AEROSPACE RECOMMENDED PRACTICE

ARP6307™	REV. A

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Superseding ARP6307

New and Newly Retreaded Tire Appearance

RATIONALE

This limited scope revision adds appearance anomaly guidelines for abrasion in the lower sidewall of newly retreaded tires caused by contact with the wheel flanges during previous usage on aircraft. The new information is shown in Section 4, Table 1, and 5.2.

ARP6307A has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This document is for establishing and addressing anomalies on appearance of new and newly retreaded tires prior to installation on aircraft. It is intended to use cosmetics as well as functionality to make a determination of acceptability. However, if cosmetic appearance is not a requirement, use the inspection criteria from ARP6225. This ARP does not supersede (E)TSO-C62 minimum requirements, including marking requirements.

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 FAA Publications

Available from Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591, Tel: 866-835-5322, www.faa.gov.

(E)TSO-C62 Technical Standard Order - Aircraft Tires

2.2 Other Publications

- Bridgestone: Tire Specification & Maintenance Manual
- Goodyear: Aircraft Tire Care and Maintenance
- Michelin: Aircraft Tire Care & Service Manual
- Dunlop: Tyre Care Manual (DM1172)

3. BACKGROUND

Operators, airframers, and wheel manufacturers receive tires and often have questions on their appearance acceptability.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
SAE WEB ADDRESS: http://www.sae.org

SAE values your input. To provide feedback on this Technical Report, please visit
http://standards.sae.org/ARP6307A

4. PROCEDURE

A summary of the appearance anomalies and actions are shown in Table 1 as a quick reference guide. Additional details and photos are provided in the following sections. If unable to determine the condition of a new or retreaded tire, please contact the appropriate tire manufacturer and/or tire retread provider for further assistance.

Table 1

Condition	Observation	Action
Impression	Impression by an object pressing against the tire.	The tire is acceptable for use, provided the impression is not on the wheel interface.
Abrasion	Scrape by an object rubbing against the tire. In addition, retreaded tires may have: • A rough surface finish on the shoulder of the tire just below the new tread rubber caused by buffing during the retreading process. • An abraded surface on the lower sidewall caused by contact with the wheel flanges in previous usage.	The tire is acceptable for use provided fabric reinforcements are not exposed.
Cuts	Penetration by a sharp object contacting the tire.	Do not use tire. Shallow scratches that do not penetrate into the tire surface are acceptable.
Crack	Cracks may be caused by the molding process or improper storage (ozone attack).	The tire is acceptable for use unless the fabric reinforcements are exposed.
Bulges/Bubbles	Expanded area of tire which appears to be stretched over a localized area of “air.”	Do not use tire. Mark the bulge area before deflating the tire. Do not probe the bulge.
Puncture	Damaged or pierced by a foreign object.	Do not use tire.
Flash	Excessive rubber which formed between mating pieces of the mold.	Tire is acceptable for use provided the flash trimming is not in the wheel interface area or does not exceed 5 mm tall x 100 mm long (0.2 inch tall x 4 inches long).
Precure Paint	Flaking appearance of the surface of the tire.	The tire is acceptable for use.
Missing Red Dot	No red dot present on sidewall of tire.	Do not use tire.
Tire Contamination	Spot or streaks resembling liquid drippings or tire sitting in fluid.	If the rubber has swelled, do not use the tire.
Matte/Gloss Finish	Surface finish can depend on different finishes of molds.	The tire is acceptable for use. In addition, retreaded tires may have a rough surface finish on the shoulder of the tire just below the new tread rubber caused by buffing during the retreading process.
Brownish Appearance	Tire can appear to have a brown colored finish.	The tire is acceptable for use.
Glue Residue	Glue residue can be visible on the tire after the label has been removed.	The tire is acceptable for use. If desired, remove the glue residue with soapy water.
Misaligned Branding	Lettering appears to be misaligned or illegible.	Do not use tire if required marking is illegible.
Sidewall Undulations	Radially oriented indentations or protrusions.	Tire is acceptable for use provided the undulation is not greater than 3 mm (0.12 inch) in depth or height.
Sidewall Growth	Sidewall appears expanded uniformly around circumference.	The tire is acceptable for use.

5. APPEARANCES

5.1 Impressions

Impressions on the tire can be due to the tire being in contact with a foreign object for a long period of time during storage or shipping.

ACTION:

- The tire is acceptable for use provided the impression is not on the wheel interface.

Figure 1

Impression example - This tire is acceptable for use.

5.2 Abrasion

Abrasions on the tire can be attributed to tires rubbing against each other, the shipping container wall, or storage facilities floor/walls.

In addition, retreaded tires may have:

- A rough surface finish on the shoulder of the tire just below the new tread rubber caused by buffing during the retreading process.
- An abraded/cracked surface on the lower sidewall caused by contact with the wheel flanges in previous usage.

ACTION:

- Tire is acceptable for use provided fabric reinforcements are not visible and providing the required tire identification markings (load/speed ratings, part number, serial number, ply rating, (E)TSO-C62 marking, etc.) are still clearly legible.

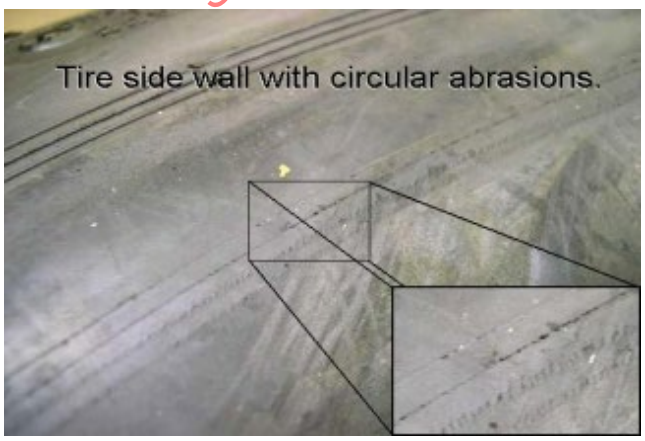

Figure 2

Figure 3

Abrasion examples - These tires are acceptable for use.

Figure 4

Tread buffed surface example - Tire acceptable for use.

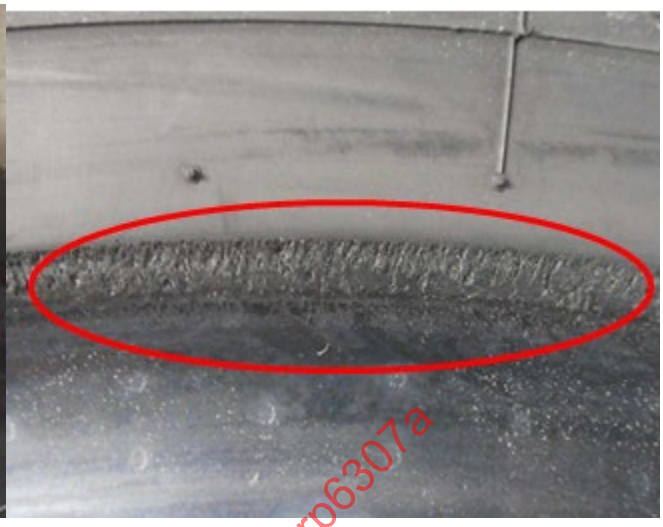

Figure 5

Lower sidewall abrasion example - Tire acceptable for use.

5.3 Cuts

Cuts on sidewall/tread are caused by:

- Sharp objects contacting the tire during shipping or storage.
- Improper use of fork lifts to maneuver the tire during shipping or storage.

ACTION:

- Shallow scratches that do not penetrate the tire surface are acceptable. If cuts penetrate the tire, do not use tire.

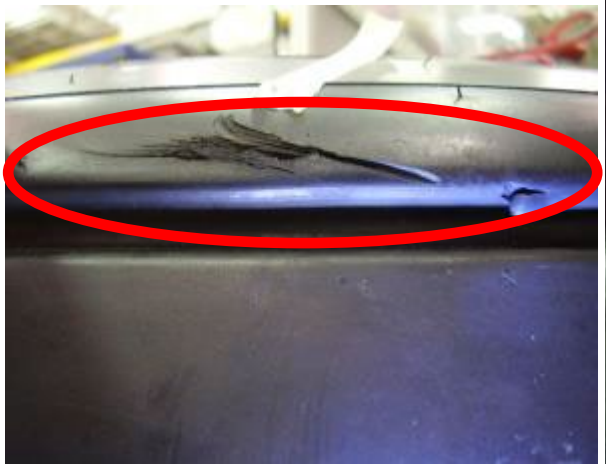

Figure 6

Figure 7

Figure 8

Cut examples - Figures 6, 7, and 8 - These tires should not be used.

Figure 9

Superficial scratch example - This tire may be used.

WARNING

DO NOT PROBE CUTS OR EMBEDDED FOREIGN OBJECTS USING A SHARP-EDGED TOOL OR IMPLEMENT WHILE TIRE IS STILL INFLATED.

NOTE: Mark all cuts, FOD, or leak sites while the tire is still inflated. Damage can be difficult to locate when the tire is deflated.

5.4 Cracks

Cracks may be caused by the molding process and improper storage (ozone attack).

ACTION:

- Tire is acceptable for use unless the fabric reinforcements are exposed.

Figure 10

Crack example - This tire is acceptable for use (photo is of a used tire).

Figure 11

Crack example - This tire may be used.

5.5 Bulges/Bubbles

Bulges on the tire may occur as a result of chemical contamination or curing issue.

ACTION:

- Do not use.

WARNING

DO NOT PROBE CUTS OR EMBEDDED FOREIGN OBJECTS USING A SHARP-EDGED TOOL OR IMPLEMENT WHILE TIRE IS STILL INFLATED.

NOTE: Mark all cuts, FOD, or leak sites while the tire is still inflated. Damage can be difficult to locate when the tire is deflated.

Figure 12

Bulge in tread example - This tire should not be used.

Figure 13

Bubble in liner example - This tire should not be used.

5.6 Punctures

Tire punctures can be caused by a foreign object or mishandling during shipping or storage.

ACTION:

- Do not use tire.

Figure 14

Puncture example - This tire should not be used.

Figure 15

Puncture example - This tire should not be used.

5.7 Flash Trimming

Excessive flash is due to the molding process which was not removed and missed during inspection.

ACTION:

- Tire is acceptable provided the flash trimming is not in the wheel interface area or does not exceed 5 mm tall x 100 mm long (0.2 inch tall x 4 inches long).

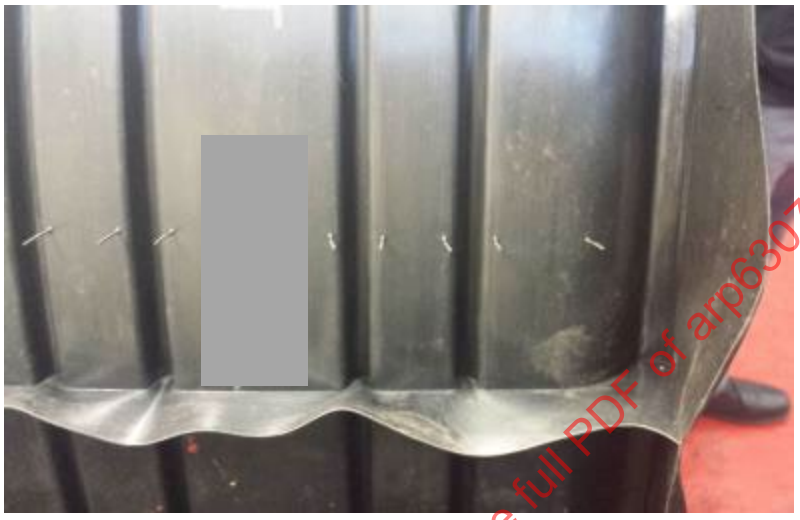

Figure 16

Flash example - This tire should not be used.

5.8 Precure Paint

Precure paint is used during the molding process to prevent the tire from sticking to the mold.

ACTION:

- Tire is acceptable for use.

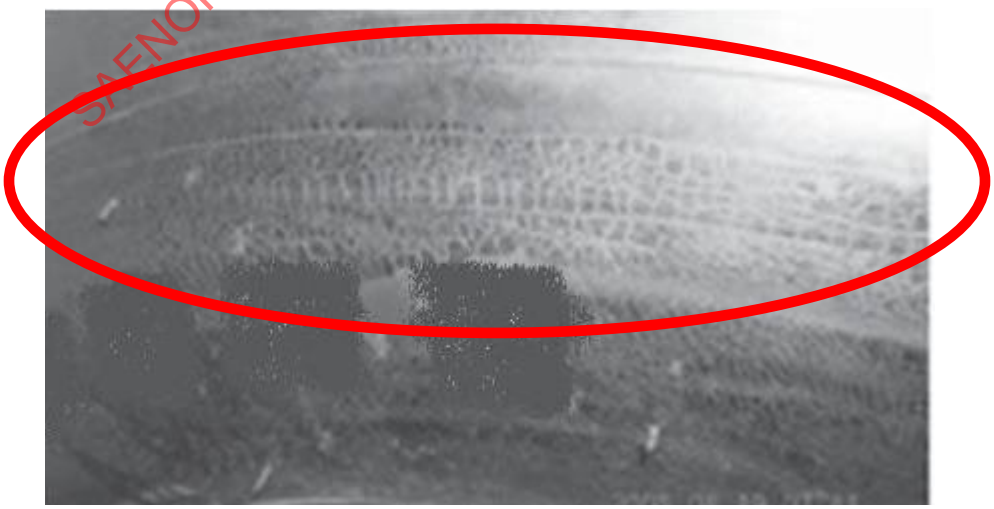

Figure 17

Precure paint example - This tire is acceptable for use.

5.9 Missing Red Dot

The red balance dot is a requirement per (E)TSO-C62. Therefore, if a red dot is missing, it should be returned to the manufacturer.

ACTION:

- Do not use tire.

5.10 Tire Contamination (Hydraulic Fluid, Fuel, etc.)

In case of contamination, check for rubber condition. The tire has to be cleaned quickly with denatured alcohol to remove the contaminant then washed with a soap and water solution. Ensure that the contaminated rubber surface has not swelled. An easy check is to push your finger nail into the contaminated surface, and, in case of swelling, the nail will leave a permanent imprint. If the rubber has swelled, do not use the tire.

Figure 18

Contamination example - This tire should not be used.

5.11 Matte/Gloss Finish

The surface finish of a tire is directly related to the surface finish of the mold surface used to cure the tire. Mold surface finishes can vary. No surface finish is better than another.

ACTION:

- Tire is acceptable for use.

5.12 Brownish Appearance

Over time, chemicals within the tire (antioxidants, antiozonants) bloom out to the surface. Their purpose is to protect the tire from the elements. They often have a brownish color.