



TEDDINGTON
AIR CURTAIN SYSTEMS



WINDBREAKS

WITH ENERGY EFFICIENT
AIR CURTAIN SYSTEMS

DOORS
MADE OF
AIR

Combined technology – optimal impact.

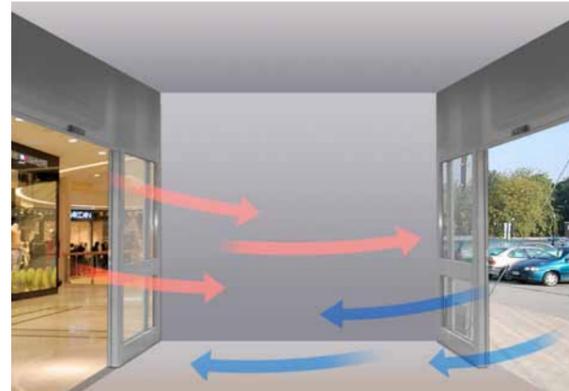
The perfect combination:
covered entrances with air curtain systems.

To guarantee a windbreak function when doors are open on both sides and to prevent cold air coming into the windbreak or covered entrance, Teddington offers the perfect solution with a combination of cold air and warm air curtain systems.

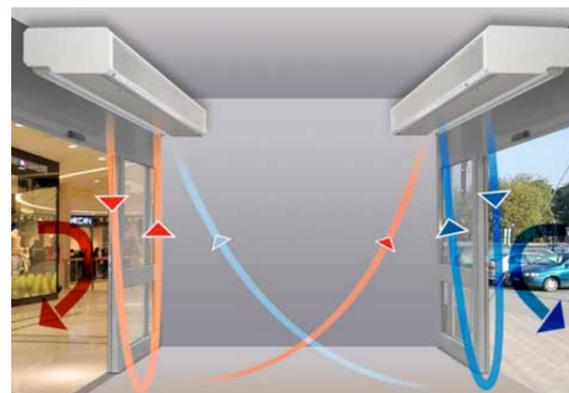
Uncontrolled air flows are present in heavily frequented entrances to buildings. These are compounded by wind pressure from outside, thermal convection and pressure changes from air conditioning systems in the building.

Double door systems are often deployed here as wind protection. However these are only effective if both doors are closed in turn. In practice the effect is often lost due to the doors being opened too often or because the depth of the entrance is inadequate.

The result is that doors on both sides are open. This creates unpleasant draughts, with high operating costs due to the considerable volume of incoming cold air.



A great deal of energy gets lost in covered entrances due to frequent opening of doors.



The interaction of two air curtain systems gives the building almost 100 % protection from outdoor air and incoming cold air, whilst simultaneously reducing heating energy by 30 to 40 % compared to the conventional use of just one air curtain system.

- ✔ Less energy
- ✔ Better air conditioning
- ✔ Improved sales psychology
- ✔ Greater environmental protection
- ✔ Better working conditions



Combined systems – solutions for every application.

Situation 1:

A covered entrance is present, heating medium flow > 40 °C

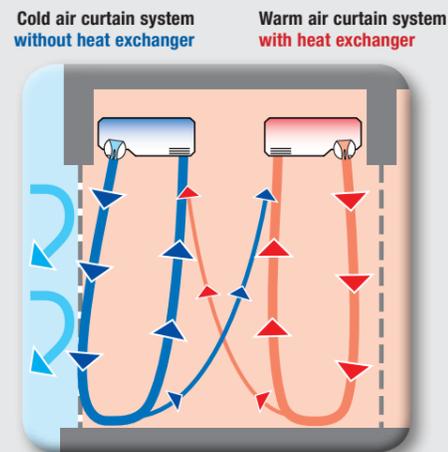
Proposed solution:

Cold air curtain on the outer door, warm air curtain on the inner door.

Application area:

Covered entrances in single storey and multi-storey buildings with special ventilation requirements or with the greatest demands regarding optimal energy savings.

Recommended device: Teddington E-Series



Situation 2:

A covered entrance is present. Heating medium flow < 40 °C through the use of renewable energy and climate-friendly technology.

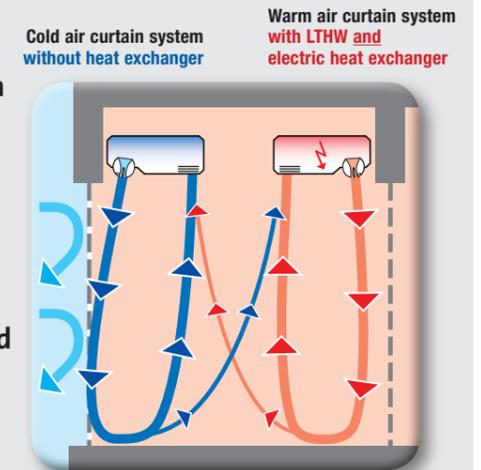
Proposed solution:

Cold air curtain on the outer door, hybrid warm air curtain on the inner door.

Application area:

Covered entrances in single storey and multi-storey buildings with special ventilation requirements or with the greatest demands regarding optimal energy savings.

Recommended device: Teddington HYBRID Series



Advantages:

- The double door system really does BREAK UP the wind
- Gusts of wind are broken up by the cold air curtain on the outer door, preventing incoming air from the sides.
- The windbreak acts as heat buffer between the cold outdoor air and the building.
- Due to the temperature control in the windbreak - resulting from the warm air curtain system, the circulating air from the cold air curtain system - which is actually unheated - is not perceived as "cold". In winter it feels warmer as soon as you enter the covered entrance.
- Any noise generated remains in the covered entrance.
- Use can be made of the space in the building directly behind the windbreak, because there are neither annoying air currents nor noise to discourage people from spending long periods of time there.
- In combination with cold and warm air curtains as well as the highly efficient CONVERGO® pressure chamber nozzle system (Patent No. DE 10 2011 000 066.6), it is usually possible to select warm air curtain systems with one performance category lower than for entrance areas without a separate cold air curtain system. This reduces the heat output needed by a further 30 % compared to a single warm air curtain unit.
- The separate arrangement of the cold and warm air curtain systems rules out any ventilation short circuits. Both air curtain systems create clean and spatially separate air rolls.
- The cold air curtain system on the outer door already reduces incoming outdoor or cold air into the covered entrance by up to 80 %. The warm air curtain system situated on the inner door creates a second air roll whose effect is to counteract the penetration of the residual air. As a result, the building behind the covered entrance is perfectly screened.
- The investment in the cold air curtain system pays for itself within a very short time due to the savings in heating (precise figures can be determined for specific projects using a calculation of profitability).

Advantages:

As Situation 1, plus:

- As the heating capacity of the LTHW heat exchanger is often not sufficient to ensure thermal comfort in entrances under flow temperatures of 25 - 40 °C and extremely low external temperatures, the air discharge temperature of the air curtain system is raised by means of an electric heat exchanger (located downstream of the LTHW heat exchanger) thus ensuring sufficient heating of the entrance.
- By incorporating the use of renewable energy into the overall concept of a building, it is possible to avoid the use of fossil fuels entirely if desired. This saves natural resources and relieves the burden on the environment.

Combined systems – solutions for every application.

Situation 3:

A covered entrance is present, vertical arrangement of the air curtain systems is desired.

Proposed solution:

Vertical device arrangement with mutually reinforcing air circulation, arranged on the outer and the inner door respectively.

Application area:

Covered entrances in single storey and multi-storey buildings with special ventilation requirements or with the greatest demands regarding optimal energy savings.

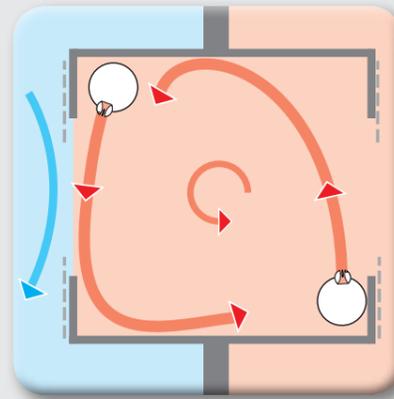


Diagram showing view from above

Recommended devices: **Teddington CHARISMA, TOPAS, TUBUS**

Advantages:

- The air roll rotates as stable system inside the covered entrance
- Gusts of wind are broken up by the air curtain system on the outer door, preventing incoming air from the sides.
- The windbreak acts as heat buffer between the cold outdoor air and the building
- The majority of the air volume produced is captured by the corresponding opposite system, and the screening effect is boosted by the rotation.
- Use can be made of the space in the building directly behind the windbreak, because there are neither annoying air currents nor noise to discourage people from spending long periods of time there
- Any noise generated remains in the covered entrance.
- Heat exchanger in either a hot water or electric version.

TWICE – the invisible windbreak.

Situation 4:

No covered entrance is present

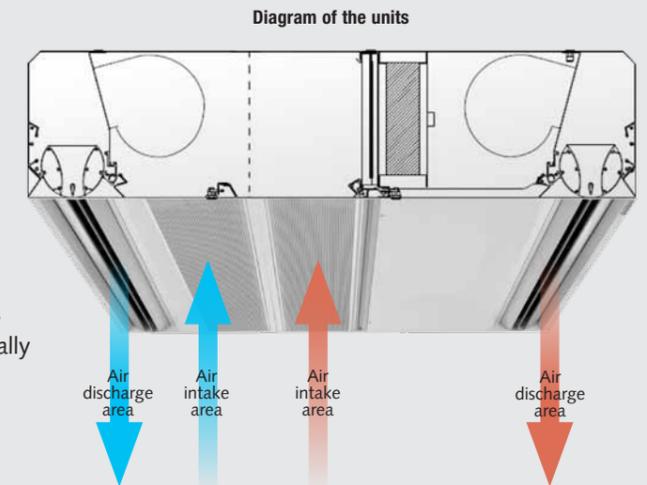
Proposed solution:

The “invisible” windbreak with the Teddington TWICE Series

The entrance area is a showcase and part of the most valuable sales area. This area is lost with a classic windbreak. A double door system with integrated windbreak is additionally expensive and involves substantial building measures.

With TWICE, Teddington offers a solution with a windbreak effect. The combined air curtain system acts as an “invisible windbreak”, but takes up no space.

Two separate fan units generate counter-rotating rolls of air, one with cold air flow and one with warm air flow, which perfectly assume the function of a windbreak.



Do not present your customers with closed doors – rather create an unobstructed entrance for them.

The solution is called TWICE.

Advantages:

- Valuable sales space in the entrance area is retained.
- The cold air roll on the outer door, which protects the entrance area from wind, already substantially reduces incoming cold air. The warm air roll which follows, and which counteracts the penetration of the residual air, also conditions the air and prevents unpleasant draughts. The building has first class screening due to the interaction of both air rolls.
- The outer air roll is not air conditioned. This reduces energy costs.
- Due to the separate arrangement of the cold and warm air curtain system as well as the high discharge momentum of the **CONVERGO® pressure chamber nozzle system** (Patent No. DE 10 2011 000 066.6), ventilation short circuits are ruled out. Both air curtain systems create clean and spatially separate air rolls. The highly efficient **CONVERGO® pressure chamber nozzle system** enables air volumes to be substantially reduced; this greatly restricts air turbulence and draughts.
- Due to the slight warming up of the outer air roll by the warm air roll that follows it, the outer air roll is not perceived as “cold”. In winter it feels warmer as soon as you enter the building.
- Although both air rolls are installed in one housing, they may be operated differently. Each fan unit can be switched to 5 levels. In this way the air curtain system can be perfectly adapted to suit the relevant building situation.
- The air curtain system can be operated using just one fan unit outside the main heating period and in the summer, so as to effectively prevent incoming cold air when it is cool or incoming warm air in the summer. This also allows energy savings without any loss of comfort.



TEDDINGTON
AIR CURTAIN SYSTEMS

Our innovations have set benchmarks in air curtain technology, offering not only convenient solutions, but also first and foremost the opportunity to save a great deal of energy and money.

Moreover by doing so we make an important contribution to the protection of our valuable environment.

- ✓ **Innovative Technology**
- ✓ **Greatest efficiency**
- ✓ **Trend-setting design**
- ✓ **Top quality**
- ✓ **Perfect service**

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