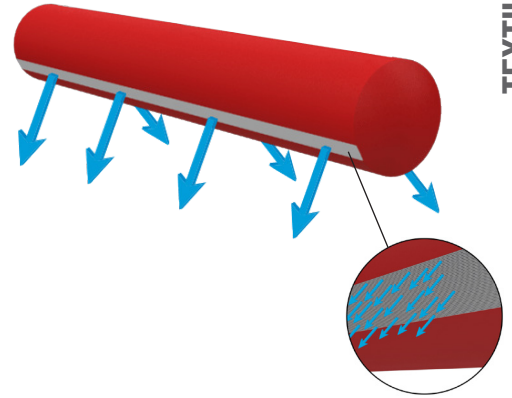


## TEXI-PULSE

### DIFFUSION BY MIXING THROUGH LINEAR MESH

The TEXI-PULSE textile duct has been designed for average speed diffusion ( $4 < V < 10$  m/s). This diffusion is ensured through diffusing slots custom-made for your project by our aeraulic engineering department. This method based on induction and Coanda effect offers a uniform air distribution in the premises.



### APPLICATIONS

#### Cooling in food industry:

- cheese draining and refining rooms,
- process and packing areas for meat, poultry, fish, seafood...
- storage warehouses.

#### Cooling of average height industrial premises ( $H < 5$ m) :

- motor industry, mechanics, aeronautics...
- electronics,
- surface treatment.

#### Heating of large volume and low industrial premises ( $H < 4$ m) :

- workshops,
- storage premises

### ADVANTAGES

- Homogeneous diffusion, controlled air throws. Suitable for the heating or cooling of large volume premises of low height ( $H < 4$  m).
- Appropriate when long air throws are required ( $x > 7$  m) with an air flow rate over 500 m<sup>3</sup>/h/ml per meter of duct.

### RECOMMENDATIONS AND LIMITS OF USE

- Difficulty to obtain a good comfort particularly for premises higher than 5 m, where the  $\Delta T$  between pulsed and ambient air is high in cooling as well as in heating mode.
- Average efficiency for very high premises ( $H > 8$  m) especially when the  $\Delta T$  is over 10°C or when the required heating capacity is over 120 W /m<sup>2</sup>.

# TEXTILE DUCT

## TEXI-PULSE

### DIFFUSING SLOTS

Mesh made from high quality polyester coated with PVC. This fabric can be used for food-processing, is washable and its mechanical resistance is excellent.

### DUCT FABRICS

All fabrics having a porosity below 100 l/m<sup>2</sup>/s under 120 Pa as well as technical PVC fabrics can be used to manufacture textile ducts with diffusion slots.

F2A references	Type of fabric	Weight +/- 5% (g/m <sup>2</sup> )	Standard colours	Permeability under 120 Pa (l/m <sup>2</sup> /s)	Characteristics
PVC - NC	Double face polyester coated with PVC (no fire rating)	680	Blue	0 (fully permeable)	Washable with high pressure jet
PM1/E - 60	Polypropylene M1 fire rating <i>Resistant to fungi and bacteria in accordance with DIN EN ISO 846 and VDI 6022</i>	60	White	70	Washable in machine (one washing only) according to our instructions
PM1/E - 80	Polyester M1 fire rating (available in non fire rating version)	75	White*	17	Washable in machine according to our instructions
PM1/E - 160	Polyester M1 fire rating	140	White**	20	Washable in machine according to our instructions
PM1/E - 340	Polyester M1 fire rating	320	White	50	Washable in machine according to our instructions
PM1/E - AS	Polyester M1 antistatic	130	White	97	Antistatic
PM1/E - AB	Polyester M1 antibacterial	100	White	36	Antibacterial

White	Black	Orange close to RAL 2001
Yellow close to RAL 1023	Blue close to RAL 5005	Red close to RAL 3020
Green close to RAL 6032	Blue close to RAL 5012	Grey close to RAL 7040

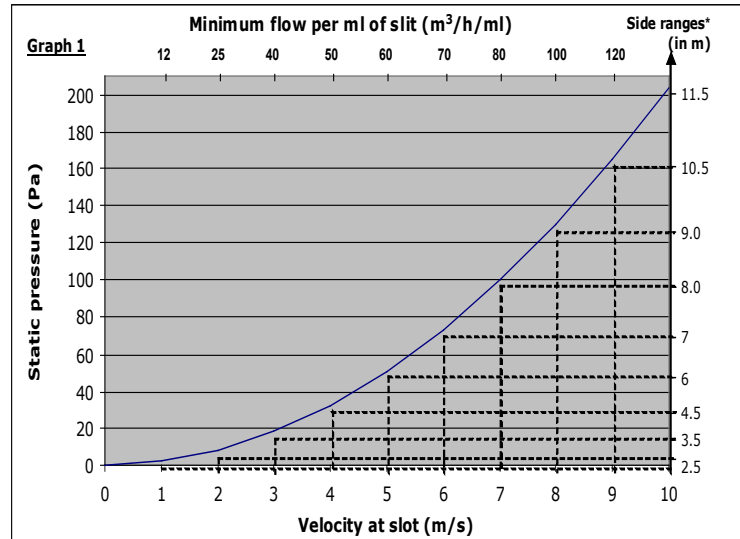
\* Standard colours Polyester 80g

White		
Yellow close to RAL 1023	Blue close to RAL 5005	Red close to RAL 3020
Green close to RAL 6032	Blue close to RAL 5012	Grey close to RAL 7040

\*\* Standard colours PM1 160g

White	Blue	Red
Green	Black	Grey

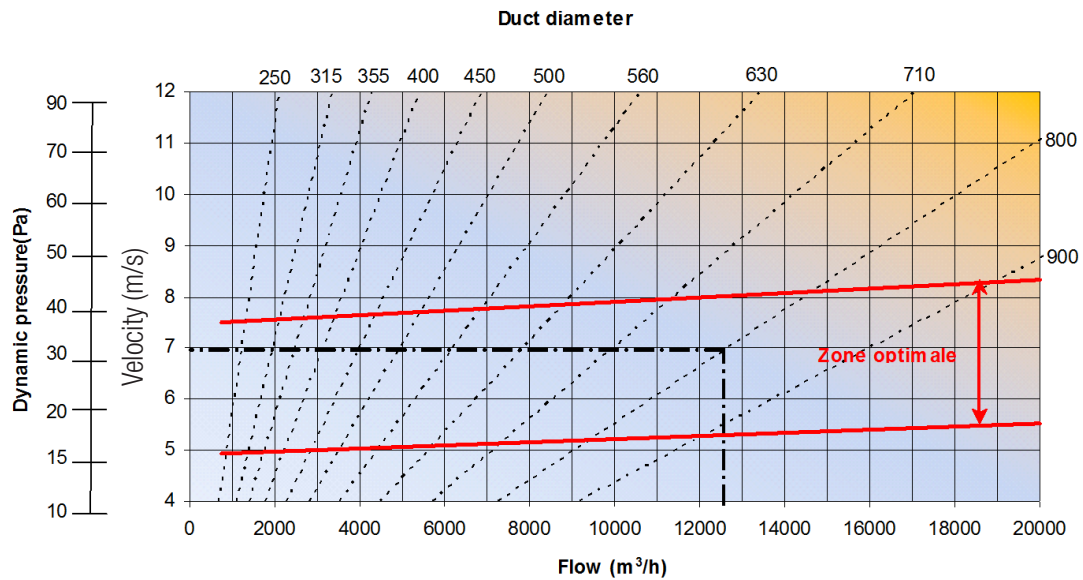
\*\*\* Standard colours PVC M1



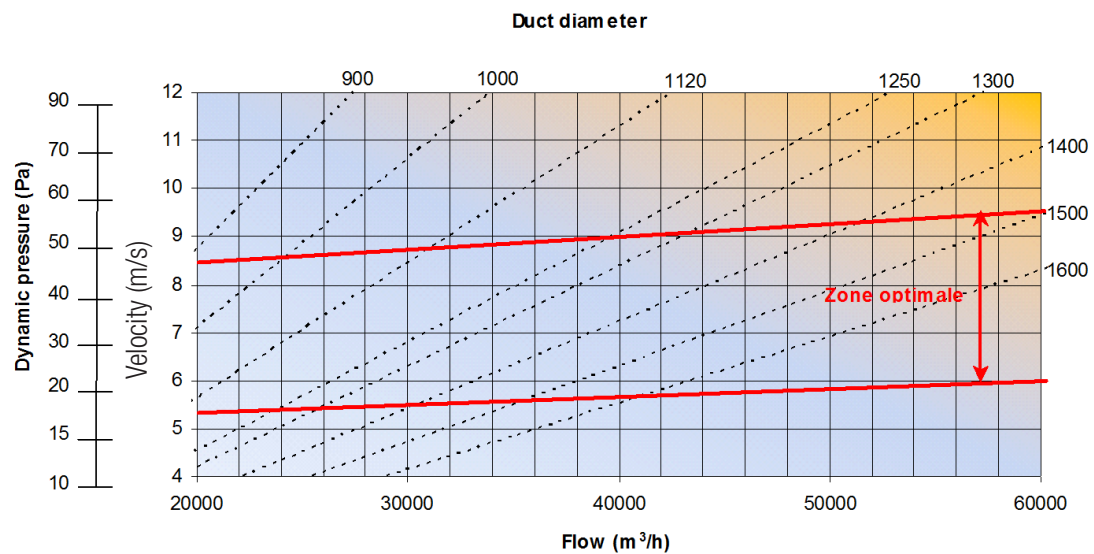
## SELECTION CHART FOR A CIRCULAR DUCT

Charts A and B : Selection of the diameter depending on the input air flow.

**Chart A**



**Chart B**

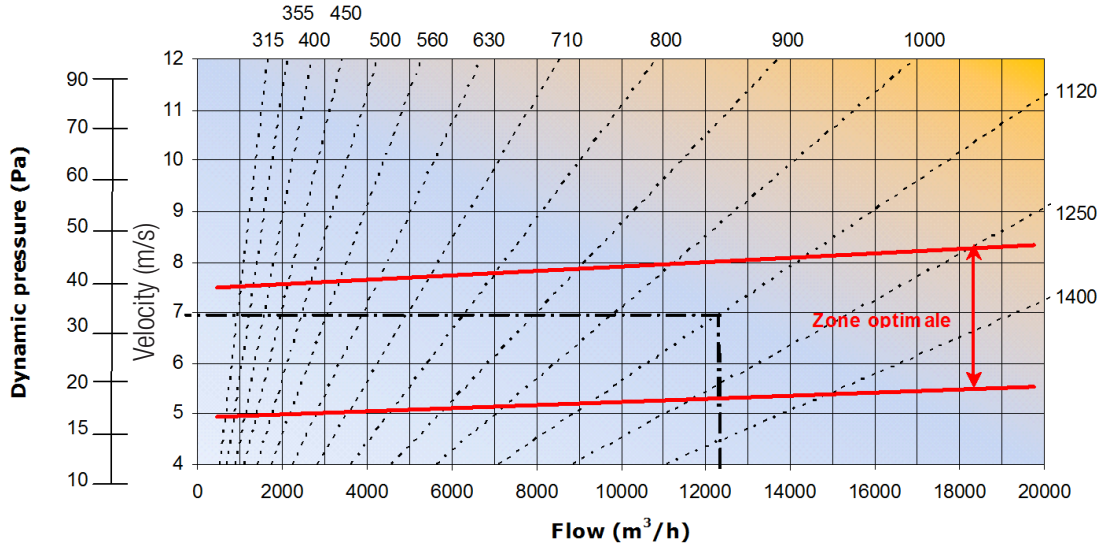


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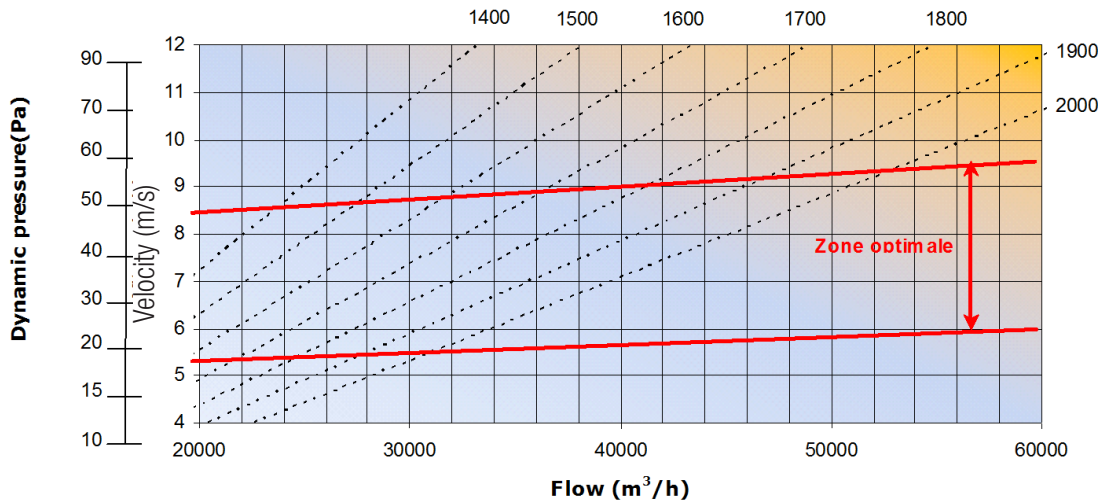
## SELECTION CHART FOR A 1/2 CIRCULAR DUCT

Charts C and D : diameter's selection depending on the input air flow.

**Chart C**



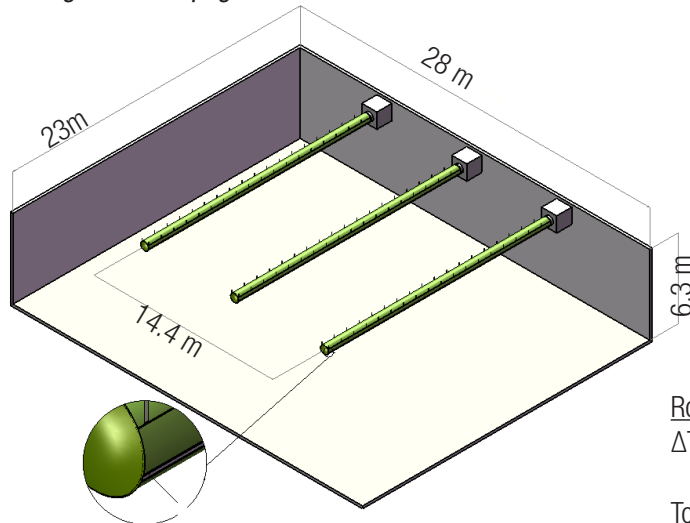
**Chart D**



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## EXAMPLE OF A TEXI-PULSE TEXTILE DUCT NETWORK

Cooling of a champagne bottles warehouse



Slot at an angle of -15°

Room dimensions : 28 m x 23 m x 6,3 m  
 $\Delta T_{\text{cooling}} = \text{Pulsed air } T^{\circ} - \text{Ambient } T^{\circ} = 5^{\circ}\text{C}$

Total air flow: 22 500 m<sup>3</sup>/h

Fan static pressure: 70 Pa

- The total airflow is dispatched through 3 parallel ducts

Airflow per duct: 7 500 m<sup>3</sup>/h

Length of each duct: 18 m

Diameter of each duct: 630 mm (see chart A, v= 6,7 m/s)

- 2 slots 20 mm wide, positioned -15° from the horizontal shaft for a total air flow of 417m<sup>3</sup>/h/ml (208,5 m<sup>3</sup>/h/ml per slot)
- Air diffusion velocity through the slot  $V_s = 4,5$  m/s

## AVAILABLE PRESSURE

The total available pressure of the fan  $P_t$  is given by the following formula :

$$P_t = P_{\text{stat}} + P_{\text{dyn}}$$

With:

- $P_{\text{stat}}$  = Pressure drop caused by the air flow going through the slots. It depends on the type of slot (free section of the mesh fabric) and the air diffusion velocity (here 5,5 m/s).
- $P_{\text{dyn}}$  = Dynamic pressure of the air when it enters the duct (see charts A to D ). Here,  $P_{\text{dyn}} = 28$  Pa