



Designation: D5702 – 07

# Standard Practice for Field Sampling of Coating Films for Analysis for Heavy Metals<sup>1</sup>

This standard is issued under the fixed designation D5702; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice covers a method to control the removal of samples of coating films from substrates for subsequent laboratory analysis for heavy metal content on a mass basis. This technique can be used in the field, the fabricating shop, or laboratory.

1.2 The values stated in SI units are to be regarded as the standard. The values 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.* For specific hazard information, see Section 5, Note 1 and Note 3.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**D4138** Practices for Measurement of Dry Film Thickness of Protective Coating Systems by Destructive, Cross-Sectioning Means

**D6132** Test Method for Nondestructive Measurement of Dry Film Thickness of Applied Organic Coatings Using an Ultrasonic Gage

**D7091** Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals

## 3. Significance and Use

3.1 Prior to beginning a project that involves the removal, cutting, grinding, or burning of paint, it is necessary to determine if the coating contains hazardous materials, such as

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.46 on Industrial Protective Coatings.

Current edition approved July 1, 2007. Published July 2007. Originally approved in 1995. Last previous edition approved in 2002 as D5702–02. DOI: 10.1520/D5702-07.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

lead, as certain requirements for worker and environmental protection may need to be imposed. The presence and quantity of hazardous materials in a paint can be determined through laboratory analysis; however, since the analysis is based on the weight of the specimen, the removal of the sample must be properly controlled to improve the reliability of the test results. The number and location of samples to be removed must also be determined to characterize properly the extent of the presence of hazardous materials, if any, on a structure.

## 4. Materials and Equipment

4.1 *Sample Collection Container*—A clean plastic bag or rigid container comprised of a material such as polyethylene that will not contaminate the sample.

4.2 *Straight Edge or Ruler.*

4.3 *Knife or Chisel*, cleaned and sharpened, for removing paint samples.

4.4 *Dry Film Thickness Gage*, for measuring total coating thickness.

## 5. Procedure

5.1 Select a sufficient number of areas for coating removal that properly characterize the coatings on the structure.

5.1.1 Selection may be based on painting history, knowledge of previously applied coatings, prior touch-up and re-painting programs, and other such factors.

5.1.2 Select areas that properly characterize the range of thickness found. Dry film thickness can be measured in accordance with Test Methods **D4138**, **D6132**, or Practice **D7091**.

5.1.3 Remove a minimum of three samples.

5.2 At each sample site, clean the surface of dirt, dust, or debris.

NOTE 1—Hazardous materials can be present in surface debris and chalk which may be removed during cleaning. Thus, consideration should be given to collecting this surface debris and chalk for analysis.

5.3 At each sample site, use a knife and straight edge to scribe the perimeter of a square through the coating film to the substrate. The square should be of sufficient size to give a one gram sample.