

# Emergency Extract Ventilation



Elta Fans have been manufacturing fans for over 40 years and are one of the founding members of the Smoke Control Association, which has been instrumental in shaping modern legislation. We were also the first company to have our entire range accredited to EN12101-3 the standard to which four of our sites across the world manufacture.

**The SmokeVent range of axial flow fans has been specifically developed for emergency smoke spill extract systems to overcome hazardous fire, smoke and fume conditions. They may operate as part of the main extract system or as dedicated fans for emergency clearance.**

Our fans are of especially high design and manufacturing integrity and are made bespoke for the individual demands of the application in order to assure the safety and operation of the structure and its occupants. As high temperatures and smoke particulates can damage components, our fans have been robustly designed for continued operation in this arduous environment.



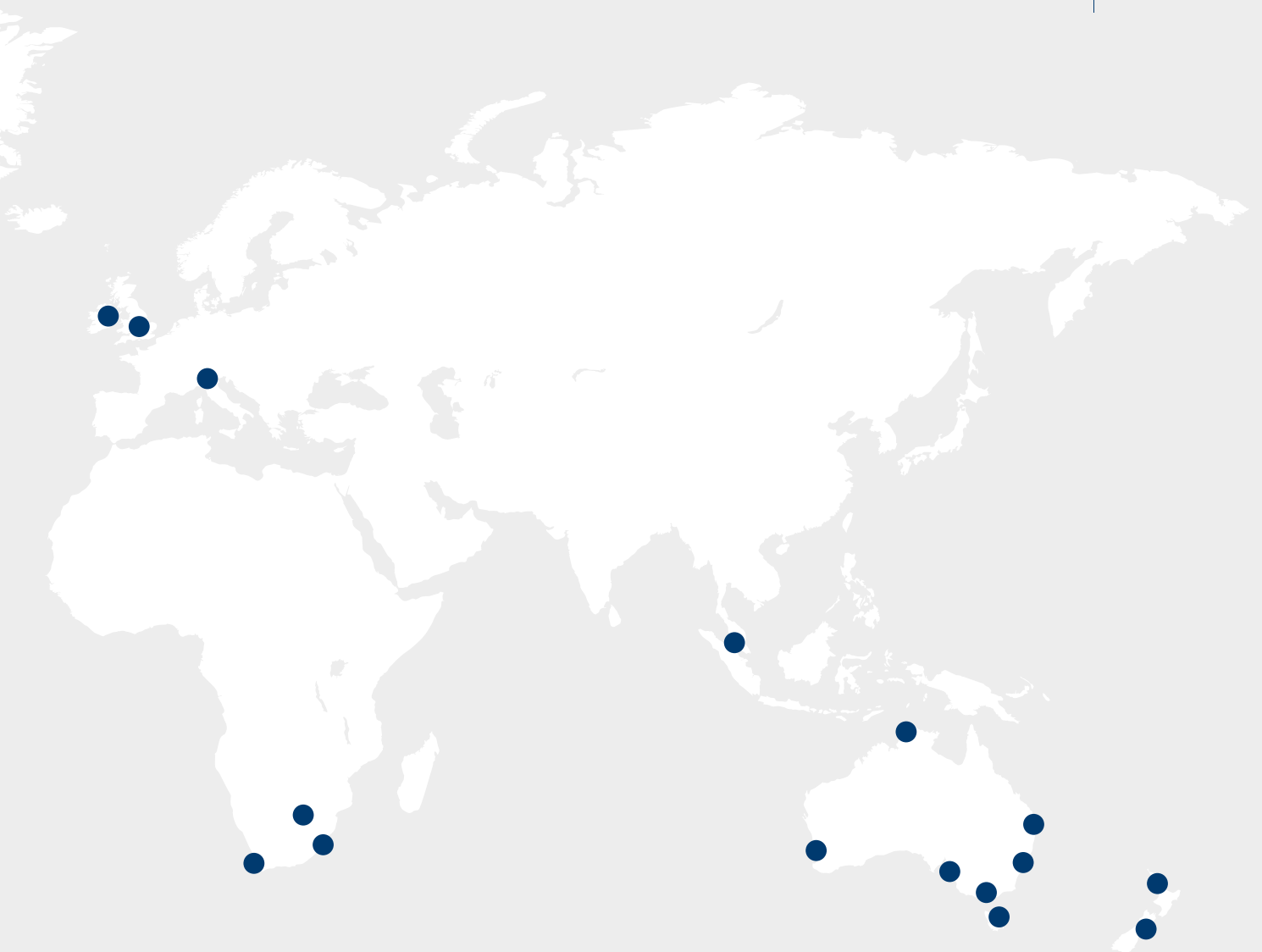


# PART OF ELTA GROUP

**Across all of our people, in all of our businesses, on all continents on which we operate, Elta Group has one purpose: To enhance life through air.**

For over 20 years we have been a proudly independent, family-owned group, but our foundations were laid over 45 years ago. Our foundations were built on an entrepreneurial spirit and a clear vision of meeting market needs and improving air quality. These have seen us become a leader in high-integrity solutions that move, filter, treat and distribute air, from agriculture to building services to applied technology. We're never standing still, always living and breathing our cause, and looking to the horizon.

[eltagroup.com](http://eltagroup.com)



Europe  
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**REGIONS**

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Air Handling  
Heat Recovery  
Filtration  
Natural Ventilation  
Acoustics  
Air Distribution  
Controls  
Heating  
Cooling  
Welfare  
Lighting  
**PRODUCTS**





A close-up photograph of a SmokeVent fan assembly. The image shows a circular metal housing with a central hub and several bolts. A blue rectangular overlay is positioned on the right side of the image, containing the word 'Products' in a large, white, sans-serif font. Below the title, there are two paragraphs of white text. The background is a blurred view of the fan's internal components and the surrounding structure.

# Products

Our comprehensive range of SmokeVent fans are supplied for operation in ducted systems and are also suitable for installation in roof extract units. All fans are designed in accordance with EN12101-3 standards and can also be supplied to meet additional region or project specifications as required.

With a broad range of sizes and variants we can flexibly supply models for new and refurbishment projects.





# Product Overview

Our standard range can operate as part of the main extract system, or as dedicated fans for emergency clearance in hazardous fire, smoke and fume conditions. With four facilities certified to EN12101-3 Manufacturing Facilities for Smoke Ventilation, Elta Fans can supply units tailored to regional and project specifications as required.

Single or  
two stage

**Single or  
two speed**  
operation

**Short Cased  
& Long Cased**

**315mm -  
2000mm**  
diameters

**F200,  
F300 & F400**  
available

A range of  
motor mounting  
arrangements

Available for  
both 50Hz  
& 60Hz

Available with  
Down Stream  
Guide vanes  
**(DSGV)**

Available as  
Contra-rotating

## Unique Design

**Elta Fans high efficiency adjustable pitch aerofoil impellers have been developed in line with the latest ErP legislation to deliver outstanding efficiency capabilities for overall lower running costs.**

Blades are made from high quality pressure die cast aluminum (LM6) with natural finish. The use of an increased blade root reduces stress levels which make our range of impellers ideal for arduous smoke and emergency applications.

The wide range of impeller solidity options and configurations in our products help to achieve reliable, precise performance. Additionally, the integral spun flanges allow for smoother airflow and added efficiency.

## Quality Assured

Every smoke fan we manufacture is tested individually in our on-site test bay to ensure its electrical loading and vibrations are in normal operating limits before undergoing visual inspection and tip-clearance checks in our dedicated Quality Assurance department. Additionally, all products within our range are independently tested to certify their capabilities under EN12101-3. All Elta Fans SmokeVent products are included on EC Certificate of Constancy of Performance 0086-CPR-493001.



## Cost Effective

Our highly efficient impellers provide an economic way of moving high volumes of air at low to medium pressures in standard operation mode. Improved impeller geometry including increased blade chord and twist provides 7% higher efficiency reducing overall energy consumption.

## Safety & Control

A mechanical smoke extract system that is independent from external conditions allows emergency control of the situation by the fire services. The removal of smoke assists the safety of the occupants in the event of a fire.

## Accessories

Selected in advance to avoid any on-site installation and fitting problems, for a complete solution, we provide a full range of accessories, including anti-vibration mounts, matching flanges, flexible connectors, silencers, bell mount inlets, non-return dampers and wire guards.



# Specification

## Casing

All casing parts are heavy gauge mild steel sheet, roll formed and welded, then hot dip galvanised to BS EN ISO 1461 after fabrication to provide a long lasting and robust construction. Flanges are roll formed as part of the casing. Motors and axial impellers are mounted within the length of the unit casing.

## Motors

Motors are totally enclosed metric type to IP55, with sealed for life bearings below 160 frame. Standard industrial paint finish and Class H insulation to EN 60034-5, suitable for use at normal continuous duty and a once only use under smoke operation at 200°C, 300°C or 400°C for 2 hours. Flying leads are brought out via a temperature resistant conduit system, to an external IP55 terminal box for customer cabling interface.

## Impeller

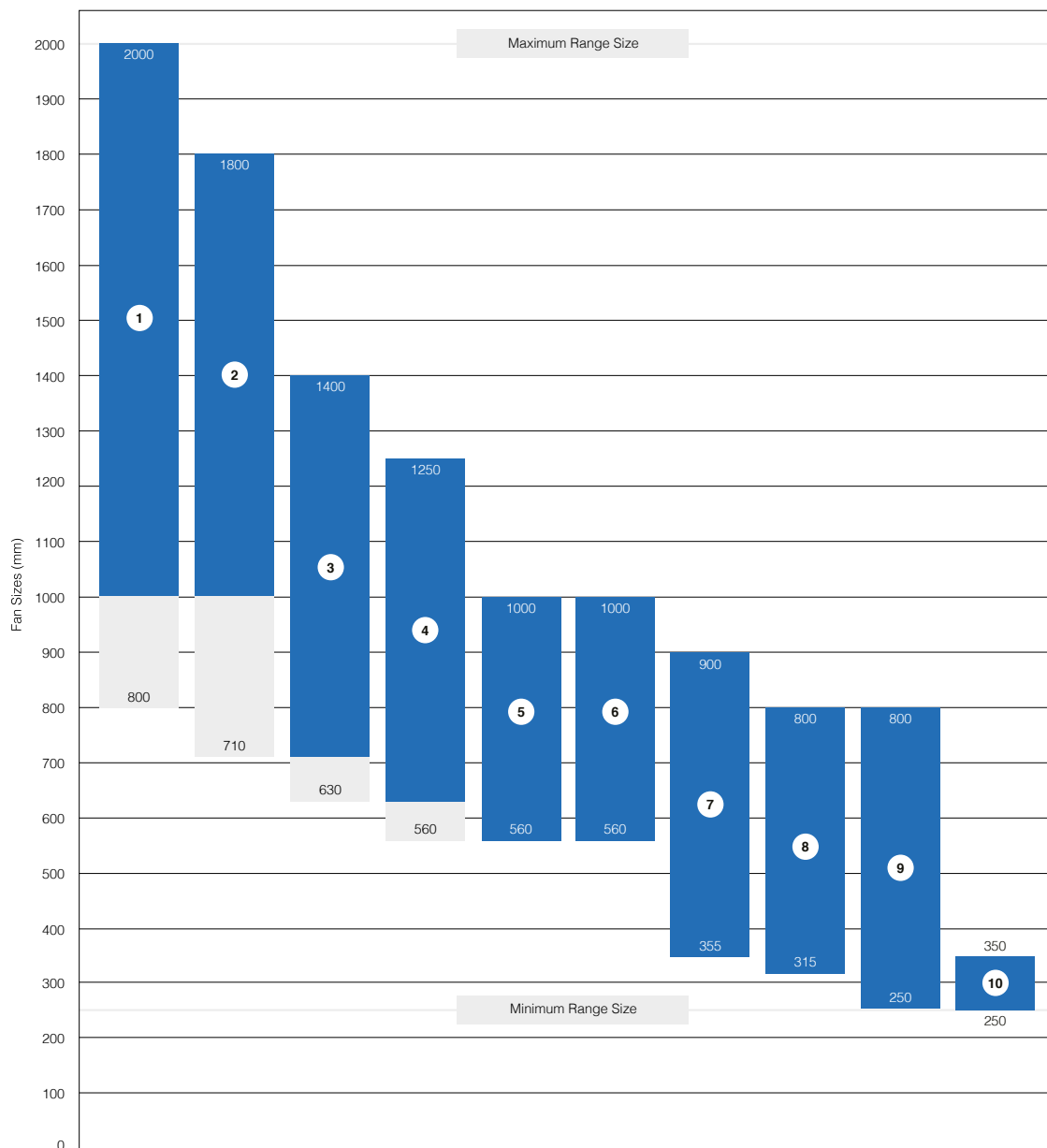
Adjustable pitch aerofoil impellers are provided with blades made from high quality aluminium (LM6) natural finish. Impellers are factory set at an angle to exact customer requirement. The hubs are manufactured from die cast aluminium alloy (LM6 or LM24). Assembled impellers are dynamically balanced to ISO 14694.

## Quality Management

Units are certified to EN12101-3 and LPCB third party certified. Units are designed and manufactured with procedures as defined in BS EN ISO 9001. Units are tested to ISO 5801:2007 (airside performance) and BS 848 Part 2:1985 (sound performance).

# Size Range Charts

## SmokeVent Axial Fan Range



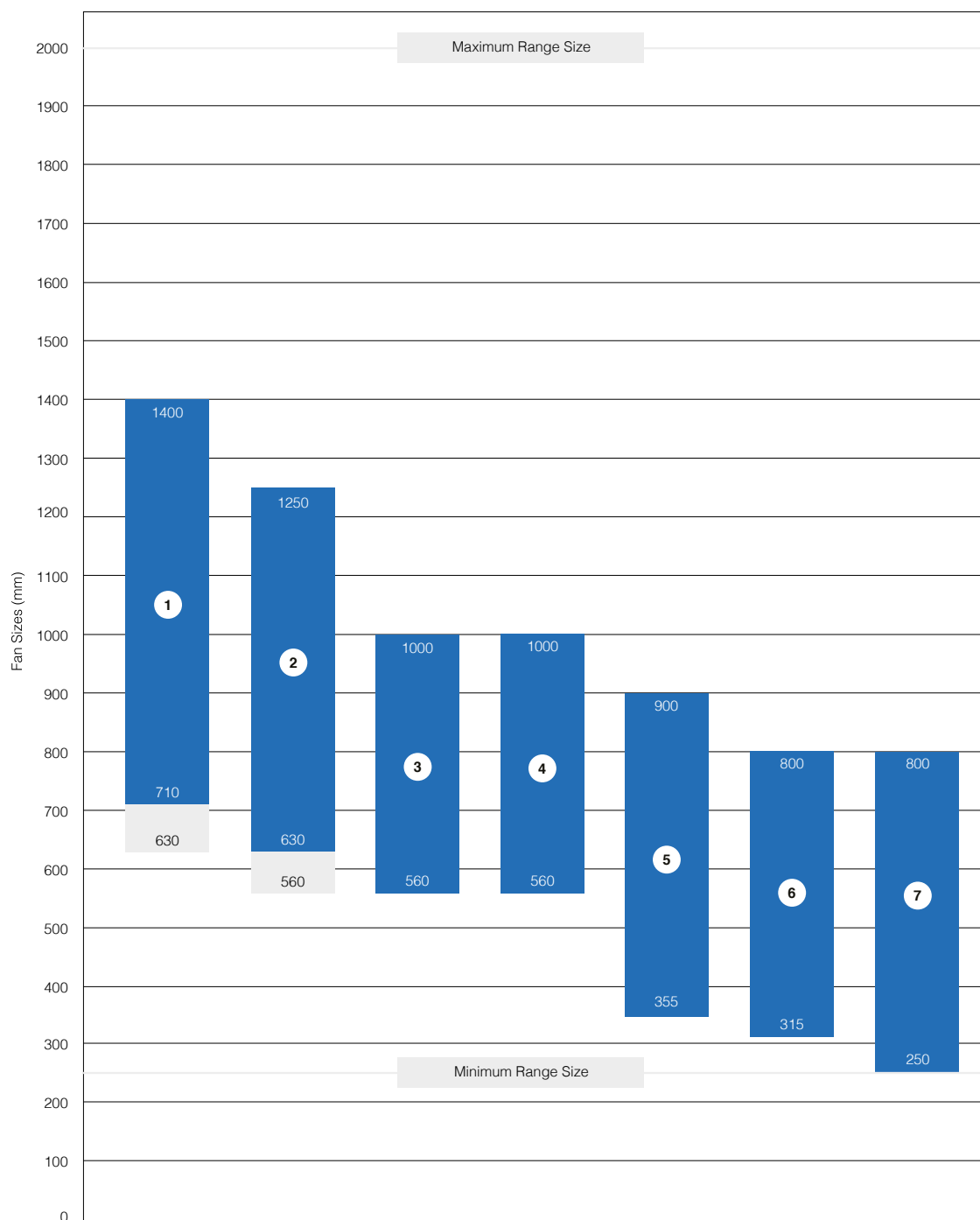
### For up to 300°C applications

#### Aluminium Impellers, Adjustable Pitch, Non-Geometric Series

■ Elta Fans Standard Sizes

■ Elta Fans Reduced Sizes

- |                            |                            |
|----------------------------|----------------------------|
| ① 550 Hub / 725 Blade      | ⑥ 250 Hub / 375 Blade      |
| ② 400 Hub / 725 Blade      | ⑦ 181 Hub / 1 Series Blade |
| ③ 350 Hub / 575 Blade      | ⑧ 150 Hub / 375 Blade      |
| ④ 255 Hub / 575 Blade      | ⑨ 131 Hub / 1 Series Blade |
| ⑤ 251 Hub / 1 Series Blade | ⑩ 100 Hub / 125 Blade      |



## For up to 400°C applications

### Aluminium Impellers, Adjustable Pitch, Non-Geometric Series

■ Elta Fans Standard Sizes

■ Elta Fans Reduced Sizes

- |                            |                            |
|----------------------------|----------------------------|
| ① 350 Hub / 575 Blade      | ⑤ 181 Hub / 1 Series Blade |
| ② 225 Hub / 575 Blade      | ⑥ 150 Hub / 375 Blade      |
| ③ 251 Hub / 1 Series Blade | ⑦ 131 Hub / 1 Series Blade |
| ④ 250 Hub / 375 Blade      |                            |

# Applications

Elta Fans' SmokeVent products are suitable to satisfy the requirements for both general ventilation and smoke control. Operating in general mode fans deliver the required air changes of the application to ensure a provision of fresh air and dilution of everyday air contaminants.

Elta Fans provide a wide range of smoke ventilation fans that have been specifically developed to satisfy the demands of emergency ventilation. If allowed to spread, fire, smoke and other noxious fumes can endanger safe means of escape, whilst causing widespread damage to buildings. By removing these and other harmful fumes, SmokeVent assists firefighters in more readily identifying the fire source, enabling location of potential casualties and occupants still within the building for prompt escape, whilst also minimising smoke and fume accumulation.

Our SmokeVent range is designed in accordance with ErP 327/2011 of the European Parliament when intended for both ventilation under normal conditions and emergency use, at short-time duty. Products designed for emergency use only, at short-time duty with regard to fire safety requirements, are exempt from ErP 327/2011.

In emergency mode our SmokeVent range is designed to:

Keep access & escape routes  
**clear of smoke**

**Aid**  
**firefighting**  
**operations**

Prevent or  
delay flashover

**Reduce**  
**damage** to  
the building  
structure and  
its contents

Typical applications include:

Atrium smoke extract

Car park ventilation and smoke  
extract systems

Emergency stairwell pressurisation

Marine and offshore living quarters  
emergency smoke extract

Office ventilation and emergency  
smoke extract systems

Roof smoke extract exhaust cowls

Shopping precinct smoke exhaust  
systems

Sports hall smoke extract







# Car Park Ventilation

**Ventilation of covered car parks is essential for removing harmful vehicle exhaust fumes and providing assistance to firefighters by clearing smoke in the event of a fire.**

The most significant development to the car park industry has been the introduction of proven tunnel ventilation fan principles in the form of impulse and induction fans. This innovative approach provides major benefits in terms of smoke control as well as reduced capital and installation costs.

The system is based on a number of small high velocity fans carefully positioned in place of the distribution ductwork to direct the airflow towards the main extract fan intake points. The fans produce a high velocity jet which thrusts against the air in front of the fan imparting momentum to all the surrounding air through entrainment as it diffuses. The volume of entrained air is significantly greater than the air quantity passing through the fan.

Car park ventilation fans eliminate the need for distribution ductwork with resultant lower extract system resistance and reduced power consumption by the fans, resulting in savings in system running costs.

Extract smoke ventilation fans are sized to provide the required flow rates, but given the reduced need, or complete elimination, of ducting within the car park area, do not have to overcome the system resistance inherent in a fully ducted ventilation system.

## **JetVent Car Park Fans**

**Elta Fans manufacture a range of fans including axial and centrifugal variants for both general ventilation and emergency situations in car park applications.**

Our JetVent range includes induction and impulse ventilation models specifically developed to operate as both general ventilation and in once-only, emergency extract mode at temperatures of up to 400°C.

The JetVent product range has been designed to provide the specifier and client a high quality, efficient and cost effective range of car park ventilation products that are easily installed and provide the clean, uncongested lines required in underground car parks to provide safer, lighter environments.

**Model sizes: from 20N to 100N  
Temperature ranges: 300°C and 400°C for 2 hours.**

**For more information contact  
Elta Fans on +44 (0)1489 566500  
or visit [carparkventilation.com](http://carparkventilation.com).**



# Fan Selection Program

The Elta Fans Fan Selection Program has been designed to make fan selection faster and more efficient.

Developed from the ground up, the selection program makes it quicker and easier for you to select fans from our expansive range of products. Whether you've used the program previously or this is your first time, you will find this program a helpful part of your processes.

## Navigating the Program

To navigate between the main areas of the program, simply use the main navigation buttons at the top. The program highlights the button to show which area of the program you are in. A dedicated Help source is available with the ability to define common default settings.

## Selecting a Fan

**Basic mode:** allows you to use a 5 step process to determine suitable fans, or alternatively, use a single product code.

**Advanced mode:** gives you complete control over the criteria for selecting your fan.

## Silencers & Acoustic Analysis

Silencer selection is available in both basic and advanced modes allowing a simple 5 step process to determine a suitable silencer or complete control over the criteria of the silencer type required.

The acoustic analysis tool allows calculations on simple systems to be made to provide a rough approximation of what noise level can be expected.

**Our Fan Selection Program has become the essential software for consultants and contractors who want fast and accurate fan and silencer selections.**



Basic Mode



Advanced Mode





# Customer Service

**At Elta Fans, we pride ourselves on our integrity and reliability as a supplier. We respect that this is your project. To ensure that your project is the best it can be, when working with us, you get a partnership with as much or as little involvement from us as you need.**

We have a dedicated sales team with individuals who are specifically trained to be experts in their individual market. When you place an order with us, you are allocated a direct point of contact to ensure consistency throughout the sales process. Our dedicated projects team constantly monitor projects, giving customers updates on their order as often as they need them.

From order processing to manufacture and all the way through to delivery, our dedicated aftersales team follow an established process to ensure we don't lose visibility of the project at any stage.



# Certifications

Elta Fans are committed to conforming to the highest standards. We hold a number of internationally recognised accreditations and certifications, in accordance with EN12103-3, including:

[Kite Mark KM613754](#)

[LPCB C937a-05](#)

[Certificate of Constasy of Performance 0086-CPR-493001](#)

LPCB third party product certification schemes are quality assurance schemes comprised of full testing of a manufacturer's quality system and production procedures, regular audit testing, labelling and listing. LPCB certified products are accepted throughout the UK and around the world.

We are also active members of professional organisations that help to shape and direct the research, legislation, trends and issues of the present and future including:

[FETA](#)

[FMA](#)

[EVIA](#)

[CIBSE Patrons](#)

[HEVAC Association](#)

[BSRIA](#)

[AMCA](#)

[Smoke Control Association](#)

## Smoke Control Association

The Smoke Control Association (SCA) is an independent body of experts all involved in various aspects of the smoke control sector. The association works in many fields including the publication of guides related to smoke control systems and products.

During the past 10 years, these guides have included methods for testing smoke extract fans, natural ventilators and smoke curtains which were subsequently adopted by BSI in the BS 7346 range of standards, ultimately being embraced in the EN12101 European Standards series.

All Elta Fans welders involved in the manufacture of SmokeVent products are coded to:

[ASME Boiler & Pressure Vessel Code](#)

Section IX (welding procedure qualification records & individual welder performance qualifications).

[BS ISO 15614-1:2004 A2:2012](#)

Welding procedure qualifications records.

[ISO 9606-1:2013](#)

Individual welder performance qualifications.

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