

Specification for

Retreading of cross ply tyres for aircraft

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Committees responsible for this British Standard

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- British Airways
- British Rubber Manufacturers' Association
- Civil Aviation Authority (Airworthiness Division)
- Ministry of Defence
- Retread Manufacturers' Association
- Society of British Aerospace Companies Ltd.

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Foreword

This British Standard has been prepared under the direction of the Aerospace Standards Policy Committee and is a revision of BS M 47:1975, which is withdrawn.

In this revision account has been taken of modern tyre testing criteria and retread progression requirements have been included. Also included are more specific details on casing repair, acceptance limits and the provision of an alternative retread date marking code. This British Standard is based on the minimum qualification, acceptance and marking requirements for retreaded cross ply tyres for use on aircraft operated under the jurisdiction of the UK Civil Aviation Authority. This British Standard is generally aligned with European and USA practice.

The approving authority referred to in this British Standard is the Airworthiness Division of the Civil Aviation Authority.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard specifies requirements for the retreading of cross ply aircraft tyres, including carcass rejection criteria and repair limits before processing. It also specifies type approval tests, quality assurance requirements and interchangeability limits to be met by the retreaded tyre after processing. Except where otherwise stated, these requirements apply to both tubed and tubeless tyres.

NOTE 1 The titles of the publications referred to in this standard are listed on the inside back cover.

NOTE 2 The latest revision of an Aerospace Series standard is indicated by a prefix number. The latest edition of the standard should be used.

2 Definitions

NOTE See Figure 1.

For the purposes of this British Standard, the definitions given in BS 3558 apply together with the following.

2.1 batch

a group of tyres of identical size, type and original manufacture that are retreaded in one production run

2.2 buffing

the preparation of the tyre surface before the application of new material

2.3 chine (deflector)

a specially profiled circumferential water-deflecting rib located on one or both side walls of the tyre at a predetermined distance below the tread edge

2.4 mould tread pattern depth

the nominal depth of the groove nearest the centreline of the mould

2.5 R level

the number of times that a carcass has been subjected to a retreading operation (e.g. third retread = R3)

2.6 retreading

a process of reconditioning a worn tyre by one of the following methods

- a) **bead-to-bead remoulding.** A process in which material is removed as necessary and new material, extending from bead area to bead area, is applied.

- b) **recapping.** A process in which material is removed from the worn tread and over the shoulders and new material is applied.

- c) **top-capping.** A process in which the worn tread material only is renewed.

2.7 speed ratings

the maximum ground speed at which a tyre is designed to operate, as follows

- a) **low speed tyre.** A tyre designed to operate at maximum ground speeds up to 120 miles/h (104 kn).
- b) **high speed tyre.** A tyre designed to operate at maximum ground speeds above 120 miles/h (104 kn).

2.8 tread reinforcement

one or more layers of material fitted within or below the wearable part of the tread

2.9 tyre fitting lines

the circular moulded lines on the outside of the upper bead area to indicate concentricity of the tyre and wheel when fitting

2.10 vent holes

holes made in the tyre above the wheel rim area for relieving permeating and entrapped air within the carcass and/or between the tube and carcass of a tubed tyre

3 Retreading

3.1 Rejection criteria before processing

3.1.1 A tyre shall not be used for retreading if it displays any of the following features:

- a) injuries to the bead or bead area;
- NOTE Repairs may be made if the chafe-resistant material only is damaged or loose, or if damage does not extend into the plies of the tyre and if there is no sign of separation in the bead area.
- b) bead injuries that affect the seal of the bead on tubeless tyres;
- c) evidence of separation exceeding process specification limits between plies or around the bead wire;
- d) injuries requiring reinforcement and all injuries requiring sectional repair;
- e) kinked or broken bead wires;
- f) weather cracking (ozone cracking) or radial cracks that penetrate body plies;