

# KAIFLEX KKplus and KAIFLEX ST – proven quality and technology

Long-term use of additional antimicrobial protection without additives according to standard VDI 6022 part 1

TECHNICAL  
INFORMATION

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The KAIFLEX product range including the premium insulation materials KKplus and KAIFLEX ST has been providing additional protection against bacteria and mould for years!

The series of VDI 6022 guidelines apply to all rooms or indoor public areas, where people reside for more than 30 days a year or on a regular basis, more than 2 hours a day

## Pollutant sources

There are many pollutants. Among these are energy sources like oil, natural gas, coal, wood, cigarette smoke, building materials, furniture and decoration, insulation material, carpets, paint and varnishes, cleaning agents, air-conditioning units and humidifiers. Other causes are from sources outside the building like e.g. radon, pesticides, road traffic and industrial pollution.

The impact of an airborne pollutant source depends on the amount and concentration released.

Some sources like building material, furniture and fittings and air fresheners virtually release a constant flow of airborne pollutants. Other sources only emit their pollutants during specific activities and therefore irregularly. This includes smoking, using kilns and furnaces, cleaning agents, solvents and insecticides, as well as renovating with paint and varnishes. As a result, high concentrations of airborne pollutants can remain in the ambient air over long periods of time.

Microbes (microscopic life forms) can only be seen with the naked eye, once they have proliferated. Under the right conditions, microbes can double in number every 15 to 20 minutes. Types of micro-organisms include bacteria, algae and fungi or mould. Anti-microbial technology is used as a countermeasure against microbial growth.

## Health risks from air-borne pollutants in buildings

We all take risks in everyday life - whether it is driving a car, flying, doing sport or the fact that we are exposed to environmental pollution. Some things are unavoidable, while we put up with other things because otherwise we wouldn't be able to live our lives the way we want to. There are also other risks, which can be avoided if we know what they are and have a choice! The quality of our ambient air is one of them.

Today, people in industrial countries spend around 90% of their time indoors. As a current study carried out by the US environmental agency EPA has shown, ambient air is up to ten times more contaminated with air-borne pollutants than the air outside.

As a result, air-borne pollutants indoors pose more of a health hazard than those outside!

Excess moisture in combination with dust and dirt particles provides an ideal breeding ground for microbial growth. The microbes themselves and air-borne pollutants then release spores, cells, particles and volatile organic compounds (VOC), which may contribute to sick building syndrome. Among the most serious consequences of a high contamination of ambient air are respiratory, allergic and asthmatic illnesses.

Studies have found levels of frequently occurring VOCs to be two or five times higher indoors than outside, irrespective of whether the buildings are situated in the countryside or industrial areas. Furthermore, it has been proven that people surrounded by the pollutants described above are exposed to immense concentrations of VOC and these pollutants can be detected in rooms over a long period of time, as the building materials and furniture and fittings cause contamination (enter and remain there).

Pollutant sources, which release gases or particles into the ambient air, are the most common causes of quality problems with ambient air. The problem can be exacerbated through insufficient air exchange, which normally causes the air-borne pollutants released to be diluted. Extreme temperatures and humidity may also result in an increase in the concentration of air-borne pollutants for some contaminants.

## Triple safety with KAIFLEX KKplus and KAIFLEX ST

**Effective prevention of condensation, active, antimicrobial protection and outstanding fire behaviour.**

KAIFLEX KKplus and KAIFLEX ST are extremely flexible and reliable insulation materials for 100% long-term prevention of condensation. Due to their unique, ultra fine cell structure, they also provide greater form stability and can be processed more easily. The ideal combination of an extremely low thermal conductivity and high water vapour transmission resistance contributes to the permanent prevention of energy losses and water vapour intrusion and reduces the risk of corrosion under insulation (CUI). Due to their integrated antimicrobial protection and outstanding fire behaviour, KAIFLEX KKplus and KAIFLEX ST are particularly suitable for use in procedural systems. The KAIFLEX system range and KAIFLEX system guarantee provide a safe solution for all application areas.

- Antimicrobial protection according to standard VDI 6022
- Euroclass B-s3, d0
- High resistance to water vapour transmission
- Safe system solution with KAIFLEX pipe manifold
- Prevention of thermal bridges
- Ultra fine cell structure
- Gradual increase in thickness of insulation layers for optimum protection against condensation and frost formation