

## **ASTM D3359**

### **Standard Test Methods for Measuring Adhesion by Tape Test.**

#### Significance and Use

If a coating is to fulfil its function of protecting or decorating a substrate, it must adhere to it for the expected service life. Because the substrate and its surface preparation (or lack of it) have a drastic effect on the adhesion of coatings, a method to evaluate adhesion of a coating to different substrates or surface treatments, or of different coatings to the same substrate and treatment, is of considerable usefulness in the industry.

The limitations of all adhesion methods and the specific limitation of this test method to lower levels of adhesion (see 1.3) should be recognized before using it. The intra- and inter-laboratory precision of this test method is similar to other widely-accepted tests for coated substrates (for example, Test Method D2370 and Test Method D4060), but this is partly the result of it being insensitive to all but large differences in adhesion. The limited scale of 0 to 5 was selected deliberately to avoid a false impression of being sensitive.

#### 1. Scope

1.1 These test methods cover procedures for assessing the adhesion of coating films to metallic substrates by applying and removing pressure-sensitive tape over cuts made in the film.

Note 1—This test method has been reported being used to measure adhesion of organic coatings on soft substrates (for example, wood and plastic). Issues with plastic substrates are noted in Appendix X1. A similar test method, ISO 2409, permits tests on soft substrates (for example, wood and plaster). Precision and bias data on the latter is lacking. Test Methods D3359 was developed with metal as the substrate and, in the absence of supporting precision and bias data, is so limited.

1.2 Test Method A is primarily intended for use at job sites while Test Method B is more suitable for use in the laboratory. Also, Test Method B is not considered suitable for films thicker than 5 mils (125 $\mu$ m).

Note 2—Subject to agreement between the purchaser and the seller, Test Method B can be used for thicker films if wider spaced cuts are employed.

1.3 These test methods are used to establish whether the adhesion of a coating to a substrate is at a generally adequate level. They do not distinguish between higher levels of adhesion for which more sophisticated methods of measurement are required.

Note 3—It should be recognized that differences in adherence of the coating surface can affect the results obtained with coatings having the same inherent adhesion.

1.4 This test method is similar in content (but not technically equivalent) to ISO 2409.

1.5 In multicoat systems adhesion failure may occur between coats so that the adhesion of the coating system to the substrate is not determined.

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

1.7 This standard does not purport to address 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.