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**Non-Destructive Testing –
Test Method for Comparing the
Brightness of Fluorescent Penetrants**

无损检测 荧光渗透剂亮度测定方法

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Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard was proposed by and under the jurisdiction of National Technical Committee for Standardization of Non-Destructive Testing (SAC/TC 56).

Drafting organizations of this Standard: Beijing Institute of Aeronautical Materials of AVIC, AVIC Aircraft Co., Ltd. Xi'an Branch, Sichuan Chengfa Aero Science & Technology Co., Ltd., Guizhou Liyang Aero-Engine Co., Ltd., Beijing Degao Aviation Testing Materials Co., Ltd., Shanghai Shipbuilding Technology Research Institute, and Inner Mongolia North Heavy Industries Group Co., Ltd.

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Non-Destructive Testing – Test Method for Comparing the Brightness of Fluorescent Penetrants

1 Scope

This Standard specifies the test method for comparing the brightness of fluorescent penetrants for penetrant test.

This Standard is applicable to the brightness inspection when the fluorescent penetrant leaves the factor, and brightness calibration when using.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 12604.3 Non-Destructive Testing – Terminology – Terms Used in Penetrant Testing

3 Terms and Definitions

The terms and definitions stipulated in GB/T 12604.3 are applicable to this document.

4 General Requirements

4.1 Fluorescent luminance meter

The fluorescent luminance meter shall be equipped with black light that can stimulate the penetrant. Calibrate the fluorescent luminance meter every year; the calibration method can refer to Appendix A.

4.2 Specimen

The specimen can be divided into standard specimen and to-be-tested specimen.

clip shall be kept dry.

5.6 Alcohol or acetone: industrial grade.

5.7 Dryer with diameter no less than 250mm.

5.8 Desiccant: silica gel.

5.9 Specimen holder for placing specimen, the specimen holder shall connect with instrument.

6 Specimen Preparation

6.1 When preparing the to-be-tested specimen, a set of standard specimens shall also be prepared.

6.2 Use pipette to drop 1mL of penetrant into the volumetric flask; then inject acetone or alcohol into volumetric flask to 25mL of scale line; plug the stopper and mix.

6.3 Pour 10mL~20mL of mixture into the beaker. Use tweezers to dip the 4 pieces of filter papers into the beaker; when taking out, discharge the excessive penetrant on the bottle mouth; and respectively clip them onto the drying clip of filter paper. Drying clip shall cover the filter paper as small as possible.

6.4 Hang the filter paper vertically in the dryer till it is dry. Or place it under the room temperature to dry for 5min.

7 Test Method

7.1 Start the instrument, and pre-heat 10min~15min.

7.2 Visually examine the standard specimens under the black light; select the brightest one; place it onto the specimen holder; then insert into the specimen notch of fluorescent luminance meter.

7.3 Turn the adjusting knob to "80".

7.4 Take out specimen holder, use the untreated blank filter paper to replace the standard specimen; then re-insert into the instrument.

7.5 Turn the zero-adjusting button to "0".

7.6 Take off the blank paper and insert the to-be-tested specimen to measure. Test the to-be-tested specimen and standard specimen alternatively, so that reduce the instrument deviation.