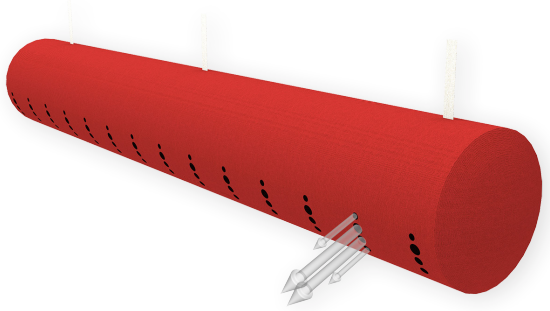
TEXTILE DUCTS

TEXI JET

The **Texi Jet** textile duct has been designed for high air velocity diffusion ($7 < V < 15$ m/s). This diffusion is ensured through rows of perforations designed for your project by our air management engineering department.
This method based on high air induction (rate > 20), offers an excellent air distribution efficiency (heating and cooling) combined with the control of residual speed, avoiding any « air draught effect ».



APPLICATIONS

Heating and cooling of large volumes

- large and average size stores, exhibition halls…
- Auditorium, amphitheaters, theaters, concert halls...
- sports halls, multi-purpose halls…

Heating and cooling of high industrial storage warehouses needing a homogeneous and controlled temperature.

Heating and cooling of sensitive industrial production premises, demanding regarding the control of residual speeds or high thermal applications :

- printing halls
- electronics
- metallurgy
- plastic injection...

ADVANTAGES

- High induction rate (> 20). Good control over residual air velocities and excellent comfort even with strong ΔT.
- High efficiency for the heating of high premises (H > 8 m).
- The ideal solution to heat and cool premises whose height is between 4 m < H < 8 m and where comfort and a homogenous repartition of the air are wanted.
- Suitable to heat up to 200 W/m² and up to 300 W/m² when in cooling mode - Air flow up to 450 m³/h/ml.
- Texi-jet ducts do not clog.

RECOMMANDATIONS AND LIMITS OF USE

- To be avoided for low height premises (H < 4 m).
- The sizing of the network and of the ducts (quantity, length, perforation plan) must be set at the beginning of the project.

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POSSIBLE FABRICS

All fabrics having a permeability below 100 l/m²/s under 120 Pa as well as technical PVC fabrics can be used.

F2A references	Type of fabric	Weight +/- 5% (g/m²)	Stan-dard colours	Permeability under 120 Pa (l/m²/s)	Characteristics
PM1/E - 60	Polypropylene B-s1-d0 fire rating *Resistant to fungi and bacteria in accordance with DIN EN ISO 846 and VDI 6022*	60	White	70	Washable (one washing only) in machine according to our instructions
PM1/E - 160	Polyester B-s1-d0 fire rating (available without fire rating)	140	cf **	20	Washable in machine according to our instructions
PVC - M1	Double faced polyester coated with B-s2-d0 fire rating (available without fire rating)	550	cf *	0	Washable with high pressure jet
VPU 550 - M0	Double faced fiber glass fabric coated with polyurethane A2-s1-d0 fire rating	460	Grey White Black	<1	Non washable. Can be dusted off.

White	Black	Green close to RAL 6032
Grey close to RAL 7040	Blue close to RAL 5005	Red close to RAL 3020

***:** Standard colours PVC PVC M1 in white only

	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 160

The indicated colours only apply for the fabric itself.

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SELECTION CHART FOR A CIRCULAR DUCT

Charts A and B : diameter's selection depending on the input air flow.

Chart A

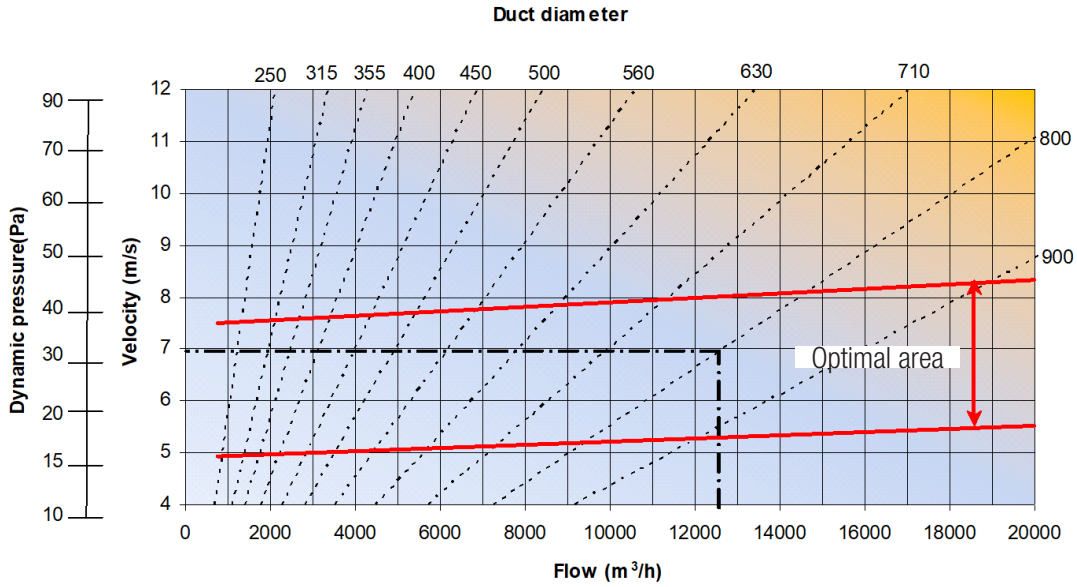
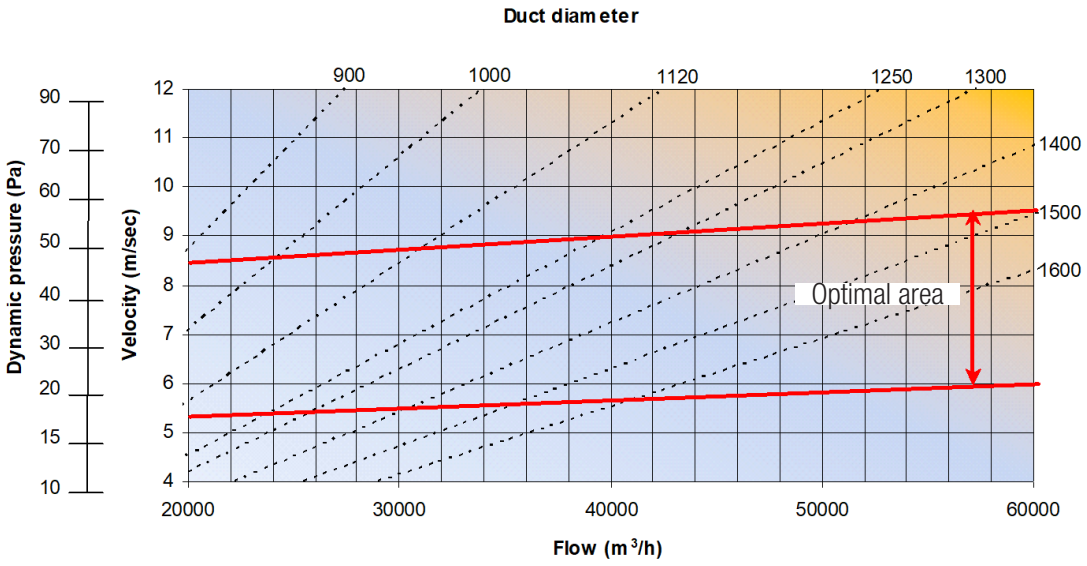


Chart B



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F2A Manufacturer Air handling components

SELECTION CHART FOR A 1/2 CIRCULAR DUCT

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

Chart C

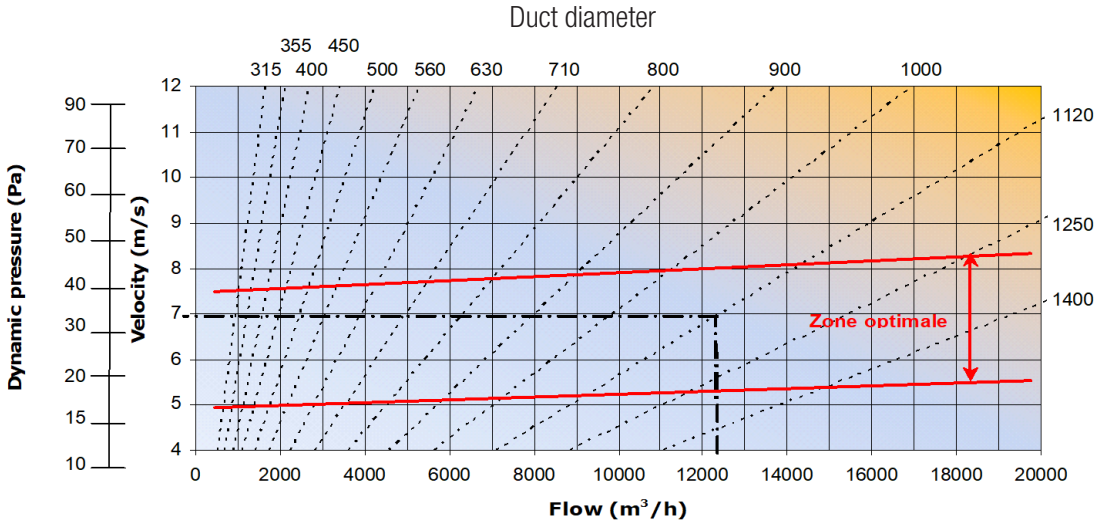
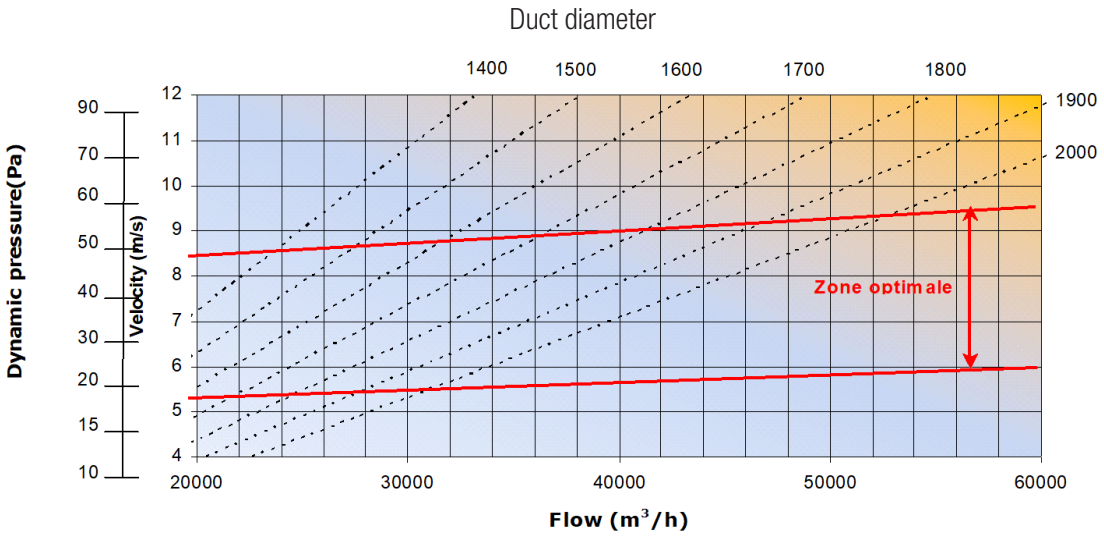


Chart D



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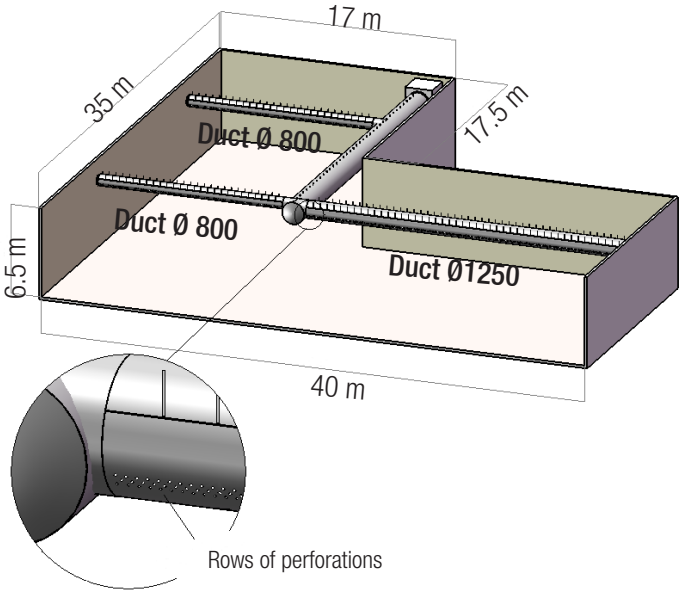
EXAMPLE OF HIGH INDUCTION TEXI-JET DUCTWORK

Heating and cooling of a large DIY store



Room's dimensions : 40 m x 35 m x 6,5 m

ΔT_{hot} = + 15°C ; ΔT_{cold} = -7°C

Total airflow: 30 000 m³/h

A collector Ø1600 dispatches the airflow over 3 ducts:
2 ducts Ø800 + 1 duct Ø1250 (see chart C and D)

Airflow per duct:

- duct Ø800 = 6 040 m3/h per duct
- duct Ø1250 = 17 920 m3/h

Length of each duct:

- duct Ø800 = 13,7 m each
- duct Ø1250 = 23,7 m
- collector Ø1600 = 24,5 m

4 rows of perforations on each side positioned -50° (towards the bottom) from the horizontal shaft

Air diffusion velocity through the perforations

V^s = 12,6 m/s

AIRFLOW DISPATCH THROUGH EACH DUCT

1. Surface to treat for each duct : S_g

S_g = Length x Air throw

2. Total surface to treat : S_t

S_t =sum of S_g

3. «Average surface airflow" : Q_s

$Q_s = Q_t/S_t$

4. Airflow per duct : Q_g

$Q_g = Q_s \times S_g$

AVAILABLE PRESSURE

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

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

With :

- P_{stat} = Pressure drop caused by the air passing through the perforations.
  It depends on the air diffusion velocity (here 9,7 m/s)

- P_{dyn} = Dynamic pressure of the air when it enters the duct (see charts A à D) here P_{dyn} = 42 Pa

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