

# Certification, performance and quality

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International Director  
Eurovent





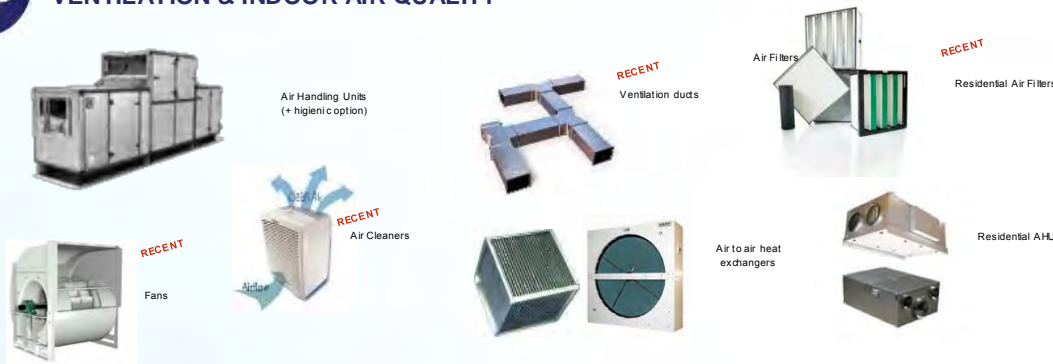
# Value of independent verification

- Independent verification of manufacturer's claims
- Allows comparisons between products and manufacturers
- Allows calculation of energy consumption over live span
- Increases confidence for consultants, no need to over-size
- Provides energy labelling, also for hot and humid climates
- Easy to apply, but verification by database is essential

# ECC programme overview



## VENTILATION & INDOOR AIR QUALITY



## INDOOR CLIMATE



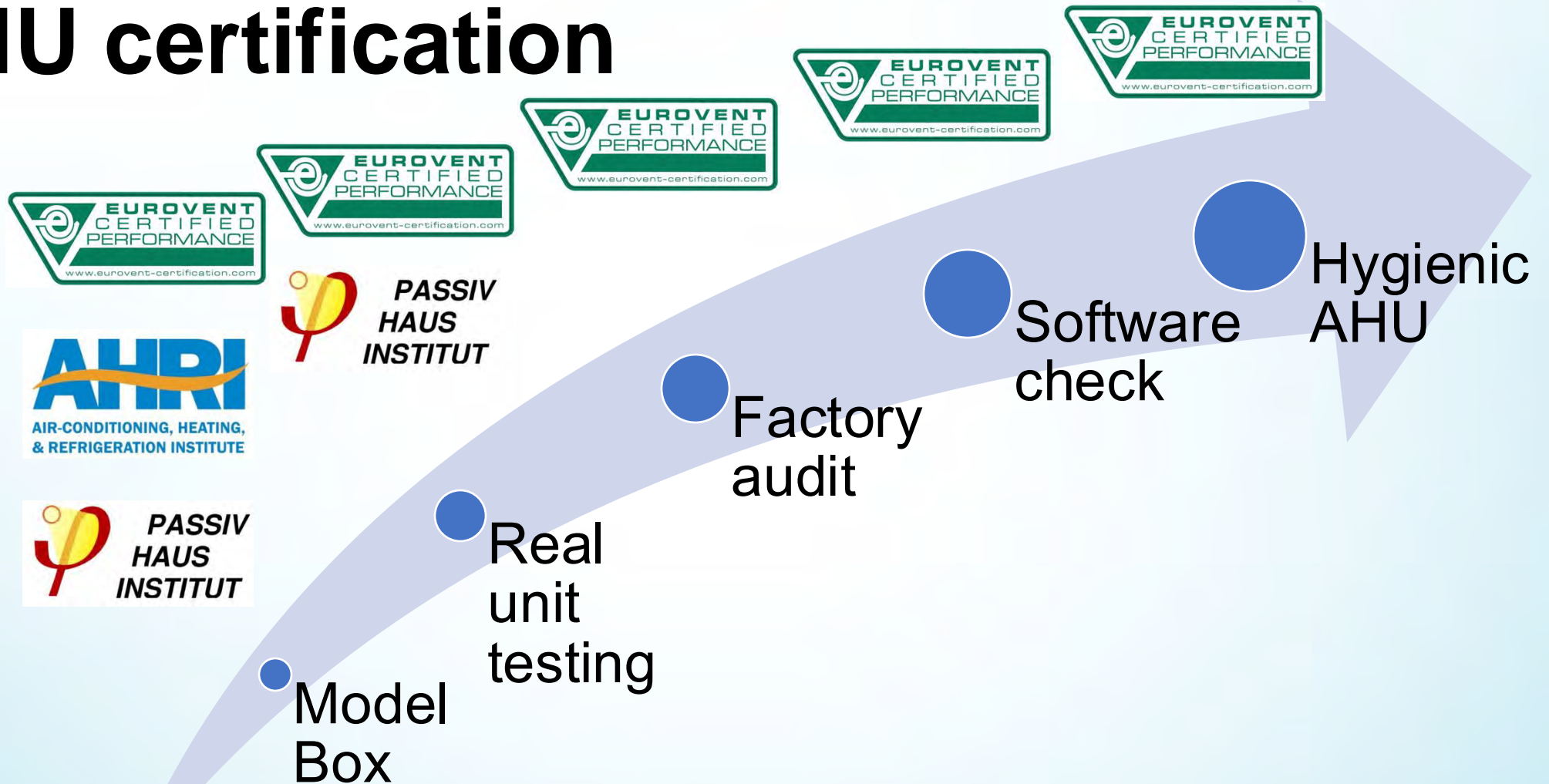
## PROCESS COOLING & FOOD COLD CHAIN



# Eurovent AHU certification

- Heavily customised machinery which is difficult to certify
- Other organisations certify individual parts, but not the complete system
- About 80% of AHUs sold in Europe and 60% in Middle East are Eurovent certified
- Tested for mechanical and electrical performance characteristics, incl. sound power, ERC, and selection software
- Testing regime with annual recurrent audits
- Global benchmark for AHU certification

# AHU certification



# Model box

Casing	ECP	Passivhaus	AHRI
Casing Deflection Rating Class	✓		✓
Casing Air Leakage Class	✓	✓	✓
Thermal Transmittance Class with Leakage	✓		✓ (option)
Thermal Transmittance Class without Leakage			✓ (option)
Thermal Bridging Class	✓		✓ (option)
Acoustic Insulation	✓		
Filter Bypass Leakage	✓		

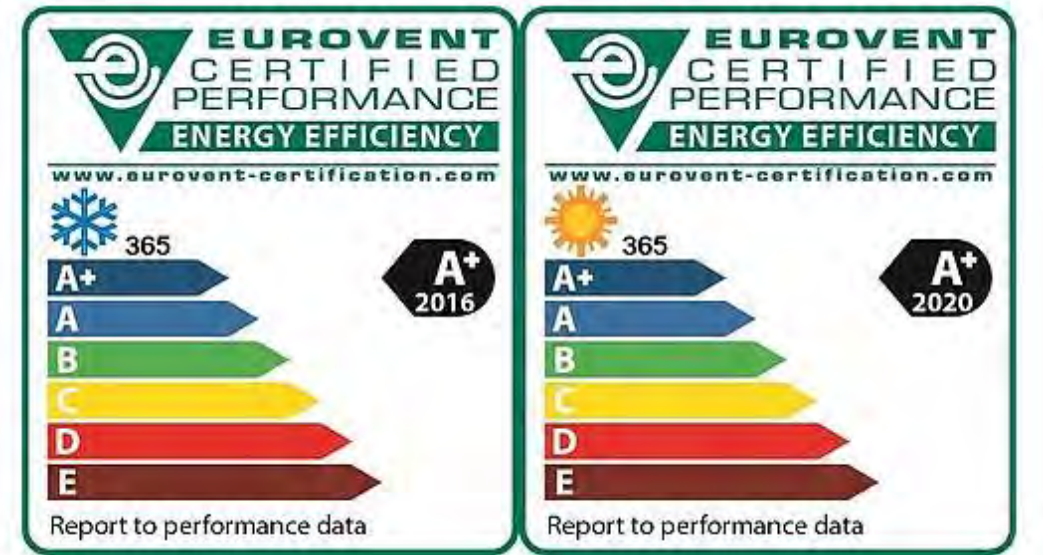
# Real unit testing

Real Unit Performances	ECP	Passivhaus	AHRI
Energy Recovery Rate	✓	✓	N/A
Octave band in-duct sound power level	✓		
Air flow	✓		
Total electrical power consumption of the ventilation apparatus	✓	✓	
Acoustic Performance	✓	✓	
Energy Efficiency	✓	✓	

# Energy labelling

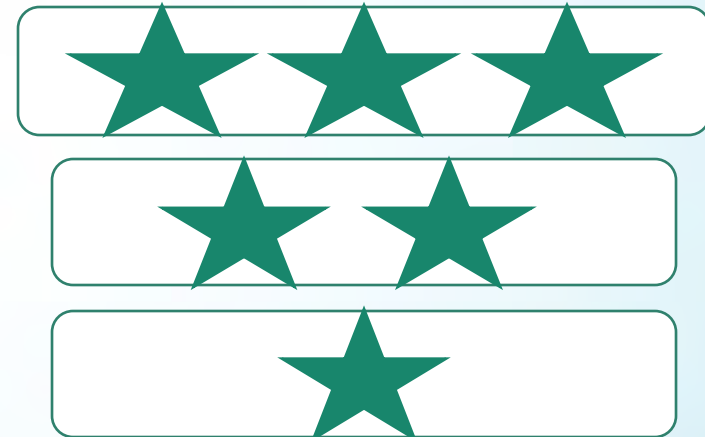
## Summer label

- Calculated based on ASHRAE weather data
- Energy label according to project location



# Hygienic AHUs

- The Hygienic option is a certification by range
- 3 levels of certification represented by stars
- requirements are listed in the Appendix H TCR ECP-05-AHU-2021



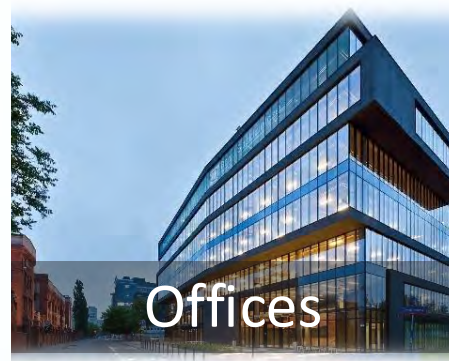
# Hygienic AHUs

	Offices, schools, hotels, retail ...  Level 1 ★☆☆	Hospitals  Level 2 ★★☆☆	Pharmaceutical, food processes, white rooms  Level 3 ★★★
Corrosivity class for metallic materials	At least C3		At least C4
Thermal Bridging class	At least TB3		At least TB2
Casing Air leakage Class	At least L2 (M)* & L2(R)*		At least L1 (M) & L1(R)
Water Drainage from pans, condense trays and water tanks	95%		
Filters class (supply side)	epm1 50%		epm1 85%
Number of filter on supply side	1	2	
Fin thickness	0.10 mm	0.12 mm	
Minimum distance between fins (cooler)	2.5 mm		3.0 mm
Minimum distance between fins (heating)	2.0 mm		2.5 mm

*Specifications are subject to change without notice.*

\* M= model box, R= real unit

# Hygienic levels



# Hygienic levels



# Hygienic levels



# **What is Quality?**

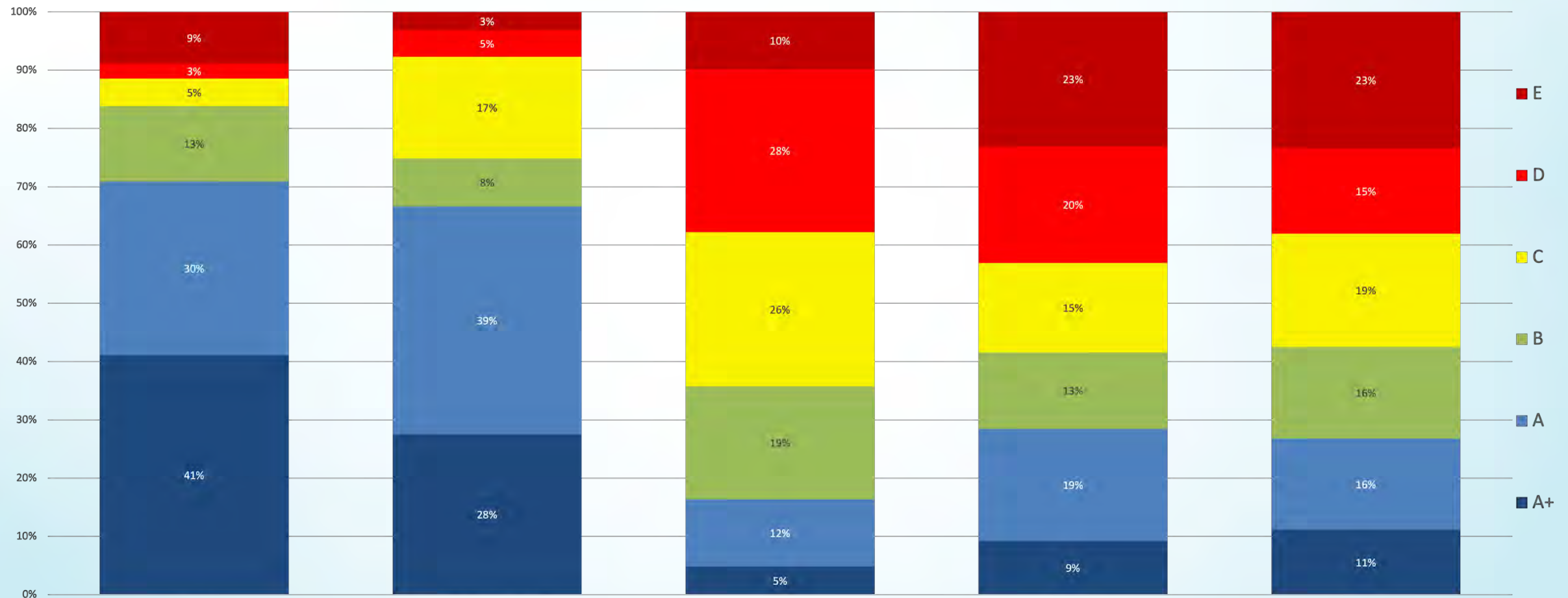
## **Performance + Durability**

# Performance

## Relevant aspects

- Electrical, mechanical, acoustical performance
- Certification
- But WHAT is certified, and under what conditions?
- How about flat-packed AHUs?
- What is good performance?

## Market 2023 - Distribution by Energy Class



# Quality

## Performance Certification not enough to ensure quality!

- Quality is determined by many more factors, for instance:
  - Materials, makeshift, easiness of maintenance, accessibility
  - Question of hinged doors, opening mechanisms, hazard protection
  - Protocols and documentation
  - Storage and delivery

Eurovent Industry Recommendation / Code of Good Practice



Eurovent 6/18 - 2022

### Quality criteria for Air Handling Units

First Edition

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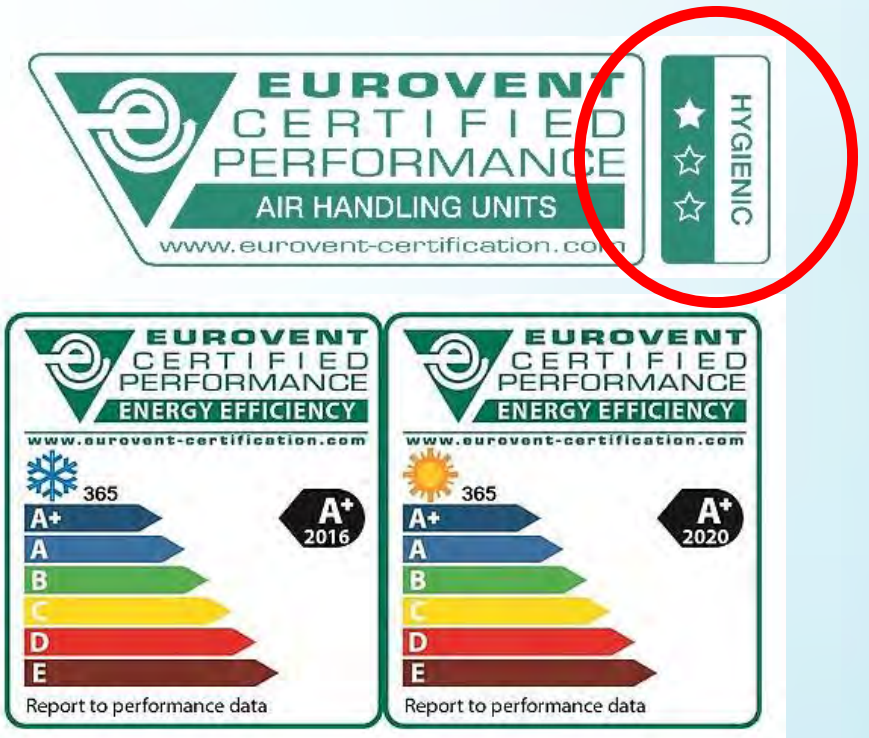
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# How to specify a good AHU?

- Eurovent Certified
- Minimum energy class A or B
- Hygienic level 1 (general spaces)



# Summary

- Durability and performance are key!!
- They safeguard energy consumption, integrity of the system, building health, investment
- Sustainability = lower TCO business case
- O&M training and protocols extremely important!



# Knowledge Development Course AHU Specialisation

Start date: October 15, 2024

**ENROLL NOW**

**Course fee 150 EUR  
10 Modules**



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- 2 times a week (Tuesdays, Thursdays, 14:30h IST)
- Registration via [www.eurovent.me](http://www.eurovent.me)
- Course certificate
- Target audience: engineers, consultants, operators

# Q&A

## **Moderators:**

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