



Standard Test Method for Analysis of Copper Dimethyldithiocarbamate (CDDC) Treated Wood by Colorimetry ¹

This standard is issued under the fixed designation D 5655; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This test method covers colorimetric analysis of CDDC in treated wood.

1.2 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

D 147 Methods of Testing Bituminous Mastics, Grouts, and Like Mixtures²

2.2 AWP Standards:

A10 Methods of Analysis of CCA Treating Solutions and CCA Treated Wood by Colorimetry³

M2 Method for Sampling Wood³

P5-14 Method of Analysis of Copper Dimethyldithiocarbamate (CDDC) Treated Wood by Colorimetry³

2.3 AOAC International Standard:

Method 972.29 Spectrophotometric Method—Thiram and Thiram Residues⁴

3. Summary of Test Method

3.1 Wood treated with CDDC is ground and extracted with chloroform/methanol azeotrope. CDDC, a colored compound, is determined colorimetrically by use of a suitable spectrophotometer at a wavelength of 435 nm.

4. Significance and Use

4.1 Copper dimethyldithiocarbamate (CDDC) for use in the preservative treatment of wood must conform with this test method.

5. Apparatus

5.1 *Spectrophotometer*—Any good spectrophotometer can be used.⁵

5.2 *Heated Magnetic Stir Plate*.

5.3 *Increment Borer and Grinder*—A typical Wiley mill is suitable to grind samples. The device should be capable of reducing the wood to a small particle size (30 mesh).

5.4 *Reflux Apparatus*, (Methods D 147, or equivalent).

5.5 *Buchner Vacuum Filter/Flask*.⁵

5.6 *Laboratory Glassware*, volumetric flasks, pipettes, cuvettes, and other commonly available glassware.

5.7 *Filter Paper*, Whatman #42⁵ (sized to fit Buchner Funnel).

6. Reagents

6.1 *Chloroform*, Spectro Grade CH₃ Cl.

6.2 *Copper Dimethyldithiocarbamate*, analytical standard >99 %.⁶

6.3 *Methyl Alcohol*, Spectro Grade CH₃ OH.

6.4 *Extraction Azeotrope*, 12.6 % MeOH/87.4 % CH₃ Cl (w/w).

7. Sampling

7.1 Sample treated wood as described in Paragraph 5 of AWP Standard M 2 except that the increment borings must be oven dried (60°C or less).

8. Preparation of CDDC Standards

8.1 Produce a standard curve by dissolving analytical grade copper dimethyldithiocarbamate in azeotrope to produce

¹ This test method is under the jurisdiction of ASTM Committee D-7 on Wood and is the direct responsibility of Subcommittee D07.06 on Treatments for Wood Products.

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² Discontinued; see 1988 Annual Book of ASTM Standards, Vol 04.04.

³ Available from the American Wood-Preservers' Association, P.O. Box 286, Woodstock, MD 21163.

⁴ Available from the Association of Official Analytical Chemists, Suite 400, 2200 Wilson Blvd., Arlington, VA 22201-3301.

⁵ Use a visual spectrophotometer, such as Beckman Model, 35, B/L Spectronic 20, or equivalent. Available from Fisher Scientific, Box 405, Pittsburgh, PA 15230; or CMS, P.O. Box 98944, Chicago, IL 60693.

⁶ Available from Pflatz and Bauer, P. O. Box 3723, New Hyde Park, NY 11040.