

Interpretation CZ NANDTB No:7/2020

Domain/Subject: NDT personnel qualification according to EN 4179/NAS410 for Fluorescent Penetrant Inspection of critical parts

1. CZ NANDTB Interpretation

Related to:

1. SIB (Safety Information Bulletin) No:2018-17R1 Issued:05 November 2018 by EASA and
2. FAA Special Airworthiness Information Bulletin (SAIB) CE-18-26R1,

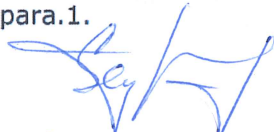
And the consequent requirement to use fluorescent penetrant (Type I) for testing of critical parts

the Czech NANDTB has interpreted and reviewed NDT Qualification requirements defined by Commission Regulation (EU) No 1321/2014 para 145.A.30 point (f) and requires NDT PT qualification according to EN4179/NAS410 for all personnel who performs liquid penetrant non-destructive testing of critical parts.

Consequently, the testing by fluorescent penetrant (type I according do AMS 2644/ASTM 1417) is assumed as a NDT process.

2. CAA Czech Republic – Interpretation Endorsement

CAA endorses the Interpretation No:7/2020 and consider that apply to personnel according to para.1.



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Jaroslav Seyfried Aircraft Continuous Airworthiness Department Director

3. Justification

The FAA SAIB document informs about the risk associated with the use of visible dye penetrant Type II inspection method under ordinary white light before subsequent in-service inspections with the use of fluorescent penetrant Type I (visible under ultraviolet light)

Visible dye penetrants can make existing cracks nearly impossible to detect when using fluorescent penetrant inspection for the next inspection. Pre-and post-inspection cleaning is critical to ensure the ability to detect cracks during current and follow-on inspections and is essential to ensure proper detection of the anomalies and cracks in the article. Inspection material residuals can also lead to corrosion.

All points of the above lead FAA to create the recommendations as are:

- Be aware of the risks associated with using visible dye penetrant inspection methods.
- Per FAA policy, do not use visible dye penetrant using ordinary white light for the inspection of safety critical engine, propeller, or APU hardware. (Ref. Policy Memo PS-ANEI00-2000-00010)
- Review the information in any AD requiring "dye penetrant" or "liquid penetrant" inspection of any safety critical part and follow the AD instructions, and/or the design approval holders (DAH) Instructions for Continued Airworthiness (ICA) with respect to inspection methods, materials, and techniques. Contact the DAH for assistance with their approved inspection methods.
- Adhere to the prohibition contained in American Society for Testing and Materials (ASTM E 1417), which prohibits the use of Type II visible dye penetrant prior to the use of Type I fluorescent penetrants for the same surface.
- Adhere to the DAH pre-and post-inspection cleaning methods and materials to ensure any residual developer, penetrant, and/or visible dye residues are removed which could affect subsequent inspections.

Applicability:

All safety critical hardware installed on engines, propellers, and auxiliary power units (APU)

4. Related Documents

EASA- European Aviation Safety Agency

- SIB No.: 2018-17R1 Safety Information Bulletin – Airworthiness
- Commission Regulation (EU) No 1321/2014, part 145.A.30 Personnel requirements

American Society for Testing and Materials

- ASTM E 1417 Standard Practice for Liquid Penetrant Testing
- AMS 2644 Inspection Material, Penetrant

FAA - Federal Aviation Administration

- SAIB No.:CE-18-26R1 dated 30 October 2018 Special Airworthiness Information Bulletin
- Policy Memo PS-ANEI00-2000-00010

European Standards

- EN4179 Qualification and approval of personnel for non-destructive testing

5. Abbreviations:

- B1 and B3 – Class and Ratings System to be used for the Approval of Maintenance Organizations. Commission Regulation (EU) No 1321/2014
- AD – Airworthiness Directives
- NDT, PT – Non Destructive Testing, Penetrant Testing
- CAA – Civil Aviation Authority

Prague, 27.05.2020

Zbyněk Zavadil

Secretary of CZNANDTB

