

ALULINE

FOG AWARENESS GUIDE 2021

Note: This document may be updated to reflect changes in technology, policy and practices relating to FOG management. Please check you have the latest version.

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1. Introduction

1.1 The problem with FOG (FOOD, OIL, GREASE)

FOG stands for food, oil and grease.

Fat, oil and grease (FOG) is generated from the preparation of various food items such as vegetables, nuts, dairy products, soups, sauces, pasta, poultry, etc. and it is discharged from where food is prepared, cooked, stored or served.

FOG causes a problem when it is discharged to drains, either during food preparation or in the washing up operation. It combines with other constituents in wastewater, congeals and accumulates in pipelines, service pipes and sewers, resulting in loss of capacity and blockages. Sewer blockages often result in flooding of premises and environmental pollution of rivers and streams. The accumulation of FOG may also take place at pumping stations and in rising mains where the operation of the plant and infrastructure may be impeded or disrupted. High FOG levels in the drainage network can lead to blockages and excessive spilling from combined storm water overflow (CSO) chambers. Accumulations of FOG in wastewater treatment plants can give rise to plant, pipe and equipment blockages, an impediment of treatment processes such as disruption of settlement and clarification facilities.

Often Foodservice Establishments (FSE's) will suffer routine drain problems but are not aware that this is caused by FOG, or they simply may not know what they can do to address it. Even using detergents or bleach only helps for a short time, as the mixture soon turns back to thick or solid fat in the drainage network.



Excavated FOG taken from sewer



FOG Build-Up in Sewer

Problems caused by FOG



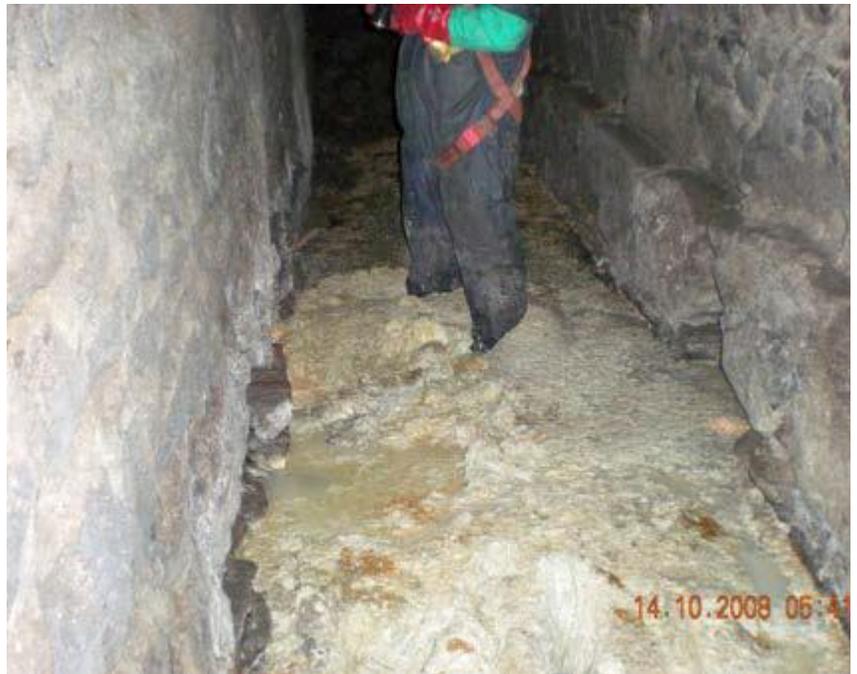
The Source of FOG

In liquid form, FOG may seem harmless, but it causes major problems to drains and sewers. Because FOG can travel through the network before it hardens, problems can happen anywhere along the drainage system – from a clogged kitchen sink to a damaged wastewater pumping station.

FOG often stick to the inside of pipes and solidify. Over time, the build-up can constrict the flow of wastewater. When people flush things like wet wipes, napkins and other unflushables down their toilets, these items can mix with the FOG to form fatbergs that block sewers. When wastewater has nowhere else to go it can back up and flood homes, streets and gardens or overflow from sewer covers and pollute streams and rivers. Blockages have even caused highways to collapse.

Under the Water Industry Act, discharging anything into sewers that may interfere with free flow is an offence. However, the difficulty of linking blockages to businesses makes enforcement problematic. Meanwhile, the cost of equipment and poor understanding about the impact of blockages has resulted in poor compliance.

Yet the food service industry is growing every year. As a result, more FSEs are operating in the same area and share the same sewer network. As a result, responsible disposal of FOG produced by commercial kitchens is vital. The benefits are felt by the public, Water Companies (WCs) and the environment. However, FSEs also have a lot to gain by taking FOG management seriously.



FOG removal confined space

Apart from the high cost, the removal of FOG blockages from within wastewater collection, transfer and treatment systems has serious health and safety implications for staff as, in man-entry pipes, the accumulated material has to be physically broken out and removed by hand from the sewers, chambers, etc.

This gives rise to maintenance staff working, unnecessarily, in very inhospitable environments and potentially dangerous confined spaces.

How FOG can affect FSEs

Blocked drains inside or near a FSE can be bad for business – the risks include:

- **Public and environmental health** - Health FSEs are responsible for providing safe and clean working conditions for staff and serving customers food that is stored and prepared hygienically. Yet blocked drains can risk contamination of food preparation and storage areas. Contaminated water in a food business is a serious risk to public health and may result in enforcement action such as poor food hygiene assessments and the FSE may be forced to close if an Environmental Health Officer issues a Hygiene Emergency Prohibition Notice. Owners of FSEs may also be subject large fines and criminal proceedings.
- **Loss of trade** – Flooding or blocked drains can put toilets, sinks and kitchens out of order and stop you from being able to trade. Dirt and unpleasant smells could also keep customers away while attracting pests and insects, which could impact your earnings.
- **Property damage** – Blocked pipes can cause systems to overflow or pipes to burst. This can result in leaks and flooding, which can lead to water or flood damage in a building and damage stock, equipment and other belongings. If others' property is damaged, the owners could claim against a FSE.
- **Reputation** – A FSE's reputation can suffer due to problems caused by FOG, such as blockages, flooding, environmental and public health issues. Customers may choose to go elsewhere, leading to loss of trade and reduced revenues.

As well as causing a loss of trade, these problems can cost money to fix and – in the worst cases – can lead businesses to temporarily or permanently close as a result,

Disposing of FOG responsibly is a win-win for FSEs, WCs, the general public and the environment.

1.2 The purpose of this document

The aim of this document is to provide a common understanding about the topic of FOG in commercial kitchens, including:

- where it comes from
- the problems it can cause
- the laws about it
- how it can be successfully managed

With this goal, the document seeks to inform those who design, install, use and serve commercial kitchens on how FOG should be considered in their activities.

The different options to manage FOG and reduce the amount entering the sewers are explained – including best practice and training for kitchen operators, along with an overview of equipment solutions available.

Together, this information is intended to give people with FOG-related duties a shared set of knowledge about the importance of disposing of FOG responsibly, along with practical ways to do so.

Please note: This document is not intended to be a prescriptive or exhaustive standard.

1.3 Who is this guide for?

Food service establishments (FSEs)

A FSE is a place where food is prepared and served in individual portions, whether for customers to take away or dine in. This includes temporary, mobile and remote kitchens and catering at events, such as festivals, street-food markets and sports.

FSEs include:

Primary Foodservice

- Quick Service
- Pubs and Clubs
- Restaurants
- Accommodation
- Retail Food

Secondary Foodservice

- Education
- Healthcare
- Leisure and Recreation
- Work Place – Business and Industry
- Retail non-food
- Visitor Attraction
- Public Sector
- Venues
- Entertainment
- Food and Drink Manufacturing
- Travel
- Community Services

As well as helping FSEs avoid the risks and costs associated with FOG-related blockages, the guidance in this document will

help FSEs achieve better value for money by selecting credible contractors and introducing effective FOG management strategies

FOG management contractors

Many specialist contractors exist to design and install FOG management systems in commercial and industrial kitchens. Meanwhile, other contractors specialise in servicing and maintaining these systems to ensure they continue to work correctly.

This guide will help decision makers identify reputable contractors whose solutions and activities align with best practice. This will incentivise contractors to meet an agreed and shared set of effective principles, and will provide support for effective FOG management practices across the supply chain. Over time this will provide a recognised professional and effective service to FSE's

Property owners and landlords

Better FOG management by tenants will reduce the risk of blockages and floods on landlords and property owners' estates and prevent the costs of disruption to trade or damage to their estate, assets or reputation.

Consultants

Consultants are often involved in preparing specifications for new developments, fit-outs and refurbishments. The guidance in this document will establish a consistent set of criteria they can use to confirm the effectiveness of a FOG management system. This will ensure robust specifications are applied in terms of equipment type, sizing and maintenance.

Insurers

Problems caused by FOG-related blockages and floods can lead to insurance claims. Improved awareness and increased compliance with FOG management best practice will protect insurers against future losses by significantly reducing pay-outs, which could also result in lower premiums for clients.

Water Companies (WCs)

Responsible disposal of waste FOG by the food and beverage service sector will prevent FOG entering the sewers. This will protect the public sewer network and private pipes, reducing the cost and disruption of repairs and maintenance.

2. What is the law about FOG?

In the UK, a number of laws are in place to help prevent FOG entering drains and sewers. Failure to comply with these can lead to enforcement and prosecution.

2.1 Legislation

Several pieces of UK legislation relate to FOG and grease management.

In Scotland, the Water Resources Act specifically forbids the discharge of FOG to sewers. Meanwhile, England, Wales and Northern Ireland rely on FOG being considered a 'matter likely to injure the sewer or drain' under the Water Industry Act. While neither of these pieces of legislation make installing FOG management equipment mandatory, several building regulations and Euro-norms do.

A run-down of current UK legislation relating to FOG is provided below. Where reference is made to Acts of Parliament and Regulations, please note that subsequent amendments or replacements equally apply.

Please note: While every effort has been made to ensure the accuracy of this information, this document should not be taken to constitute legal advice. Please seek guidance from a suitably qualified professional or official.

England

Water Industry Act 1991

111 Restrictions on use of public sewers.

(1)...no person shall throw, empty or turn, or suffer or permit to be thrown or emptied or to pass, into any public sewer, or into any drain or sewer communicating with a public sewer—

(a) any matter likely to injure the sewer or drain, to interfere with the free flow of its contents or to affect prejudicially the treatment and disposal of its contents

Disposal of Fats, Oils, Grease and Food Waste, Best Management Practice for Catering Outlets

By Water UK: Extract: It is a criminal offence under section 111 of the Water Industry Act 1991 to discharge into the public sewers any matter which may interfere with the free flow of wastewater. In addition, where the water company has incurred costs in dealing with the detrimental effects on the sewers e.g. removing blockages cleaning sewers, investigating and remedying flooding or pollution incidents, it can take legal action

to recover these costs. Prosecution can result in substantial fines or even imprisonment.

[Uncontrolled discharge of FOG from a food service establishment could contravene Section 111 of the Water Industry Act 1991 and result in the water and sewerage company bringing a prosecution against that establishment with recovery of their costs and a potential fine if proven]

Environmental Protection Act 1990

The EPA 1990 covers England, Scotland and Wales and states: "It is illegal to treat, keep or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health. It is an obligation to safely manage, store and legally dispose of any waste product that is produced." The Act imposes a duty of care on businesses with respect to their commercial waste in terms of making sure a licensed contractor removes their waste oil and they obtain waste transfer notes.

The Environmental Protection Act 1990 also gives local authority Environmental Health departments powers to impose restrictions or to shut down a business in response to 'statutory nuisance', such as smells, effluents and the accumulation of refuse.

The Building Regulations 2010 Drainage and waste disposal (2015 edition)

H1 Foul Water Drainage, Section 2 2.21

Drainage serving kitchens in commercial hot food premises should be fitted with a grease separator complying with BS EN1825-1 and designed in accordance with BS EN1825-2 or other effective means of grease removal.

Building Act 1984

Section 59 of the Building Act 1984 enables a local authority to require satisfactory provision for drainage of an existing building by service of a notice on the owner. This can require the owner of the building to make satisfactory provision for the drainage of the building, or, as the case may be, require either the owner or the occupier of the building to do such work as may be necessary for renewing, repairing or cleansing the existing cesspool, sewer, drain, pipe, spout, sink or other appliance, or for filling up, removing or otherwise rendering innocuous the disused cesspool, sewer or drain.

Food Safety Act 1990

Under the Food Safety Act 1990, local authorities are authorised to inspect catering premises. Any problems stemming from the effects of FOG on drains, resulting in a

failure to comply with the Food Hygiene Regulations which may result in prosecution or an emergency prohibition order preventing trading.

Animal By-Products Regulations

Animal By Products Regulation (EC) No 1069/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation)

This stipulates the responsibilities placed on each member state.

From 1 November 2004 waste cooking oil from catering premises can no longer be used as an ingredient in animal feed. This is to safeguard the food chain. The collection of waste cooking oil must be via a licensed waste carrier. From October 2007 liquid waste may not be disposed of at landfill.

ENGLAND: The Animal By-Products (Enforcement) (England) Regulations 2013
<http://www.legislation.gov.uk/ukxi/2013/2952/contents>

Food Safety and Hygiene (England) Regulations 2013

British Water FOG Code of Practice: In England the Food Safety and Hygiene (England)

Regulations 2013 and European Regulation (EC) no.852/2004 set out general hygiene rules that apply to all registered and approved food businesses including structural requirements and the implementation of procedures based on hazard analysis and critical control point (HACCP) principles.

The regulation sets out objectives for “good hygiene practices” to protect food safety and consumers.

This includes ensuring that grease is not allowed to build up and that premises and equipment are cleaned regularly to remove grease and dirt.

The British Standard – BS EN 12056-1:2000 - Drainage Systems Inside Buildings

Paragraph 5.3 Hygiene – “Drainage systems shall be designed and installed so that health and safety of the users and occupiers of the building is not affected, by amongst other things, the penetration of toxic or noxious odours into the building”.

Paragraph 5.4 Safety – “Waste water systems shall be designed and installed so that there is protection against escape of odours”

Paragraph 5.4.2 “Drainage systems shall be water and gas tight against the operational pressures. Pipe work systems installed inside buildings shall not release vapours and foul air into the building”.

The Control of Pollution (Oil Storage) (England) Regulations 2001

Failure to comply with any of the requirements of regulations 3 to 5 or a notice under regulation 7 is a criminal offence (see regulation 9), punishable on conviction on indictment to an unlimited fine or on summary conviction to a fine not exceeding the statutory maximum (currently £5,000).

Scotland

Sewerage (Scotland) Act 1968

46A Offence as to fat, oil or grease

A person commits an offence if the person passes, or permits to be passed, any relevant substance from trade premises into a public sewer, or a drain connecting with such a sewer and the substance – alone or in combination with any matter – interferes with, or is likely to interfere with, the free flow of the contents of the sewer, or adversely affects, or is likely so to affect, the treatment or disposal of the contents of the sewer.

Environmental Protection Act 1990

The EPA 1990 covers England, Scotland and Wales and states: “It is illegal to treat, keep or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health. It is an obligation to safely manage, store and legally dispose of any waste product that is produced.” The Act imposes a duty of care on businesses with respect to their commercial waste in terms of making sure a licensed contractor removes their waste oil and they obtain waste transfer notes.

The Environmental Protection Act 1990 also gives local authority Environmental Health departments powers to impose restrictions or to shut down a business in response to ‘statutory nuisance’, such as smells, effluents and the accumulation of refuse.

The Building (Scotland) Regulations 2004

3. 7 Wastewater drainage

Every wastewater drainage system serving a building must be designed and constructed in such a way as to ensure the removal of wastewater from the building without threatening the health and safety of the people in and around the building, and that facilities for the separation and removal of oil, fat, grease and volatile substances from the system are provided.

Building Standards technical handbook 2019: non-domestic buildings

[The Building Standards technical handbooks provide guidance on achieving the standards set in the Building (Scotland) Regulations 2004]

3.7.8 Discharges into a drainage system

Where a discharge into a drainage system contains oil, fat, grease or volatile substances, for example from a commercial kitchen, there should be facilities for the separation and removal of such substances.

Separator systems are used in a wide variety of situations to fulfil a number of different requirements.

It is important to establish why a separator system is needed and what specific function it is expected to fulfil before selecting the appropriate size and type of installation.

Separators should be constructed and installed in accordance with:

- a. BS EN 858-2: 2003 for light liquids such as oil or petrol
- b. BS EN 1825-2: 2002 for fat or grease.

The use of emulsifiers to break up any oil or grease in the drain is not recommended as they can cause problems further down the system.

Food Safety Act 1990

Under the Food Safety Act 1990, local authorities are authorised to inspect catering premises. Any problems stemming from the effects of FOG on drains, resulting in a failure to comply with the Food Hygiene Regulations may result in prosecution or an emergency prohibition order preventing trading.

Animal By-Products Regulations

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SCOTLAND: The Animal By-Products (Enforcement) (Scotland) Regulations 2011

<http://www.legislation.gov.uk/ssi/2011/171/made>

The Food Hygiene (Scotland) Amendment Regulations 2014

To support European Regulation (EC) 852/2004, which sets out general hygiene rules that apply to all registered and approved food businesses including structural requirements and the implementation of procedures based on hazard analysis and critical control point (HACCP) principles.

Water Resources (Scotland) Act 2013. Part 6 – Sewage Network

Section 35 – Substances generally

60. This section inserts a new section 46A into the 1968 Act which creates a new offence of passing, or permitting to be passed, fat, oil or grease into a public sewer or connected drain where it is liable to interfere with the free flow of the sewer's contents or adversely affect the treatment or disposal of its contents. The offence only applies to the passing of such matter from trade premises (defined by section 59(1) of the 1968 Act as any premises used or intended to be used for carrying on any trade or industry). It does not apply in circumstances where Scottish Water has given its consent for the substance to be passed into the sewerage network under Part II of the 1968 Act.

61. The section also inserts a new section 46B into the 1968 Act, which allows Scottish Water to recover the cost of investigating or remedying any resulting damage to or blockage of the sewer or drain, or interference with the free flow of the sewer's contents, from the owner or occupier responsible, unless Scottish Water has given its consent to the discharge under Part II of the 1968 Act.

in Scotland the discharge of FOG to the public sewer has been specifically prohibited, other than when it is controlled by a trade effluent consent, by an amendment to Section 46 of The Sewerage (Scotland) Act 1967 (SSA) (see attachment). This amendment also formalises Scottish Water's right to recover

costs for the maintenance and repair of our sewers associated with any breach of this legislation. The SSA also gives Scottish Water the power to decide which effluent discharges it will control using trade effluent legislation.

Waste(Scotland) Regulations 2012 (WSR)

Since the implementation of the Waste(Scotland) Regulations 2012 (WSR), it has been mandatory for all FSE, in an urban setting, who produce >5kg per week of food waste, to present this for collection. This has led some to seek an alternative disposal route such as, on-site digesters and de-watering units. The legislative stakeholders, Scottish Water, Zero Waste Scotland and SEPA, came together and agreed a position which states that, food digestion units do not comply with the regulations as the waste is not “presented for collection” and that where a de-watering unit is installed the volume of waste remaining must be maximised. There has been discussions on whether the effluent from food waste de-watering units should be consented however, as we are unaware of any units having been installed, these discussions have never come to any firm conclusion. FSE in rural locations are exempt from complying with WSR however they are still subject to S46 of the SSA

Wales

Water Industry Act 1991

Restrictions on use of public sewers

It is a criminal offence under section 111 of the Water Industry Act 1991 to discharge into the public sewers ‘any matter likely to injure the sewer or drain, to interfere with the free flow of its contents or to affect prejudicially the treatment and disposal of its contents.’

Environmental Protection Act 1990

The EPA 1990 covers England, Scotland and Wales and states: “It is illegal to treat, keep or dispose of controlled waste in a manner likely to cause pollution of the environment or harm to human health. It is an obligation to safely manage, store and legally dispose of any waste product that is produced.” The Act imposes a duty of care on businesses with respect to their commercial waste in terms of making sure a licensed contractor removes their waste oil and they obtain waste transfer notes.

The Environmental Protection Act 1990 also gives local authority Environmental Health departments powers to impose restrictions or to shut down a business in response to ‘statutory nuisance’, such as smells, effluents and the accumulation of refuse.

Waste Duty of Care Code of Practice

[Presented to Parliament and to the National Assembly for Wales pursuant to Section 34(9) of the Environmental Protection Act 1990]

4. Waste holders: waste duty of care requirements

It is illegal to deposit controlled waste except under and in accordance with an environmental permit or a registered waste exemption. It is also illegal to treat, keep or dispose of controlled waste in a way that is likely to cause pollution of the environment or harm to human health.

The Building Regulations 2010 Drainage and waste disposal (2015 edition)

H1 Foul Water Drainage, Section 2 2.21

Drainage serving kitchens in commercial hot food premises should be fitted with a grease separator complying with BS EN1825-1 and designed in accordance with BS EN1825-2 or other effective means of grease removal

Note: In certain circumstances grease traps will need to be installed where it is not practical to comply with the requirements of with BS EN1825; It may be the case that it simply is not practical in some situations as the standard was written to cover only large traditional external underground units, which are impractical for most catering outlets. BS EN 1825 sized traps do not determine efficiency or effectiveness. It is widely agreed that the standard needs to be revised.*

Building Act 1984

Section 59 of the Building Act 1984 enables a local authority to require satisfactory provision for drainage of an existing building by service of a notice on the owner. This can require the owner of the building to make satisfactory provision for the drainage of the building, or, as the case may be, require either the owner or the occupier of the building to do such work as may be necessary for renewing, repairing or cleansing the existing cesspool, sewer, drain, pipe, spout, sink or other appliance, or for filling up, removing or otherwise rendering innocuous the disused cesspool, sewer or drain.

Grease traps must be maintained and emptied regularly based on needs, by an appropriately qualified contractor.

Food Safety Act 1990

Under the Food Safety Act 1990, local authorities are authorised to inspect catering premises. Any problems stemming from the effects of FOG on drains, resulting in a

failure to comply with the Food Hygiene Regulations may result in prosecution or an emergency prohibition order preventing trading.

Waste and Contaminated Land (Northern Ireland) Order 1997

The legislation refers to disposal of waste and governs the disposal of fats, oils and grease which are to be collected in a suitable container and disposed of by a licensed waster contractor.

Building Regulations 2012

23. Fitness of materials and workmanship

In any relevant work the materials used shall be of a suitable nature and quality in relation to the purposes for and the conditions in which they are used; be adequately mixed and prepared; be applied, used or fixed so as adequately to perform the functions for which they are designed; and not continue to emit any harmful substance longer than is reasonable in the circumstances; and the standards of materials and workmanship need be no more than are necessary to secure the health, safety, welfare and convenience of persons in or about the building; and further the conservation of fuel and power.

79. Drainage systems

Every building shall be provided with such sanitary pipework, underground foul drainage and rainwater drainage as may be necessary for the hygienic and adequate disposal of foul water and rainwater from that building.

81. Underground foul drainage

Underground foul drainage shall consist of pipes and fittings of such size, layout, construction and water tightness; and with sufficient ventilation, to ensure the hygienic conveyance of foul water to a sewer, cesspool, septic tank or similar structure; and have such means of access as is necessary to facilitate the clearance of blockages.

2.2 Enforcement

Several of the UK's WCs have set up enforcement teams to gather evidence about the source of FOG blockages and inspect FSEs which are suspected to be at fault.

Where persistent offenders are identified, water utilities can reclaim the costs of removing blockages from the offending FSE, as well having the power to charge for damage to the

public sewer. This has also been successfully carried out by the majority of the water utilities across the UK.

In more serious circumstances, prosecution of the offending FSE may be pursued. If found guilty, this will result in fine and costs. Severn Trent Water, Southern Water and Thames Water have all successfully pursued prosecutions for offending FSEs.

Where poor FOG Management results in or contributes to a food hygiene safety issue, the Food Standards Agency may issue an Emergency Prohibition Notice and force the business to close until improvements have been completed.

In some cases, landlords or other bodies may have specific grease management criteria beyond this guideline with the power to enforce them.

3. Solutions

The aim of any effective FOG management system should be to make sure as little FOG as possible enters the drains and passes into the sewer. No single solution will achieve this alone. Kitchen design, ways of working, staff training and equipment all have a part to play.

Equipment should never be seen as a substitute for staff training and correct working practices. All these elements need to be in place to ensure that FOG is managed, treated, collected and disposed of correctly.

3.1 Kitchen best practice

All kitchen staff should be instructed about the importance of keeping FOG and food waste out of drains and sewers. They should be fully aware of the company policy on FOG and how to dispose of waste in general.

Preparing to wash-up

All plates, pots, trays and utensils should be scraped and dry-wiped with disposable kitchen towel or with a suitable utensil before they are put in the sink or dishwasher. The scrapings should be put in the food waste bin. All sinks should have a strainer over the plughole to prevent food waste going down the drain. Waste caught in the strainer should be transferred to the food waste bin.

Maintaining FOG management equipment

A FOG management system is only as effective as the service it receives. Grease separators need emptying, grease removal units require regular maintenance and dosing systems have to be frequently topped-up and serviced. An unmaintained grease

separator or grease removal unit is a health hazard, especially in a catering and food preparation area.

Personal protective equipment

Because the waste collected in grease traps is hazardous, personal protective equipment should be worn when carrying out any cleaning or maintenance work. As a minimum, disposable gloves, eye goggles and a protective mask should be worn.

Control of Substances Hazardous to Health (COSHH) data sheets should also be consulted before using any substances to clean or maintain equipment.

Disposal of food waste and FOG

Kitchen procedures should clearly set out the process for dealing with food waste and cooking oil. Waste FOG must never be tipped down sinks or drains. They should be stored and collected securely.

In accordance with the Environmental Protection Act 1990, you should ensure your waste contractor is an Environment Agency licensed waste carrier and check that your waste is being taken to a licensed waste management site.

You should also receive a copy of the waste transfer note for each load of waste that leaves your premises. Corresponding sections of the waste transfer note should also be kept by persons or company removing the waste from the premises. These should be kept for two years and you may be asked to make them available for inspection under Section 34 of the Act.

Reports and documents

Several records and documents can be maintained to demonstrate best practice is being followed and confirm whether contractors are fulfilling their contractual duties correctly. These include:

- Staff training records (in line with data protection and General Data Protection Regulation (GDPR) guidelines)
- In-house maintenance records
- Records of all planned contractor maintenance and any repair or call-out work
- Waste transfer notes for each load of waste that leaves the premises

These records and documents can be provided as evidence of the status of your FOG management system to landlords, water authorities, insurance companies and environmental health officers.

Storing oil

Oil must be stored in accordance with The Control of Pollution (Oil Storage) (England) Regulations 200.

Oil shall be stored in a container which is of sufficient strength and structural integrity to ensure that it is unlikely to burst or leak in its ordinary use.

The container must be situated within a secondary containment system which must have a capacity of not less than 110% of the container's storage capacity or, if there is more than one container within the system, of not less than 110% of the largest container's storage capacity or 25% of their aggregate storage capacity, whichever is the greater.

3.2 Equipment solutions

Equipment solutions are an important part of any best practice FOG management system for FSEs. In fact, to minimise the risk of blocked drains, the building regulations advise that kitchens in commercial hot food premises should be fitted with a BS EN1825 compliant grease separator or other effective means of grease removal.

The three most common types of FOG management equipment in the UK are:

- Grease separators
- Grease removal units (GRUs)
- Dosing systems
- Bio-Hydro System (Aluline combined system)

Both grease separators and GRUs use gravity to separate FOG and food waste from wastewater. FOG has a lower density than water and floats to the top, while food debris has a higher density and sinks to the bottom. This allows the waste to be captured or directed elsewhere, while the water flows away. Meanwhile, dosing systems introduce chemicals or microorganisms into the wastewater stream, which are specially chosen for their ability to break down FOG.

Each of these systems is more effective when paired with staff training and best practice kitchen procedures. None of these solutions is a fit-and-forget system either. Any FOG control system is only as effective as the service it receives.

Competent personnel should always be engaged to undertake installation of FOG management equipment.

Please note: The composition of FOG and wastewater generated by each FSE is different. When choosing an equipment solution, please seek advice from a competent

contractor and follow the manufacturer's guidance relating to products used.

3.2.1 Choosing the best solution for you

While the challenge of FOG management and disposal is important to every business, the practical requirements vary for each site. Every kitchen is different and needs to be individually assessed the purposes of FOG management, just as it does for all elements of kitchen planning, installation, workflow and maintenance. However, some common elements need to be considered before any FOG solution is put in place.

Whichever system or combination of FOG management systems is to be used, the starting point for any installation is an up-to-date drainage plan, or the proposed drainage plan for a new build.

Those responsible for reviewing, designing, specifying and recommending FOG management systems and/or supplying and installing the equipment should visit the site to carry out an assessment or review a plan of the site if it is a new build. All kitchen areas from where FOG can be discharged must be identified and details of the drainage arrangement understood concerning the catering activity undertaken.

Even where direct drainage is unavailable, such as on-mall concession stands, waste must still be disposed of responsibly and managed using a robust FOG management strategy.

Site assessment

The overall aim of this assessment is to understand the volume of FOG that could enter the drainage system and recommend a solution that can appropriately treat or collect it instead.

Several factors need to be considered to develop a system that minimises the amount of FOG that can escape into the sewer. These include:

1. **Kitchen activity** – The style of menu, cooking methods and cleaning activities will all affect the type and amount of waste FOG created. All equipment used in food preparation, cooking and warewashing should be assessed, along with all drainage protection points (explained later in this section). The length of hours trading and the number of meals served will also affect how much waste FOG is produced. Water generated by defrosting frozen foods with a fat content also needs to be considered.
2. **Kitchen layout** – The space available will impact what FOG management solutions are possible, including

whether FOG disposal equipment will need to be placed inside and/or outside the kitchen. How closely the equipment can be located to the contamination point can impact on its effectiveness. Access to equipment for maintenance, repair and inspection must also be considered.

3. **Electricity** – Where equipment needs an electrical supply, unobstructed access is essential. Equipment must be able to be safely isolated and have an RCD/RCBO device fitted in accordance with manufacturer specifications. Only competent electricians should carry out electrical work.
4. **Sewer connections** – Identifying and connecting to the correct sewer is essential. The foul sewer carries used wastewater to a sewage works for treatment, while the surface water sewer carries rainwater straight to watercourses. Wastewater from FSEs must be directed into the foul sewer. The use of surface water sewers is not permitted without consent from local authority. This is particularly important for mobile and temporary catering.
5. **Drainage** – The drainage system should be reviewed, including its route through the kitchen and beyond the premises. Any areas where the FOG load is heaviest or the potential for bottlenecks greatest should be identified. Correctly sized pipework is also essential to maintaining flow rates through FOG management equipment while in operation. Incorrect sizing may lead to blockages and operational issues that could reduce the equipment's ability to stop FOG entering the drainage system. Drain runs and floor gully positions will need to be reviewed, especially for systems which rely on gravity to drain. The fall of pipework must also be correct to achieve required flow rates. Incorrectly installed pipework will have a detrimental effect on how well equipment prevents FOG entering the drainage system.
6. **Installation** – The access required to install the equipment must be considered, along with its correct configuration. Inlet and outlet points of equipment should be identified and connected to the correct pipework. Care should also be taken when installing and connecting all pipework to equipment to prevent the risk of leaking pipework and operational issues.
7. **Service and maintenance** – Equipment must be easily and safely accessible for operator maintenance, specialist maintenance and inspection. This includes access to inlet and outlet pipework, internal chambers of traps, sediment and solid waste baskets and any externally-mounted waste containers. Fetid air must not be allowed in the kitchen area.
8. **Third parties** – In some cases, a landlord, parent company or franchisor may have specified a particular method of FOG management. The local authority may also specify how FOG disposal systems should be

positioned. These third party requirements need to be considered.

9. **Training** – Staff training procedures and working practices should be reviewed, particularly the cleaning regime. Staff turnover rates should also be considered as untrained staff are least likely to follow procedures.
10. **Audit** – Robust audit systems should be put in place to assess drain health and successful FOG removal and management. This includes identifying sampling points. As a minimum, a sampling point should be installed at the point of outlet to allow waste entering the drainage system to be tested.

Failure to consider any these factors properly is likely to lead to poor FOG removal practices. As well as offering poor value for money, ineffective FOG management could generate greater ongoing costs for the business.

Drainage protection points

Any item of equipment in a food service operation has the potential to contribute to FOG entering the drainage system. Even appliances that do not drain directly into the water system can produce FOG which could be disposed of in sinks or drains unless correct procedures are followed and staff are adequately trained.

As a result, all equipment must be taken into consideration when designing a robust FOG management scheme. Potential contamination points within a FSE include:

- **Sinks** – Sinks are used for many different jobs. In larger kitchens, some of will be only be used for food preparation and others solely for washing up or cleaning. Identifying the role of each sink is important and signage should be in place. Understanding how the sinks are plumbed is also vital. Follow the drain pipes to see if they exit the kitchen at the same point. This will be relevant when sizing a grease separator for use within the kitchen. The size of the sinks can also affect the sizing of these solutions, so capture the dimensions as part of a kitchen audit.
- **Washing appliances** – Dishwashers, utensil washers and de-carbonisers are commonly in many commercial kitchens for cleaning and sanitising cutlery, crockery and cookware. The combination of strong chemicals and hot water mean that dishwashers have the potential to allow FOG to enter the drain, so care must be taken to stop food waste and FOG entering the dishwasher. Dishwashers should not be connected to internal traps, only the pre-rinse sink.
- **Floor gully** – Wastewater from cleaning is often tipped down floor gulleys. As FOG is often contained in used cleaning water, these gulleys must be considered as part of a FOG management system. If staff are not

properly trained, flood gulleys can also receive residue from bratt pans, boiling pans, kettles, etc.

- **Ovens and combi ovens** – Combi ovens are steam ovens used for cooking bread, baked goods, meats and vegetables. They are plumbed to the drainage network and generate significant levels of FOG as a bi-product of the cooking process. These units should be connected to grease trapping equipment or at a minimum, solid trays should be used at the bottom of the units to prevent FOG entering the network.
- **Deep fat fryers** – Deep fat fryers found in commercial kitchens will vary in size depending on the cuisine. Some premises will have small (almost domestic) sized DFFs, while others will have large tank fryers. Used cooking oil from these units must be disposed of by registered contractors with documentation held on-site to support this.
- **Wok station** – A unit commonly used for oriental-style cuisine, which uses running water connected to drainage. The wastewater is likely to contain high levels of FOG as a bi-product of the cooking process.
- **Bratt pans and tilt kettles** – Often used to prepare large volumes of cooking stocks, sauces, soups, etc. These units pose a FOG risk as waste from them is likely to contain significant levels of FOG. During cleaning, they are often emptied directly into floor drains and staff training is required to stop this from happening. Some are also connected directly to drains.
- **Potato peeler/rumbler** – These units are used to peel large volumes of potatoes and are usually either directly connected to a drain or drain-off valve. The waste from these units is likely to contain significant levels of starch and solid waste, i.e. potato peelings. See Aluline Starch Separator.
- **Coffee machine** – Used to produce coffee from coffee grounds, these units can produce significant levels of solid waste in the form of coffee grinds. Meanwhile, large volumes of dairy product or coffee residue can enter drains. See Aluline Coffee Catcher
- **Food macerator or digester** – Used to dispose of food waste directly to drain either by shredding it or using biological or enzyme-based additives to disintegrate it. The waste is likely to contain significant levels of FOG. Consider removing this equipment!!
- **Ventilation systems** – Some ventilation systems incorporate water wash down functions which contain FOG. Consideration must be given to other areas of the kitchen where FOG on filters is removed or cleaned

After a full evaluation of a site's expected FOG output, expert advice should be sought. The local Environmental Health Department can advise whether your proposed solution meets hygiene and food safety requirements for commercial kitchens.

You can also check whether the local WC agrees the proposed solution will successfully prevent problems in the drains.

Solution design

Aluline produce a commercial kitchen drainage design guide. Contact 01928 563532 for your FREE copy.

There is extensive guidance for kitchen designers in the BS EN1825-2 standard. This includes methodologies for assessing wastewater flow and likely FOG related issues. While each site should be considered on an individual basis when planning a solution, some fundamental principles which can be used as a starting point.

The design approach of an effective FOG Management strategy are largely the same irrespective of location of the property in question. However, specific requirements may vary with type of property and whether kitchen is new or existing.

Here are some considerations for the design of a successful FOG management solution for the following property types:

- **High street and residential areas** – *If the drainage of the property or building directly enters a regulated sewer network, any specified trade effluent discharge or local environmental parameters should be considered when designing a FOG management solution.*
- **Multi-tenanted property** – In some settings, multiple businesses use a shared drainage system owned by the landlord (e.g. shopping centres, transport hubs, office buildings) which then connects to the regulated sewer network. In this situation, a landlord or managing agent may specify particular FOG management requirements, including specifications or technical fit-out guides that a FOG management system must adhere to.
- **Existing kitchen** – Where FOG management is being introduced into an existing kitchen, a full site assessment should be carried out to ensure important factors (see 'site assessment') are considered.
- **New kitchens** – Where FOG management is being considered for a new kitchen or development, detailed plans including an itemised equipment schedule should be reviewed by the FOG management scheme designer. The kitchen designer should also be consulted throughout the process to ensure important factors (see 'site assessment') are considered in the design.
- **Commercial premises and offices** – In-house catering units and restaurants are increasingly popular within office buildings and commercial premises. Due to the nature of these buildings, multiple kitchens may be in use across several floors and rely on the same drainage and pumping stations, which may become blocked by the incorrect disposal of FOG. Suitable FOG

management should be used to protect contamination points in all FSEs.

Sizing requirements

To work effectively, any FOG management equipment has to be sized to match the nature and scale of your business. However, the size of the equipment also influences whether the solution is possible within the space available, whether it has to be located within or outside the kitchen, and how closely it can be positioned to the contamination point. As a result, sizing solutions is crucial during the design phase.

Grease separators

BS EN 1825-2:2002 provides guidance on sizing for grease separators. However, this sizing criteria should only be applied to in-ground grease traps located outside the building.

Contact Aluline for a survey or for correct sizing calculation for your establishment. Do not attempt to calculate this using online calculators as many of them are flawed and the capacity will be incorrect.

All grease traps must be easily accessible for operational review, monitoring and auditing purposes.

Grease removal units

There are many varying types of these units now flooding the market and claiming to be efficient automatically removing the FOG. Buyer beware, these units are expensive to purchase and even more expensive to run and maintain. They have electrical connections and up until recently were directly flaunting the British Standard – BS EN 12056-1:2000 - Drainage Systems Inside Buildings LAW as many are not airsealed and not safe for use in kitchens.

The sizing for these units is unreliable at best and their inability to deal with foodwaste make them less than ideal in a real kitchen environment.

Dosing and dosing volumes

As best practice, guidance on correct dosing levels should be sought from the manufacturer as product performance will vary depending on application. Dosing should be used in conjunction with a greasetrap and not stand alone as it does not prevent oil and grease from entering the sewers.

3.2.2 Standards of solutions

In the UK, only one standard currently applies to Grease Management: EN 1825, which only relates to passive grease traps (i.e. grease separators). No UK-recognised standards apply for grease removal units or dosing systems.

However, all FOG management equipment should be installed in line with BS EN12056 for drainage systems inside buildings. This standard requires that:

'drainage systems shall be designed and installed so that health and safety of the users and occupiers of the building is not affected, by amongst other things, the penetration of toxic or noxious odours into the building. Drainage pipework systems installed inside buildings shall not release vapours and foul air into the building.'

The BS EN 1825 standard for grease separators

The BS EN 1825:2004 is the only European approved standard for grease management equipment in the UK.

This standard applies to separators for the separation of greases and oils of vegetable and animal origin from wastewater by means of gravity and without any external energy (BS EN 1825:2004 Part 1). Standards that relate to EN1825 Grease Separator

- BS EN 1825-1:2004 – Principles of design, performance and testing, marking and quality control.
- BS EN 1825-2:2004 – Selection of nominal size, operation and maintenance.
- BS EN1825 Grease Separators Applications

BS EN 1825 applies to Grease Separators Nominal Size (NS) > 1 (~1 l/s flow rate). Separators that comply with this standard can be placed above or below ground and should bear an identification plate that states:

- Manufacturer name/identification mark/address
- Last two digits of the year the marking was affixed
- Reference to the British/European Standard
- Description of the product: generic name (e.g. grease separator), material and nominal size
- Information or regulated characteristics
- Load bearing capacity (for below ground separators)

From 1 January 2021, all grease separators that comply with BS EN 1825-1:2004 should be UK Conformity Assessed (UKCA-marked). However, in most cases, to allow businesses time to adjust to the new requirements, the CE-mark will be allowed until 1 January 2022. The UKCA-marking will then become mandatory.

All aspects of separator design, performance, installation and maintenance are covered by the harmonised Standard EN 1825. Construction Products Regulations (CPR) that came into force on 1 July 2013 made it a legal requirement for construction products manufactured under the scope of harmonised European standards and equipment can be CE and UKCA marked. After 1 January 2022 the only the UKCA mark must be used. There are specific requirements for product sold in Northern Ireland

3.2.3 Grease separators

What it is

Grease separators, often called grease entrapment systems or grease traps, use gravity to separate FOG and food debris from wastewater. They are installed into the drain run between a source of FOG and the main sewer to intercept FOG and food waste before it reaches the public sewer. They vary in volume from 20-400 litres, although they can sometimes be larger.

They can be made of mild steel, stainless steel or plastic and are usually floor-standing. They do not require any power source. As well as separating and capturing FOG, they can also contain a filter basket for removing solids.

They can be used alongside bacteria dosing products, which can how often maintenance is required as the dosing degrades the FOG waste captured in the unit.

Pros

- Suitable for indoor/outdoor use
- Do not require daily maintenance (less paperwork)
- Can be located underground
- Better suited to large equipment
- Large capacity can reduce maintenance requirement
- No electricity requirement

How it works

Grease separators use gravity to separate FOG and food waste from wastewater. uses gravity to separate FOG and food debris. FOG have a lower density than water and float to the top of the separator unit, while food solids usually have a higher density and sink to the bottom.

While models differ, all separators work by slowing down the flow of water coming out of a FSE or discharged from an appliance. The longer wastewater takes to pass through the separator, the more debris and FOG will be separated. The volume of the grease separator and the flow rates determine how well the unit separates FOG from wastewater.

FOG is kept in the unit by baffles which cover the inlet and outlet of the tank, preventing FOG from flowing out of the grease separator, while food solids remain on the bottom, the oil and grease float to the top. The cleaner wastewater continues to flow from the unit to the drain and then into the sewer.

.Effectiveness of any grease separator system is dependent on the correct sizing/volume capacity and location of the grease separator system, temperature of discharge and detergent levels. Seek advice from a competent contractor and follow the manufacturer's guidance.

3.2.8 De/re-commissioning solutions

Decommissioning

The purpose of any in-line FOG management system is to capture and retain FOG waste.

Therefore, consideration should be given to the following when decommissioning and/or removing a FOG management system which has been in use, as waste effluent containing FOG waste material will likely require safe disposal.

In circumstances where the system will be left in situ but remain idle, the system should be fully serviced, inlet and outlet pipe work cleared of any debris or 'build-up' and filled with fresh clean water to prevent:

- 'Caking' whereby any captured waste solidifies in the system restricting flowrate in/through/out of the system
- Back flooding whereby waste effluent cannot pass through the system to drain efficiently
- Blocked decant valves, preventing FOG waste from being decanted
- (GRUs are a fire risk) Increased risk of smoking and in extreme cases fires; the heating elements are soiled with FOG waste which starts to smoke under heat from the element (triggering fire alarms). In severe cases, this deposit may ignite causing fire.
- Fly, larvae, maggot infestations (typically systems are frequently maintained to prevent pest infestations)

Where the system is being removed and/or replaced, any waste material held within the system should be safely collected and disposed of.

Recommissioning

Where FOG management systems have been left idle e.g. following a period of inactivity (+14 days), a specialist should be

instructed to complete a full commissioning review of the system to ensure effective operation will resume once in use.

Following successful commissioning a certificate or service report should be produced and kept for future reference.

Where the system has been left idle without being properly decommissioned, a full service will be required.

3.4 Training solutions

Staff training should include instruction on the importance of keeping FOG and food waste out of drains and sewers. All personnel should have adequate training for the function that they are required to undertake.

It should be explained to each member of staff that failure to do this can lead to expensive costs for the business to unblock drains and clean up the area. Bad practice can result in a public health nuisance, prosecution and unwanted negative publicity as well as disruption to normal business.

Records of in-house training received by all staff – whether full-time, part-time or zero hour contracted – should be maintained by the employer and detail all aspects of training undertaken.

Personnel training records should be kept and available for inspection in line with data protection and GDPR guidelines.

Qualifications and accreditation

FOG management system – operative training

Training courses are available for any person responsible for the maintenance of any fog management equipment. Operatives may include kitchen staff, restaurant owners, facilities teams... Contact Aluline for Details

FOG management system – technician training

Training courses are available for contractors, engineers, service teams responsible for sizing, installation, maintenance of fog management systems and disposal of waste.. Contact Aluline for Details.

3.5 Kitchen audits

FOG management auditing

All FSEs should be subject to an annual FOG Management Audit, as a minimum. Multi-tenanted sites and managed properties should consider more frequent audits as part of a robust FOG Management Audit Programme.

FOG Management audits may be used by Insurers to determine annual premiums. Insurers may request documents from a third-party auditor to determine levels of risk posed by an FSE.

Audit criteria

The following should be included as part of any FOG Management audit:

- Identification of FOG contaminant points
- Checking all FOG contamination lines are protected
- Assessment of the FOG management equipment's suitability / performance
- Checking correctly sized equipment is installed
- Checking routine maintenance is carried out:
 - Review of Staff Training Records
 - Review of In-House Maintenance records
 - Review of Contractor maintenance records
- Key Condition Indicators:
 - Inspection of Inlet Chamber
 - Inspection of Outlet Chamber
 - Inspection of Central Chamber
 - Inspection of Outlet Pipework

Sampling

Random sampling of outlet discharge may also be undertaken to verify performance of FOG Management equipment. [Sampling should be undertaken by an independent third party. Analysis of samples to be completed by an independent laboratory.]

NB in the absence of an UK industry recognised performance standard for automated grease recovery devices, discharge parameters will be obtained from the relevant water and sewerage company (WC) to ascertain whether performance of equipment is acceptable.

An Audit Report should be submitted following all FOG Management Audits. Reports should include:

- Overall risk assessment of FOG Management (E.G. LOW, MEDIUM, HIGH RISK)
- Date of audit
- Surveyor name/details
- Site reference
- Clear improvement notices/recommendations (where applicable)
- Details of FOG management equipment in operation
- Details of each appliance (e.g. basin, dishwasher...) connected to any FOG management device
- Condition report for each FOG management device
- Key measurements and findings
- Supporting images

FSE Risk Ratings

Following the completion of a kitchen audit/inspection, a risk rating is applied to the premises based on their FOG management practices. This rating does not account for the size of the premises or the cuisine type.

It can be used in conjunction with the FSE facility type to gain look at cross sections of the FSE population and determine the applied risk of the food service industry to the network. The table below details the risk ratings:

Category 1: Unacceptable	<ul style="list-style-type: none"> • FSE has no grease management systems in place
Category 2: High Risk	<ul style="list-style-type: none"> • FSE has a severely undersized grease trap installed (50% of recommended or lower) • FSE has an appropriately sized grease trap installed but the equipment is in a poor state of repair with no evidence of maintenance • FSE has no grease trap installed, but has straight to line bacteria dosing system in place with no documentation to support regular maintenance
Category 3: Medium Risk	<ul style="list-style-type: none"> • FSE has an appropriately sized grease trap installed, which is in an acceptable state of repair, but has no documentation to support maintenance schedule (or the documented maintenance schedule is not appropriate) • FSE has no documentation to support the safe disposal of used cooking oil from site, however the waste oil is stored securely • FSE has no grease trap, but has straight to line bacteria dosing system in place with documentation to support regular maintenance • FSE has evidence of poor in kitchen FOG practices (i.e. evidence of FOG being poured down the drain)

	<ul style="list-style-type: none"> • Canopy filters are not cleaned by a contractor (with documentation) or they are not being cleaned (by staff) in a sink connected to a suitable grease trap
Category 4: Low Risk	<ul style="list-style-type: none"> • FSE has an appropriately sized grease trapping equipment installed, which is in an acceptable state of repair, and has an appropriate documented maintenance schedule • FSE has documents for all used cooking oil waste removed from site and used cooking oil is stored securely FSE has good in kitchen management practices in place

4. What to do with the FOG you collect

Each FSE produces an average of 1,200 litres of FOG a year. Knowing how to correctly store and dispose of FOG waste is important to meeting your legal requirements and keeping your staff and customers safe.

When discharged to the sewers, FOG cause costly problems. But if collected and processed, they can be reused as a source of energy. In this way, the FOG you collect can play a role in the circular economy.

Storing waste FOG

When oil used in the kitchen becomes dirty, it is transferred to storage containers for safekeeping until collected.

Waste FOG from sources such as deep fat fryers, woks, frying pans and baking trays should be collected in an air-tight container to prevent odours and infestation by pests and insects. The container should be stored in a secure area, clear of all drains, to prevent spills and leakages.

Storage needs to be within a bund system in case of accidental leakage of oils.

Collection or disposal of waste FOG

FSEs have many options when disposing of FOG, so choose the one that costs you least or earns you most:

- Contact the Environment Agency, which licenses waste oil collectors, and ask about those operating in your area.
- Bag up your grease trap waste and take it to a collection facility
- Ask your local authority about commercial waste operator collection options

- Contact an anaerobic digestion (biogas) facility to see if it might want your yellow grease and food waste. A map can be found on www.biogas-info.co.uk/resources/biogas-map/ but you may have to do some investigation to find contact details for nearby operators.
- Contact waste management companies directly. A list can be found on the Environmental Services Association Website www.esauk.org/about-us/members-directory
- Contact specialist yellow grease collection operators.

You must ensure your waste contractor is an Environment Agency licensed waste carrier and that they give you a copy of the waste transfer note. You should also check that the waste is being taken to a licensed waste management site.

Waste transfer notes should be kept for two years and made available for inspection under Section 34 of the Environmental Protection Act 1990.

Recycling FOG

When discharged to the sewers, FOG cause many problems. But if it is correctly collected and processed, they can be reused to create fuel and energy.

FOG as fuel

FOG can be used to produce bio-diesel for transport. The decarbonisation of transport is a terrific challenge and renewable fuels can play a much larger role than they currently do in the transition to net zero.

The government supports recycling of waste cooking oil as it reduces the dependency on landfill sites and the use of fossil fuels for energy generation, which reduces greenhouse gas emissions. Water UK supports recycling as it ensures that waste oil stays out of the drainage system.

There are five biodiesel manufacturing sites in the UK, and many hundreds of biogas plants. Biodiesel can be made from a variety of different feedstocks, including from purpose grown crops such as rapeseed, but UK producers mainly use wastes and Government policy aims to incentivise the use of waste wherever possible.

The future of FOG

All FSE's have a responsibility to have grease management systems, the overall volumes of material available for collection is small, and the collection infrastructure is underdeveloped. This will change as more FSEs begin to play their role in the circular economy, and with volume their waste will become more valuable to the renewable fuel industry. Ideally, this

circular economy solution would be delivered most efficiently by combining supply and disposal.

**For more information on any of the
points in this document contact
Aluline on 01928 563532**