

Deviation Request ETSO-C80#4 for an ETSO approval for CS-ETSO applicable to Flexible fuel and oil cell material (ETSO-C80) Consultation Paper

1 Introductory Note

The hereby presented deviation requests shall be subject to public consultation, in accordance with EASA Management Board Decision No 7-2004 as amended by EASA Management Board [Decision No 12-2007](#) products certification procedure dated 11th September 2007, Article 3 (2.) of which states:

“2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency.”

2 ETSO-C80#4 Flexible fuel and oil cell material

2.1 Summary of Deviation

Deviates from ETSO-C80, Appendix 1, § 11.0 *Permeability*, specifically from §11.1.2 *Test Procedure*, carrying out permeability testing at a relative humidity (RH) level of 50 +/- 5% instead of 40 +/- 5%.

2.2 Original Requirement

ETSO-C80, Appendix 1, § 11.1.2 *Test Procedure*.

*Permeability cups prepared as specified above shall be placed in a suitable rack in a constant temperature of 77°±5° F and a **relative humidity of 40±5 percent**. After allowing 1 hour for equilibrium, the cups shall be weighed to the nearest 0.005 gram and placed in the rack with the faces of the cups facing upward (test disks up). The cups shall be kept at the above constant temperature for 24 hours, then weighed to check for seal integrity. The bolts shall be re-torqued if necessary. The cups shall then be inverted (test disks down) in a rack that permits free access of air to the test disks.*

Cups shall be weighed at the end of the third, fifth, and eighth day after inverting. Defective films or leaks caused by faulty assembly will usually be found when making the weighing on the third day. The diffusion rate calculation shall be made on the fifth day to eighth day period and expressed as fluid-ounces per square foot per 24 hours. The permeability shall be less than 0.025 fluid ounces per square foot per 24 hours for each sample tested.

2.3 Industry

The Applicant's normal laboratory conditions follow ISO2231:1989 where RH is 50 +/-5%. Moreover, the relative humidity level is maintained constant all along the permeability test duration. Indeed, the aim of this test is to check the fuel weight loss during the overall test. If relative humidity is maintained at the same level, whatever the level is, the only weight loss possible will be the one of the fuel.

2.4 Equivalent Level of Safety

Base on test purpose, results are independent form relative humidity level while depending from the fact that RH is maintained constant during the overall test duration. As the deviation follows this principal thus the deviation request has no influence of test results thus provides equivalent level of safety.

2.5 EASA position

We accept the deviation.