

# Impacts and benefits of Indoor Air Quality



**Mr Stanley O Mathew**  
Head of Sales & Marketing  
AAF

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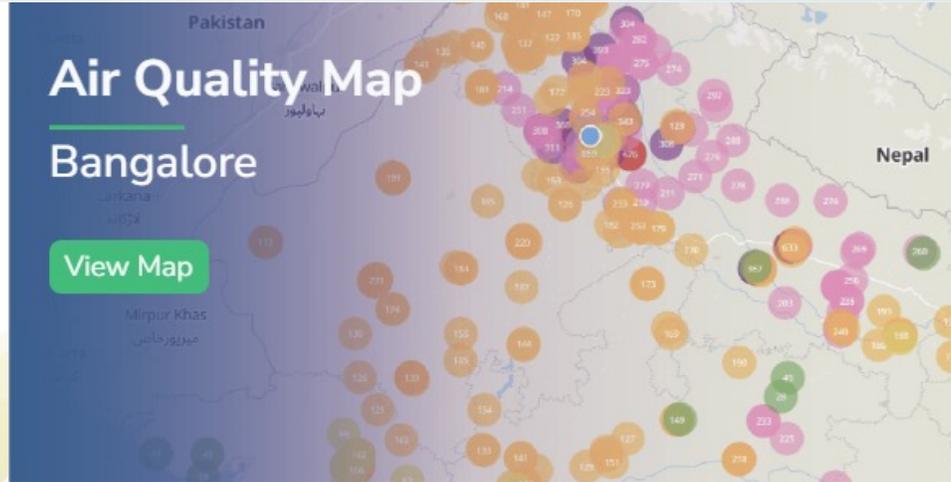
# Bangalore Air Quality Index (AQI)

Real-time PM2.5, PM10 air pollution level Karnataka

Last Update: 02 Nov 2023, 12:56pm

**MODERATE**

**94**  
(AQI-US)



## Most Polluted Cities in India

Real-time worst city rankings



RANK	CITY	AQI-US
1	New-Delhi, India	389
2	Ghaziabad, India	369
3	Faridabad, India	363
4	Hisar, India	362
5	Noida, India	360
6	Rohtak, India	330
7	Sonipat, India	322
2023-11-07	8 Gurgaon, India	273

## Major Air Pollutants in Bangalore

**31** (PM2.5)

**262** (CO)

**57** (PM10)

**40** (Ozone)

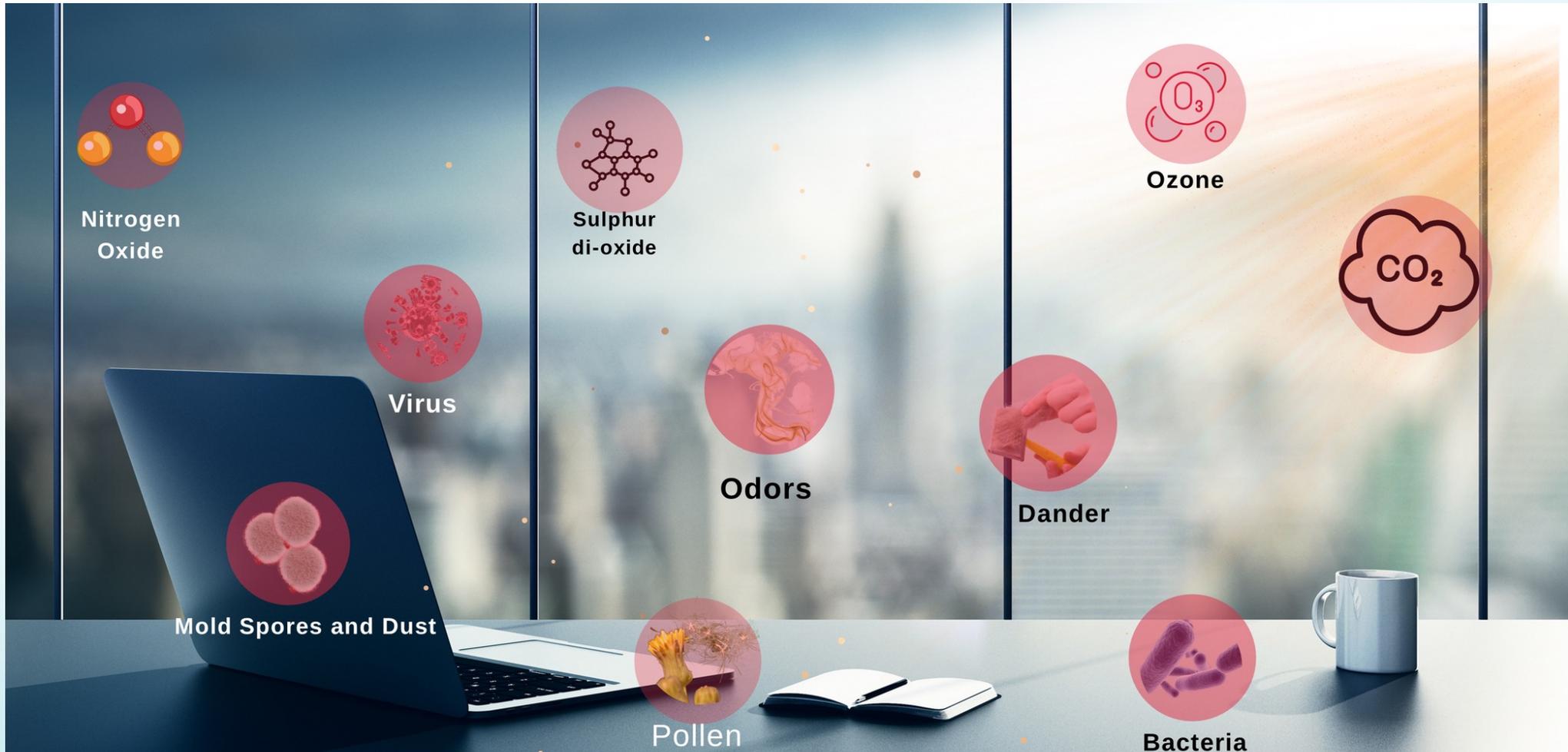
**3** (SO2)

**13** (NO2)

PM2.5  
**2.1X**

The current PM2.5 concentration in **Bangalore** is **2.1 times above** the recommended limit given by the WHO 24 hrs air quality guidelines value.

Indoor Air Quality (IAQ) refers to the air quality within the buildings and structures, especially as it relates to the health and comfort of building occupants.



# Impact on health

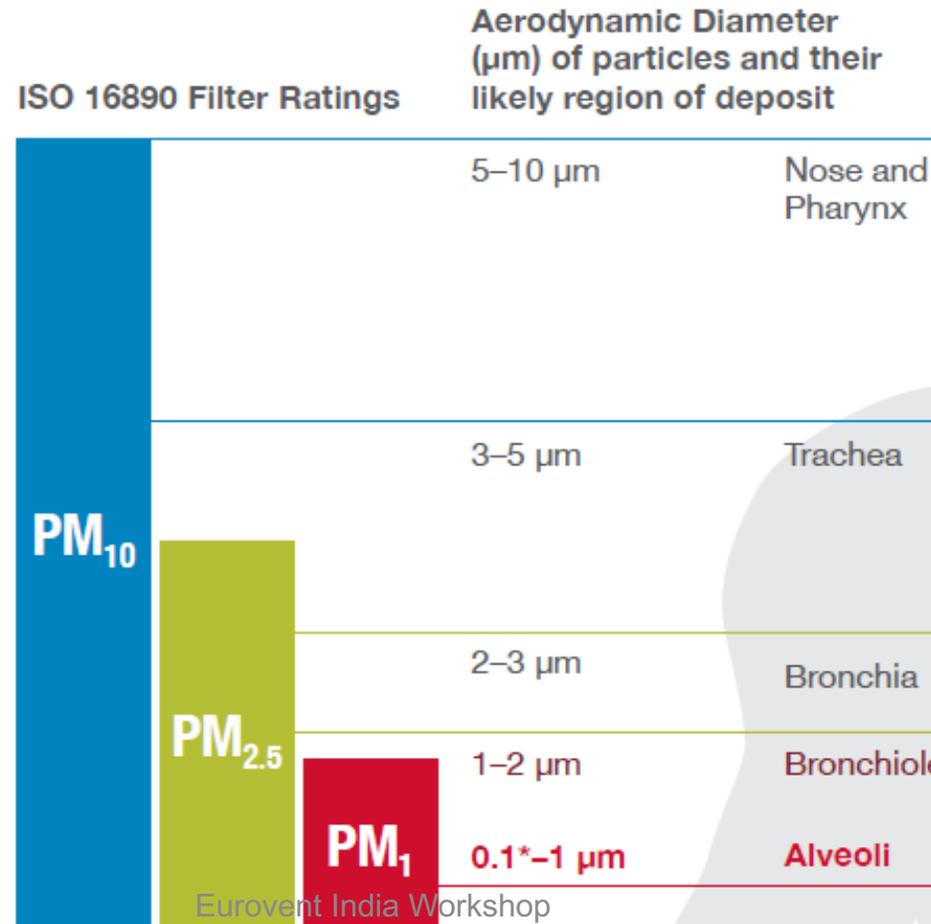
**The world's leading health-related organizations consider PM10, PM2.5, and PM1 fine dust fractions as the most important and dangerous for humans.**

Particles with an aerodynamic diameter of:

**10 micron (ePM10)** deposit in the **nose and pharynx** of the human respiratory system

**2.5 micron (ePM2.5)** are small enough to reach the **human lung** and deposit in the bronchia

**1 micron (ePM1) or smaller** are small enough to find their way through the cell membranes of the alveoli into the **human blood stream** and cause life-threatening diseases



\*Efficiency on particles smaller than 0.3 micron is not defined by ISO 16890.

## AIR AND OUR BODY: AN UNSEEN CONNECTION



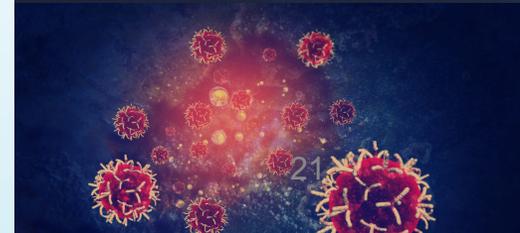


### Building Related Illnesses

- Influenza
- Infections
- Allergies & Asthma
- Legionnaires' Disease
- Cancers
- Humidifier Fever
- Mold Related Illness
- Chemical Sensitivity

### Sick Building Syndrome

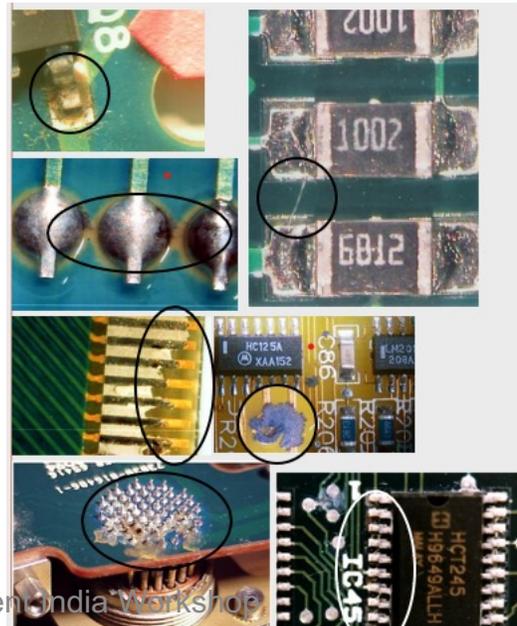
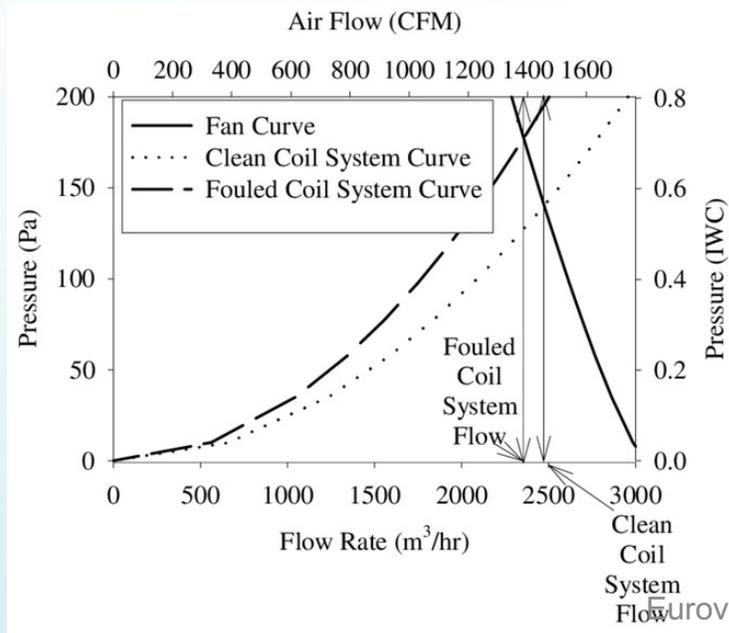
- Breathing Difficulty
- Eyes, Nose or Skin Irritation
- Nausea
- Fatigue
- Generally Unwell
- Weakens Immunity



# Impact on equipment

# Issues due to Particles & Corrosive Gases

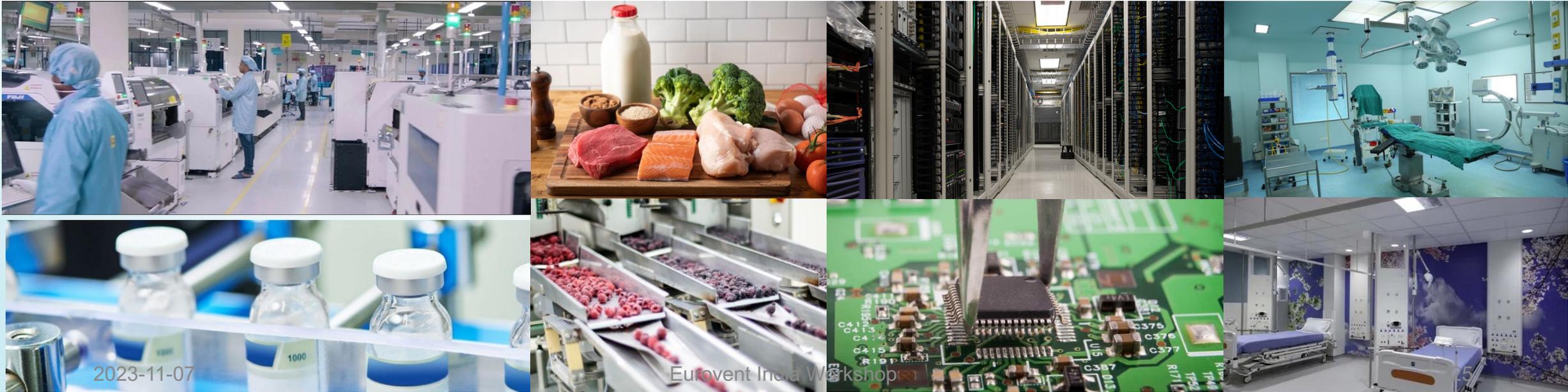
- Reduced Efficiencies – HVAC systems
- Corrosion on Electronic Parts
- Frequent Breakdowns – HVAC , Electrical and Electronic equipment



# Impact on processes

# Issues due to Particles & Contamination

- Pharmaceutical – Lot rejections
- F&B – Contamination affecting products
- Micro-electronics – Product failures
- Healthcare – Cross infection in Hospitals



2023-11-07

Eurovent India Workshop

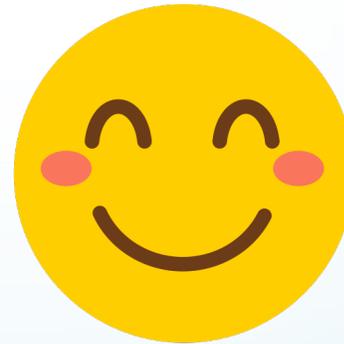
# Benefits of high IAQ

## AT WORK PLACE

- Higher Productivity
- Lower Absenteeism

## BETTER LIFE

- Reduced Airborne Illnesses
- Healthy Body



## RELIABILITY

Lesser Breakdowns  
Better end Products



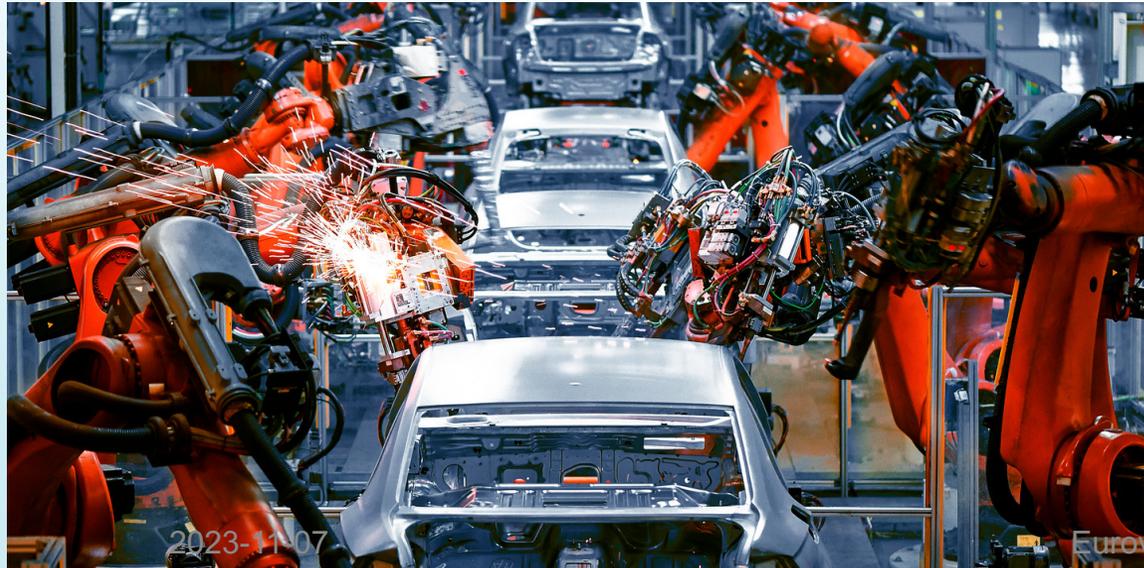
## EXTENDED LIFE

Costly equipment like servers,  
Gas turbines  
Manufacturing CNC Machines

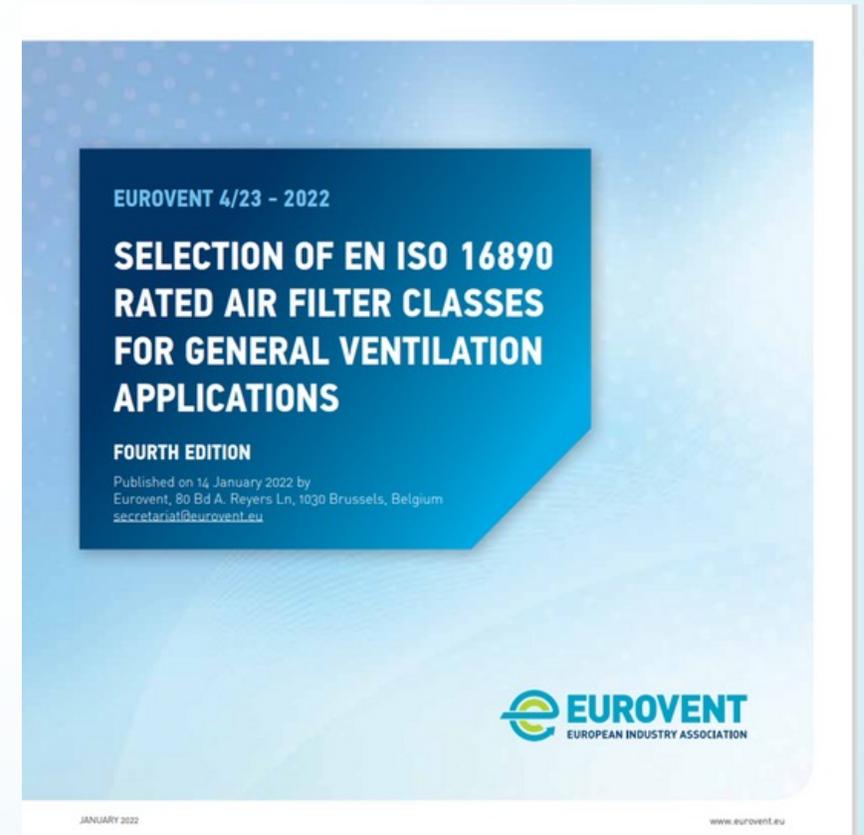


- Improved Productivity
- Higher Production
- Lesser Downtime
- Lesser Costs
- Higher Profits

- Better Quality End Projects
- Lesser Rejections

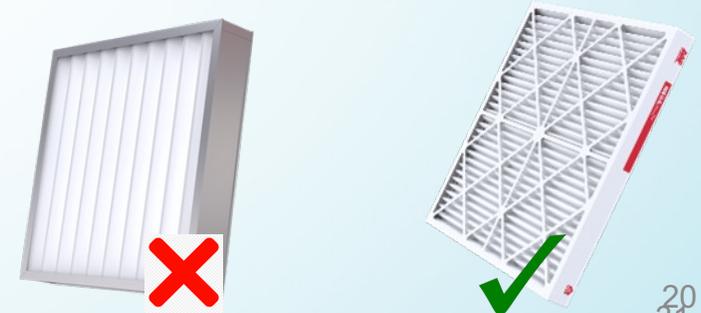


# How to achieve the desired IAQ ?



## Recommendations

- **Start following ISO 16890 guidelines** in design stage for Air Filtration at project design stage
- **Governmental regulations** on Filter manufacturers for following certifications
- **Select certified products** to ensure the standards
- **Maintain the filter conditions as per the standards.** Disposable filters to be used instead of the washable filters which are commonly used in India



# THANK YOU

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Head of Sales & Marketing  
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