



Introduction 2025

The Dilemma

Traditional grease extraction systems rely on mechanical methods, like fan extraction, to remove harmful gases, heat, and steam from workspaces. This process not only maintains proper air circulation in the kitchen but also ensures compliance with safety regulations to protect workers.

Although fans play a crucial role, grease-laden air still passes through standard baffle filters, which capture only a portion of the grease. The remainder accumulates on ductwork surfaces, creating a fire hazard that can lead to income loss and increased maintenance costs.

While oxygen and heat remain unavoidable in kitchen extraction systems, wool pads significantly reduce grease-related fire risks, helping protect your business from potential damage and costly losses.

The Consequences

Grease build-up in ductwork acts as a fuel source for kitchen fires, regardless of how they start. Even with regular cleaning, traditional methods allow grease to accumulate between cleanings, leaving ductwork perpetually at risk with residual fuel. The following are some examples of kitchen fires in pub, a restaurant and a prestigious venue with kitchens.....

London Pub

London Fire Brigade said of a fire inside the extraction system of Guy Ritchie's *Lore of the Land* that it proved "challenging" to tackle. The blaze which is believed to have started in the kitchen, saw ten fire engines and around 70 firefighters arrive at the scene to tackle the fire.

The Station Commander said: "The fire was within the extraction system from the first floor to the roof vent. There were no reports of any injuries. Access to the seat of the fire was challenging and very labour intensive. The number of fire engines at the scene was a reflection of the need for a high turnover of firefighters wearing breathing apparatus."



Liverpool Restaurant

When a fire broke out at Jamie Oliver's Paradise Street restaurant in Liverpool, six fire engines and their crews were needed to bring it under control. The fire was believed to have originated in the ductwork.

O2 Arena

More than 1,200 people were evacuated from the O2 Arena in London due to a fire in the Brazilian restaurant Rodizio Rico. Around 21 firefighters tackled the blaze, which was contained to the restaurant's extraction system. Station Manager Martin Freeman said: "It did create a lot of smoke and so security staff evacuated people from arena. There were no injuries."



Challenges with the Current Method

Traditional cleaning methods come with various risks and disruptions. They rely heavily on chemicals, electricity and large amounts of water, making the process environmentally unsustainable.

Frequent cleaning can cause wear and tear on costly components, potentially leading to leaks or mechanical failures over time.

Managing this process also demands significant client organisation. Early closures or late openings are often necessary to allow equipment to cool and workspaces to be cleared, a process that can take several hours before cleaning can even begin, resulting in lost productivity and revenue.

Permits to work, accessibility to areas where the grease extract is present and escort requirements often represent unfactored costs.

Labour costs further increase the expense of these services, as third-party certifications, rising wages, and worker qualifications are factored into the overall price passed on to the customer.

After grease extraction systems are cleaned and certified, this certification— similar to an MOT— only reflects the condition at the time of service, leaving fire risks between cleans and gaps in safety compliance.

Grease deposits removed from an extract system will often find their way into a sites waste management system, contributing to breakdown, clogging or more frequent requirements for cleaning and can affect any biodosing technology present.

In some cases, specialised equipment is essential to ensure safe and effective access to specific areas which leads to increased costs and pose logistical challenges.

Moreover, compliance with UK property insurance requirements, which often refer to standards from RICS, NAADUK, or BESA, is crucial. Regulation EC852/2004 on the hygiene of foodstuffs states that:

“Ventilation systems must be constructed to allow easy access for cleaning or replacement of filters and other parts.”

However, certain building designs can make it difficult or even impossible to fully and safely access grease extraction systems. In many cases, the costs of ensuring accessibility are prohibitively high.

This highlights the need for more sustainable and effective solutions to managing grease and maintaining safety compliance.

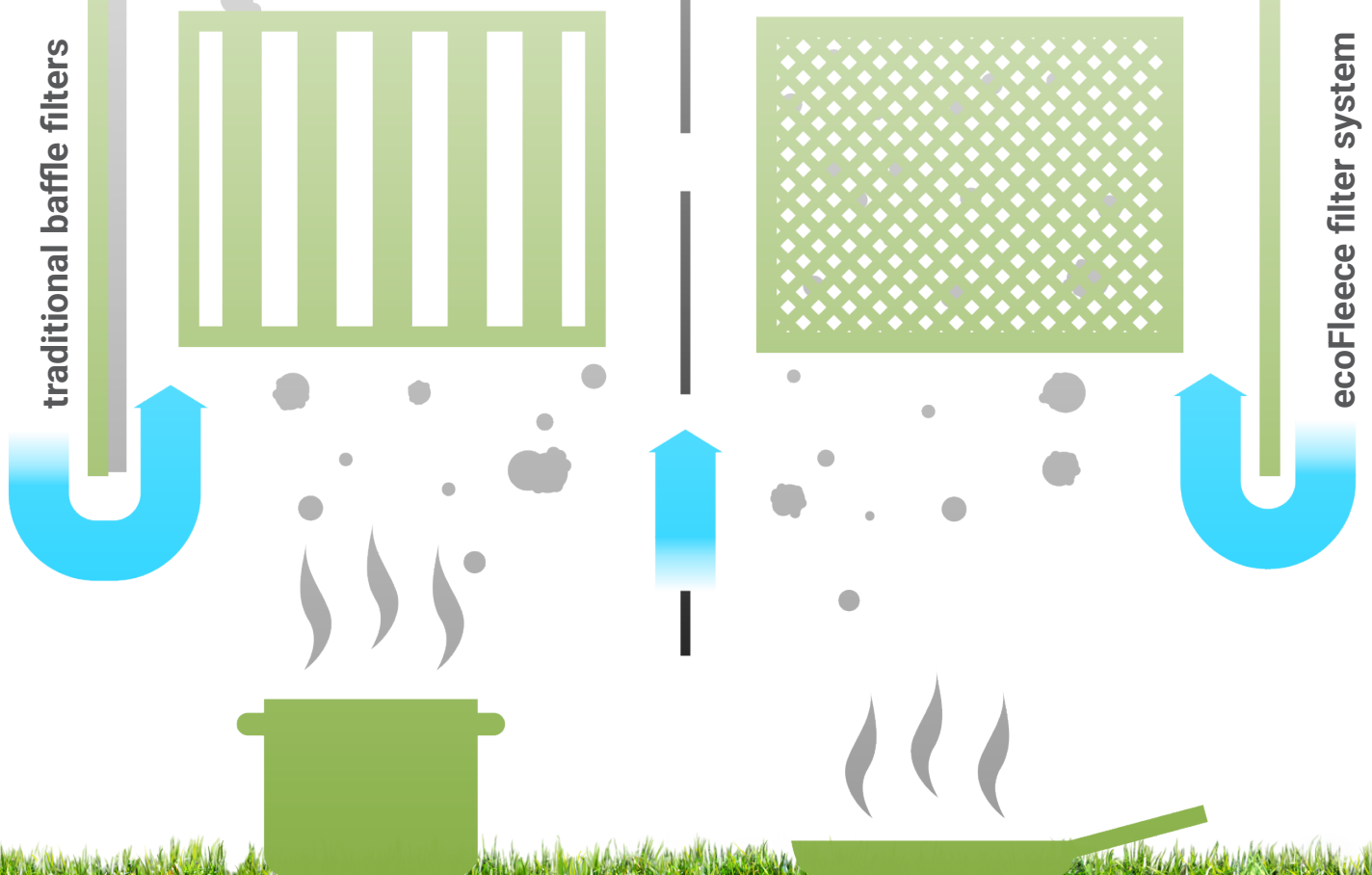
The Solution

Introducing the groundbreaking ecoFleece system as your first line of defence! Replacing traditional grease filters with a sustainable, naturally fire retardant alternative, offering minimal cleaning requirements and efficient removal of grease-laden vapours. ecoFleece wool pads serve as the original preventative solution for reducing the fire risk associated with grease build-up in kitchen extraction systems. Only ecoFleece wool pads have been rigorously tested to the UL1046 standard by Intertek, boasting impressive eco-friendly credentials. They also help reduce the presence of fats, oils, and grease (FOG) in your waste system, a common issue with traditional cleaning methods.

ecoFleece filters are available in various sizes and can usually be installed without the need for modifications to existing canopy setups, as our wool pad housing is designed to replicate traditional baffle filters. In some cases, small, cost-effective adjustments may be needed. With the ability to capture up to 98% of grease before it enters the system, ecoFleece significantly reduces fire risk within the canopy and ductwork, while also extending the lifespan of internal components, such as fan units, dampers, and silencers.

The ecoFleece system is a simple, low-tech solution with inherent and effective qualities that can manage grease control, reducing the need for expensive grease extract cleaning - resulting in;

- Safer buildings – Minimising grease extract fire risk year-round.
- Simple and safe to operate – User-friendly and hassle-free.
- Eco-friendly – Made from 100% natural, renewable materials, reducing environmental impact.
- Flame retardant – Enhances safety in high-risk areas.
- Reduces grease management challenges – No more complex cleaning requirements.
- No modifications needed – Integrates seamlessly with existing HVAC systems.



Increased Productivity

Reduces down time associated with managing grease extract cleans and staff time in cleaning cumbersome baffle filters in house.



Eliminates Chemicals

Easy To Use

Fits into the onsite cleaning regime, the wool pads change colour to indicate change requirement.



Increased Efficiency

System Longevity

Reduces risks of seals corroding due to grease build-up and use of caustic chemicals in the cleaning process. Increased longevity for extract fans due to no grease build-up and risks associated with the cleaning process.



Natural Materials

Eco Friendly

Ecofleece is 100% biodegradable therefore its disposal, requires no special attention. Traditional grease extract cleaning uses water and heavy duty chemicals which creates hazardous waste.

System Efficiency

High grease capture results in less maintenance and cleaning, resulting in longer lifespan.



Easy Installation

Less Fire Risk

Ecofleece captures up to 98% of grease before it enters the system so the build-up is significantly reduced. Reducing the risk of loss of income; rejection of insurance claims due to lack of maintenance; business closure.



Reduced Cleaning

System Improvements

Reduces odour in kitchen as canopy and ductwork stay clean. Sand traps, rooftops, channels, grease bowls also remain cleaner for longer; another labour saving task.

Improved Maintenance, protecting costly components - no leaks, less risk of fan breakdown.

Labour-Intensive Cost Reduction

Can reduce the need for grease extract deep clean requirements and associated costs.



Reduced Fire Risk

How ecoFleece filters work

The ecoFleece filter consists of three essential components: the baffle filter, a wool pad, and an overframe.

Each element is crucial for the system's effective operation. The baffle filter provides structural rigidity and directs airflow, maintaining positive static pressure. The wool pad captures greasy vapours while the ventilation system is in use, and the overframe ensures the wool pad is securely positioned over the baffle filter.

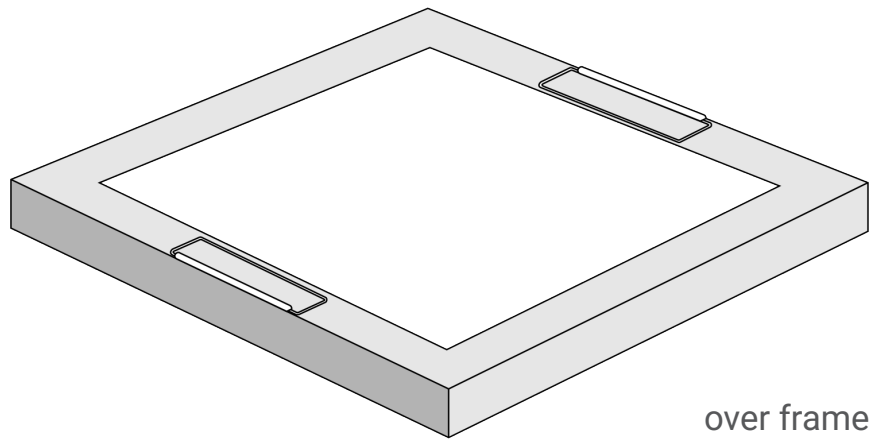
Greasy vapours drawn through ecoFleece filters naturally adhere to the wool fibres upon contact.

The wool pad construction has been specifically configured to provide just the right dynamics to deal with virtually all the airborne contaminants, without noticeably affecting air flow.

Much of the incoming contaminants collide with and adhere to the outer fibres of the wool pad. The wool then 'wicks' the collected contaminants along the fibres and into the core of the wool pad, helped by the flow of passing air.

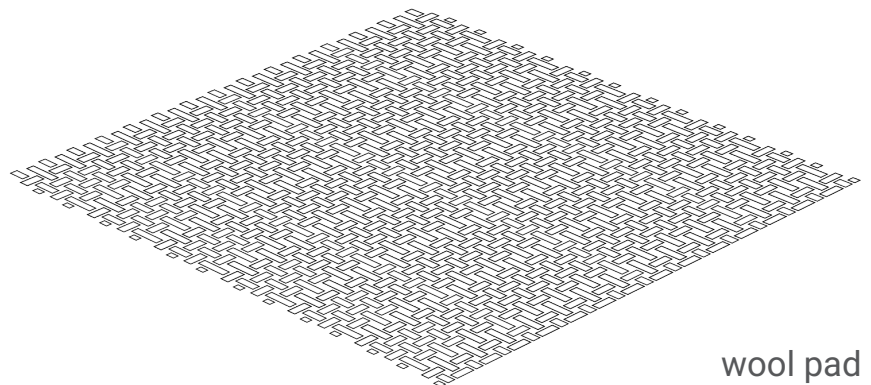
The contaminants adhering to the wool pad are stored along the wool fibres themselves, rather than within the spaces between the fibres. Allowing air to continue passing through the fibres preventing premature blocking.

As the wool fibres approach the limit of material that they can hold small droplets of grease begin to form on the outer fibres of the face of ecoFleece filter. These droplets are the prime visual indication that the wool pad needs to be replaced (a "weeping" filter)



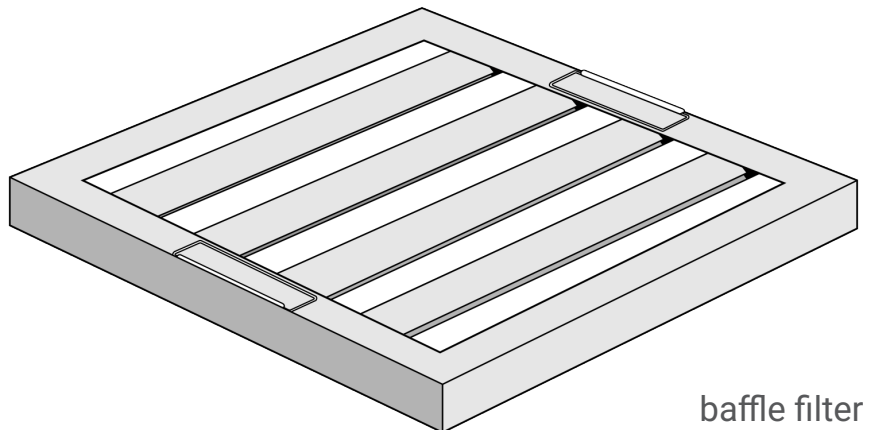
over frame

connects the wool pad to the baffle



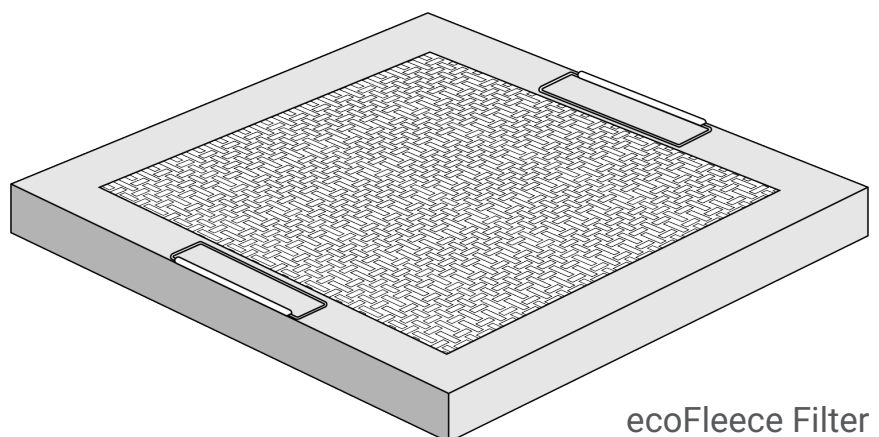
wool pad

specialised wool pad for ventilation protection



baffle filter

standard baffle filter for additional ventilation protection



ecoFleece Filter

over frame, wool pad and baffle combined

How ecoFleece filters work

How Does Wool Resist Fires?

Wool's natural properties including cuticle cells, cross-linked cell membranes, and strong chemical bonds are responsible for its fire resistance. Here's how wool resists fire and high heat:

Oleophilic

Grease loving; absorbs fats and oils or nonpolar liquids.

Hydrophilic

Water loving; absorbs water and bonds on a molecular level with water. Inner layer of the wool is hollow so absorbs water.

Hydrophobic

Repels water. Outer layer of the wool repels water.

Hydroscopic

Absorbs humidity and moisture from the air. It takes up moisture in vapour form and won't feel wet. An exothermic reaction takes place which heats the water inside the hollow, evaporating it.

The water evaporates but the contaminants are contained.

Tiny pores in the epicuticle make the fibre semi-permeable, allowing vapour to pass through to the heart of the fibre. Wool can easily absorb up to 30% of its weight in moisture. Wool has this great little feature in that the hydrogen bond within the water molecule is broken down and this then chemically reacts (exothermic reaction) with the molecules of the wool to generate heat. Thus releasing the water vapour back into the atmosphere.

Fuel Barrier

Wool fibres effectively resist fire by acting as a fuel barrier. Typically, wool absorbs a lot of moisture from the environment, which makes it difficult to ignite. When that material is exposed to fire, the heat burns it and changes its form. The burned wool fibres then form a protective layer that protects it from catching on fire.

Insulating Layer of Pyrolyzed Materials

All of the wool fibres are held together by a cross-linked cell membrane complex. If the temperature starts to rise, this structure changes its form and provides an additional layer of pyrolyzed material. It works as an insulator that separates both oxygen and heat from the wool fibre. This way, wool doesn't spread the heat, so the flame is easily extinguished.



Pre-Install

An extensive full system clean (super clean) is required prior to installation. This is to ensure the benefits of ecoFleece are entirely visible and there is little or no remaining fire risk. It also ensures that the system is capable of passing a TR19 inspection.

Cleaning is to include all components such as:-

- Canopy
- Canopy Plenum Chamber
- All Ductwork
- Fan
- Inline Components
- Cowling / Grille
- Fire Suppression System

The canopy will then be ready to receive the newly fitted ecoFleece baffle filters with wool pad inserts.

Post-Install

The ecoFleece wool pads will collect the grease created as a by-product of the cooking process. Full training is given and a schedule provided for wool pad replacement.

The ecoFleece system is managed alongside a third party contractor who carries out and Inspection & Certification of Cleanliness Service. The frequency of these service visits is aligned with your insurance policy and is based on the number of cleans required. This is a full report including a visual inspection and/or a Wet Film Thickness Test (WFTT) of the ductwork and canopy void to measure any grease along with supporting photographic evidence. The report and Certificate of Cleanliness can be forwarded onto insurers as evidence of due diligence and compliance.



At the centre of everything we do, lies a community of wool growers who uphold the highest standards of welfare, environmental conservation and transparency.

Founded in 2019, the creation of The Woolkeepers® ensures that every aspect of the wool sourcing process adheres to shared values of fair price, assurance and community.

Our supply network is verified with independent third-party accreditation. These various bodies allow growers to be recognised for their commitment to safety, animal welfare, land management, traceability, environment and biodiversity.

Fair Price

We aim to ensure that the production of wool is a profitable activity for the farmer.

The Woolkeepers supports equitable practices by offering higher payments to farmers for better quality wool. This ensures they receive a fair price for their wool, which can lead to improved living standards and investment back into their farming practices. By doing so, we aim to create long-term partnerships and secure a consistent quality of raw materials.

Traceability

Our wool is independently verified and traceable.

Each batch of wool can be traced back to its source with a QR code, providing customers with the assurance that they are purchasing Woolkeepers wool. This transparency builds trust among end-users who are conscious of the origins of the products they buy.

Community

We share knowledge to create a common language which aims to reinvigorate rural communities.

Community building includes, facilitating connections throughout the value chain, from raw material sourcing to final product delivery, ensuring transparency and collaboration at every stage in order to create financial abundance throughout the chain.

Supporting the transition to regenerative agriculture practices that enrich the soil, increase biodiversity, improve the water carrying capability of the soil. Creating social links that support farmer health and well-being, recognising that a healthy community is the backbone of a sustainable supply chain.

Regenerative Farming

As the world moves towards sustainability, we go one step further; facilitating regenerative farming and holistic practices to produce better products that positively impact the climate crisis and society.

Regenerative farming works with nature, not against it, to actively restore the land through the managed grazing of sheep. This in-turn restores elements that are critical to life; biodiversity, water quality and soil health – creating a better ecosystem above and below ground.

Some benefits of farming regeneratively are,

- Improved water quality - less drought and flooding
- Improved biodiversity - less need for chemicals
- Increase of carbon sequestration from deeper roots
- Improved soil health

WOOLKEEPERS®
TRACEABLE WOOL GROWERS

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