Burner For Powerplant European status

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ISO 2685 Revision - Background

End of 2008 launch of ISO 2685 revision
- Review severity of gas burner vs fuel burner
- Representativity of gas burner versus an engine fuel-fed fire
- Informative vs formative status of Appendixes
  - Inconsistent application of vibrations by applicants
  - Clarification of fire resistance/fire proofness function intend of the part/component /structure to be performed.
- Clarify relation between burner size vs specimen
- Improve robustness of calibration to avoid test results variations
Burner For PWP - European status

Status

- Preliminary cross-testing (Snecma / CEAT lab test) indicates room for variability in results despite same standard is followed

- ISO is a test standard and does not offer possibility to introduce certification fire requirements and compliance interpretation as an AMC.

- Electrical harness/connector suppliers are using “Benzen burner”: suspect size, temperature and heat flux of flame are not representative of engine fuel-fed fire
Standby

- Last group meeting end of 2010
- Dependent on progress on the fire test survey and associated comparative testing.
1st analysis of the Powerplant Fire Test Survey

(A full analysis will be done when all the labs reply to the survey)

- 8 responses received
- All the labs perform tests according to the FAA test methods and AC (AC20.135, AC33.17-1A, Handbook)
- 7 labs perform test according to the ISO 2685 standard:
  - 1 lab uses only a gas burner
  - 1 lab uses only an oil burner
Main differences:
(the differences are not commented on or discussed here to avoid influencing the responses still expected)

Gas Burner:

➢ The labs don’t use the same way to set / or check the air-flow and gas-flow
➢ All gas burners are homemade

Oil Burner:

➢ Various Brands of burners
➢ Various oils
➢ Various additional items used to enhance / stabilise the flame (discs, tabs, additional holes, ...)  
➢ Various nozzles (brands and spray angles)
1st analysis of the Powerplant Fire Test Survey

Main differences:
(the differences are not commented on or discussed here to avoid influencing the responses still expected)

Settings and calibrations:

- Same type of thermocouples but various configurations (diameters, grounded or not, exposed junction (weld) or not, aspirated or not, ...)
- Heatflux calculation: various values are used for the exposed length of the tube
- Various heatflux calibration methods are used (water-cooled thermogage or heat transfer device)

Additional descriptions/explanations and/or pictures would be appreciated for a better understanding (see questions: 28, 36 (homemade modifications and variations), 68 (calibration system and procedure), heat transfer device, ...
Main differences:
(the differences are not commented on or discussed here to avoid influencing the responses still expected)

Test configurations and environmental conditions:

- The test enclosures vary from 20m³ to 3000m³
- Test configuration (orientation of the burner):
  - only horizontal position: 4 labs
  - only vertical position: 1 lab
  - both positions or multi-angles: 3 labs
- 1 lab only sometimes performs tests using multiple burners
Round Robin test results on 600mm x 600mm 2024 aluminium sheet (3mm)

Test results currently received from only 1 lab:
(The test results will be presented and discussed when all expected results will be received)

REQUEST:
- To be sure that all labs performed the tests under the same conditions (or to be able to analyse and compare the results if the conditions were different) please mention/confirm:
  - the type of burner used (oil / gas),
  - the calibration parameters (HF, T),
  - the test standard used,
  - the HF device used (Watercooled calorimeter or Heat transfer device),
  - the distance from the burner to the head of the screw,
  - … all additional point which could have an effect on the test results…
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