


theBreath<sup>®</sup> by Anemotech  
Pure technology.

“There’s so much pollution in the air now  
that if it weren’t for our lungs  
there’d be no place to put it all.”

Robert Orben

the**Breath**<sup>®</sup>   
it traps pollution and purifies air.



**Anemotech®** 6

**theBreath®**

Simply revolutionary 8

How does it work? 10

Unique characteristics 12

Table of the pollutants 14

Efficient Adsorption 16

IN & OUT door 18

Tests & Certifications 20

Acknowledgments 22

Umberto Veronesi 26

Indoor Applications 28

Outdoor Applications 34

the**Breath**®  
is the result  
of the research  
by **Anemotech**®.

An all-Italian company  
that since 2014 has a  
very specific mission:  
studying and developing  
products aimed  
at enhancing people's  
quality of life.

Anemotech®

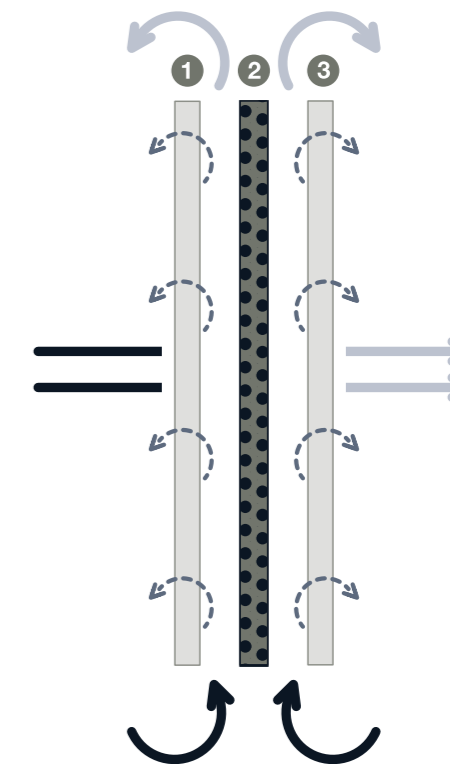
**Made in Italy**  
with an international breath.

## A simply revolutionary technology.

theBreath® is an innovative patented fabric designed to adsorb and disaggregate harmful particles present in the air; a technology that helps to fight domestic and atmospheric pollution caused by heating and air conditioning systems, cars and industrial facilities.



The purification:  
**3 layers that work in synergy.**



The air, with its natural movement, flows both tangentially and through the three layers, returning to circulation cleaner and more breathable.

## A process as light as air.

theBreath® purification process is completely passive and it relies on the natural flow of the air without requiring any additional source of energy.

### 1 FRONT LAYER

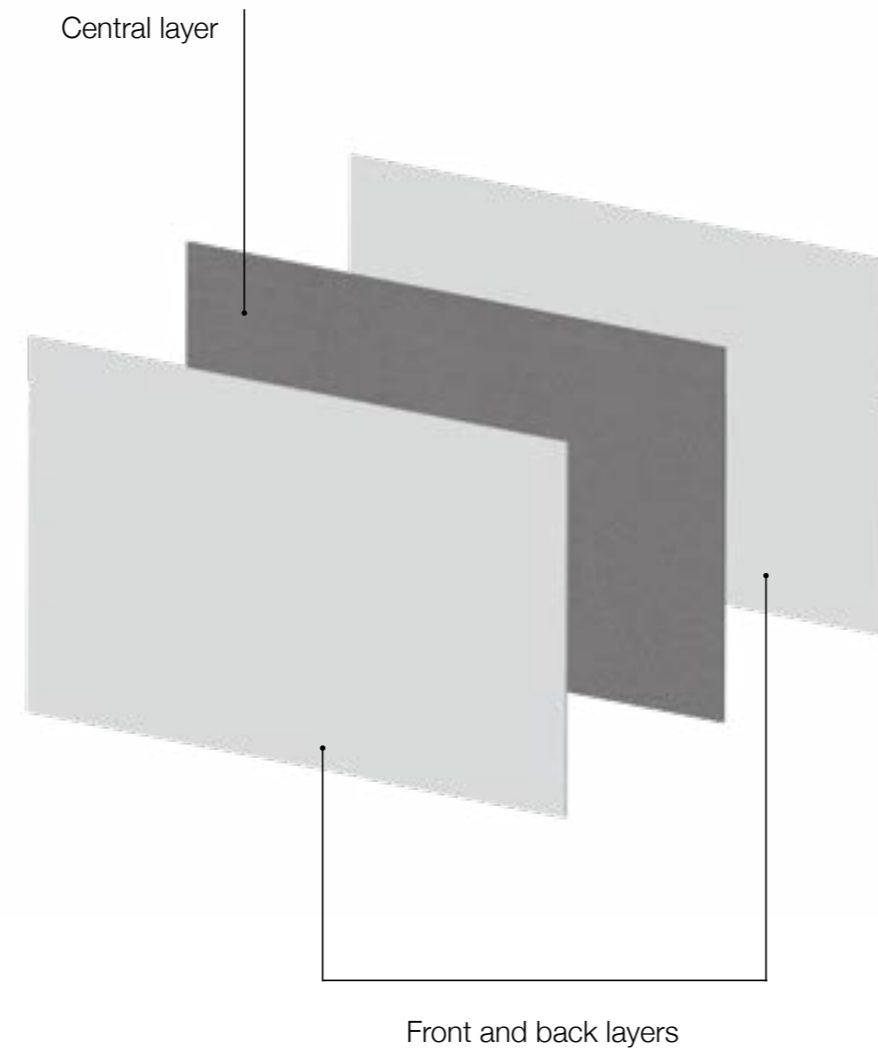
Printable, bacteriostatic, antiviral and fungicidal, it helps air transpiration.

### 2 CORE LAYER

A carbon mesh that adsorbs, traps and disaggregates polluting molecules and bad smells.

### 3 BACK LAYER

Printable, bacteriostatic, antiviral and fungicidal.



love is in **the air.**

Follow us on 

theBreath®, pure wellness.



The carbon mesh traps the polluting molecules inside its structure and prevents them from being released back. They are adsorbed and disaggregated.

**adsorbing**



Thanks to the properties of the outermost layers of the fabric, it eliminates and prevents the action of any harmful organism, killing up to 98.7% of the viral load

**biocidal**



Silver ions incorporated into the fibers of the outer fabric exert an effective control over Gram-positive and Gram-negative bacteria and a number of fungi.

**bacteriostatic**



It does not use external electrical or fossil energy sources and has a low environmental impact and sustainable performances.

**energy free**



It does not simply cover or reduce smells, but it also disaggregates molecules thanks to its carbon mesh, freeing the air from unpleasant emissions.

**anti-odor**



theBreath®  
A valid ally for  
all towns with high  
traffic density.

From the left picture,  
billboard text translation:

**"THIS ADVERTISEMENT  
DOES NOT SELL CARS.  
IT MAKES 379,050 OF THEM  
DISAPPEAR IN A YEAR."**

Piazza Della Cancelleria  
Rome

By URBAN VISION

POLLUTANT ADSORBED	IARC* CLASSIFICATION	PRESENT IN	HARMFUL EFFECTS
<b>FORMALDEHYDE (CH<sub>2</sub>O)</b>	<b>1</b>	Furnishings - Coatings - Floor covering - Cleaning Liquids and Products	<b>Eye, nasal and throat irritation, fatigue and skin erythema.</b> Formaldehyde is one of the most involved agents in the Sick Building Syndrome. Moreover, IARC define Formaldehyde as one of the certain carcinogenic substances.
<b>BENZENE (C<sub>6</sub>H<sub>6</sub>)</b>	<b>1</b>	Gasoline - Cigarette smoke - Glues - Adhesives - Solvents- Paints - Buildings materials (immediatly after laying)	<b>Carcinogenic agent causing leukemia</b>
<b>VOLATILE ORGANIC COMPOUNDS (VOC)</b>	<b>1,3</b>	Cosmetics - Deodorants - Heating appliances - Cleaning materials - Glues - Adhesives - Solvents - Paints Clothes washed by a laundry - Cigarette smoke - Printers and photocopiers - Building materials - Furnishings - People in an indoor environment whose breath and body surface are polluting	<b>From sensorial discomforts up to severe alterations of the state of health.</b> Indoor they can have effects on many organs and apparatuses, especially on the central nervous system. Some of them are recognized as carcinogenic to humans (Benzene) or to animals (carbon tetrachloride, chloroform, trichloroethylene).
<b>POLYCYCLIC AROMATIC HYDROCARBONS (PAH)</b>	<b>2</b>	Cigarette smoke - Kerosene boilers - Fireplaces - Fumes coming from cooking and grills	They are higly carcinogenic and are present in the indoor air; they are partially present in the vapor phase and partially adsorbed by particulate matter. <b>They can cause skin cancers by contact and lung cancers when inhaled.</b>
<b>NITRIC OXIDE (NO<sub>x</sub>)</b>	<b>2A</b>	Kerosene radiators - Heaters - Gas radiators without external exahust system - Tobacco smoke - Gas cooker - Vehicles	They have a pungent smell and cause eye, nasal and throat irritation as well as cough. <b>Alterations in the respiratory functions can occur in sensitive individuals such as children, and people suffering from asthma or chronic bronchitis.</b>
<b>SOLPHUR OXIDES (SO<sub>x</sub>)</b>	<b>2A</b>	Kerosene radiators - Heaters - Gas radiators without external exahust system - Tobacco smoke - Gas Cooker - Vehicles	They produce the same biological and health effects of the nitric oxides. At low concentrations their <b>effects are mainly linked to diseases of the respiratory system such as bronchitis, asthma, tracheitis and skin, eye, and mucous membrane irritations.</b>
<b>OZONE (O<sub>x</sub>)</b>	<b>-</b>	INDOOR: Laser photocopiers and fax machines - Ultraviolet rays - Electrical filter for air cleaning - Fumes from cooking - Spray - Any type of working electrical appliance. OUTDOOR: Combustion engines - Vehicles - Industrial plants - Heating system.	<b>It can cause irritations to the eye mucous membranes and to the upper respiratory tracts, cough, broncho-obstructive phenomena and alterations in the respiratory function.</b> In the epidemiologic studies carried out on urban populations exposed to Oxone, irritative symptonns were observed with regard to the eye mucous membranes and to the upper respiratory tract. These were caused by an exposition for some hours to Ozone levels starting from 0,2 mg/m3.

\* IARC (International Agency for Research on Cancer) classification of the substances by groups according to the carcinogenicity level showed in scientific studies.  
1) Recognized carcinogen 2A) Possible carcinogen 2B) Suspected carcinogen 3) Not classifiable as carcinogen 4) Non-carcinogenic.



## Efficient adsorption.

Performances of the **Breath**® have been tested in accordance to international standards by university research centers and certified laboratories. Results demonstrate extremely high level of efficacy in adsorption of pollutants, as described in the table.

The studies on the effectiveness of the **Breath**® were developed in collaboration with Università Politecnica delle Marche - SIMAU (Scienze e Ingegneria della Materia, dell'Ambiente e dell'Urbanistica - Science, Matter Engineering, Environment and Urbanism) Department. Tests were realized following the international standards UNI, ISO, ANSI.

Results tested and verified by the Scienze e Ingegneria della Materia, dell'Ambiente e dell'Urbanistica Department



UNIVERSITÀ  
POLITECNICA  
DELLE MARCHE



POLLUTANT		ADSORPTION LEVEL
VOLATILE ORGANIC COMPOUNDS (VOC)	Toluene (C <sub>7</sub> H <sub>8</sub> )	<b>Up to 97,2%</b>
	Heptane (C <sub>7</sub> H <sub>16</sub> )	<b>Up to 96,8%</b>
FORMALDEHYDE (CH <sub>2</sub> O)		<b>Up to 92, 2%</b>
SULPHUR OXIDE (SO <sub>2</sub> )		<b>Up to 91,5%</b>
NITRIC OXIDE (NO <sub>x</sub> )		<b>Up to 86,8%</b>
BENZENE (C <sub>6</sub> H <sub>6</sub> )		<b>Up to 62 %</b>
OZONE (O <sub>3</sub> )		<b>Continuous transformation of Ozone (O<sub>3</sub>) into Oxygen (O<sub>2</sub>)</b>

Adsorption table based on the Standards UNI 11247 / ANSI/AHAM AC-1-2002 / ISO 16000-9



## It is not important where you breathe, but what you breathe.

theBreath® is highly effective for use in indoor environments such as houses, schools, offices, hospitals, hotels, private and public transport as well as in urban outdoor environments.

### indoor

In commercial and residential buildings theBreath® can be installed in the form of a wall poster or in a number of other forms. The fabric captures a significant amount of the polluting substances released by air treatment systems and by chemical products used in a large number of objects.

### outdoor

Specific formats can be installed to effectively capture pollutants along roads and highways, on buildings, worksites, street furniture and near air conditioners and flue pipes of boilers.

Leicester Square  
London

By URBAN VISION





## Tests and certifications

### Safety and Health Protection.

theBreath® passed multiple tests on product performance and obtained important certifications:

#### ISO 16000-9

Test used to define the specific flow by emission surface of the volatile organic compounds (VOC's) generated by newly produced building products or finishing products in certain climatic conditions.

#### UNI 11247

Test used to define the photocatalytic abatement index of the nitric oxides in the air which are produced by inorganic materials.

#### ANSI/AHAMAC-1-2002 TEST

Method assessing the performances of the domestic air purifiers.

#### ISO 18184:2019

Determination of antiviral activity of textile products.

#### Oeko-Tex®

UNI EN ISO 3071:2006

BVL B 82.02-8 – 2001

RAfPS GS 2014:01

MIP 132:2014 Rev.0

DIN 54232:2010

ISO 18254-1:2016

UNI EN ISO 14184-1:2011

UNI EN 14362-1:2017

ISO 20743:2013

JIS 1902:2002

EN 14119 a-2003-12



For a better environmental management.



For occupational safety and health protection.



For the quality of the business processes.

## Acknowledgements



### Sette Green Awards

In 2016, thanks to the **Breath**®, Università Politecnica delle Marche won *SetteGreen Awards*, a competition organized by Corriere della Sera, which awards Italian excellences in the field of scientific research for the Environment.

SETTE GREEN - Il Corriere della Sera 25/11/2016



### Start Up of Green Economy

**Anemotech® is recognized among the first ten Italian Companies for sustainable development** Start Up sector of Green Economy.

Rimini Fiera during di Ecomondo 2016



### the **Breath**®, the British!

the **Breath**® technology is presented in an article by Jack Dixon who, while speaking about the great London's problems, explains how the **Breath**® works, as well as its effectiveness and its advantages in its application in Leicester Square.

London News Online 28/02/2017



### From overseas

Years dedicated to study and develop this technology enables us to publish an important scientific article in a leading US scientific magazine, the *American Journal of Environmental Sciences*, which maintains the important result obtained with regard to the reduction of the air pollutants.

Paper ID 0179 ISBN: 978-83-7947-232-1



## Ideas & Future

With the innovative fabric theBreath®, Anemotech is among the magnificent 7 of the Mario Unnia - Talento & Impresa Award, promoted and organized by BDO Italia. The company wins the award for the category "Ideas and Future" for the Prize third edition, awarded in 2019 in Milan at Palazzo Mezzanotte, Borsa Italiana headquarters.

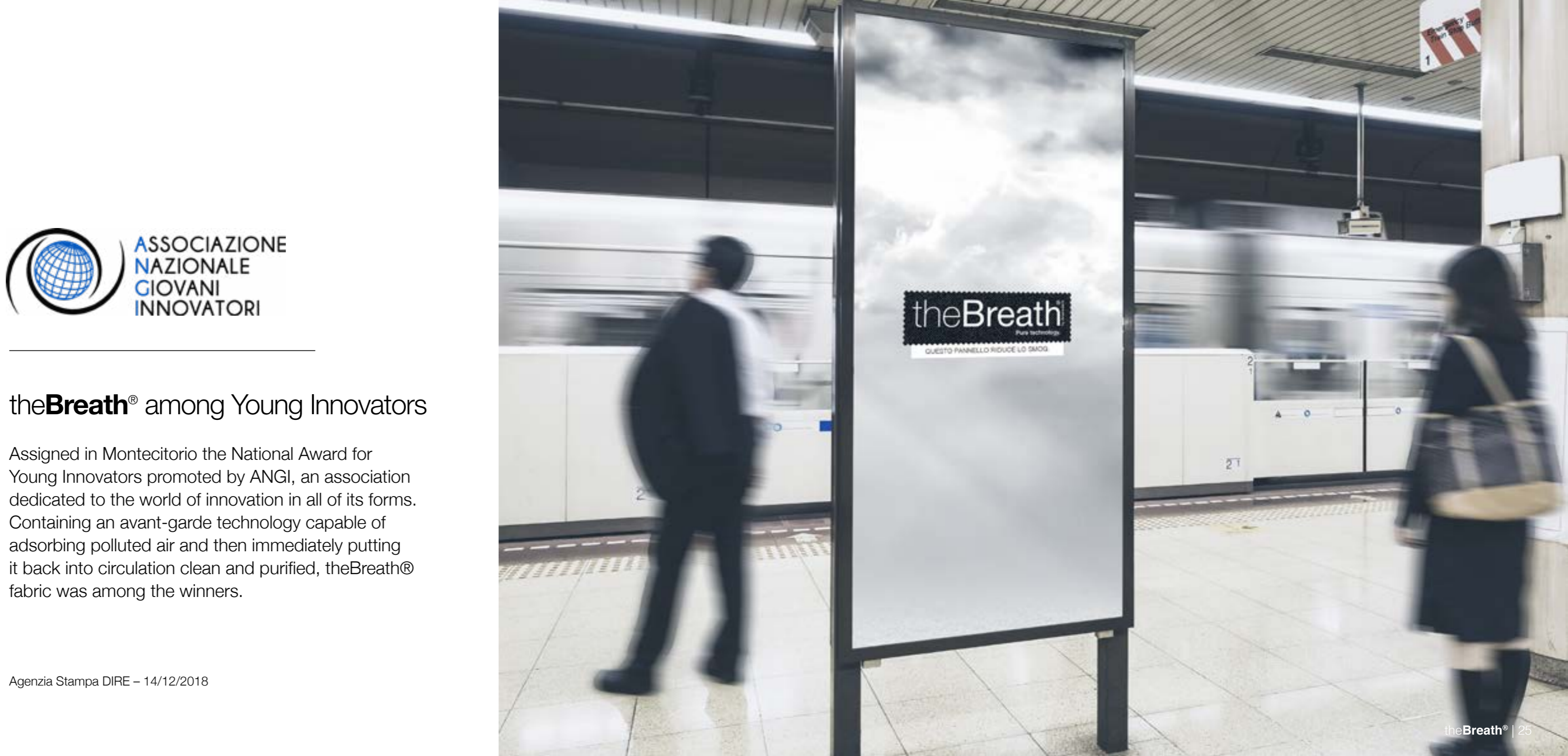
Adnkronos – 25/06/2019



## theBreath® among Young Innovators

Assigned in Montecitorio the National Award for Young Innovators promoted by ANGI, an association dedicated to the world of innovation in all of its forms. Containing an avant-garde technology capable of adsorbing polluted air and then immediately putting it back into circulation clean and purified, theBreath® fabric was among the winners.

Agenzia Stampa DIRE – 14/12/2018



## Umberto Veronesi

A very special friend who we will always remember with great appreciation.

*"I consider the **Breath**® a simple, ecologic and effective solution, that has been validated, and it stresses the importance of the prevention of the respiratory system's diseases.*

*I wanted to work with Anemotech by contributing to its diffusion [...]*

*Today having the chance to enjoy a safer, more breathable air is a priority of society [...]"*



“ I got closely involved with Anemotech, as I believe they are a group of researchers, engineers, scientists, people who care about public health.”

Umberto Veronesi\*, theBreath®



FUORI TG RAI3 13/06/2016

\* **Umberto Veronesi** has been an Italian oncologist and politician. Former Minister of Health of the Italian Government (2000-2001). He founded and has been Scientific Director of the European Institute of Oncology (1994-2016) and former Scientific Director of the National Institute of Oncology of Milan (1976-1994)

## Indoor applications.

theBreath® is a technology that can be perfectly used in public and private indoor spaces to reduce the pollutants caused by air treatment systems, allergens, chemical products and fine particulates.

Especially in public places, like hospitals, offices and schools, theBreath® can be used as a valid printing support for informative or teaching material.

theBreath® is an formidable tool for architects and interior designers to enrich their projects with an innovative product that improves the quality of the environments they design.





Indoor applications

## Schools

### Sustainability lesson.

When installed in school buildings, the **Breath**<sup>®</sup> helps protecting the health of children, who are more vulnerable to the effects of air pollution. In addition the **Breath**<sup>®</sup> can be used as a canvas customizable with contents and used on the walls of the classrooms for didactics or with images and messages of the school.

## Hospitality

### Improving guests' wellbeing.

the **Breath**<sup>®</sup> can be an effective instrument to provide care and to enhance the experience of guests, when used both in private or public areas. Thanks to the reduction of pollutants and odors in the air, guests appreciate a more pleasant and healthier environment and can value the increased attention to their safety and wellbeing.

## Gyms and Spas

### A more relaxing experience.

Gyms and Spas are environments of high density and intense use. the **Breath**<sup>®</sup> can be utilized to improve cleanliness and hygiene, thanks to its adsorbing and smells reduction features. In addition, surfaces covered by the **Breath**<sup>®</sup> receive biocidal and bacteriostatic protection.



Indoor applications

## Residential

### New air at home.

the **Breath**<sup>®</sup> can be an instrument for architects and designers who are always looking for innovation and eco-sustainable solutions. Thanks to its flexible structure and customizable aesthetics, it can be used to adorn indoor environments as well as to create specific design objects, while enhancing the quality of the air.





Indoor applications

## Offices

### Working in a healthier place.

Under a number of national legislative systems, companies are expected to guarantee a health working environment to their employees

#### Did you know that...?

theBreath® can be placed in work environments where high printing volumes occur, to effectively and continuously reduce level of pollutants present in the air.

“In a room where there are photocopiers with toners, a significant quantity of volatile harmful substances are released.”



## Outdoor applications.

The Air in most of our towns is significantly harmful and polluted: smog and fine particles released by heating, air conditioning and fossil fueled transport systems

theBreath® located in strategic places is the ideal ally for a safer air: along the main roads, on advertisement billboards, worksite fences, and maxi-placards, in parking spaces, road signs as well as near street furniture.

*From the right picture, billboard text translation:*

**"THIS ADVERTISEMENT DOES NOT SELL CARS. IT MAKES 379,050 OF THEM DISAPPEAR IN A YEAR.**

**TO DRAPE THIS BUILDING, URBAN VISION HAS CHOSEN theBreath®, THE FABRIC THAT ADSORBS THE POLLUTION AND CLEANS THE AIR."**

Via della Liberazione  
Milan

By URBAN VISION





Outdoor applications

## Maxi-placards

A great breath.

theBreath® has a significant use in the applications of maxi-placards by worksites. Leading international companies have decided to associate their brands to a more responsible and sustainable advertising activities and they now use theBreath® as the default support for their outdoor communication.

### Why choose theBreath®:

- for a healthier environment for those who work on scaffolds;
- to reduce pollutants on the surfaces under renovation;
- to reduce the “Canyon Effect” in urban environments and improve citizens’ wellness.



Outdoor applications

## Street furniture

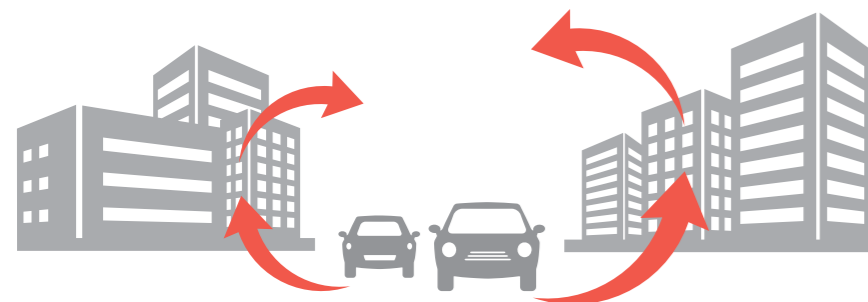
Streets free from smog.

Buildings, billboards, road signs and much more: the efficiency of theBreath® is such that it can also be used in open city spaces and along arterial roads, through different and completely customizable urban applications.

One of the applications with the most noteworthy effect on air quality in outdoor settings is the use of theBreath® fabric in fencing systems for construction sites. The goal is to develop a zero-impact location by adsorbing all pollutants locally emitted.

In addition, theBreath® perfectly integrates with the street furniture of our towns and becomes a protection against the fine particulates for those who walk in the streets and in the nearby areas.

## The urban Canyon effect

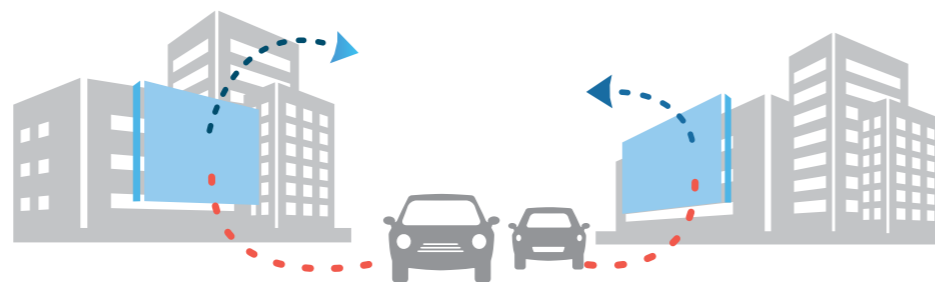


Urban environments have usually **temperatures higher** than the **immediate surroundings** because of **reduced vegetation** and significant use of **materials adsorbing sun beams**.

Materials constantly overheat and cool down and this creates **air flows** which remain **“entrapped”** along high buildings - the so called "Canyon Effect".

The concentration of harmful\* pollutants in those air flows results extremely high.

## theBreath® effect



When properly installed in areas where the "Canyon Effect" occurs, the **Breath®** even increases its adsorption capacity as a result of the stronger flows of polluted air.

Air passing through the **Breath®** fabric mesh is cleaned and purified from pollutants and starts recirculating more breathable.

\*Carbon monoxide Nitrogen dioxide (NO2) Tropospheric ozone. Particulate matter (PM10, PM0,1 and PM2,5) Sulphur dioxide (SO2) Hydrocarbons and Lead.

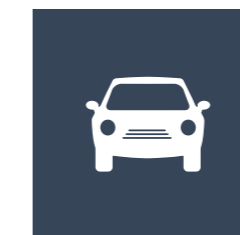
## theBreath® figures

theBreath®



**10**  
SQM/YEAR

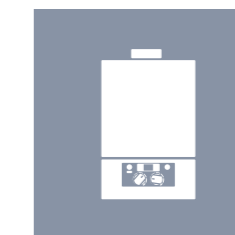
### ADSORPTION IN OUTDOOR URBAN ENVIRONMENT OF 10 SQM OF theBreath® FABRIC ON ANNUAL BASIS \*\*



**1450**  
Diesel Engine



**3625**  
Gasoline Engine



**15**  
Boilers

- DIESEL CAR About 1,450 diesel cars referred to NO2 emission
- GASOLINE CAR About 3,625 gasoline cars referred to VOC emissions
- ABOUT 15 BOILERS referred to NO2 emissions

\*\* Adsorption projection based on real test carried out in the city centre of Milan, on annual basis. The cars considered in the test are those passing by the proximity of the installation's area. The number of cars to be counted and the area in which the benefit will be obtained, are proportional to the size of the panel.

Piazza del Parlamento  
Rome

By **URBAN VISION**



theBreath<sup>®</sup>  
by Anemotech  
Pure technology.

[thebreath.it](http://thebreath.it)

follow us



**Registered office:** Strada Provinciale 206 Voghera – Novara km 0,55 • 27050 Casei Gerola (PV) [info@anemotech.it](mailto:info@anemotech.it)