

European Aviation Safety Agency

European Technical Standard Order

Subject: Aircraft Wheels And Wheel-Brake Assemblies (CS-23, -27 and -29 aircraft)

1- **Applicability**

This ETSO gives the requirements which aircraft wheels and wheel-brake assemblies for CS-23, CS-27 and CS-29 aircraft that are designed and manufactured on or after the date of this ETSO must meet in order to be identified with applicable ETSO marking. The requirements which transport aeroplane wheels and wheel-brake assemblies (CS-25 aircraft) must meet are contained in ETSO-C135.

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

Standards set forth in the appendix 1 to this ETSO.

The MPS is based, in part, on the Society of Automotive Engineers (SAE), Aerospace Recommended Practice (ARP) 5381, Minimum Performance Recommendations for Part 23, 27, and 29 Aircraft Wheels, Brakes, and Wheel-Brake Assemblies, dated October 2000.

Where applicable, instead of the referenced FAA documents/paragraph the corresponding Part, CS or ETSO document/paragraph shall be used, when available.

3.2 - Specific

None.

4 - **Marking**

4.1 - General

Marking is detailed in CS-ETSO Subpart A paragraph 1.2. In addition and in lieu of the marking specified in 21.A.807(a), the following information shall be legibly and permanently marked on the major equipment components:

- (1) Name of the manufacturer responsible for compliance;
- (2) Serial number;

- (3) Part number;
- (4) Applicable ETSO number;
- (5) Rim size (this marking applies to wheels only);
- (6) Hydraulic fluid specification (this marking applies to hydraulic brakes only).

4.2- Specific
None.

5 - Availability of Referenced Document

Copies of SAE ARP5381 may be purchased from the Society of Automotive Engineers Inc., Department 331, 400 Commonwealth Drive, Warrendale, PA 15096-0001. Copies also can be obtained through the SAE Internet website at: www.sae.org.

APPENDIX 1.**MINIMUM PERFORMANCE STANDARD for aircraft wheels, brakes and wheel/brake assemblies for small airplanes and rotorcraft.**

This appendix prescribes the Minimum Performance Standard (MPS) of SAE ARP5381, 'Minimum Performance Recommendations for Part 23, 27, and 29 Aircraft Wheels, Brakes, and Wheel-Brake Assemblies', dated October 2000, as modified in this ETSO.

Additions to and one deletion from the standard, are shown in italics as follows:

Additions:

1. *Page 3, a new paragraph is added after 3.6:
Suitable Tire for Brake Tests, TT_{BT}
 TT_{BT} is the rated tyre type and size.
 TT_{BT} is the tyre type and size that has been determined as being the most critical for brake performance and/or energy absorption tests. The TT_{BT} must be a tire type and size approved for installation on the wheel (TS_{WR}). The suitable tyre may be different for different tests.*
2. *Page 7, a new paragraph is added after 4.3:
Fire Protection: Except for small parts (such as fasteners, seals, grommets, and small electrical parts) that would not contribute significantly to the propagation of a fire, all solid materials used must meet the applicable flammability rules for the part and category of aircraft.*

Deletion:

1. *Page 13, paragraph 5.3.3.2 is disregarded. Worn brake testing is not a requirement of Part 23, 27 or 29, so it cannot be included in this TSO.*