



Standard Specification for Adhesive, Casein-Type¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers casein and other protein-blend adhesives for use adhering wood to wood. The adhesive type covered by this specification is a dry powder or granular product comprising a mixture of casein, or casein and other protein source, with the necessary dry chemicals to effect solution when the mixture is added to water.

NOTE 1—Although the term *casein adhesive* is used throughout this specification, historically, the adhesive subclass described in 1.1 has been known as casein glue. See Terminology D 907, *adhesive types*.

1.2 *Limitations*—Cooked casein adhesives are not covered by this specification.

1.3 The values stated in inch-pound units are to be regarded as the standard.

1.4 The following safety hazards caveat pertains only to the test method portion, Sections 8 through 16, of this specification: *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 899 Test Method for Applied Weight per Unit Area of Liquid Adhesive²

D 905 Test Method for Strength Properties of Adhesive Bonds in Shear by Compression Loading²

D 906 Test Method for Strength Properties of Adhesives in Plywood Type Construction in Shear by Tension Loading²

D 907 Terminology of Adhesives²

D 1084 Test Methods for Viscosity of Adhesives²

D 2556 Test Method for Apparent Viscosity of Adhesives Having Shear-Rate-Dependent Flow Properties²

D 5266 Practice for Estimating the Percentage of Wood Failure in Adhesive Bonded Joints²

E 104 Practice for Maintaining Constant Relative Humidity by Means of Aqueous Solutions³

2.2 Other Standards:⁴

MIL-STD-129—Marking for Shipment and Storage

FED-STD-123—Marking for Shipment

PPP-C-96—Cans, Metal, 28 Gage and Lighter

PPP-D-723—Drums, Fiber

PPP-D-729—Drums, Shipping and Storage, Steel, 55 Gal (208 L)

3. Terminology

3.1 *Definitions*—Many terms in this specification are defined in Terminology D 907.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *adhesive designation, n*—an adhesive that is manufactured by a unique combination of raw materials and manufacturing process that conforms to a given set of physical and performance properties and is identified by a specific name, number, or alphanumeric designation.

3.2.2 *lot, n*—adhesive manufactured at one place from the same batch or blends of raw materials subjected to the same operation and conditions.

NOTE 2—In this specification, the maple block lamination in Test Method D 905 and the birch plywood construction in Test Method D 906 are described as *assemblies*.

4. Significance and Use

4.1 This specification provides testing procedures and specifies requirements to differentiate the physical, adhesive, and durability properties of commercially available casein and casein-protein adhesives. The two classes are defined by water resistance. Selection of class is left to the choice of the product manufacturer and the consumer, based on measures used by each to protect the bond line from moisture degradation.

NOTE 3—Because of strict EPA requirements as to disposal of waste

¹ This specification is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of Subcommittee D 14.30 on Wood Adhesives.

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² *Annual Book of ASTM Standards*, Vol 15.06.

³ *Annual Book of ASTM Standards*, Vol 11.03.

⁴ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.