PRESS RELEASE FROM ROXTEC INTERNATIONAL, KARLSKRONA, SWEDEN – MAY 2023

# New white paper on how to design rooms for fumigation

The white paper “Airtight solutions. A future-focused look at designing for fumigation” by Andrew Somerville of Hoare Lea and Shem Sacewicz of HOK Architects explains the process of using a highly toxic gas to inactivate biological agents. It also highlights the need to consider room airtightness requirements early in the design process to achieve a safe and cost-effective result.

Andrew Somerville is a director and the science and research sector head at Hoare Lea, an engineering consultancy providing solutions to complex engineering and design challenges for buildings. Shem Sacewicz is a senior associate and laboratory architect at HOK Architects with 20 years of experience of working on science projects in Europe and Asia. Their white paper says that retrofitting or consideration of sealability late in a design can be life-threatening and very expensive while “consideration of room airtightness requirements early in the design process will help achieve a safe and cost-effective result”.

## Airtightness for safety

The primary reasons for making fumigated rooms airtight are to prevent fumigant release, to maintain the required fumigant concentration and to prevent the escape of biological agents. Main issues are airtightness of room envelope construction, material compatibility and the gated space and adjoining areas throughout the fumigation cycle. The authors state it is important for designers to be involved in the risk assessment. They present different types of fumigants, equipment, methods, and different standards regarding airtightness in fumigable spaces.

## Keeping a strong barrier

Vulnerability of the containment barrier typically occurs at junctions of dissimilar materials, services penetrations or where the barrier fails or has been damaged. All these conditions must be carefully detailed, and some basic principles apply to how to form these junctions:

“The containment barrier needs to fully integrate with any item that penetrates through it such as doors, windows, lights, pipes, cables, ducts, to provide the seal. These penetration details need to enable a robust, reliable, and cleanable solution.”

The white paper can be downloaded on roxtec.com.

Caption:

*The white paper highlights the importance of airtight solutions to ensure safe operations.*

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