testing systems in foundries or workshops, you're breathing in stuff like wood dust, metal particles, and other nasty airborne bits. We're talking fine, respirable dust—the kind that sneaks deep into your lungs and can set you up for serious trouble like COPD or occupational asthma down the road.



A recent survey we did showed a worrying trend: a lot of you aren't quite sure if your PPE is up to scratch, or if it's even the right gear for the job. That's a red flag—we can't have you taking risks with every breath. So, let's walk through how to pick and use the right respiratory protective equipment (RPE), leaning on the HSE's HSG53: Respiratory Protective Equipment at Work for some solid advice.

2. Getting to Grips with the Risks

What You're Up Against

Your day-to-day involves inspecting, maintaining, and testing LEV systems—tasks that kick up dust like nobody's business. Changing a clogged filter? Dust everywhere. Clearing out ductwork? More of the same. A lot of this stuff is tiny enough to slip past your body's defences and settle in your lungs, and some of it—like wood or metal dust—carries long-term health risks.

Why FFP3 Masks Might Let You Down



Plenty of you are using these disposable FFP3 masks, and they're not a bad start—they're decent against fine dust. But here's the catch: they're not always the best fit for the heavy-duty dust clouds that service engineers face. Why?

- They need a tight seal against your face. Got a beard or stubble? That seal's toast. Even shifting around can break it.
- In really dusty spots, they clog up fast, making it harder to breathe and cutting their effectiveness.
- If the dust levels are sky-high, they just don't offer enough protection.
- If you have to get up close and personal with a cartridge, say (lifting out for example), you run the risk of knocking the mask and breaking the seal.
- Plus they have a max wear time of 1 hour. See Page 16 of HSG53.

3. The Better Option: Airfed Respirators

Why Powered Respirators Win

The HSE's HSG53 guide nudges us toward powered air-purifying respirators (PAPR) or airfed systems for these high-dust jobs—and for good reason. Here's what they bring to the table:

- Continuous airflow: A little fan keeps clean air flowing, so you're not huffing and puffing through a clogged mask. Comfort's a big win here.
- Better protection: They've got a higher Assigned Protection Factor (APF)—think **APF40** instead of FFP3's 20. That's double the lung protection.
- No fuss with face seals: Got facial hair? No problem. Many come with hoods or helmets that don't rely on a perfect fit.
- HSG53 gives an continuous wear time of more than 1 hour. Which is far more practical because changing filters and cleaning up often takes longer than an hour.



This table is screenshotted from HSG53:

Adequacy/suitability	Respirators						
RPE type							
	Disposable half mask – particle filter*	Reusable half mask – particle filter	Reusable half mask – gas/ vapour filter	Full face mask – particle filter	Full face mask – gas/vapour filter	Powered mask	Powered hoods/helmets
Effective for particles	✓	✓	✗	✓	✗	✓ **	✓ **
Effective for gas/vapour	✗	✗	✓	✗	✓	✓ **	✓ **
Continuous wear time	Less than 1 hr	Less than 1 hr	Less than 1 hr	Less than 1 hr	Less than 1 hr	More than 1 hr	More than 1 hr
APF4 types	✓	✓	✗	✓	✗	✗	✗
APF10 types	✓	✓	✓	✓	✗	✓	✓
APF20 types	✓	✓	✗	✗	✓	✓	✓
APF40 types	✗	✗	✗	✓	✗	✓	✓
APF200 types	✗	✗	✗	✗	✗	✗	✗
APF2000 types	✗	✗	✗	✗	✗	✗	✗

Top Respirator Picks for LEV Engineers

- ✓ Powered Air-Purifying Respirators (PAPR) with Belt-Mounted Filters: Think 3M™ Versaflo™ TR-300+ or Sundström SR 500. These suck in the dirty air, run it through filters, and pump clean air to your face. **APF of 40**—plenty of muscle for dusty tasks.
- ✓ Airfed Respirators (Supplied-Air): Units like CleanAIR or 3M Jupiter™ hook up to an external air supply. Perfect for the worst dust storms where filters alone might choke. **APF of 40+**, so you're well covered.

Consideration should be given that when airfed respirators are used that the Risk Assessments are undertaken to ensure they are suitable for the environments they are used in (i.e. Flammable/explosive environments).

4. Keeping a Mask Working Right

- **Fit Testing:** If you're using a tight-fitting mask (not a hood or helmet), get it fit-tested. No point wearing it if air's sneaking in the sides.
- **Filter Swaps:** Check the manufacturer's advice on when to change filters—or swap them sooner if breathing gets tough.
- **Check seals and the pipework for damage.** When working in smaller spaces, it is not unusual for masks to get knocked about. Fix as required and maybe have a back up mask for if ever yours is taken out of service..
- **Clean and Store:** After a shift, give your RPE a wipe-down and tuck it into a dry, sealed container. No sense letting it get gunked up.

5. Don't Ditch the Mask Just Yet: Why It Matters After Dusty Tasks

Picture this: you've just finished swapping out a clogged filter on an LEV system. Your hands are grubby, there's dust swirling around, and you're itching to yank off that mask and take a deep breath of "fresh" air. Hold up—don't do it. Especially if you're indoors, that dust isn't going anywhere fast, and it's still a sneaky exposure risk.

When you're changing filters or doing other dusty jobs, all those fine particles—wood dust, metal bits, whatever—get kicked up into the air. Sure, the heavy stuff might settle quick, but the tiny, respirable stuff? That hangs around, floating like an invisible cloud. Indoors, with no breeze to clear it out, it just lingers—waiting for you to breathe it in. And trust me, your lungs don't need that kind of souvenir from the job.

Take filter changes, for example. You pull that old filter out, and poof—dust everywhere. Even after you've popped the new one in and tidied up, those particles are still drifting. If you rip off your mask the second you're "done," you're basically inviting all that junk straight into your airways. We're talking stuff that can lead to occupational asthma or worse lung diseases over time.

So, here's the deal: keep that mask on—whether it's your PAPR, airfed respirator, or even an FFP3—until you're well clear of the dusty zone. Give it a few extra minutes, especially indoors where the air's stagnant. Better yet, step outside or into a cleaner area before you peel it off. It's a small hassle, sure, but it's way better than coughing up trouble years down the line. Your future self will thank you.

6. What Your Boss Needs to Do (CoSHH Rules)

Employers, this one's for you:

- Run a proper risk assessment to figure out what RPE your team needs.
 - You need to know what the dust is and how harmful it is if breathed in. AKA figure out if the RPE offers suitable protection in line with the hazards of the dust.
- Supply decent gear that meets HSG53 standards—no cutting corners.
- Train everyone on how to use it, clean it, and spot when it's not pulling its weight.
- For tight-fitting masks, book an annual fit test. Lung safety is non-negotiable.
- Apply ways of working which reduce the amount of exposures. (i.e. cover cartridges in plastic bags before lifting out).

7. Common dusts and their health effects

We thought it would be interesting to list some of the common dusts and what breathing it in can do, to your lungs.

Dust	Health effects from exposure
Wood	Wood dust is a well-recognized occupational hazard in woodworking, construction, and manufacturing. It is classified as a respiratory sensitizer, with hardwood dust being a known carcinogen and a leading cause of occupational asthma and nasal cancer.
Flour	Flour dust is a well-documented occupational hazard, particularly in bakeries, food manufacturing, and milling industries. It is classified as a respiratory sensitizer and is one of the leading causes of occupational asthma in the UK.
Carbon Black	Carbon black dust is a fine particulate commonly encountered in rubber, plastics, and printing industries. It poses respiratory risks, with prolonged exposure linked to lung irritation, reduced lung function, and potential carcinogenic effects due to associated polycyclic aromatic hydrocarbons (PAHs).
Shotblast dust	Shot blasting dust is a significant occupational hazard in surface preparation and metal finishing industries. It often contains metal oxides, silica, and other harmful particulates, posing risks of respiratory irritation, lung disease, and, in some cases, long-term conditions such as silicosis or heavy metal toxicity.

As you can see, this is some nasty stuff. Always make sure that you ask for your employers Risk Assessment to assess what you're going to be breathing in.

8. The Bottom Line

Look, disposable FFP3 masks are fine for light jobs, but for the dusty grind of LEV servicing, they're not the long-term answer. Airfed or powered respirators are the way to go—higher protection, better comfort, and peace of mind. If you're an engineer or a manager, take a hard look at what you've got in place. Does it stack up to HSE guidance? Let's keep those lungs healthy—respiratory diseases are no joke, and they're preventable with the right kit.

9. Sources

- HSG53 Respiratory protective equipment at work Link: <https://www.hse.gov.uk/pubns/priced/hsg53.pdf>
- HSE 5 Steps to Risk Assessments. <https://www.hse.gov.uk/simple-health-safety/risk/index.htm>

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