

European Aviation Safety Agency

European Technical Standard Order

Subject: CREWMEMBER DEMAND OXYGEN MASK

1 - Applicability

This ETSO provides the requirements which crewmember demand oxygen masks that are designed and manufactured on or after the date of this ETSO must meet in order to be identified with the applicable ETSO marking.

2 - Procedures

2.1 - General

Applicable procedures are detailed in CS-ETSO, Subpart A.

2.2 - Specific

None.

3 - Technical Conditions

3.1 - Basic

3.1.1 - Minimum Performance Standard

Crewmember demand oxygen masks must meet the standards set forth in SAE International (SAE) Aerospace Standard (AS) 8026A, Crewmember Demand Oxygen Mask for Transport Category Aircraft, dated October 2001, as modified by Appendix 1 of this ETSO.

Crewmember oxygen masks are separated into four types;

- Type I: Quick donning mask with integral breathing valve(s);
- Type II: Quick donning mask without integral breathing valve(s);
- Type III: Non-quick donning mask with integral breathing valve(s); and
- Type IV: Non-quick donning mask without integral breathing valve(s)

This ETSO standard applies to crewmember demand oxygen masks to be used with straight-demand, diluter-demand and pressure-demand oxygen systems on transport category aircraft. The oxygen mask design should be either oronasal, covering the mouth and nose, or full face, covering the mouth, nose and eyes.

3.1.2 - Environmental Standard

Refer to CS-ETSO, Subpart A, as well as SAE AS8026A, paragraph 4.5.

3.1.3 - Software

See CS-ETSO Subpart A, paragraph 2.2.

3.1.4 - Electronic Hardware

See CS-ETSO Subpart A, paragraph 2.3.

3.2 - Specific**4 - Marking****4.1. - General**

Marking is detailed in CS-ETSO, Subpart A, paragraph 1.2.

4.2. - Specific**4.2.1 - Each demand flow mask shall be marked to indicate:**

- (a) whether it is a 'non-pressure-demand' or a 'pressure-demand' mask;
- (b) the maximum environmental (cabin) altitude for which it is qualified;
- (c) its type in accordance with paragraph 3.1.1; and
- (d) its size (if more than one size is manufactured).

5 - Availability of Referenced Document

See CS-ETSO, Subpart A, paragraph 3.

APPENDIX 1**MPS FOR CREWMEMBER DEMAND OXYGEN MASKS**

This Appendix prescribes the MPS for crewmember demand oxygen masks. The applicable standard is SAE AS8026A, Crewmember Demand Oxygen Mask for Transport Category Aircraft, dated October 2001. It is modified as follows.

SAE AS8026A:	Modification:
Section 1, SCOPE	To be disregarded.
Paragraph 3.1.1	To be revised: 'General: Materials of a type, grade and quality that experience and/or tests have shown suitable for the purpose shall be used. Materials that contaminate oxygen or are adversely affected by continuous service with oxygen shall not be used. The following test methods shall be used to verify compliance with material requirements established in a design specification.'
Paragraph 3.1.1	
a. Resistance to Flammability	To be revised: 'Except for small parts like knobs, triggers, fasteners, seals, and electrical parts that don't contribute significantly to fire propagation, materials including packaging shall comply with CS 25.853(a) and Appendix F, Part I(a)(1)(iv)'
Paragraph 3.1.3	To be revised: 'Cleaning and Sterilizing: The oxygen mask shall be made of materials that permit cleaning and sterilising without adverse effects, and without major disassembly. The cleaning method shall be either manufacturer recommended, or according to SAE ARP1176, Oxygen System Component Cleaning and Packaging. Cleaning and sterilising procedures shall be included in the Component Maintenance Manual (CMM).'
Paragraph 3.1.4	To be revised: 'Elastomeric Components: A tag or leaflet describing service life limits of elastomeric components and a suggested method to inspect for deterioration in these components shall be attached to the mask. If not attached, the tag shall be included with the packaged mask as delivered to the user. Silicone rubber parts, having unlimited shelf life, are exempt from this requirement. Life limits and inspection procedures shall be included in the CMM.'
Paragraph 3.3	To be disregarded. Marking is specified in paragraph 4 of this ETSO.
Paragraph 3.5	To be revised: 'The oxygen mask face-piece of Type I and Type II masks shall be stored in a container, mounted (panel or sidewall) or attached to a suspension device. The mask assembly must be donned using only one hand and operating in 5 seconds or less, without disturbing eyeglasses. After donning, the mask must not prevent immediate communication between crewmembers of the airplane intercommunications system.'
	Type III and Type IV oxygen masks may be similarly installed, and may be designed to require use of two hands and/or take more than 5 seconds to don.

Paragraph 3.12	To be revised: 'Oxygen mask design shall permit the installation of a microphone and connecting communications cable. When microphones are furnished with the masks, these must conform to the current revision of ETSO-C139.'
Paragraph 5.1.4	To be disregarded.
Paragraph 5.1.5	To be disregarded.