

# PROJET MONFE 011

## Airport Tivat

### SUGGESTIONS FOR THE TEXT TO BE USED IN THE TECHNICAL SPECIFICATION FOR THE USE OF PATENTED\* **MIX-IND®** SYSTEMS

For the air distribution it has been chosen to use the patented\* MIX-IND® system with a PULSION BEAM , exclusively conceived by SINTRA.

Each PULSION BEAM will be constituted by a set of particular perforated ducts, called PULSERS®, connected to the AHUs/ROOF-TOPs by rectangular ducts.

The PULSION BEAMS are of the "multi-functional" kind, with a variable air flow, and it will use the following patented\* technologies:

- **TWIN-VARIBOOST®** it manages the variable air flow between the PULSERS®, allowing to easily regulate the desired residual speed at floor level and to reduce to a minimum the plant's set-in-motion times.
- **VARITRAP®** for the manual regulation of a possible exhaust air flow for each PULSER®, in order to be able to regulate the residual air speed at floor level during the plant's set-in-motion phase.

The system is constituted by two kinds of PULSERS®:

- **Primary PULSER®** , which has the function to guarantee the controlled movement of the totality of the air mass in the treated areas, with a maximum thermal gradient of 1°C ( $\pm 1^\circ\text{C}$ ) in the whole volume and an average air speed at floor level which can be easily regulated by the user between 0,1 e 0,5 m/sec.
- **Secondary PULSER®**, with special perforations at very high induction, but with no air throw, and a variable air flow between 0÷100%, which introduces the excess air flow without perturbing the activity of the primary PULSER®.

A plenum will be positioned at the extremity of the PULSION BEAM for the feeding of the PULSERS®.

The plenum will be equipped with motorized dampers for the regulation of the air flow in the secondary PULSERS®

The motorized dampers will be served by a modulating pressure switch, installed inside the plenum/primary PULSER® and run by the GTC, which will allow to obtain the desired pressure and air flow on the primary PULSERS® which will "discharge" more or less air flow on the secondary PULSERS®.

During the plant's set-in-motion phase, the secondary PULSER® will be partially closed by the respective motorized dampers in order to increase the air flow and pressure on the primary PULSER®.

This allows to create air drafts at floor level before the phase in which the premises are occupied, therefore it accelerates to a maximum the plant's set-in-motion times.

## DESCRIPTION OF THE COMPONENTS

- The PULSERS® will be made of galvanized steel, realized in open modules in order to reduce the volumes for the transportation and consequently CO2 emissions, to be riveted on site, with a length not over 1m, constituted by:
  - Deep drawing for the reinforcement and alignment of the two extremities of each module, with special perforations to facilitate the closure with stainless steel rivets.
  - Liquid expanding gasket for the fixing and tightness of the deep-drawn extremities.
  - Special omega collars TWIN-LOCK type for the junction of the modules, realized in galvanized steel of the suitable thickness, with no welding, with a special anti-corrosion treatment realized with magnesium galvanization, with precision double closure made with high resistancy screws.
  - Polyethylene low density gasket for the air tightness between the modules.
  - Patented VARITRAP® system for the manual regulation of a possible exhaust air flow, useful for the regulation of the residual speed at floor level during the plant's set-in-motion phase.
  - Adhesive protective film for the duct's surface, to be removed when the installation is finished, in order to safeguard the aesthetical appearance of the ducts.
  
- 2 PLENUM for the feeding of the PULSERS®, each constituted by:
  - Structure in aluminium profile, type ANTICORODAL, with nylon junctions equipped with fastening screws for high pressure.
  - Sandwich panels with a 25 mm thickness, in galvanized steel, with high density polyurethane expanded foam .
  - Seal dampers for the automatic regulation of the secondary PULSERS® air flow, with opposed blades with aluminium airfoil profile 100mm pitch, complete with steel control levers and brass bearings, equipped with a bi-directional electric servo-motor 24 V, 180 sec, dimensioned for a continuous functioning with a counter-pressure of 400 Pa.
  - A differential pressure switch with a 0÷600 Pa range, with a 0÷10 V signal, for the regulation of the above mentioned dampers.

Note :

The PULSERS® support will be realized with steel cables type GRIPPLE or similar, in order to surround the PULSERS® circumference, to allow a possible rotation on its axis in case there is the need to vary the air throw angle of the PULSER®.