ZASE

Air-handling units certified EUROVENT with classes T1 and TB1 with nominal air volumes from 3.000 to 130.000 m³/h, suitable for the following applications:

- **Heavy-duty ambiences where a particularly performing casing is required;**
- **Operating theatres and hospitals;**
- **Executions in compliance with the recent UNI 11425 norm specifying the classes T1 for hospital applications;**
- **Pharmaceutical, chemical and industrial sectors;**

The air-handling units of the ZASE series have been specifically designed to reach the highest certification levels within the Eurovent Certification program, in all possible categories.

Base features:

. 22 main sizes; bespoke executions according to the customer's specifications, with modifications from the standard, in terms of both dimensions and capacities
. internal invisible steel welded bearing frame ; . sandwich panels with 50 mm or 100mm thickness, available in:
- galvanised steel
- pre-plasticised galvanised steel
- aluminium
- stainless steel AISI 304

. condensate drain pans in AISI 304 stainless steel as standard;
. insulation material available in hot-injected polyurethane with density 42kg/m³;
. possibility to manufacture AHUs in compliance with the norm UNI 11425;

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www.eurovent-certification.com

A superior Eurovent certification

Though already certified Eurovent with the ZASE range of air-handling units, TCF wanted to move even further by aiming at reaching the highest certification levels for all the classes considered by the Eurovent Certification Program. This means the T1 level for the thermal conductivity and the TB1 level for the thermal bridge (having already confirmed the best levels in the mechanical resistance D1, casing leakage in positive and negative pressure L1/L1 and filter by-pass class F9) which are an indication of a unit which guarantees superior quality and looks to the most recent developments both in Italy and abroad, for what concerns the norms and the constructive features. The ZASE is an air-handling unit studied in all details in order to guarantee those technical and certified characteristics not to be found elsewhere in the standard national and international production of air-handlers.

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On the grounds of the performed tests, the Air Handling Units of the ZASE series have been classified with the following Eurovent classes:

Certified characteristic	Class
Casing mechanical resistance	D1
Casing air leakage with test pressure -400Pa	L1
Casing air leakage with test pressure +700Pa	L1
Filter by-pass leakage	F9
Thermal conductivity "U"	T1
Thermal bridging factor of standard execution	TB1

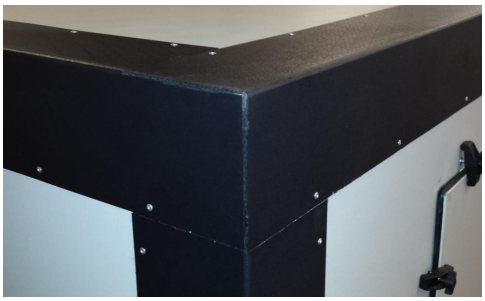
In the air handling units market the certifications, and in particular the Eurovent certification, once requested only seldom, are more and more required in the design phase, in order to comply with the new National and International requirements for energy saving. By choosing a product with the Eurovent label, the designer is sure to rely on a product designed and manufactured respecting the European norms with the performances of the various elements (fans, heat exchangers, silencers etc.) guaranteed and certified. TCF has submitted its ZASE range of air-handling units to the controls of the prestigious and demanding Eurovent criteria, whose tests on the model boxes are performed at the TUV laboratories in Germany, as an additional guarantee of a total independence of judgement and evaluation, in order to be able to offer the customers a product which responds unequivocally to the everyday more demanding requests.

The advantages of the ZASE series:

- Superior thermal insulation capacity, constant and stable on the whole surface of the panel.
- Extremely elevate structural rigidity of the units, suitable also for applications at the limits, such as industrial applications with continuous elevate differential operating pressures and use of remarkably heavy components, such as heat exchangers with pipes/fins in iron or stainless steel etc.
- Superior sound absorbing capacity.
- Total absence of thermal bridges since all the profiles and supports in aluminium have been eliminated, homes of dangerous condensations specially in applications at the limit, such as in outdoor units, or units serving low temperature technological cycles.
- Total absence of protruding screws.
- Maximum pneumatic tightness in the most different operating conditions.
- Maximum performance levels obtained in all classes of the Eurovent Certification Program;

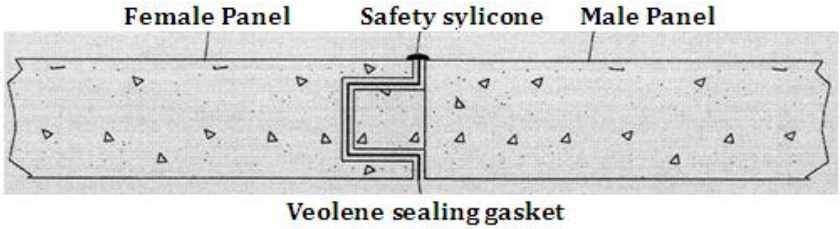
Description of the components:

The **bearing frame** is constituted by a square section tubular profile with thickness 20/10mm in cold-rolled galvanised steel and on request it is also available in AISI 304 stainless steel. Globally, the frame is joined together uniting the various segments of tubular by robust welding joints (in an inert atmosphere) in the same material as the frame itself. Once the frames, making up the various modules of the unit, are obtained, they are fixed to the base frame interposing appropriate panels with supports in thermal bridge execution. The manufacturing phases are several and complex but the final result is of a unit at the top of the performances for what concerns the mechanical characteristics of the structures, which may be obtained nowadays with the materials available on the market.



The **base frame** constitutes a continuous support to the units under all sides and allowing to unload the weight on a larger surface reducing the load on the structure on which our units are placed. The base frame is manufactured by coupling a galvanised cold-rolled metal profile, 30/10 thickness welded at the corners and with a height of 180mm.

The **panels** are constituted by coupling two spacers in plastic material with two metal sheets, previously sheared and shaped on two sides according to a special male/female profile; successively, they are injected with polyurethane foam which, when stabilising, constitute a finished product of excellent mechanical strength and with premium sound-absorbing capacity. The extremely low air leakage factors are reached also thanks to the special male/female joint between panel and panel, as proved by the tests carried out with test pressures up to 2000Pa. The panels are produced in 100mm thickness and are applied externally to the frame.



The standard range of panels includes the following configurations:

1- pre-plasticized galvanized external / galvanized internal: the external sheet is constituted by a plasticized galvanized sheet, the internal one by a simple galvanized sheet.
2. prepainted external/ galvanised internal: the external sheet is constituted by a prepainted metal sheet, the internal one by a simple galvanised sheet.
3. stainless steel external / stainless steel internal: both sheets are in AISI 304 stainless steel at a very elevate mechanical resistance and absolute inalterability to external agents.

Condensate drain pans exclusively in stainless steel material: AISI 304 stainless steel with 15/10mm thickness, with very elevate mechanical performances. Also the support frames for cooling coils and humidification systems and, in general, all the wet surfaces inside the unit, are manufactured in AISI 304 stainless steel with 10/10 mm. Each condensate drain pan is equipped with one or more discharge points complete with pipe, also manufactured in stainless steel.

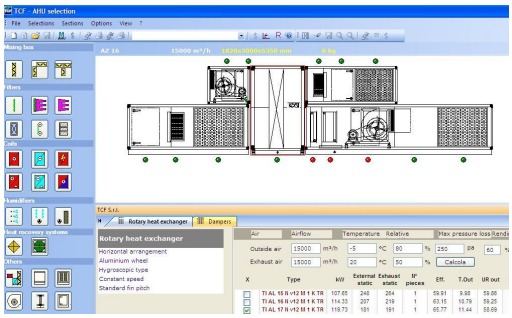
Inspection doors made with the same process as the panels and in the thickness 50-100mm and with the same insulating material (polyurethane). The doors are fixed to the frame with an opening system of handles and hinges, or closing latches, according to the requirements and specific possibilities of the application. The accessible areas in negative pressure will have outwards-opening doors – the accessible areas operating under positive pressures will have inwards-opening doors. In compliance with the CE 89/392 Machine Directive, related to the safety in motor-fan sections, a counter-door is installed behind the fan access door, named 'anti-accident grid' with the same dimensions of the first one but made from 50% micro-perforated metal sheet , duly enforced at the edges and fixed on 4 points with nuts. In this way we grant: safety of the operator with moving devices, unless using the appropriate wrench, quick visual inspection of the section through the grid for a safe confirmation of a still unit and a sufficiently long time to remove it.

Integrated control systems

TCF can supply control and power boards for the management of the air-handling units. The supply of air-handling units complete with controls may include: control components integrated in a dedicated technical compartment, complex solutions for precision control, possible combination with power boards, control board for 'niche' installation for heat recovery units, air-conditioning units and low profile AHUs, controls for indoor installations with components "at sight" as well as customisations and logos available upon specific customer's request. All AHUs with controls are tested in the factory, so as to guarantee the perfect operation of all the elements when finally commissioning the unit on site.

Selection software

An innovative selection program, easy to use and complete, allows the selection of all the components o fan air-handling unit, from dampers to filters, water and DX heat exchangers, heat recovery systems (plates, rotary wheels, run-around-coils), humidification systems, fans and silencers.



The software may be downloaded from internet and installed on the pc, for a total autonomy of management and selection also when off-line, and it provides the technical datasheet (in formats .rtf, .pdf and .dwg drawings) complete with all the selection data, operating diagrams and psychrometric charts showing the selected air treatment.