



Deviations request #73 for an ETSO approval for CS-ETSO applicable to Aircraft Position Lights (ETSO-C30c) Consultation Paper

1. Introductory note

The hereby presented deviation request shall be subject to public consultation, in accordance with EASA Management Board Decision No 7-2004 as amended by EASA Management Board Decision No 12-2007¹ products certification procedure dated 11. September 2007, Article 3 (2.) of which states:

“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-C30c#2 – Aircraft Position Lights

Deviate from SAE AS 8037(or AS 8037A) 4.2.7 and allow the use other test categories than A for the Explosion Proofness test in accordance with section 9 of EUROCAE ED-14()/RTCA DO-160().

Requirement:

SAE AS 80374.2.7 Explosive Atmosphere: Systems which are to be marked explosion-proof Category A must be tested in accordance with DO-160B. The equipment should operate in the presence of an explosive atmosphere without creating an explosion and should contain any explosion occurring inside the equipment.

Industry:

Especially for equipment having no closed volume the test to category A cannot be performed as that test demands to perform an explosion inside the volume which does not allow an ignition outside the unit. In the specific case the unit does not contain any internal volume in which an ignition could be performed because the complete internal volume is filled with material leaving no space for any gas to be ignited.

In other cases the installation location for the position lights are far away from the areas with flammable fluids or vapours or the location is sufficiently vented that there is no need to demonstrate Explosion Proofness to category A. The general requirement to demonstrate to category A and not allow any other category seems not to be adequate. The proper selection of the category for the specific installation will be verified during the installation project anyhow.

EASA:

It has to be noted that the requirement itself contains a condition to perform the test only in case the system is intended to be marked with explosion-proof category A. This requirement already has the provision not to mark the system as explosion-proof category A.

¹) <http://easa.europa.eu/management-board/meetings/2007/04/MB%20Decision%2012-2007%20amending%20the%20certification%20procedure.pdf>

The same conditional requirement is applicable to Sand and Dust, Fungus Resistance, and Salt Spray testing while no such condition is applicable to the Temperature and Altitude, Humidity, Vibration, or Thermal Shock tests, which need to be performed. The standard does not define any category for those tests, which need to be performed, and leaves it to the applicant to select an appropriate test category, which is assumed to meet the installation requirements.

The requirement as given can be met by not marking / declaring the system as explosion-proof category A compliant but e.g. category X – no test performed. A similar approach to mark some test as optional is performed in other standards as well often by using a phrase like ‘if required’ or by directly stating that the test is optional. Those optional tests are included in the environmental testing section to have defined test criteria and test procedures for all environmental tests and not to leave it to the individual applicant to suggest criteria and procedure in case the test is needed for a specific installation environment.

We reject the deviation request as the requirement itself already contains the provision not to test to category A but to any other category including X - no test performed.