

Continuing Airworthiness Notice 02-005



Type II Liquid Penetrant Testing

17 February 2022

Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains information and guidance about an airworthiness concern that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91.

CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

All aircraft maintenance engineers carrying out liquid penetrant testing of aircraft products.

Purpose:

This Continuing Airworthiness Notice (CAN) is issued to advise operators and maintainers that ASTM has revised ASTM E1417 applicable to the Standard Practice for Liquid Penetrant Testing.

Background:

ASTM E1417 establishes the minimum requirements for conducting liquid penetrant examination of nonporous metal, and non-metal components. The penetrant examination processes described in this practice are applicable to in-process, final, and maintenance (in-service) inspections.

These processes are applicable for the detection of discontinuities, such as lack of fusion, corrosion, cracks, laps, cold shuts, and porosity, that are open or connected to the surface of the component under examination.

Recommendation:

The intent of this CAN is to draw attention to paragraph 6.9.2 in revised ASTM E1417-21, approved 1 September 2021.

Type II liquid penetrant (also known as visible dye or colour contrast) examination shall not be used for final acceptance of aerospace products.

In addition Type II penetrant examination shall not be used at any point in the process, over the life of a component, if a Type I (fluorescent) penetrant examination of the same surface is to be performed.

This is not intended to eliminate the use of in-process Type II examinations where subsequent fabrication/forming operations remove the surfaces inspected.

The following links are provided as information only:

ASTM E1417-21, approved 1 September 2021 https://www.astm.org/e1417_e1417m-21e01.html

FAA Special Airworthiness Information Bulletin (SAIB) CE-18-26R1, dated 30 October 2018 Liquid Penetrant Inspection; Using Visible Dye Penetrant

[https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/\(LookupSAIBs\)/CE-18-26R1?OpenDocument](https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/(LookupSAIBs)/CE-18-26R1?OpenDocument)