Workshop on Safety Standards Relevant to the Safe Use of Low GWP Alternatives

Impact of International Safety Standards on Domestic Safety Standards in Brasil

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Domestic Refrigeration in Brasil and Flammable Refrigerants (since 2009)

Fridges, Freezers, Appliances and Vending Machines using Isobutane (R-600a) as refrigerant and C-Pentane for foam insulation.
Brazilian Standards on R/AC&HP

- Developed under **ABNT – Brazilian Association of Technical Standards**.
- ABNT is a NGO but, in general, all national legislation related to technical issues refers to ABNT standards.
- Representatives from Ministry of Environment and Environmental Agencies are actives on the STCs.
- Committee CB-55 covers most of the STCs related to R/AC&HP (except Domestic Refrigeration → CB-03).
- **ABRAVA – Brazilian Association of HVAC&R** – hosts and coordinates all STCs from CB-55.
Current Brazilian Standards on R/AC&HP related to Refrigerants and Safety

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ABNT has agreements with ISO/ IEC/ AHRI/ ANSI/ ASHRAE

- ABNT NBR-IEC  60335 Series.
- ABNT NBR-IEC  60079 Series.
- ABNT NBR-AHRI 700-2014 – Specifications for Refrigerants (Standard Project under STC 055.004.03).
- ABNT NBR-ASHRAE 34 – 2013 - Designation and Safety Classification of Refrigerants (Standard Project under STC 055.004.03).

NBR 16069 is under revision and ready for Public Review.

Minimal changes for current version – 2L class of refrigerants to be added. Still has many barriers related to flammable refrigerants.

But STC-55.001.04 is discussing if the new version will be released, because…
With the ISO 5149:2014 (Parts 1 to 4), STC-55.001.04 started a new Task Group in order to adopt it as the new standard for safety requirements.

EN 378 is also being compared but once ABNT has an agreement with ISO, there is a enforcement to adopt it.

If approved, the ABNT NBR-ISO 5149 is expected to be released until 2019.
IEC 60335 Series – Safety of Household and Similar Electrical Appliances (ABNT CB-03)


ABNT also has several NBR-IEC Standards from 60079 Series.
Conclusions

- Flammable refrigerants are largely applied in domestic refrigeration in Brasil since 2009.
- Brasil is ready for and already adopting many International Standards related to safety issues in R/AC&HP equipment.
- There is some resistance in adopting safety standards for large systems (industrial refrigeration and supermarkets).
- Biggest challenge for flammable refrigerants in Brasil is related to the training of technicians (ISO 5149-4 will help).
- Discussions about legislation and the regulation of technicians activities with a certification program already started but there is much work to be done in the next years.
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