



Dry Ice Blasting for Commercial Kitchens

Grease and carbon removed without water, chemicals or long closures

Commercial kitchens produce grease and carbon every service. It builds up on canopies, filters, extraction, ovens, ranges, fryers, walls and ceilings. Grease in extraction systems is a major fire risk, and insurers and environmental health officers take it seriously.

Most deep cleans still rely on caustic chemicals, hot water, scrapers and a lot of hours. That works, but it means strong chemicals in a food area, water everywhere, long drying times and closing the kitchen for longer than anyone wants.

Dry ice blasting offers a different approach. In this guide I want to explain how it works and where it delivers real advantages in commercial kitchens.

What is dry ice blasting?

Dry ice is solid carbon dioxide (CO_2) at around -78.5°C . Instead of melting, it turns straight back into gas when it warms, a process called sublimation.

In dry ice blasting, small pellets of this material are fired at a surface using compressed air. Three things happen on impact:

- **Impact energy** breaks up and dislodges the deposit.
- **Thermal shock** makes the residue brittle and weakens its bond to the surface beneath.
- **Sublimation** turns the pellet into gas, which expands rapidly and lifts the residue away from behind.

The pellets disappear into the air. The only thing left to collect is the residue that has been removed. There is no water, no detergent and no blast media to clean up afterwards.

Where dry ice blasting really outperforms traditional cleaning

1. It cuts through grease and carbon

Thermal shock makes baked-on grease and carbon brittle, and the expanding gas lifts them off canopies, ovens and equipment.

2. It is a dry process

No water goes into the kitchen, the extraction or the equipment. There is no standing water, no drying time, and no water around electrics.

3. No caustic chemicals

Dry ice is made from CO_2 and leaves no residue of its own. There are no harsh degreasers to rinse off food areas. Your normal sanitising still follows.

4. Equipment cleaned in place

Ovens, ranges, grills and fryers can often be cleaned where they stand, and warm equipment does not need to cool fully first.

5. Gentle on stainless steel

Dry ice is non-abrasive, so it removes build-up without scratching stainless steel. Scratched surfaces are harder to keep clean.

6. Shorter closures

No soaking, rinsing or drying mean a deep clean can fit around service, often overnight.

Environmental credentials

Kitchens and their landlords are under pressure to cut chemicals, water and grease going to drain. Dry ice blasting can help on several fronts.

- **Recycled CO₂.** The CO₂ used to make dry ice is typically recovered as a by-product of other industrial processes, such as fertiliser production and fermentation, rather than produced specially. Blasting returns it to the atmosphere it would otherwise have reached, so the process adds no new CO₂ of its own.
- **No greasy wash water.** Grease and caustic water going to drain contribute to blockages and fatbergs. Dry ice sends nothing to drain.
- **Fewer chemicals.** Less caustic to buy, store and handle under COSHH.
- **Water savings.** No hot water used on the jobs it replaces.
- **Minimal waste.** The only waste is the grease and carbon removed.

At a glance

	Caustic chemicals and hot water	Dry ice blasting
Water introduced	Large volumes	None
Chemicals	Caustic degreasers	None
Drying time	Often hours	None
Hot equipment	Must cool first	Can be cleaned warm
Electrics	Must be protected	Non-conductive, no moisture
Grease to drain	Yes	None
Closure time	Often long	Often shorter

Typical applications in commercial kitchens

- **Canopies and filters:** grease build-up on canopy interiors, filter housings and plenums.
- **Extraction ducting and fans:** accessible sections and fan housings.
- **Ovens, ranges and grills:** baked-on carbon and grease.
- **Fryers and griddles:** exterior and surrounding build-up.



- **Walls, ceilings and floors:** grease and smoke staining.
- **Food manufacturing kitchens:** central production units and bakeries.

Our setup at Vortex Ice Labs, and why it matters in a kitchen

Vortex Ice Labs is a fully mobile service. We bring a complete, self-contained system to site, so there is no reliance on your own air supply. The air passes through four stages before it reaches the surface.

- 1 **Compressor.** This supplies the large, steady volume of air needed to drive the pellets. Consistent flow means consistent cleaning, with no drop in performance halfway through a job.
- 2 **Aftercooler.** Compressing air heats it, and hot air carries a lot of moisture. The aftercooler cools the air straight away so that moisture condenses and can be drained off. Without it, water would freeze inside the blaster, causing pellets to clump and block, and could be sprayed onto the surface being cleaned.
- 3 **Filtration.** Filters then remove the remaining water, any oil carried over from the compressor, and fine particles. In a food area this is critical. The aim is to leave surfaces clean and dry, not to deposit oil or moisture.
- 4 **Dry ice blasting unit.** The pellets are metered into the conditioned airstream and delivered through the hose and nozzle. Pressure, ice feed and nozzle choice are adjusted for each task, from stainless panels to heavy carbon on ovens and grills.

Every stage protects the result. Clean, dry air means a clean, dry kitchen.

Working safely, and where it fits

Dry ice blasting is a powerful tool, and it should be planned with the kitchen manager before we start.

- **Ventilation.** As the ice sublimates it releases CO₂ gas. Kitchens can be enclosed, so this is managed with the extraction running, open doors and gas monitoring.
- **Noise and PPE.** Blasting is loud, and operators use hearing protection, eye and face protection, and insulated gloves. People nearby need to be kept clear of the work area or protected too.
- **Containment.** Removed grease and carbon can travel, so we sheet off and protect food, utensils and surfaces, and clear up afterwards.
- **Extract system certification.** Many insurers expect kitchen extract systems to be cleaned and certified to the BESA TR19 Grease standard. Where that is needed, we can work alongside your extract cleaning contractor.
- **Your hygiene procedures.** The clean is followed by your normal sanitising before food preparation restarts.

Used this way, it is most valuable for deep cleans, canopies and heavy carbon, and where closure time must be kept short.

Final thoughts

Kitchens need to be clean, safe and open. Traditional deep cleaning will always have a role, but it brings caustic chemicals, water and long closures with it.



Dry ice blasting removes many of those trade-offs. It cleans dry, without harsh chemicals, and gets the kitchen back into service sooner.

If you would like to see how it could work in your kitchen, I would be happy to arrange a demonstration or trial clean. Get in touch with us at Vortex Ice Labs.

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