

STANDARDS

Heinz Jürgensen

Convenor ASERCOM Work Group Standards

Brussels, 2019-01-25

CONTENTS

1. CEN

- ▶ TC 113 WG 6 Status

2. ISO

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3. IEC

- ▶ SC61C

EN 13215:2016

CONDENSING UNITS

PERFORMANCE RATING

Condensing units for refrigeration - Rating conditions, tolerances and presentation of manufacturer's performance data

EU Mandate M/495 acc to ErP Directive published 2017

- ▶ Additional rating points
 - At t_{amb} 32, 25, 15, 5 °C
- ▶ SEPR calculation
 - Annex A with formula, ambient temp bins, ...
 - Acc to working doc from JIEG
- ▶ Tolerances part load and SEPR
- ▶ Economized compressors in CUs
- ▶ New Annex ZA with reference to Commission Regulation 1095/2015

EN 13215 CONDENSING UNITS PERFORMANCE RATING

EN 13215:2016 Amendmend draft for mid point evap. temp

▶ Draft for enquiry in TC113 send

- Linear interpolation for mid point
 - Limitations to 0,5 K deviation from thermodynamic mean temperature for high glide

- Linear
$$t_{om} = \frac{t_{o1} + t_{oD}}{2}$$

$$t_{o1} = t_{oB} + (t_{oD} - t_{oB}) \times \frac{h_{EX} - h_{oB}}{h_{oD} - h_{oB}}$$

- Thermodynamic
$$t_{o,th} = \frac{h_{oD} + h_{o1}}{s_{oD} + s_{o1}}$$

- Other limitations dropped
- Definitions added to standards main text
 - “evaporation temperature” with reference to Annex B
 - Wording modifications at few places, where dew point was defined

ISO TC 86 SC 4 REFRIGERANT COMPRESSORS WORK ITEM PROPOSAL

ISO ... RATING OF CO₂ COMPRESSORS

Basis: Chinese standard

- ▶ Reference to ISO 9309:1989
 - ▶ To be re-established as WIP
 - No official information yet
 - ▶ Text draft agreed with CRAA 2017-05
 - Almost all content from Chinese proposal left in
 - Additions from EN12900
 - polynom description
 - Tolerance for all application area
 - Details for economized compressor rating
- Would be good base for ISO 9309 revision

ISO TC 86 SC 4 WG 1 WORK ITEM

ISO 916 TESTING OF VAPOR COMPRESSION REFRIGERATION SYSTEMS (REVISION)

Basis DIN 8976:2017

- ▶ Installed systems on site test
- ▶ Revision of DIN 8976:1972
 - Modified ISO/R 916:1968
- ▶ English translation send to ISO as working draft
- ▶ WG convenor for 3 years: Heinz Jürgensen

- ▶ WG had 4 webmeetings
 - 7 members
- ▶ Proposal for DIS for final vote launched 2018-10
 - Vote until 2019-02

ISO TC 86 SC 4

WORK ITEM PROPOSAL PLANNED



ISO 917 TESTING OF REFRIGERANT COMPRESSORS (REVISION)

Basis ISO917:1989 and Chinese testing standard of 2017

- ▶ Revision proposed by CN national committee members
 - Still not official new work item proposal NWIP

- ▶ EN13771-1 – and maybe EN 13771-2 - proposed as source also in discussion on CR
 - English version of 13771-1 made available for CN members

ISO917 was base for EN13771 developments

IEC 60335-2-89 COMMERCIAL REFRIGERATORS AND FREEZERS

Status: Flammable refrigerants up to 150 g per circuit covered

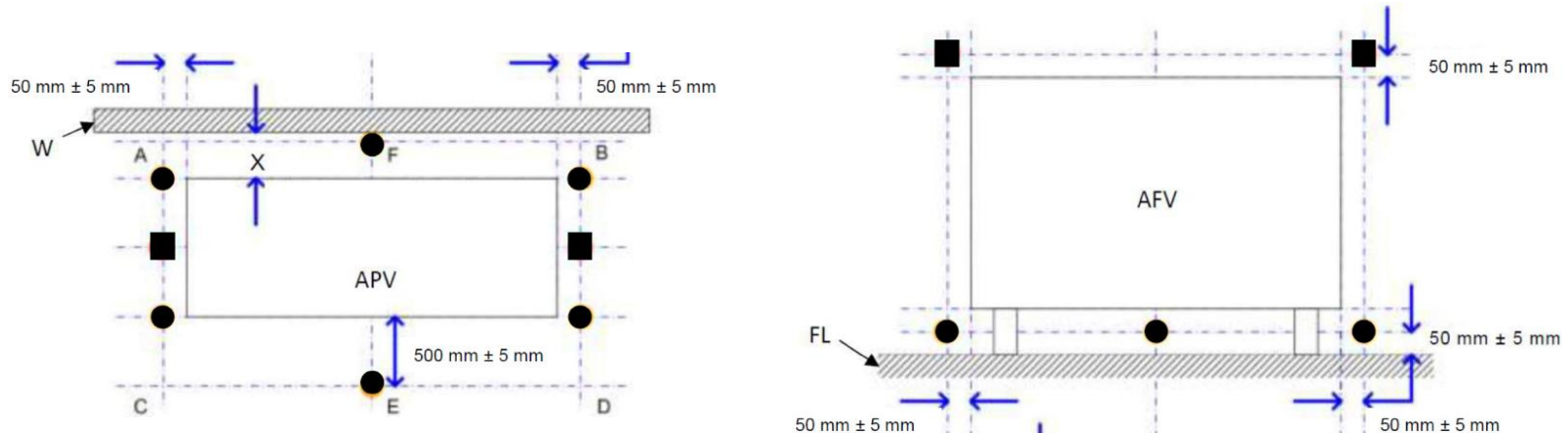
- ▶ Above 150 g was open with own risk assessment

Revision Draft for voting

- ▶ Rules up to 500 g per circuit
 - More charge – more rules
 - Ambient, e.g. room size to be covered
- ▶ Commission Draft for Voting CDV circulated
 - Voted yes October 2018
- ▶ Final Draft International Standard FDIS from 2018-12-17
 - Final vote in Q2 2019

IEC 60335-2-89 COMMERCIAL REFRIGERATORS AND FREEZERS

Above 150 g with new leak test setup



Source: IEC CDV 60335-2-89 2018

IEC 60335-2-89 COMMERCIAL REFRIGERATORS AND FREEZERS

Above 150 g with new leak test setup

- ▶ Test room size determined depending on charge size
- ▶ Several test points around the cabinet
 - Top - several close to cabinet height
 - Bottom - several just above floor
 - Also behind cabinet
- ▶ LFL is not allowed to be exceeded
 - If continuous fan is necessary for this, fan function has to be monitored
- ▶ Above certain charge per inner volume
 - Door opening simulated during leak test
- ▶ Other criteria as leak test before