

# SMOKE VENT



Emergency **Ventilation**

# introduction

Elta Fans are a major supplier of axial flow fans for smoke ventilation, with the SmokeVent range specifically developed for emergency smoke spill extract systems that may operate as part of the main extract system as dedicated fans for emergency clearance only, to overcome hazardous fire, smoke and fume conditions.

Technology will set its own limits, and at Elta we take special pride in exceeding them. Sometimes the solution is straight forward, sometimes it can be a tiresome, testing process. Nevertheless, Elta's development in Smoke Ventilation, by working to exacting standards, continues to set us apart through excellence in fan engineering and design.

That's why we are pleased to announce that an extensive range of SmokeVent axial fans is available to the EN 12101-3:2002 Certification, which became mandatory on April 1st 2005.

## so where are we at?

F300 Classification – Suitable for normal extract use and emergency smoke conditions.

This extensive SmokeVent range covers sizes 250mm to 2000mm diameter, and although testing has been undertaken to meet the F300 Classification, additional running at 300°C for 2 Hours duration has been successfully completed.

By exceeding expectations, Elta Fans can provide fans to this build standard for all requested temperatures up to 300°C, and a maximum emergency requirement of 2 Hours.

Our comprehensive testing undertaken provides for two brand leading motor ranges, offering customers the flexibility of foot and pad mounted motor arrangements.

Leroy Somer foot mounted motors, single and two speed designs, within a frame range of 80 to 315. These motors have been tested in their own capacity to Annex D of the EN 12101-3:2002 Standard, prior to completed fan/motor tests.

Weg Pad mounted motors, with IEC and AOM enhanced outputs, which have been tested over the frame size range of 80 to 250, for single and two speed use.

Bristling with models, SmokeVent are available as long cased, short cased or multi-stage variants, with down stream guide-vane models available. These models have been tested for both horizontal and vertical installation, as well as variants with and without casing terminal boxes.

A full range of accessories, tested at the same time as the fan units; are available, all complying with EN 12101-3:2002 requirements.

SmokeVent units are constructed from the highest quality materials, using sheet steel casings with spun and punched flanges, hot dipped galvanised after manufacture.

Motor mounting arrangements are dependant upon the choice of motor used, whether of pad or foot mounted design.

Adjustable pitch aerofoil impellers shall be provided with blades made from high quality pressure die cast aluminium, natural finish. Assembled impellers will have their blades positively locked by pinning, for added security, for operation in the emergency smoke conditions.

The requirement to differentiate between the installation categories of Reservoir and Non-Reservoir applications forms part of EN 12101-3:2002. This is particularly important when

considering the required impeller tip clearances for differing thermal expansions that will occur in the fan unit.

**Elta have set our built tip clearances so that operation in either of these installation categories is permitted with the 'As-built' fan unit.**

Furthermore, Elta have made allowances for the performance reduction in the fan selections to comply with EN 12101-3:2002.



The Weg motor frame sizes range from 80 to 180 for both IEC and AOM enhanced outputs, whilst Leroy Somer motors range from 80 to 180 frames with IEC outputs.

SmokeVent will be available in long cased, short cased and multi-stage variants, with down-stream guide vane variants available too, all tested for both horizontal and vertical applications.

SmokeVent units are constructed from the highest quality materials, using sheet steel casings with spun and punched flanges, hot dipped galvanised after manufacture.

Motor mounting arrangements shall be dependant upon the choice of motor used, whether a pad or foot mounted arrangement.

Adjustable pitch aerofoil impellers shall be provided with blades made from high quality pressure die cast aluminium, natural finish.

Assembled impellers will include the addition of hub strengthening plates in steel into the hub design. All blades shall be pinned for added security, for operation in the emergency smoke conditions.

**F400 Classification – Suitable for normal extract use and emergency smoke conditions.**

This extensive SmokeVent range covers sizes 250mm to 1250mm diameter. The requirement for SmokeVent at F400 Classification means satisfactory operation at 400°C for a 2 Hour duration. At the heart of the SmokeVent range are Weg and Leroy Somer electric motors, providing both pad and foot mounted motor arrangements for this temperature rating.



Elta Fans have received their EC Certificate of conformity 0086 - CPD - 493001 for this described F300 and F400 range as well as for other products. They are therefore permitted to CE mark this range at 300°C for 2 Hours and 400°C for 2 hours

# design by application

With extensive experience in the design and application of Smoke Ventilation fans, SmokeVent products must immediately create understanding of their performance and characteristics, but above all, the benefits they provide for the demanding conditions in which they operate.

As customers, you must be able to see what it is and what SmokeVent can do for you, Elta must continue to apply its understanding of fan engineering principles for smoke ventilation applications, enabling us to provide you with fans that assist in the protection of buildings and their occupants.



In today's environment, 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 fire fighters 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.

SmokeVent fans are available from 250mm up to 2000mm diameter, supplied for free standing operation in ducted systems, although they are also suitable for installation in roof extract units.

Fans can be supplied as Single or Two Stage, Single or Two-speed operation, and with such a comprehensive range of standard sizes, SmokeVent provides the flexibility to supply models for new or refurbished projects.

SmokeVent fans have been independently tested to EN 12101-3:2002, which ensures customer confidence that SmokeVent units shall operate in emergency situations without failing. In addition, SmokeVent units are tested to ISO 5801:1997 (Airside performance) and BS 848 Part 2:1985 (Sound Performance)

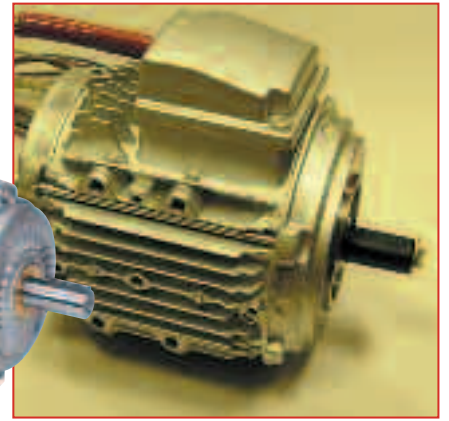
This particular SmokeVent model was a 400mm diameter fan, tested to F300 Classification, although it was run for 2 hours duration. The SmokeVent unit was tested at BSRIA, the approved UK test facility for powered ventilators that comply with the European standard EN 12101-3:2002.

The unit was tested complete with a range of accessories, namely, a Non-return damper, flexible collar and clips, Silencer, matching flanges, feet and Anti-vibration mounts.

All accessories and the fan unit were mounted onto a common base for ease of alignment and installation within the high temperature test facility.



SmokeVent models can be supplied with either pad or foot mounted motor arrangements, dependant upon the choice of motor used. Elta's alignment with brand leading motor manufacturers Weg and Leroy Somer, ensures customers have the flexibility of supply to meet precise motor specifications, with responsive lead times, combined with the SmokeVent high efficiency fan design.



SmokeVent casings are manufactured from carbon sheet steel, with spun and punched flanges, all hot dipped galvanised after manufacture,

providing a robust, corrosion resistant construction, which ensures they withstand high temperature shock and stress conditions, whilst providing maximum resistance to distortion under the arduous conditions under which they can operate.



High efficiency adjustable pitch aerofoil impellers shall be provided with blades made from high quality pressure die cast aluminium, natural finish, hard wearing and corrosion resistant, whilst providing a wide range of sizes and performance variants. Assembled impellers will have their blades positively locked by pinning, providing added security, for operation in emergency smoke conditions.



SmokeVent long cased axial fans within the Elta SELECT range, shall either be available from stock or on short delivery, and all complying with EN 12101-3:2002.



SmokeVent motor designs enable them to be mounted directly in the fan airstream, which enables more efficient motor cooling, whilst maximising air throughput by minimal motor obstruction.

SmokeVent tip clearance design provides for differing thermal expansions that will occur in the fan unit under high temperature conditions.



SmokeVent motors are to be wired to a protected terminal box mounted on the outside of the unit casing, which provides ease of installation and connection.

SmokeVent fans are complimented with an extensive range of accessories to work under the arduous applications for this product range, all to comply with EN 12101-3:2002.

Accessories include; Feet, Anti-Vibration mounts, Matching Flanges and Flexible Collars, Silencers, Bell Mouth Inlets, Motor and Impeller-Side Guards, Non-Return Dampers and Guide Vanes.

# applications, applications, applications

The SmokeVent range of axial fans are specifically developed to satisfy the demands of 'emergency' ventilation, particularly during fires.

There are a wide variety of applications for our products, which include:

Atrium Smoke Extract

Sports Hall Smoke Extract

Emergency Stairwell Pressurisation

Shopping Precinct Smoke Exhaust Systems

Emergency Tunnel Ventilation

Roof Smoke Extract Exhaust Cowl

Office Ventilation and Emergency Smoke Extract systems

Car Park Ventilation and Smoke Extract Systems

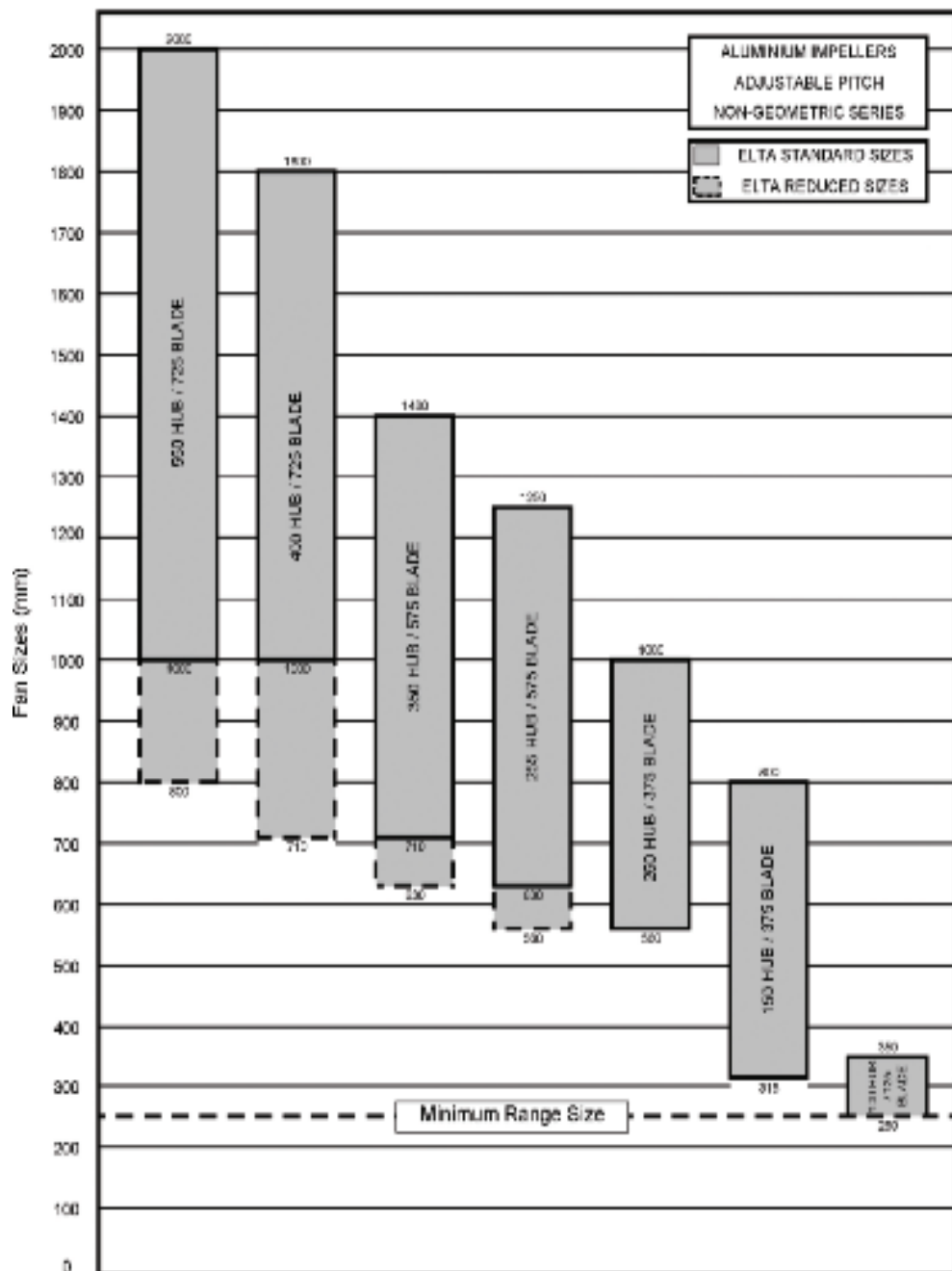
Marine and Offshore Living Quarters Emergency Smoke Extract





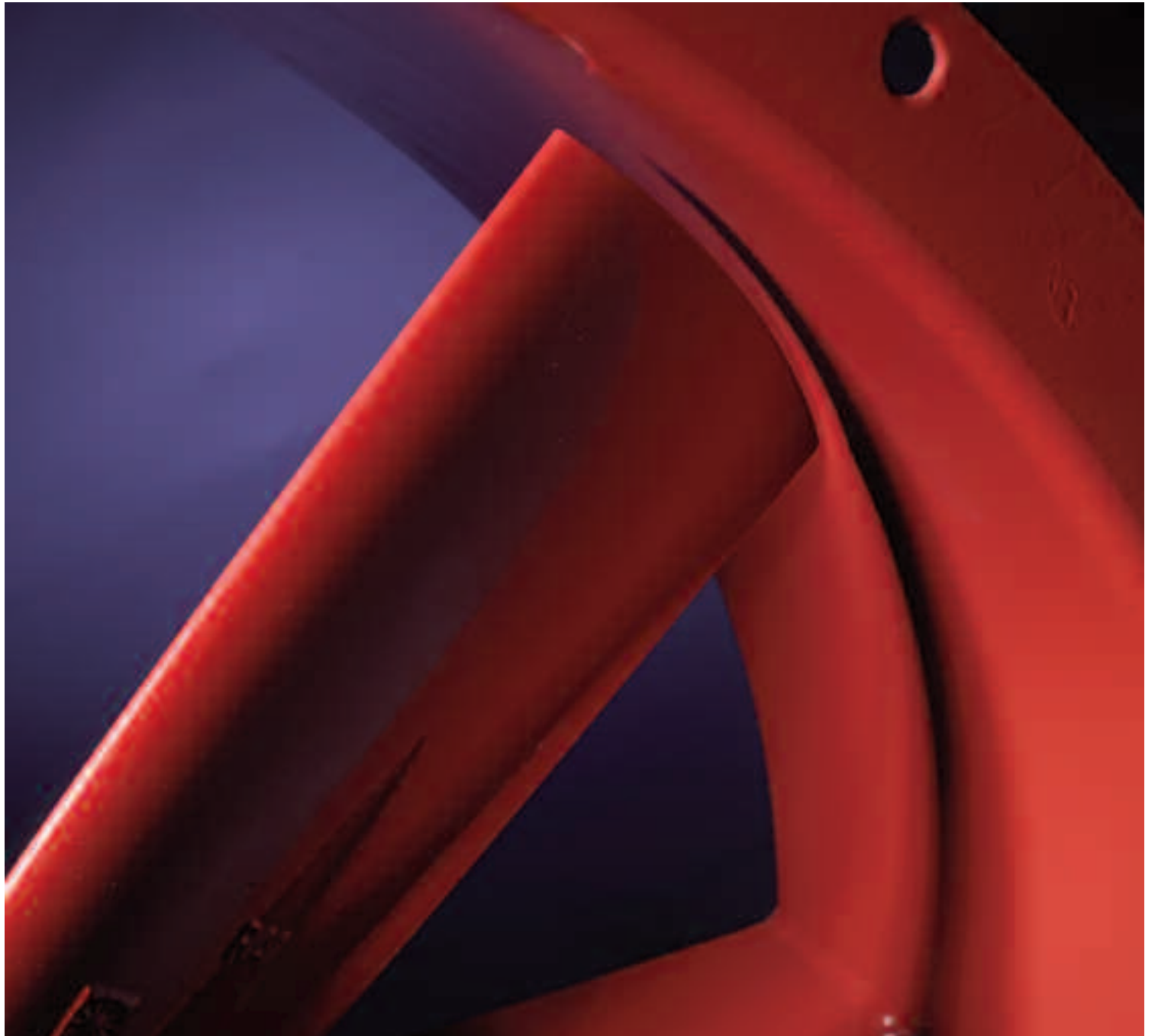
## ELTA SMOKEVENT AXIAL FAN RANGE

FOR 300°C & LESS APPLICATIONS



The SmokeVent chart above provides a visual overview of Elta Fans current product size range for F300 Classification, namely, 250mm to 2000mm diameter, whilst highlighting Elta's extensive hub and blade arrangements. This range meets the EN 12101-3:2002 Certification, which became mandatory on April 1st 2005.

Elta can also offer a complete SmokeVent range extending from 250mm to 1250mm tested to the F400 Classification under the same EN 12101-3:2002 standard.



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