

# Deviation Request ETSO-C80#1 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#1 Flexible fuel and oil cell material

### 2.1 Summary of Deviation

Deviates from ETSO-C80, Appendix 1, § 4.2.a, substituting the test fuel MIL-S-3136, Type III, with fuel Jet A1 for tests in the paragraphs: §7 Slosh, §8 Stand test, §10 Fluid resistance of exterior surface, and §17 Low temperature leakage.

### 2.2 Original Requirement

ETSO-C80, Appendix 1,

*4.2 Test Fluids. Unless otherwise specified, the following test fluids shall be used in testing the different tanks.*

*a. Fuel Tank: Test fluid conforming to MIL. Spec. MIL-S-3136,3 Type III. [...]*

### 2.3 Industry

The MIL-S-3136, Type III fluid is mixing of 2,2,4-Trimethylpentane and toluene (70:30). Toluene is CMR level 2 according to Regulation (CE) n° 1272/2008 and is in Annex XVII of REACH Regulation. As consequence huge amount of the MIL-S-3136, Type III cannot be used for safety reason (health).

A representative test fuel could be the Jet A1 (ASTM D1655 or equivalent) as it is a fuel of standard use in aviation and mainly on rotorcraft, thus can be used to demonstrate suitability of fuel cell. Moreover, Jet A1 (ASTM D1655 or equivalent) has the same density as MIL-S-3136 Type III and is a reference fluid for CS2X.965 requirements.

## 2.4 Equivalent Level of Safety

Basically for safety reasons the referenced test fluid has practical limitation. The proposed Jet A1 fuel is widely used in aviation and thus representing an acceptable test fuel alternative for the equipment certification purpose. Equivalent level of safety will be ensured by a limitation to Jet A1 use.

## 2.5 EASA position

We accept the deviation.