# 5 plus 5 good reasons

## 5 points in favour of textile air distribution

ECONOMY
• Cost saving compared to sheet metal system may reach as much as 70%! Take the price of conventional diffusers, transport, installation, setting of the proper air flow, and cost of cleaning into consideration!

HYGIENE
• Having been washed, possibly with disinfectant, the distribution system is absolutely clean and bacteria-free! Such assurance can never be given with non-textile materials.

SPEED
• Installation and disassembly only take a fraction of time compared to conventional, heavy systems!

METHOD
• Layout of distribution openings is optional and so is their size. An inexhaustible number of air distribution methods can be achieved – beginning from draught-free diffusion up to targeted transfer over a long distance.

AESTHETICS
• Various colour and shape combinations may satisfy the needs of an architect and the product then becomes a tasteful part of the building interior!

## 5 points in favour of Příhoda s.r.o.

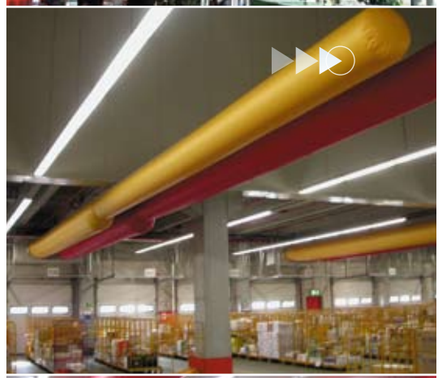
THE BEST COST / QUALITY RATIO
• Please, assess our quality and purchase prices for yourselves!

MICROPERFORATION
• Our original technology which gave a totally new quality to textile diffusers!

PROMPT RESPONSE
• Our organisational system which is in line with ISO 9001 and is being continuously improved allows the quickest possible response to customers` inquiries and purchase orders.

MONOFILAMENT
• Our materials are woven exclusively from monofilament! For the advantages of monofilament please read the body of the leaflet.

SOFTWARE
• Accurate calculation of all dimensions, automatically generated drawing and speed-profile graph, exact specification of supplied goods!



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PŘÍHODA

**TAYLOR - MADE** AIR DISTRIBUTION

# TEXTILE AIR DISTRIBUTION SYSTEMS

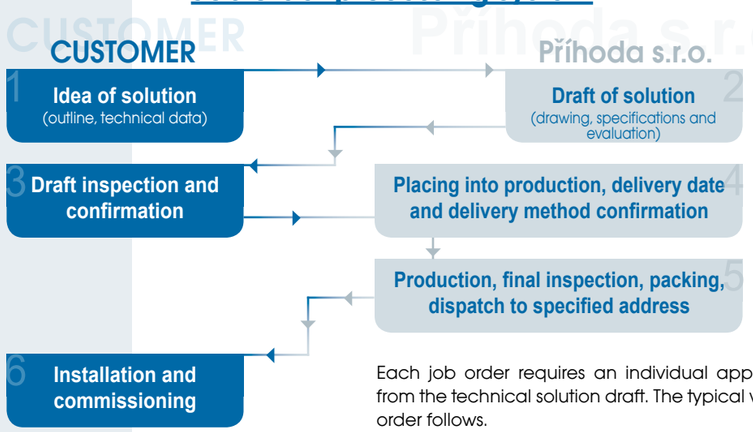
ENGLISH

# Basic information

The textile air distribution systems are designed for the specific distribution of air from air - conditioning, heating, cooling or filtration units into precise locations within a room or space. The air distribution is provided through fabric with perforated holes of various sizes which are placed in the fabric in a purposeful manner. Thus, very interesting technical effects may be achieved and solutions to very difficult requirements may be provided. The used textile fulfils the fire-safety, hygienic, durability and aesthetic requirements. In order to achieve the required air-flow speed, it is important to determine the number, size and direction of the perforated holes. Each job order is dimensioned and proposed as an original design based on the input conditions. The specially developed assembly material, which is included in the delivery, facilitates quick and easy installation or disassembly.

The correct diffuser shape and length are chosen based on the site of installation. The dimension is chosen based on the air flow. The incoming air temperature, suspension height and working sites` placement influence the direction and size of the perforated holes in the fabric. The advantages of textile diffusers are utilised to the maximum extent due to the experience and creative imagination of our technicians.

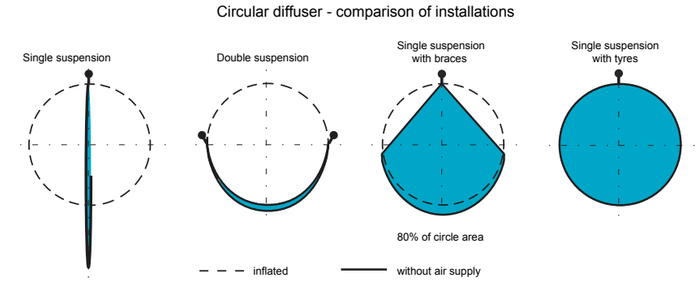
## Job order processing system




Each job order requires an individual approach and starts from the technical solution draft. The typical work-flow of a job order follows.

# Frequently asked questions

## 1/ What does a textile diffuser look like when the fan is switched off?




## 2/ Can textile diffusers be used for air exhaust?

Unfortunately not, the diffuser's shape is only maintained by internal pressure. Moreover, the passage of unfiltered air would contaminate the fabric very quickly.

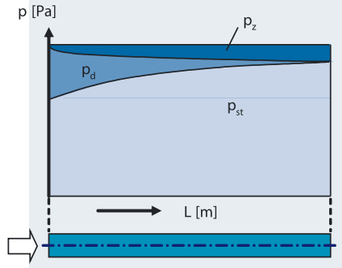
## 3/ What is the service-life duration of textile diffusers?

This is not a short term solution. Diffusers made from good quality fabrics will last for fifteen years or longer. Light fabrics (approx. 100 g/m2) with maximum permitted number of 50 washing procedures (typically polyethylene foils susceptible to tearing) may have limited durability.

## 4/ What is the pressure loss of a textile diffuser?

In a well designed diffuser which does not utilise shaped pieces there is an almost constant static pressure throughout. The fabric perforation is calculated based on the average value of the static pressure. In other words, the diffuser is designed based on the fan's external pressure to which it is adapted. Shaped pieces and turbulence equalisers present certain pressure loss which needs to be taken into consideration. Loss caused by friction is usually minimal due to the decreasing air speed inside the diffuser. The minimum utilisable pressure is 50 Pa, with light materials 20 Pa.

**Typical static and dynamic pressure progression inside the diffuser.**




## 5/ What to do with diffusers when they get clogged by contamination?

Diffusers with micro-perforation and even diffusers with larger holes never get completely clogged by contamination (if used with minimum pre-filtration EU3). The maintenance (typically washing in a washing machine) is therefore necessary for hygienic and aesthetic reasons only. Each individual piece separable by a zipper contains a washing-instruction tag which contains sufficient instruction for washing. Our experience has proven that our monofilament fabrics remain internally almost clean even after many years of operation.

**Washing-instruction tag**


## 6/ Can textile diffusers get mouldy?

Mould can form on any kind of material if it is moist and unventilated. This goes for fabrics with antibacterial treatment, too. It is caused by the fact that moulds are not bacteria. Therefore, never store moist diffusers packed-up or do not let them out of operation for long periods of time. Moulds cannot be removed from fabrics by any means.

## 7/ Can diffusers of square cross-sections be used?

Only if they are supported in a suitable manner. Even after this sort of support, the shape will never be precise. A blown-up fabric always tends to take a rounded shape.

## 8/ Does the textile diffuser function as a filter at the same time?

If permeable materials are used, the fabric functions as a filter for the part of the transferred air that goes through the fabric. As the fabric contamination gradually increases, the pressure loss grows and the air flow decreases. Therefore, it is necessary to wash the fabric. We consider the utilisation of perforated fabric to be by far the best solution. Although perforated fabrics do not function as filters they do not change the pressure loss value and the number of necessary washing procedures significantly drops. We are a manufacturer of distribution (not filtering) elements.

# Use of textile diffusers

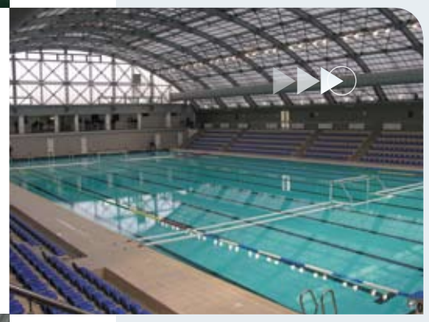
There is literally no building that needs air distribution where a textile diffuser would not be a suitable solution. We know how to diffuse air so that no draughts occur. On the other hand, we know how to reach distances of 10 m and more. We adapt the shape and colour to the building interior. We may utilise materials which are totally inflammable.

## Food industry

There is usually no alternative because only textile diffusers may be perfectly cleaned by washing.

## Swimming pools and gyms

Non-draught air distribution and corrosion prevention are prerequisites for a successful installation.

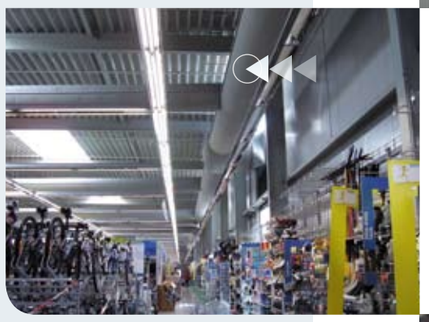


## Food stores, working sites with low temperature

We know how to maintain constant temperature in large areas, in cooled rooms without forming draughts. Permeable material prevents water condensation on the surface of the distribution system.

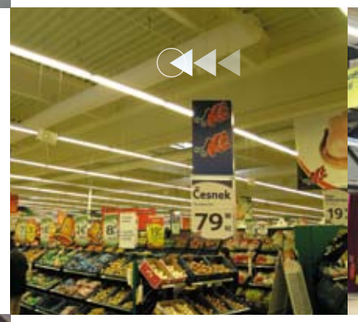
## Kitchens

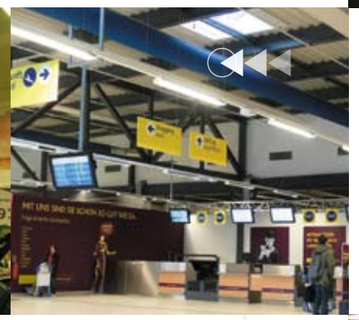
Ideal solution for diffusion of large volume of air into a small area. Totally vapour/fume resistant.



## Supermarkets, sports halls

Fire resistant materials with perforated holes that are based on the incoming air temperature.



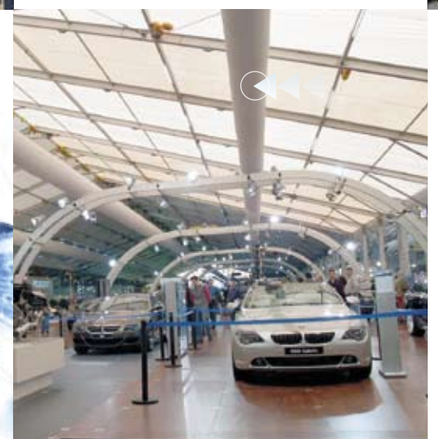



## Offices, discos, cinemas etc.

Semi-circular diffusers placed on the ceilings prevent the draught formation typical for conventional systems and at the same time become a valuable aesthetic part of the interior.

## Chemical, textile and electrical industry

The typical motivation is low cost and easy assembly.



## Temporary installations

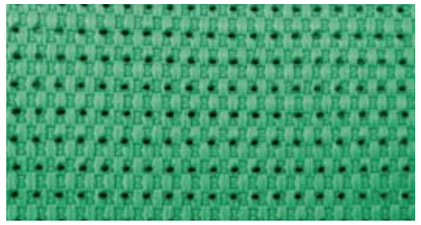
Huge tents or roofed areas with no side walls may be efficiently and economically air-conditioned or heated.

# What you may not find sewhere

## Our Specialities

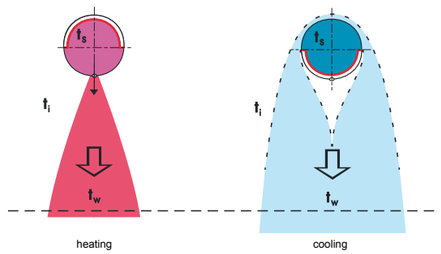
### Micro-perforation

The required air flow through the fabric is achieved by burning an exact number of tiny holes (approx. 0.4 mm) into the fabric. Such fabric, if pre-filtered to EU3 at least, does not change the pressure loss value and requires washing for aesthetic and hygienic reasons only.



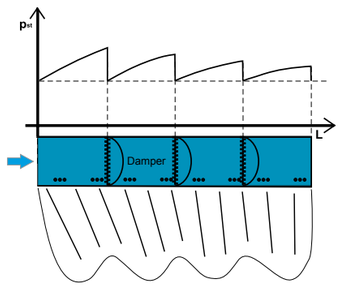
### Membrane diffuser

The distribution of warm air into a room requires completely different approach than the distribution of cold air. The membrane diffuser allows the switching between these two operation modes and thus enables effective heating and draught-free cooling.



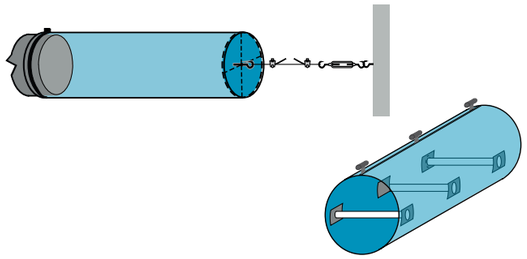

### Sequential and structured perforation, screens

Tests and measurements proved that the layout of holes influences how the air spreads from the diffuser. We have developed special layouts of perforated holes ensuring more even air distribution. The static pressure progression along the diffuser (and therefore the air output) can be adjusted by utilising textile screens.




### Tensioning stretchers and braces

The most economical and best solution for short diffusers is installation utilising a stretcher. With longer diffusers – the stretcher improves the visual appearance. Braces are a more economical alternative of stretching rims (collars).



### Insulated ducting and noise silencers

Insulated textile ducting is used for passing through areas which are not air-conditioned. Insulation reduces the heat loss and at the same time serves as a noise silencer.



# Materials

## Materials

The materials used are essential for a well functioning diffuser which is in line with technical regulations and can provide good service life. We only manufacture from synthetic materials the basic overview of which is listed in the following chart:

| MARKING | PERMEABLE | WEIGHT | CHARACTERISTICS | MATERIAL | GUARANTEE |
|---|---|---|---|---|---|
| PMS /NMS | yes / no | medium | standard | 100% polyester | 10 years |
| PMI / NMI | yes / no | medium | increased FR | 100% polyester - modified | 10 years |
| PMB | yes | medium | antibacterial | 100% polyester + silver | 2 years |
| PLS / NLS | yes / no | light | standard | 100% polyester | 2 years |
| PLI / NLI | yes / no | light | increased FR | 100% polyester - modified | 2 years |
| NMF | no | medium | foil | 100% polyethylene | 1 year |
| NHI | no | heavy | increased FR | polyester + 2x PVC + antimony | 2 years |
| NHE | no | heavy | excellent FR | fibre glass + 2 x PVC + carbon | 2 years |
| NMA | no | medium | antistatic | fibre glass + 2 x PVC + carbon | 1 year |

FR = fire resistance

Most of our materials are available in 8 colours which roughly correspond to the following colour range. Choosing a special colour version usually means longer delivery time.

In order to choose the colour accurately, please ask for a material pattern book!

All our fabrics are manufactured from synthetic silk, so called monofilament. The differences between mono- and multi-filament are illustrated in the photos from an electron microscope.