

# Safe Building Practices for Laboratories and Pharmaceutical Facilities

## What is the problem?

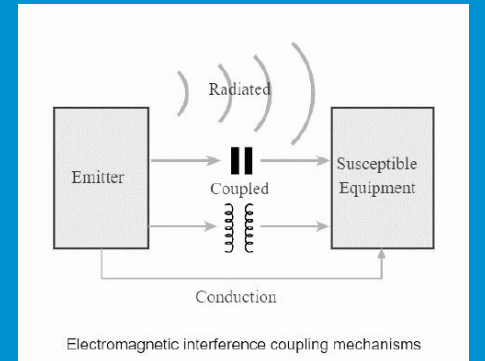
- Fire, water, gas, dust, EMI, sound, and pests can pose major threats.

## What can happen?

- If the seals of the building, room or equipment are breached, there could be severe consequences, such as the loss of life or company assets.

## SEALING IN ADVANCED FACILITIES

- **Fire protection:** 2 - 4 hours
- **Equipment Protection:** IP 55 - 69k; NEMA 4X
- **Acoustics and Vibrations:** STC Maintenance
- **Hazardous/Explosive Areas:** Zones 0 - 1 - 2
- **Electromagnetic Interference & Grounding**



## CLEANROOMS:

Pressurized locations require effective sealing to prevent contaminants from entering or exiting.

## CRITICAL AREAS:

- Laboratory walls
- Glove boxes
- Building envelope
- Mechanical and electrical rooms
- Interior equipment



## Cleanroom and Contained Room Requirements

- Fire Protection
- Watertight Protection
- Gas/smoke Protection
- Acoustic Sealing
- Operating across a wide range of pressures
- Good material reaction to common fumigants
- Tamper resistance – service retention
- Follows GMP Guidelines

## Good Manufacturing Practices

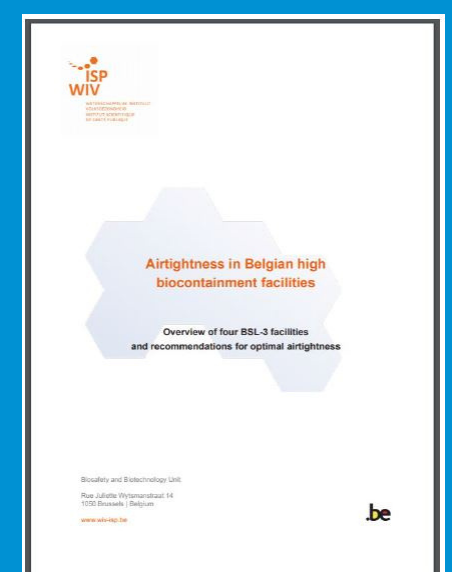
ISO 14644: Specifies the classification of air cleanliness in terms of concentration of airborne particles in cleanrooms and clean zones

- For GMP compliance, **all surfaces in a cleanroom should be "smooth and impervious"** and:
  - **not generate their own contamination** (does not create dust, or peel, flake, corrode or provide a place for microorganisms to proliferate)
  - **are easy to clean** (all surfaces are easily accessible, there should not be any ledges or recesses)

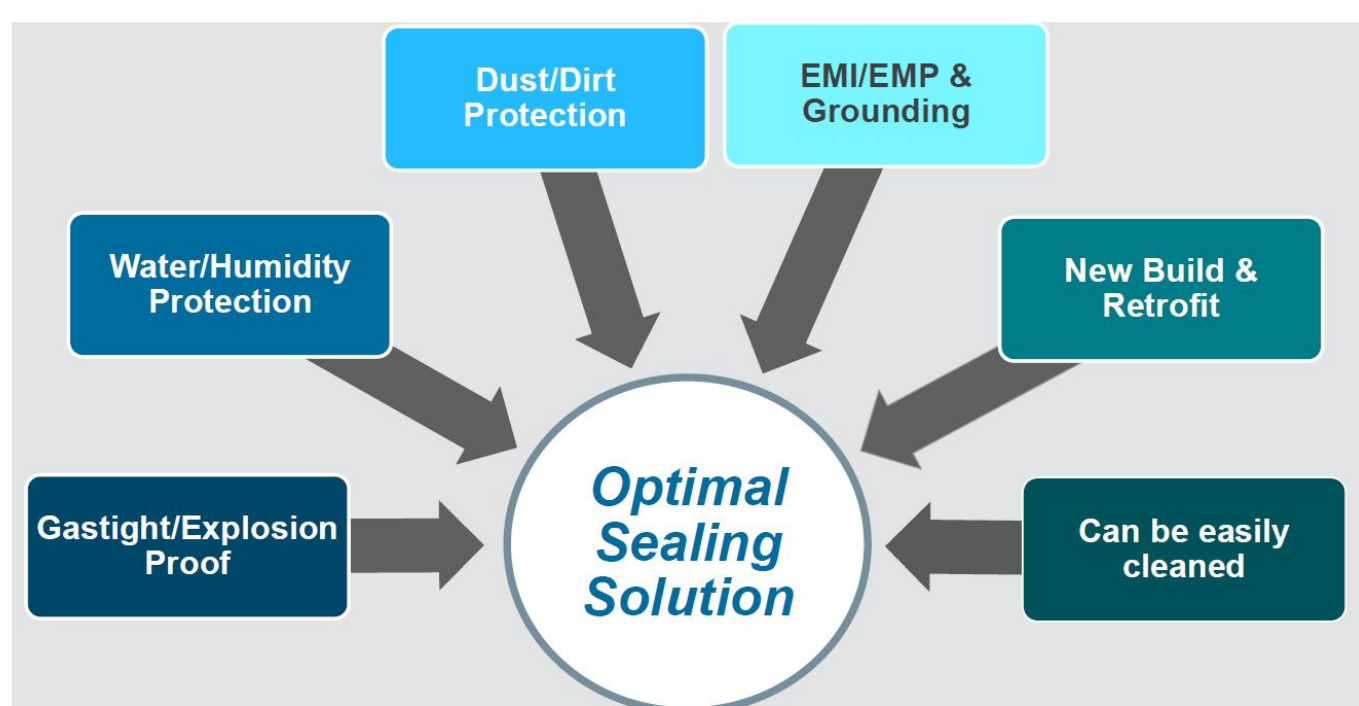


## Fumigant Exposure Compliance Airtightness Report:

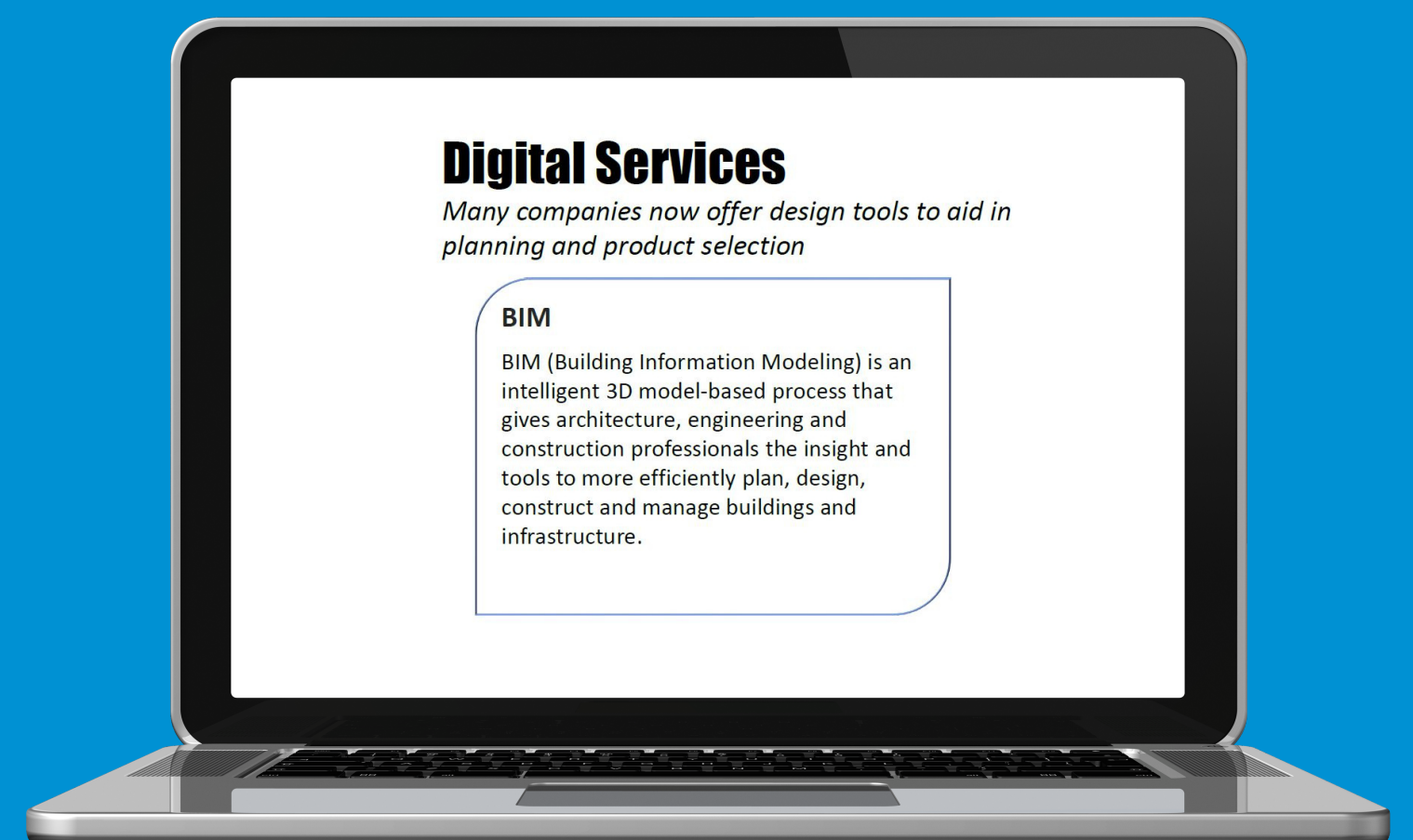
Formaldehyde  
VHP (Vaporized Hydrogen Peroxide)  
Chlorine Dioxide  
Acetate



## Does your current sealing method meet your needs?



## Digital & Design Services



Sarah Mueller

Advanced Facilities Segment Manager

843.817.1380

sarah.mueller@roxtec.com



**Roxtec**



**ISPE**®