



Federation of European Heating, Ventilation and Air Conditioning Associations

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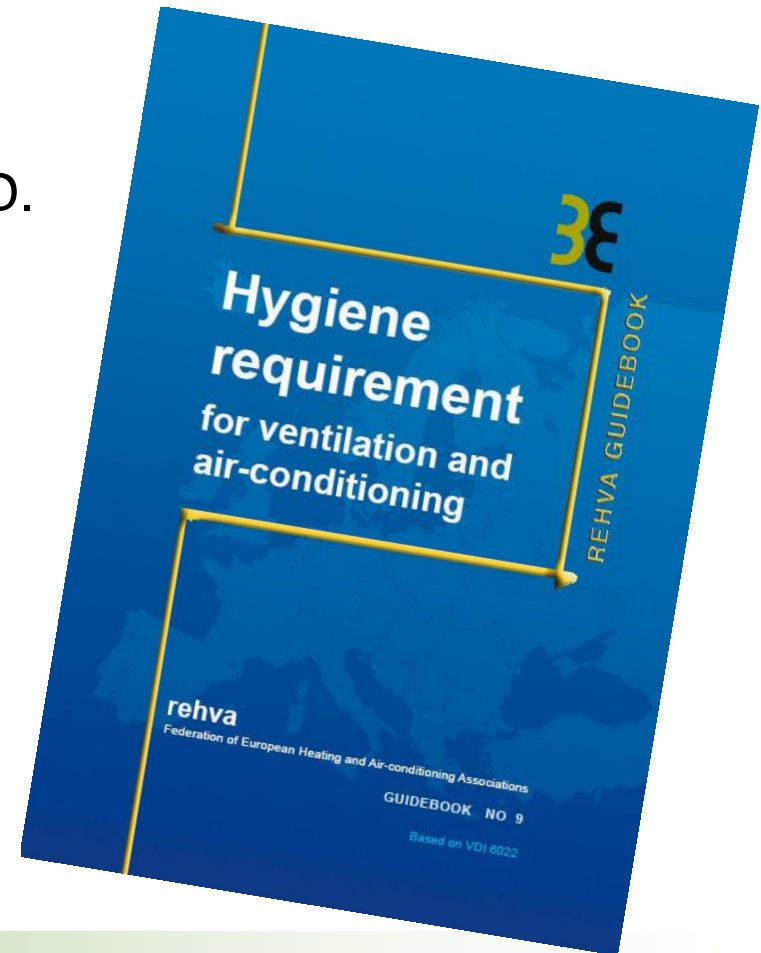


Federation of European Heating, Ventilation and Air-conditioning Associations

Hygiene Requirements for Ventilation and Air Conditioning Systems and Units

The New REHVA Guidebook Based on VDI 6022

Andreas Winkens, Ph.D.



ICS 91.140.30	VDI-RICHTLINIEN	April 2006
VEREIN DEUTSCHER INGENIEURE	Hygiene-Anforderungen an Raumluftechnische Anlagen und Geräte Hygiene requirements for ventilation and air-conditioning systems and -units	VDI 6022 Blatt 1 / Part 1 Ausg. deutsch/englisch Issue German/English

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Zu beachten durch / Available to	<p>5 Anforderungen an Betrieb und Instandhaltung 37</p> <p>5.1 Allgemeine Hinweise 37</p> <p>5.2 Hygienekontrollen 39</p> <p>5.3 Hygieneinspektionen 40</p> <p>5.4 Komponenten 43</p> <p>5.5 Checkliste für Betrieb und Instandhaltung . . . 48</p>	<p>5 Requirements regarding operation and maintenance 37</p> <p>5.1 General guidance 37</p> <p>5.2 Hygiene checks 39</p> <p>5.3 Hygiene inspections 40</p> <p>5.4 Components 43</p> <p>5.5 Checklist for operation and maintenance . . 48</p>	Vervielfältigung – auch für in
VDI-Gesellschaft Technische Gebäudeausrüstung			
VDI-Handbuch Technische Gebäudeausrüstung, Band 2: Raumluftechnik VDI-Handbuch Medizintechnik			

REHVA Guidebook Addresses:

- **Building owners**
- **Architects**
- **Planners**
- **System manufactures**
- **Equipment manufactures**
- **Approving authorities**
- **Experts**
- **Owners / Operators**
- **Building managers**
- **Maintenance personell**
- **Company physicians**
- **Public health officers**

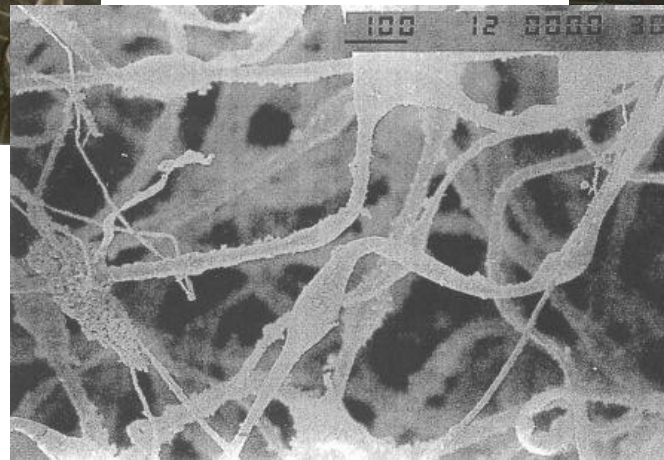
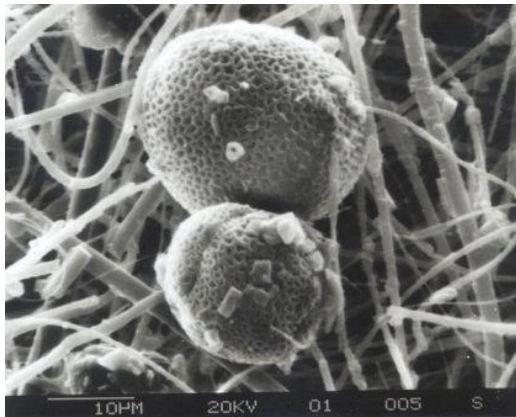
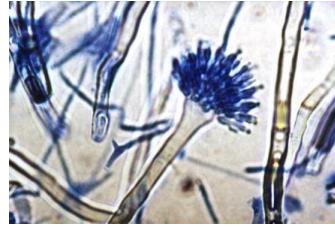


The Problem:

Many air-conditioning systems are planned, manufactured, executed and operated in a badly hygienic way



Filter as a Biotope



Purpose of the REHVA Guidebook:

- to define hygiene related constructional, technical and organisational requirements for ventilation- and air-conditioning systems
- to define hygienic standards by mentioning concret total numbers of hygienic parameters which must be fulfilled
- to show a check list for hygiene checks and hygiene inspections (what has to be done and where in which frequency)
- to educate and train the personnel by qualified instructors which have to fulfil special qualification requirements
- to show the high quality by given out a certificate at the end of the training if the written examination is passed.

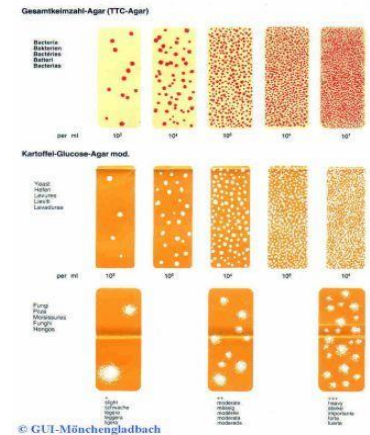
Main Contents of the REHVA Guidebook:

- Terms and definitions
- General requirements
- Requirements for planning, manufacture and installation
- Requirements regarding operation and maintenance
- Owner /operator- and branch-specific requirements
- Qualification and training

Main Contents of the REHVA Guidebook:

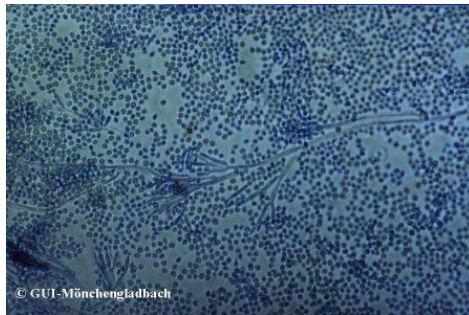
e.g. Requirements regarding operation and maintenance

- general guidance
- hygiene checks
(visual inspection, orientating microbiological testing, documentation)
- hygiene inspection



e.g. Hygienic monitoring of surfaces / air ducts

- < 1 CFU/cm² = very good or good, no need to act
- 1 CFU/cm² up to 4 CFU/cm² = limit value, necessary to clean or to exchange soon
- > 4 CFU/cm² = very bad hygienic situation, act directly



Certificate



RHEVA-CERTIFICATE
Air hygiene Category X

Mr John Q. Public
born: 01-01-1900

has attended the air-hygiene training as per RHEVA-Guidebook Hygiene requirements in air-conditioning systems and -units Category A or B.


The attendant has fulfilled the preconditions and has passed the final examination on 12-31-2006 in Helsinki.

The training was performed on behalf on the RHEVA-Society by training partner GUI-LAB, Hindenburgstr. 77, D-41061 Mönchengladbach

Helsinki, 12-31-2006 RHEVA	Mönchengladbach, 12-31-2006 GUI-LAB
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Managing director	Managing director
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1



Trainers:				
Subject area	Family name	First name	Title	Qualification/Subjects
Technical	Praetorius	Frank	Dipl.-Ing.	Engineering
Hygiene	Winkens	Andreas	Dr. Dipl.-Ing.	Hygiene

Categories of hygiene training:

Having attended a **Category A** training in accordance with RHEVA Guidebook Hygiene requirements in air-conditioning systems and -units (termed **Qualification A** hereinafter), together with the required initial qualification, the participant is qualified for RHEVA Guidebook-compliant, i.e. hygiene-related, planning, installation, manufacture, as well as maintenance and monitoring of ventilating and air-conditioning systems. He or she is qualified to supervise personnel having Qualification B.

Having attended a **Category B** training in accordance with RHEVA Guidebook Hygiene requirements in air-conditioning systems and -units and having passed the examination, the participant fulfils one requirement for performing hygiene checks and hygiene-relevant maintenance activities. Personnel having this qualification work under the supervision of at least one **Colleague having Qualification A**.

The validity of this certificate is not limited. Attending pertinent refresher courses following the issue of a revised edition of this guideline will update the hygiene training.

Date	Type of course	Title of course	Performed by

2

Experiences with the VDI 6022:

- the guideline VDI 6022 is well accepted by users
- the obligation to fulfill the hygienic standards written in the VDI 6022 guideline leads in Germany, Switzerland and Austria to an increase of interdisciplinary knowledge and helps to avoid contaminations with micro-organisms and harmful substances in air-conditioning systems
- the number of unhygienic systems has been significantly reduced in the last 9 years
- as an important result the number of people which feel uncomfortable and unhealthy in rooms which are mechanically ventilated decreased significantly.

The requirements of the REHVA - Guidebook primarily serve to protect HUMAN HEALTH

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for your
attention

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