

Breathe Cleaner Indoor Air



The building material emission classification system promotes the development and use of low-emission products. The classification system is meant for materials in normal working and accommodation facilities. We wish to promote a healthy and pleasant indoor environment.

Ventilation product cleanliness classification aims at offering better air supply for people working indoors. The ventilation product cleanliness classification system is a part of the Indoor Air Classification 2000 unity.



EMISSION CLASS FOR BUILDING MATERIAL

M1

- Plasters and filling materials
- Paints and varnishes
- Building insulation materials
- Windshields
- Decorative boards
- Wall elements
- Floor coating materials
- Wallpapers, glues
- Timber boards and other timber products

Building Material Emission Classification

M1 Category Requirements

When aiming to belong to the best indoor air categories (S1, S2), primary indoor building materials must have been graded M1 or have a similar classification.

Products meeting the following requirements fall under category M1:

Volatile organic compounds (TVOC*)	< 0,2 mg/m ² h
Formaldehyde (HCOH)	< 0,05 mg/m ² h
Ammonia (NH ₃)	< 0,03 mg/m ² h
Carcinogenic agents (IARC**)	< 0,005 mg/m ² h
Material has no odour	Odour test result a minimum of +0.1
Furthermore, plaster, filler materials and putties may not contain casein.	

* A minimum of 70% of the compounds must be identified.

** Carcinogenic agents falling under category 1 (IARC 2004, not applicable for HCOH)

The classification mainly poses requirements for emissions from materials to the indoor air. A product will receive the M1 classification provided that the product has been tested by an independent laboratory. In addition to chemical tests, the products go through a sensory evaluation process by an Odour Council. The classification will not be issued to untested materials. In the design of indoor premises, materials similar to the M1 category products include brick, natural stone,

ceramic tiles, glass, metal as well as boards and logs manufactured of Finnish wood species. VOC emissions of these wood species may exceed the M1 category threshold values when the timber is fresh, however.

Classified Products Must Be Correctly Used and Maintained

The classification method does not pose any requirements for emissions during installation. Issues connected with occupational safety must be checked from the manufacturer's instructions and any Material Safety Data Sheets available. Classified products must be used only in proper sites and under proper conditions. For example, products meant for non-humid premises must not be used in humid premises. Furthermore, improper building material maintenance actions may deteriorate the indoor air. Instructions for installation and use of products can be demanded directly from manufacturers and importers. Errors made when designing and implementing structural elements and ventilation systems cannot be corrected by using good building materials.



Ventilation Product Cleanliness Classification

Products with Cleanliness Classification

There is only one cleanliness classification category: M1. One can ensure the cleanliness of a ventilation system by using classified products and following the storage, installation and maintenance instructions for all products.

Clean Air Supply as the Objective

For a ventilation product to be classified as clean, it must meet the following general requirements upon its manufacture:

- The classified product may not promote the increase of any impurities detrimental to health or comfort in either the ventilation system or air supply.
- The classified product may not emit any odour detrimental to air supply quality or any gaseous or particle impurities.
- The classified product must be easy to clean.

Furthermore, there are more specific requirements and testing instructions for each product group.

Requirements for Ducts and Duct Components

The requirements refer to steel sheet ventilation ducts and their components manufactured by utilising the normal manufacturing methods as well as duct components manufactured from other materials. For steel sheet ducts, there are requirements pertaining to dust accrual, oiliness and odour output. There are also requirements regarding chemical emissions and mineral fibres coming loose due to air flow; this pertains to components that are not steel.

Requirements for Air Filters

The requirements refer to filters to be used mainly in public buildings or in business, office or residential buildings as air supply filters. Classified filters must meet the normal approval requirements. The filters undergo sensory tests and a fibre release test as well as studies pertaining to biocides and pesticides, air filter performance characteristics and filter replacement or cleaning needs. In contrast to the other ventilation products, the classification system for filters is two-part. All classified filters fall under the M1 category regarding cleanliness, but the filters are also classified into various categories based on their particle release degree, for example, F7 + M1.



- Ventilation ducts and their components
- Gate valves
- Control valves
- Dampers
- Air filters
- Sound absorbers



