



## **Commercial**CanopySystems

An introduction to our full range of commercial canopy systems.



Contact us on:  
**01384 455811**



Visit us at:  
**[www.mideng.net](http://www.mideng.net)**



Email us at:  
**[sales@mideng.net](mailto:sales@mideng.net)**

# Choose Midtherm

A successful history in the design, manufacture and installation of commercial kitchen canopies throughout the United Kingdom has seen Midtherm Engineering become a market leader in the field.

The fabrication of high quality materials and the expertise imported to every project by skilled company engineers, including our direct

employed time served installers, all contributing to our envied reputation for turnkey ventures.

The attention to detail afforded to all projects, regardless of size, enables Midtherm to continually provide a high level of service and quality, while still conforming to all relevant legislation, including British, European and International standards.

## Introduction

**Midtherm Engineering has extensive experience in the design, development and installation of commercial kitchen canopy systems throughout the British Isles. Our range of products vary from simple extract only hoods to tempered air canopies complete with fire suppression, carbon filtering or UV filtration.**

Midtherm's experienced and committed engineering team have carried out countless projects across both public and private sectors.

From small school canopy replacements to fully designed bespoke renovations of high end commercial kitchens, our team are fully versed in up to date legislation and take pride in being able to offer a high class service to fully meet the client's requirements,

whatever they may be. Midtherm adapts to suit each project, processing your enquiry from concept to completion to suit your specific design brief, adding value and offering timely advice where required.

This wealth of knowledge and experience is reinforced by our professional indemnity insurance, peace of mind that your faith in Midtherm's expertise is well grounded and guaranteed.



**We offer a prompt and personal approach with a view to delivering a competitive free quotation once your particular project design brief has been ascertained.**

## Design & Manufacture

**Midterm Engineers are experienced in responding to a wide range of design briefs and have regularly overcome site constraints to fulfil client requirements. Our design team are fully versed in current regulations and apply them as necessary on all projects.**

Our canopies are manufactured in-house from austenitic grade stainless steel and subjected to strict quality control to ensure the highest standards are maintained. All canopies are fully welded and polished using our manufacturing plant, which is computer controlled to ensure accurate high quality products on every occasion.

In the kitchen environment it is essential that the extraction canopies are designed to sufficiently eliminate cooking fumes, steam and products of combustion from the working area.

The point of termination where these gases are expelled also needs to be carefully considered, with relation to any input air supply and possible nearby residents.

In order to calculate these requirements correctly the cooking appliances need to be assessed, alongside the nature of their workload and the intended locations.

Canopies can also be designed to provide fresh input air or a tempered supply, depending on the clients' needs. These serve to provide vital ventilation for combustion as well as comfort cooling for improved and safe operating conditions.

All hoods can be supported in alternate ways depending on the individual kitchen conditions. Subject to the structural integrity of the floor, walls and roof, different types of support can be designed. All options are available as bespoke proposals, enabling our systems to overcome almost any commercial kitchen obstacle.

Previously the information supplied by our design engineers within our quotations, has been used as a guide to obtain relevant planning permission. Additionally we have provided solutions to making termination points more aesthetically pleasing by the implementation of our modified Windvent terminal range, for further details please see our brochure.

**Midterm Engineering are well versed and practiced in a wide range of current regulations and legislation with regards to design and installation of kitchen canopy systems including:**

- CIBSE TM50: 2009 (Energy Efficiency in Commercial Kitchens)
- DW/172 (HVCA For Kitchen Ventilation Systems)
- BS6173:2009 [Specification for installation and maintenance of gas fired catering appliances for use in all types of catering establishments (2nd and 3rd family gases)]
- TB140 (Guidance on ventilation and extract requirements for commercial catering installations)

**When undertaking the development of any canopy package, the following items are typically considered within our design process:**

- Type and size of appliances including the power source of appliances in kW.
- Room plan including heights.
- Estimate of cooking content (low, medium or high) and subsequent filtration control.
- Gas solenoid safety cut off requirements.
- CO<sub>2</sub> monitoring.
- Heater battery requirement for tempered air input systems.
- Extract and compensation air ductwork design (tempered or otherwise).
- Control systems.
- Fan selection.
- Ductwork system / fan attenuation.
- Fire suppression.
- Heat recovery - Reducing energy costs whilst still providing a fresh air supply.
- Odour control, via carbon filters or UV filtration.
- Lighting – Varying lux levels are available to your requirements.
- Energy efficiency – Ratio control between input and extract, with option for cooking fluctuation control.

When undertaking any canopy project, we take all of your preferences and requirements into consideration from the outset. After initial contact is made, the first step is to determine the plan area of your canopy which is done based upon calculations to suit the plan area of the cooking equipment. We then determine an extract flow rate based primarily on the cooking appliances to be installed, or secondarily a volume based on light, medium or heavy loading to give a face velocity. Once the extraction rate is known we can then calculate the necessary compensation air to suit the design brief, and the full system design can be resolved.

When the proposed system is sized and specified, we provide a thorough, competitive quotation detailing all inclusions and exclusions specific to your brief. We then ensure the transition from design and estimating through to contracting is carried out with the greatest efficiency by our highly trained and skilled team.



## Canopy Features

Every canopy is a bespoke product developed for an individual client's requirements. Various options are available to help achieve the precise needs of the kitchen and staff:

### Canopy Grease Filtration:

Standard kitchen canopies are designed with grease baffle filters, however UV filtration or carbon filter systems are available to further eliminate grease build up within the extract ductwork. Baffle filters work by moving saturated air through multiple sharp changes of direction thus allowing air to move through relatively unobstructed but trapping grease particles as they pass, which then drain to the reservoir.

### Tempered Air Supply:

When compensation air kitchen canopies are specified, it is important to consider the temperature of the makeup air to the kitchen environment as essentially it is a place of work and comfort is an important consideration. Midtherm can supply and install heater batteries or dedicated air handling units to effectively regulate the temperature of supply air to the kitchen and thus prevent secondary condensation forming due to differential air temperature.

### Odour Control:

Carbon filtering is a method of cleaning contaminants and impurities, using the process of chemical absorption. Each granule of carbon provides a large surface area increasing the filter's ability to capture contaminants. Captivation works by trapping pollutant molecules within the pore structure of the carbon substrate.

We also utilise UV filtration systems to achieve odour control, with the added benefit of reducing bacterial build up.

### Ductwork:

All ducting installed by Midtherm complies fully with DW144 and is bolted together via mezz flanges. Our ductwork can be fire rated and insulated to suit specific site requirements. Options are available to powder coat ductwork and install our aesthetically pleasing Windvent style terminals in areas where visual impact is to be minimised.



*Powder Coated Rooftop Ductwork*



*Kitchen Supply/Extract via Bespoke Windvent Style Terminal*



**Fire Suppression:**

Midtherm's typical fire suppression system is designed for rapid flame knockdown and comes as a pre engineered, wet chemical, cartridge operated regulated pressure type with a fixed nozzle agent distribution network for maximum effect. The systems we use are ideal for protecting areas exposed to cooking equipment and potential fire including canopies, ducts, plenums and filters.

When the fusible link in the system is broken either by fire, or manually, the chemical agent is dispensed via nozzles and the fuel to the cooking appliances is shut off. The suppressant liquid is released, smothering the flames and cooling the hot surfaces.

The fire suppressant agent protects operatives and equipment within seconds, whilst also being easy to clean up in the aftermath of a fire, reducing the period of time before the kitchen is operating again.

**Lighting:**

Midtherm Engineering only use approved, sealed clean room kitchen canopy lighting systems designed and manufactured to meet modern stringent hygiene regulations. Our lighting is typically supplied as one of two types, either recessed fluorescent low profile units or recessed incandescent units. All lights supplied are flame and grease proof, manufactured to IP65, and are selected to achieve an illumination level of approximately 500 lux, at worktop level.

**Control Systems:**

All of our control systems meet the requirements of BS6173 and combine modern digital gas proving technology with reliable ventilation / gas interlocking connections in one clear, concise panel. We also supply a range of natural gas, carbon monoxide, CO, and carbon dioxide, CO<sub>2</sub>, detectors for use in conjunction with the control panel.

**Heat Recovery:**

Where space and budget allow, heat recovery can be a successful way to utilise the energy created from the cooking process. The heat can be used to elevate the incoming air temperature or to raise incoming mains water supply.

On the basis that the tempering of air is not required all year around, the provision of heating water is deemed more efficient, as there is always a requirement for hot water in a kitchen.

There are different means of transferring the waste heat from the exhaust air, depending on the requirements, all with differing levels of efficiency.

**Electrical Works:**

Our qualified electricians install our lighting, emergency stop push switches, fan wiring and control panels. All work can be commissioned and NIC EIC Certification provided for insurance and peace of mind.

## UV Filtration

The incorporation of an Ultra-Violet Filtration system in a kitchen canopy set-up, significantly reduces grease and odours that are by-products of the cooking process. By exposure to light and ozone the structural double bonds of the Volatile Organic Compounds are broken down, thus creating less harmful composites.

Such a method can be extremely important for kitchens that have a high frequency of use, as well as ones that have to pay special attention to the environment around which they expel the cooking waste.

The cooking grease and gases are exposed to UVC lamps that, by using a combination of photolysis and ozonolysis, destroy odours more efficiently and cost effectively than conventional filtration systems without the need for frequent replacement.



### Advantages of UV Filtration

- Drastically reduces airborne grease particulate.
- Destroys cooking odours.
- Reduces fire risk in ductwork.
- Works automatically.
- Helps protect downstream plant, filtration and heat exchangers.
- Potential for low level discharge.
- Lower operating costs compared with carbon based systems.
- Reduces ductwork cleaning.
- Reduction in the development of bacteria.



## Turnkey Packages

In addition to being able to work to clients' detailed specifications Midtherm are capable of providing a complete design and installation service encompassing all associated works, with our direct employed CHAS and Safe Contractor accreditations along with our long standing Constructionline approval.

### Midtherm's own qualified professional teams can carry out such aspects as:

- Builders work.
- Roof works.
- Electrical installations.
- Gas installations.
- Lifting equipment.
- Access plant and equipment.
- Steel support frames and structural calculations.
- Water works.

By ensuring that all of the on-site co-ordination is taken care of by our engineers the efficiency of the whole kitchen installation is improved. All electrical and gas works are commissioned and all relevant certification issued to ensure the kitchen complies with all current regulations. Our clients further benefit from our Professional Indemnity cover, meaning you could not be in safer hands.



*Pictures courtesy of [www.bartpics.co.uk](http://www.bartpics.co.uk)*

## Cleaning and Maintenance

The Midtherm canopy range is designed to provide a long lasting high quality finish and high performance extraction. To ensure the system continues to extract grease safely whilst maintaining a hygienic, corrosion free finish, it is essential that regular maintenance procedures are implemented.

### Canopies

Canopies require bi-annual inspection to ensure trouble-free operating. All grease drain points should be checked for blockages and cleaned as required. Grease collection trays should be emptied as required.

### Filters

All filters are provided with grips for easy removal and insertion. Appliances should be isolated before cleaning to avoid unfiltered air entering the system and depositing grease (causing a potential fire hazard).

Depending on the cooking load, filters should be cleaned accordingly to ensure optimum working conditions. It is recommended that the filter and collection drawers are cleaned once a week to prevent accumulation of dirt, grease, grit etc. Both mesh and baffle type filter cells are sized to facilitate their cleaning with any commercial dishwashing appliance. Alternatively, soaking for 15 minutes in a warm degreasing agent can also clean mesh-type filters, without the use of aggressive cleaning solutions.



### Fans

Fans should be checked regularly for undue noise or vibration. Cleaning the fan impeller often cures any vibration. Fan motors with grease fittings should be lubricated using low pressure grease gun with shell alania no.3 grease. We manufacture our own range of fans for site specific or specialist needs ask for our brochure.

### Ducts

An annual inspection should be carried out to ensure there is no accumulation of congealed grease in the ductwork. The HVCA recommended cleaning periods for extract ductwork is either 3 monthly (Heavy use: 12-16 hours per day), 6 monthly (Moderate use: 6-12 hours per day) or annually (Light use: 2-6 hours per day).



## Health and Safety

**Safety is our overriding concern on all projects, both that of our own employees and of those working with and around us. For this reason we have a committed policy of on-going training for all engineers including on site and office staff. The priority is carried over to all of our clients as we offer post install staff training along with full and site specific operating, maintenance manuals (O&Ms). Further assistance is also provided via telephone support.**

### Our Installers are:

- CSCS approved.
- SSSTS (for supervisors) trained.
- PASMA trained.
- Asbestos Aware.
- Trained in height awareness and use of harnesses, plus fall rescue.
- Multiple test specific trained and tool use.
- Confined spaces

Our contract engineers are also well versed and specifically trained in Risk Assessment and Method Statement writing (RAMS). Our in house health and safety co-ordinator is fully trained to IOSH, with our directors also attending courses to ensure its ethos is truly of paramount importance to Midtherm Engineering.

We also have an external health and safety consultancy to keep us up to date with legislation changes in advance so the successful integration of health and safety within our daily business practice is guaranteed.

The training of our engineers is constantly monitored using our Training Matrix, which ensures that all refresher courses are taken at the appropriate time.

Many of the larger construction contractors have given very positive feedback on the presentation and content of our RAMS documents and this is a great help in securing high value, prestigious contracts, and why Midtherm can be trusted.

We actively support health and safety campaigns by encouraging our engineers to report any near misses as well as any accidents that they see. When things do go wrong, it is essential to react in the correct way and properly report, then advise of the events, resulting in an evolutionary improvement for all.

This dedicated approach to health and safety, with full insurance cover, coupled with a wealth of technical expertise, highlights how Midtherm Engineering can fully accommodate your kitchen canopy requirements.





## Commercial Canopy Systems



Other products available from Midtherm:

Flues Masts and Chimneys

Industrial Fan Systems

Natural Ventilation Systems

X-Stream Systems

i-Window Systems

Intelligent Controls