

Aldes Air Diffusion Seminar



Aldes Air Diffusion Seminar took place on the 2nd of June 2010, at the Intercontinental Hotel, Dubai (Festival City). The goal of this meeting was to share with you our knowledge and experience in Air Diffusion, in order to support you in your projects.

Marc-Robert Jean and Francois Biguenet, our two French experts, gave their technical approach, mainly focused on the **key principles** and **best practices** to consider in Air Diffusion.



Air Diffusion has to ensure both a proper IAQ and air renewable with thermal, aerologic and noise **comfort** along with an optimized **energy consumption**. The installed products should definitely allow a well-being for people inside any building facilities.

Three systems can fulfil this goal:

1- Diffusion by air mixing

= **70%** of the Western Europe systems. This is efficient for all types of rooms and high air mixing levels, and for both heating and cooling. It is considered as the **most flexible and economical system**.



⇒ **Nothing to feel :**

You have to select both an **adapted technical velocity** for the room and the right **air throw** to get an homogeneous temperature in all the occupied zone. You have also to select the right **diffuser** type to ensure a good mixing rate.

Use the Coanda effect but be careful about any obstacles and any crossings of air jets to avoid any uncomfortable cold air draughts.

⇒ **Nothing to hear :**

It is really important to have the requested **Sound Pressure Level (SPL)** in the room and to take care about the **Sound Power Level** of each diffuser.

⇒ **Nothing to see :**

The product has to **fit the indoor design**, to look as an **aesthetic** product and of course to fit into the **ceiling**
EU tendency = discreet and slim, perfect integration, high quality, RAL 9010 30% gloss

2- Diffusion by active chilled beams

= **20%** of the Western Europe systems. It is mainly efficient for individual offices or open spaces. The energy saving is made only with **low consumption building** (cooling loads up to 70w/m²). This system is not really flexible and less efficient for meeting rooms, malls, schools, stores...

Aldes is not actually promoting this system in The Middle East, as we are not 100% convinced of the capacity of the system to ensure such cooling loads/comfort than an air mixing system with an AHU or FCU.

3- Diffusion by air displacement

= **10%** of the Western Europe systems. This is better for **high ceiling rooms** (large halls or industrial buildings). This system is efficient for cooling but has to be avoided for heating. It allows a better evacuation of the pollutants and a better «free cooling».

Please ask for our new Air Diffusion Brochure



How to make comfort AND optimized energy consumption?

Your choice should be well done for the whole Air Diffusion and Distribution system :

- The **products selection**: grilles and diffusers with adapted mixing rates and good performances.
- The **location** of each diffuser (supply as exhaust): to avoid a common mistake with energy loss via a by-pass effect due to a bad location of the exhaust diffuser.
- The **distribution ductwork**: to avoid a huge amount of energy loss in your ductwork. The circular ductwork is an optimized solution to decrease air leakage and pressure loss (-30% to -40% compared to a rectangular ductwork)

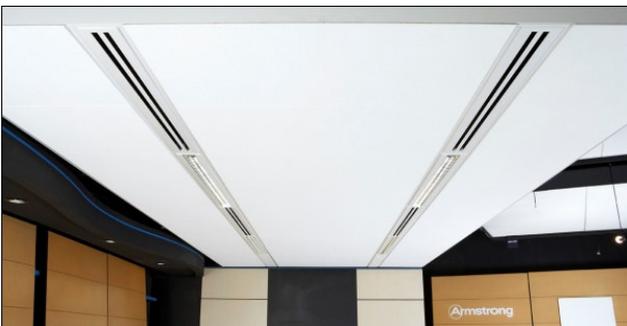
Aldes daily innovates to answer the market's needs : design, energy efficiency, comfort and ease of use (installation and commissioning) are the priorities.

During this technical seminar, some new & innovative solutions were presented by our French experts and one experts from Armstrong@.

Three particular focuses :

1-TechLine slot diffusers compatible with Armstrong@ TechZone

A new concept for integrating diffusers into suspended ceilings (technical zone), that gives an optimum comfort by slot diffusion (Coanda effect, adjustable air diffusion). Compatible with standard sizes of slabs in Europe and Middle East.



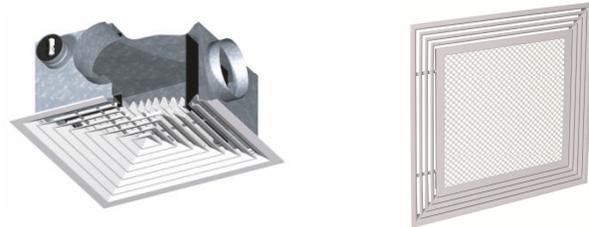
2- Twisted 850 (patented product)

Sober, discreet, monolithic: Twisted 850 has an excellent swirl diffusion in **cooling** and is easy to install. This is the best solution for all VAV system with airflow variations.

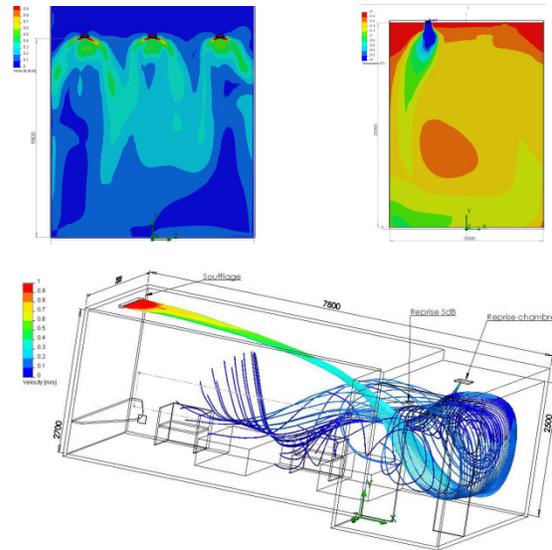


3- Combined diffuser

Only one diffuser for both air supply (periphery) and air exhaust (centre) with no by-pass effect. This is the best solution for square offices



To support the design of our partners and to prove the efficient performances of our grilles and diffusers, Aldes is able to provide you a high level technical support with **CFD analysis** (Floworks - Solidworks)



Aldes Team thanks you for your presence. We hope that this technical seminar brought to you a good insight about Air Diffusion.

If you didn't manage to attend the seminar, your Aldes contact can meet you to summarize it and to give you all the information you are interested in.

