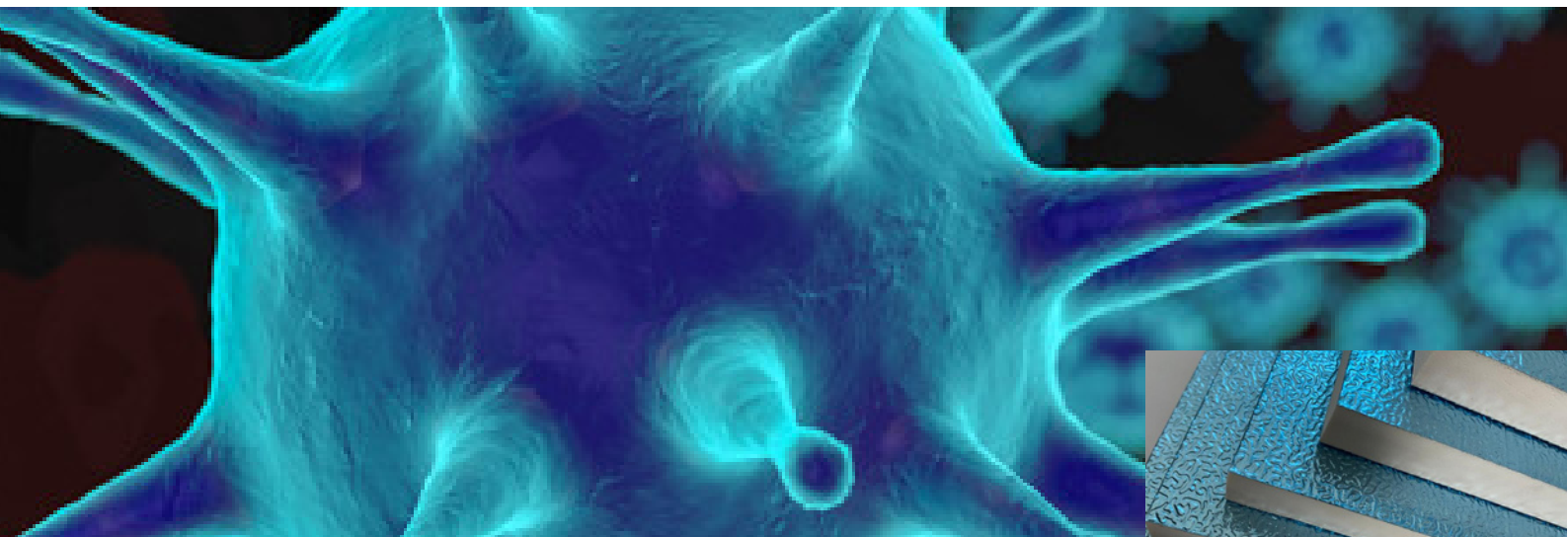




**WORLD THERMAL
INSULATION MATERIALS LLC**
Guard

ANTIMICROBIAL Panels & Accessories.



WTI GUARD ANTIMICROBIAL panels and accessories

WTI GUARD represents a brilliant technological innovation for all milieus in which high hygiene levels are absolutely necessary to protect human health as well as industrial process from the risk of unwanted contamination. Lacking active means to prevent bacteria, fungi and moulds from growing to disruptive colonies, HVAC ducts have, up to the creation of **WTI GUARD**, been considered as a fertile culture ground for micro-organisms. Proves to be the best choice for who demand lightness of the materials, safety and wholesomeness of air, for those who expect extremely accessible facilities and a must for those who care hygiene and maintenance of facilities.

WTI GUARD system is in complete harmony with all legislation concerning the new achievements and can therefore be applied also for the replacement of old and obsolete systems, widely ensures compliance with constraints and limitations. It is also effective against the following virus: SARS Norwalk Viruses 5N1 Avianflu Virus.

The active principle lying behind **WTI GUARD** is a compound that exploits the antimicrobial action of a natural occurring element: silver. Through an industrial process, tested and patented by **WTI GUARD**, this compound is incorporated into the aluminium foil. Meticulous and detailed study of all the issues related to healthy air, the result of synergic and intensive teamwork composed of different and heterogeneous professionalism, led to the design and implementation of a comprehensive active system and where the effectiveness of **WTI GUARD** is guaranteed by the continuity of the antimicrobial action within the duct, on the surface and on all the components in contact with the air.

Safe air from the certified ductwork.

The heating, ventilation and air conditioning installations are part of our daily life. In offices, commercial centres, industries, they grant an adequate thermal comfort, but they are responsible of problems such as the atmospheric, acoustic and – less known, but however equally dangerous - microbiological contamination. The ductwork is traditionally fabricated with galvanized iron with insulation: this simply confines itself to convey the air in an inactive way, with consequences as noisiness, heat dispersion and higher energy consumptions. Moreover on the inner surfaces of the ductwork settles the particulate, which is a real feeding ground for the proliferation of viruses and bacteria. The **WTI GUARD** alternative does not confine itself to the mere conduction of the air, it controls it: the pre-insulated panel composed of aluminium and a high density close- Phenolic foam overcomes the typical problems of the galvanized iron.

- The aluminium facing grants the maximum resistance against corrosion. Outcome: lengthening of the average life of the installations.
- The thermal insulation allows the supply of air at a fixed temperature. Outcome: lower energy consumptions.
- The air circulation is more fluid and less hindered. Outcome: lower noisiness.

But **WTI GUARD** has gone beyond the “passive handling” of the air: thanks to **WTI GUARD** System Active the panels actively take intervention to prevent the microbial contamination and proliferation. Outcome: safer and healthier air. The panel and the ductwork are thus more than a technical choice: they stand for qualifying

points for safer and healthier rooms.

Guaranteed air: technology and awareness..

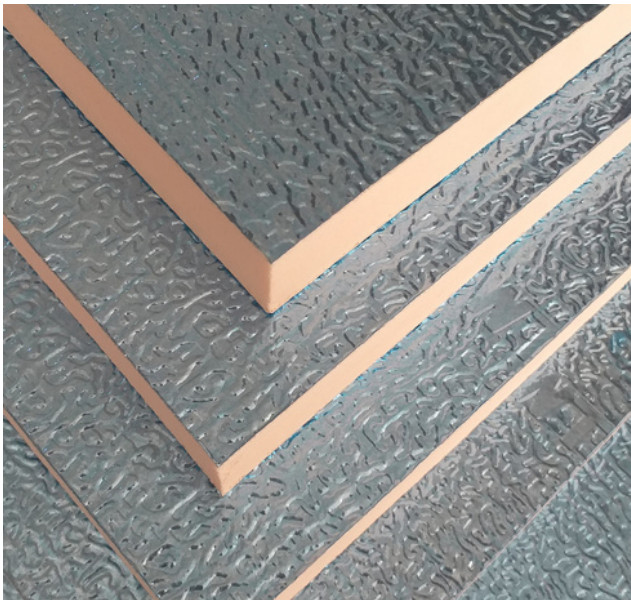
The traditional ductwork is a means, **WTI GUARD** ductwork is an active element able to improve and guarantee the quality of the air. But this result can be achieved only if the technology is exploited with awareness by those who buy the ductwork, those who design the installation and those who set it up. Purchasers, engineers, duct fabricators – each one in their own role – have not only the duty to respect the norms, but also to endow themselves with the expertise and the methods necessary to grant the technical functionality of the installation and the benefit for the end-user.

WTI GUARD contributes to this cultural and technical growth and invests on training. For the engineers **WTI GUARD** has indeed prepared – in addition to specific courses on the technology and its results – a software that assists them during the planning of the installation. The more and more numerous masters for duct fabricators held by the Company clarify how to get the best from the technical characteristics of the **WTI GUARD** product (lightness, easy handling at the site and lower accident risk thanks to the greater easiness of installation) in order to fabricate installations really able to “deliver healthy and safe air”.



WTI GUARD HAS PROVED TO BE EFFECTIVE AGAINST A WIDE RANGE OF BACTERIA AMONG WHICH:

- Legionella Pneumophila
- Staphylococcus Aereus
- Pseudomonas Aeruginosa
- Escherichia Coli
- Candida Albicans
- Aspergillus Niger
- Salmonella Choleraesuis
- Listeria Monocytogenes



SAFETY: A PROBLEM IN THE AIR.

Air is a key-element for the quality of our life. Breathing clean air is a primary aim for the protection of both private and common wellbeing: a safety and health problem at the same time.

Air quality affects the security of individuals and communities: it concerns what we breathe, the packed foodstuffs we eat as well as health spaces such as hospitals and public spaces such as cinemas or swimming pools. Clean air means air non polluted by chemical agents, but also air “made” clean by means of effective and efficacious heating, ventilation and air conditioning installations.

The air quality issue is of utmost importance: the social, economical and financial costs that originate from an inadequate air care are enormous and because of this air becomes a central subject in the design and construction of all the rooms intended for the health, for the common life and for the production processes.



**WORLD THERMAL
INSULATION MATERIALS LLC**

Activating the prevention.

Complying with the norms is not enough, the heating, ventilation and air conditioning installation has to protect actively the health. The “chemical” atmospheric pollution is hindered by reduction devices such as filters, but the microbiological damage, which is very often unknown, is equally or even more dangerous. Legionella or salmonellosis, for instance, are transmitted by air with results at times fatal.

The prevention of these diseases also passes through the ventilation installation. Or better still: a good ductwork, an active ductwork as **WTI GUARD** System Active works in an effective way to diminish the risk of infections.

Thanks to the technology applied by **WTI GUARD**, the **WTI GUARD** System panel has an antimicrobial function: it overcomes pathogens such as Legionella pneumophila, Escherichia coli, Pseudomonas aeruginosa, Staphylococcus aureus, Candida albicans, Aspergillus niger, Salmonella Choleraesuis and Listeria monocytogenes with reduction percentages of the order of 99,9999%. The chemical principle lying behind this technology is the ionic exchange: in the inner surface of the duct are incorporated the silver ions that, after exchanging with the sodium ions present in the air, carry out their antimicrobial action against a huge number of pathogens (over 600 tested).

Steady performances in time and space.

The **WTI GUARD** system offers steady performances and results: the germicidal action is guaranteed for **10 years**, as proved by laboratory tests and experiments conducted in real use conditions. The steadiness of the performances in time combines with the continuity of the antimicrobial effect throughout the ductwork. The treatment and thus the ionic exchange and its effects are present on the whole surface of every panel that constitutes the duct. And, to grant a complete effectiveness, **WTI GUARD** has produced all the elements necessary for the fabrication of the ductwork (profiles, duct connectors, glues and sealants, flexible hoses) by applying on them the same antimicrobial treatment.

Any residue of particulate that might settle in spaces difficult to access, maintain and clean will be anyway “subjected” to the antimicrobial treatment and the microbial load will be thus overcome.

A far-reaching protection.

The pre-insulated **WTI GUARD** panel allows **WTI GUARD** Antimicrobial to convey better air inside hospitals, cinemas, food industries and other rooms. The possibility of incorporating the active antimicrobial principle inside the panel derives from its lightness, its technical characteristics and from the completeness of the accessories and tools that **WTI GUARD** offers for the fabrication of high performing installations. **WTI GUARD** Antimicrobial rises above the average of other antimicrobial technologies, that usually act on single segments of the ductwork, and it fully exploits the characteristics of the panel in order to supply safer air with an unprecedented ecological (energy consumptions) and economical (overall operating costs) impact.

WORLD THERMAL INSULATION MATERIALS LLC



**WORLD THERMAL
INSULATION MATERIALS LLC**

Technology that makes the difference.

The effectiveness of the **WTI GUARD** Technology is proven. Laboratory checks, and tests performed in real working conditions, sample trials on actual installations have demonstrated that **WTI GUARD** Antimicrobial really functions: it overcomes over 600 families of microorganisms, with reduction rates close in many cases to 100%. The certifications are proof of the acknowledgment of the effectiveness from international institutions and the scientific community has verified that **WTI GUARD** Antimicrobial is able to assure a concrete preventive function against the identified pathologies. The air coming from ducts fabricated with **WTI GUARD** System Active panels has been acknowledged as better: the dispersed microbial load is 77,23% lower than the one present in the air coming from traditional ducts. The **WTI GUARD** technology of treatment of the panel and the other elements constituting the duct has been thus defined as a concrete solution for the management of the microbiological damage inside heating, ventilation and air conditioning installations. "the values of bacterial load found in the air emerging from the Ag+ ions zeolite-lined duct were 5 times lower than those found in the air from the traditional galvanized iron ducts" "in a variety of conditions the use of the **WTI GUARD** System panel turns to be useful for the containing of the environmental microbial load"

WTI GUARD TECHNICAL DATA SHEET

Panel Dimensions : 4000 X 1200mm

Panel Thickness : 20mm

Aluminium Facing : reinforced aluminium facing with anti-microbial protection coating.

Panel Density : >55 kg/m³

Compressive Strength : 0.25mpa

Thermal Conductivity : 0.020 - 0.036 w/mk

Combustion property : Class "O" BS476 Part 6 & 7

Service Temperature : -30 to 150 deg. C

Water Absorption Rate : <5%

Certification: UL181, DCL, DCD, ADCD

Fire: FSI <25

Smoke: SDI <50