



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2024-1304; Project Identifier MCAI-2023-01134-T]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede Airworthiness Directive (AD) 2020-25-07, which applies to certain Embraer S.A. Model EMB-550 and EMB-545 airplanes. AD 2020-25-07 requires repetitive inspections of the flight deck side windows for any cracking or delamination, corrective action if necessary, and eventual replacement of the windows. Since the FAA issued AD 2020-25-07, additional part numbers were added to the installation prohibition list. This proposed AD would continue to require the actions in AD 2020-25-07, expand the list of affected parts, and prohibit the installation of affected parts, as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is proposed for incorporation by reference (IBR). The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-1304; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

Material Incorporated by Reference:

- For ANAC material, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 - Centro Empresarial Aquarius - Torre B - Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 - São José dos Campos - SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; website anac.gov.br/en/. You may find this material on the ANAC website sistemas.anac.gov.br/certificacao/DA/DAE.asp. It is also available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-1304.

- You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

FOR FURTHER INFORMATION CONTACT: Hassan Ibrahim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 206-231-3653; email hassan.m.ibrahim@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2024-1304; Project Identifier MCAI-2023-01134-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to regulations.gov, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Hassan Ibrahim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 206-231-3653; email hassan.m.ibrahim@faa.gov. Any commentary that the

FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2020-25-07, Amendment 39-21349 (85 FR 81385, December 16, 2020) (AD 2020-25-07), for certain Embraer S.A. Model EMB-550 and EMB-545 airplanes. AD 2020-25-07 was prompted by an MCAI originated by ANAC, which is the aviation authority for Brazil. ANAC issued AD 2020-04-01R01, effective May 22, 2020, to correct an unsafe condition.

AD 2020-25-07 requires repetitive inspections of the flight deck side windows for any cracking or delamination, corrective action if necessary, and eventual replacement of the windows. The FAA issued AD 2020-25-07 to address cracks and delamination, which could cause the flight deck side windows to fail and lead to an in-flight depressurization event.

Actions Since AD 2020-25-07 Was Issued

Since the FAA issued AD 2020-25-07, ANAC superseded ANAC AD 2020-04-01R01, effective May 22, 2020, and issued ANAC AD 2020-04-01R02, effective November 2, 2023 (ANAC AD 2020-04-01R02) (also referred to as the MCAI), to correct an unsafe condition for certain Embraer S.A. Model EMB-550 and EMB-545 airplanes. The MCAI states that part number (P/N) NP-200402-7 and P/N NP-200402-8, made mandatory by the previous revisions of the MCAI, have not had the expected effect on the fleet as premature cracks in the outer layer of windows with P/N NP-200402-7 and P/N NP-200402-8 have been found. These cracks may be undetected, and the inner layer may be subjected to unpredicted loads for several flights, which could result in window failure and subsequent in-flight depressurization events.

The FAA is proposing this AD to address the unsafe condition on these products. You may examine the MCAI in the AD docket at regulations.gov under Docket No. FAA-2024-1304.

Explanation of Retained Requirements

Although this proposed AD does not explicitly restate the requirements of AD 2020-25-07, this proposed AD would retain all of the requirements of AD 2020-25-07. Those requirements are referenced in ANAC AD 2020-04-01R02, which, in turn, is referenced in paragraph (g) of this proposed AD.

Related Service Information Under 1 CFR Part 51

ANAC AD 2020-04-01R02 specifies procedures for initial and repetitive detailed inspections of the left-hand cockpit side window P/N NP-200402-1 or P/N NP-200402-5 and right-hand cockpit side window P/N NP-200402-2 or P/N NP-200402-6 to detect cracks, delamination, or any other damage (such as scratches, chipping, erosion, and crazing), and replacement of the windows with a new window P/N NP-200402-9 or P/N NP-200402-10, as applicable. ANAC AD 2020-04-01R02 also prohibits the installation of flight deck side windows with P/N NP-200402-1, P/N NP-200402-2, P/N NP-200402-5, P/N NP-200402-6, P/N NP-200402-7, and P/N NP-200402-8, on any airplane.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with this State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA is issuing this NPRM after

determining that the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements in this NPRM

This proposed AD would require accomplishing the actions specified in ANAC AD 2020-04-01R02 described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD. This proposed AD would also prohibit the installation of affected parts.

Additional Proposed Changes in this NPRM

In the “Costs of Compliance” section, AD 2020-25-07 stated an incorrect estimated costs for required actions. This NPRM corrects the estimated cost of the required action of inspecting the windows from 10 work-hours to 1 work-hour. The on-condition actions of replacing the windows have been updated to the latest cost and work-hours.

Explanation of Required Compliance Information

In the FAA’s ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has been coordinating this process with manufacturers and CAAs. As a result, the FAA proposes to incorporate ANAC AD 2020-04-01R02 by reference in the FAA final rule. This proposed AD would, therefore, require compliance with ANAC AD 2020-04-01R02 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Service information required by ANAC AD 2020-04-01R02 for compliance will be available at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2024-1304 after the FAA final rule is published.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 44 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

Estimated costs for required actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Retained actions from AD 2020-25-07	1 work-hour X \$85 per hour = \$85, per inspection cycle	\$0	\$85, per inspection cycle	\$3,740, per inspection cycle

The FAA estimates the following costs to do any necessary on-condition action that would be required based on the results of any required actions. The FAA has no way of determining the number of aircraft that might need this on-condition action:

Estimated costs of on-condition actions

Labor cost	Parts cost	Cost per window
15 work-hours X \$85 per hour = \$1,275	\$21,636	\$22,911

According to the manufacturer, some or all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2020-25-07, Amendment 39-21349 (85 FR 81385, December 16, 2020); and

b. Adding the following new airworthiness directive:

Embraer S.A.: Docket No. FAA-2024-1304; Project Identifier MCAI-2023-01134-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2020-25-07, Amendment 39-21349 (85 FR 81385, December 16, 2020) (AD 2020-25-07).

(c) Applicability

This AD applies to Embraer S.A. Model EMB-550 and EMB-545 airplanes, certificated in any category, as identified in Agência Nacional de Aviação Civil (ANAC) AD 2020-04-01R02, effective November 2, 2023 (ANAC AD 2020-04-01R02).

(d) Subject

Air Transport Association (ATA) of America Code 56, Windows.

(e) Unsafe Condition

This AD was prompted by reports of cracks, delamination, and failure of the flight deck side windows during certification fatigue tests. The FAA is issuing this AD to address such cracks and delamination, and any other damage of the flight deck side windows. The unsafe condition, if not addressed, could result in flight deck side windows to fail and lead to an in-flight depressurization event.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2020-04-01R02.

(h) Exceptions to ANAC AD 2020-04-01R02

(1) Where ANAC AD 2020-04-01R02 refers to its effective date, this AD requires using the effective date of this AD.

(2) Where paragraph (b)(1) of ANAC AD 2020-04-01R02 refers to April 17, 2020 (the effective date of the original issue of ANAC AD 2020-04-01), this AD requires using January 21, 2021 (the effective date of AD 2020-25-07).

(3) Where paragraph (b)(1)(iii) of ANAC AD 2020-04-01R02 specifies “In case of no crack, delamination, or any other damage, no action is required at this time,” this AD requires replacing that text with “In the case of no crack, delamination, or any other damage found during the inspection specified in paragraph (b)(1) of ANAC AD 2020-04-01R02, no further action is required by this AD until the next inspection interval.”

(4) Where paragraph (b)(2) of ANAC AD 2020-04-01R02 refers to the compliance time of the repetitive inspections, “at each 750 Flight Hours (FH),” this AD requires replacing that text with “at intervals not to exceed 750 flight hours.”

(5) Where paragraph (c) of ANAC AD 2020-04-01R02 refers to the compliance time for the replacement of the flight deck side windows as, “before the airplane logs 3,400 Flight Cycles Since New (FCSN),” this AD requires replacing that text with “before the airplane logs 3,400 FCSN, or within 50 flight cycles, whichever occurs later.”

(6) Replacement of the flight deck side windows as specified in paragraph (c) of ANAC AD 2020-04-01R02 terminates the repetitive inspections for the flight deck side windows specified in paragraph (b)(2) of ANAC AD 2020-04-01R02.

(7) This AD does not adopt paragraph (e) of ANAC AD 2020-04-01R02.

(i) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the International Validation Branch, mail it to the address identified in paragraph (j) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

(j) Additional Information

For more information about this AD, contact Hassan Ibrahim, Aviation Safety Engineer, FAA, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 206-231-3653; email hassan.m.ibrahim@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Agência Nacional de Aviação Civil (ANAC) AD 2020-04-01R02, effective November 2, 2023.

(ii) [Reserved]

(3) For ANAC AD 2020-04-01R02, contact ANAC, Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 - Centro Empresarial Aquarius - Torre B - Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 - São José dos Campos - SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; website anac.gov.br/en/. You may find this ANAC AD on the ANAC website at sistemas.anac.gov.br/certificacao/DA/DAE.asp.

(4) You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th Street, Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

(5) You may view this material at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, visit www.archives.gov/federal-register/cfr/ibr-locations or email fr.inspection@nara.gov.

Issued on May 8, 2024.

James D. Foltz,
Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.

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