



Lead Contamination Surveys - shooting ranges



Areas & Air Clearance
Certifications

Building & Soil
Contamination

Lead, Mercury,
Chromium & Toxic
Substances

Sysco Environmental Ltd,
Mexborough Business Centre,
College Road, Mexborough, S64 9JP

Free phone:

0800 433 7914

T: 01709 291 022

E: admin@sysco-env.co.uk

www.sysco-env.co.uk

Lead Contamination Surveys - shooting ranges

Recreational and target shooting is a great pastime and very popular sport among young people inspiring to become professional shooters. With a vast array of disciplines, encompassing various guns, targets, distances and competitions this fun sport is attracting all age groups.

Shooting at firing ranges is however linked with certain health risks. The shooting results in the discharge of lead dust near the shooter and therefore firing ranges constitute a significant and unmanaged public health problem.

Sources of lead during shooting include:

- The primer compound, which is made of about 50 percent lead-containing compounds;
- The effect of the hot propellant gases on the base of the lead bullet;
- Friction of the bullet against the barrel wall;
- Fragmentation of the bullet against the target and backstop.

After the bullet leaves the muzzle of a rifle, the lead-containing gases naturally stream forward, unless they are diverted by wind or ventilation-created air currents. Fragmentation of the bullet against the target and backstop results in significant lead dispersal.

Air lead in the breathing space of a shooter is usually in the toxic range (over 50 mg/m³) with reports varying from 14 mg/m³ to a whopping 34,900 mg/m³. For comparison Health and Safety Executive has set the lead exposure limit

to 0.15mg/m³. The accumulation of air lead likely depends on a variety of factors, including ventilation, length of time spent at the range, number of rounds shot, calibre and model of rifle, use of lead or copper-covered bullets, and eating and drinking at the range.

The exposure of shooters also depends on the number of personal rounds shot, the number of rounds shot by other shooters, and the firing position of the other shooters. The more rounds shot and the closer the other shooters, the greater the risk of lead poisoning. Since the air lead remains high even in well-ventilated indoor ranges, the duration of time spent is important regardless of the number of rounds shot. Lead escapes the best ventilation system and settles on walls, floors, and furniture. Clothes, carpets, and cloth-covered furniture effectively trap lead from the air and slowly disperse it even when no one is shooting.

Prevention includes clothing changed after shooting, banning of eating and drinking at firing ranges, improved ventilation systems and oversight of indoor ranges. Eliminating lead dust risk at firing ranges requires primary prevention and using lead-free primers and lead-free bullets.

Sysco Environmental Ltd is an environmental and occupational exposure consultancy specialising in identifying workplace hazards. We can carry out a comprehensive lead contamination survey for lead dust and likely exposure of the range users. We can evaluate if the indoor air contains traces of lead dust, test the level of range contamination or even evaluate accumulation of lead in your body using biological monitoring.

-  **Specialist Services**
-  **Building Hazard Surveys**
-  **Lead Clearance Monitoring**

-  **Exposure Assessments**
-  **Decontamination Certification**