



Standard Practice for Field Identification of Coatings¹

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1. Scope

1.1 This practice describes procedures and portable apparatus for determining the generic type of coating films most likely to be encountered on structures. The coating can either be weathered from exposure or be freshly applied.

1.2 Most commonly used coatings can be divided into the broad categories and subgroups shown in Table 1 on the basis of the nonvolatile component (generic types) of their vehicle (film forming resin, binder). Although the curing of some coatings involves more than one process and coatings may contain more than one type of resin, they can usually be assigned to one of the basic classes and generic types listed in Table 1.

1.3 For field exposed coatings, it is suggested that these test methods be used as part of a complete evaluation of a coated surface as it is frequently helpful to consider the environment of exposure and how the coating has performed in the environment when drawing conclusions from these tests.

1.4 These procedures will not result in the identification of components of a coating beyond general classification of the coating by generic type and are not appropriate if more detailed analysis is required, for example, as a part of failure analysis or to identify between different manufacturers of the same type of coating. They also may not be definitive enough to identify complex systems that include multiple layers of different generic types of coatings.

1.5 The evaluation of results is quite subjective. Practice and experience are required to minimize misinterpretation. Repeat tests may be required.

1.6 None of the test is to be taken alone as grounds for identifying the generic type. Only the combination of results from several or all of the tests is to be used in conclusions regarding generic types.

1.7 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

¹ 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.

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1.8 *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 statements see 5.3.4, 6.3.1, 6.3.3, 7.4, and 8.4.

2. Summary of Practice

2.1 Samples of coatings films are tested with solvents and chemicals and subjected to pyrolysis to provide evidence of their generic type. Fig. 1 shows a flow chart for suggested order of tests and classification of results.

3. Significance and Use

3.1 Information about the generic type of coating on a surface is required to select compatible coatings for repainting and can be used when evaluating the performance of a coating in an environment in decisions on upgrading or replacing a coating system. This guide provides a systematic procedure for identifying the generic type of a coating. The procedure can be performed in the field by personnel with limited laboratory experience, and requires a minimum of equipment and materials.

4. Sampling

4.1 The sample of coating is obtained by chipping or scraping with a knife or by sanding and then brushing the material into a specimen container or clean envelope. Care should be taken not to cut into substrates, such as plastic or asphalt, that contain polymeric or bituminous materials. Small portions of untreated wood, masonry, or steel do not ordinarily interfere with the tests. Some tests can be conducted directly on the coating surface. If a liquid sample of coating is to be evaluated, a film of the coating should first be cast on a glass plate or similar surface from which it can conveniently be removed after drying.

NOTE 1—To develop familiarity with the subjective evaluations that follow, it is good practice to make films of known resin composition by applying control paints to glass plates or similar surfaces from which they can be readily removed after drying.

5. Pyrolysis

5.1 *Summary of Test Procedure*—A sample of coating placed in a small glass test tube is burned over a hot flame. The