

# **Deviation Request ETSO-C99#2 for an ETSO approval for CS-ETSO applicable to Protective Breathing Equipment (ETSO-C99) 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-C99#2 Protective Breathing Equipment**

### **2.1 Summary of Deviation**

Deviates from AS8031 paragraph 12.1.3, with light transmission being approximately 80%.slightly less than the Z87.1 standard required value of 89%.

### **2.2 Original Requirement**

AS8031 paragraph 12.1.3 *Light transmission, refractive deviation, optical haze and distortion shall be tested in accordance with, and meet Table 8. USA Standard Z87.1 requirements of FAA report FAA-AM-78-41.*

### **2.3 Industry**

The Protective Breathing Equipment (PBE) has not been tested according to the procedures shown in FAA-AM-78-41 because these tests were designed for goggles, face masks, or other nonflexible types of devices. Many of the tests specified in FAA-AM-78-41 cannot be run on flexible hoods such as the Applicant PBE. As an alternative, the PBE has been tested against the vision requirements of E/TSO C116, and found to be satisfactory.

Because of the amber tint of the Kapton film used in the PBE, which is required to meet the flammability standard, light transmission is believed to be slightly less than the Z87.1 standard of 89%. Information from the manufacturer of the film, estimates light transmission through Kapton to be approximately 80%. The Applicant believes, however, that this small discrepancy should not disqualify the PBE from certification against TSO C99.

## 2.4 Equivalent Level of Safety

The PBE is certified to E/TSO C116, "Crewmember Protective Breathing Equipment". Devices certified to TSO C99, "Protective Breathing Equipment", and devices certified to TSO C116 perform the same function, i.e., allow aircraft crewmembers to safely enter areas of the aircraft that may contain smoke or toxic fumes, in order to determine the severity of the emergency and take appropriate action. Whereas devices defined by TSO C99 may be either self-contained or be connected to other aircraft sources of air or oxygen, devices that fall under TSO C116 must be self-contained. Also, the workload requirements for users of devices defined by TSO C116 are slightly more demanding than workloads under TSO C99. Because the units defined by these two TSO's are intended to be used by the same people in the same emergency situation, and because devices defined by TSO S116 must meet equal or more demanding requirements for all other aspects of product design, and because the PBE meets all of the requirements, including vision requirements, of TSO C116, the Applicant contends that the design of the PBE is adequate to meet the vision requirements of users of units certified by TSO C99.

## 2.5 EASA position

We accept the deviation.