



Designation: D3376 – 18

Standard Test Methods of Sampling and Testing Pulps to be Used in the Manufacture of Electrical Insulation¹

This standard is issued under the fixed designation D3376; 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 These test methods cover the sampling and testing of cellulosic pulps for use in the manufacture of electrical insulating papers and boards or in the direct application of pulp fibers as insulation to electrical conductors.

NOTE 1—Consider the significance of any one pulp property test method, as set forth herein, with discretion depending on the product made from the pulp.

1.2 Sections on Reagents, Sampling, and Report are integral parts of each of the individual test methods that follow.

1.3 Each test method is described as being a measure of either a bulk property of the pulp or a property of a handsheet formed from the pulp.

1.3.1 Bulk characteristics determinable by these procedures appear in the following sections:

Procedure	Sections	ASTM Method Reference	TAPPI Method Reference
Aqueous Extract Conductivity	8 & 9	D202	...
Aqueous Extract pH	10 & 11	D202	...
Aqueous Extractable Acidity-Alkalinity	12 & 13	D202	...
Analysis of Ash for Cations by Atomic Absorption Spectrophotometry	70 – 78	D1193 & D2576	...
Ash Content	79 – 82	D202	T 413
Dirt in Pulp	40 & 41	...	T 213
Fiber Analysis	23 & 24	D202 & D1030	...
Fiber Length of Pulp	42 & 43	...	T 232, T 233
Freeness (Canadian Standard Freeness)	53 & 54	...	T 227
Kappa Number/Permanganate Number (Substances Oxidizable by Permanganate)	27 & 28	...	T 236, UM 251
Laboratory Processing of Pulp (Beater Method)	51 & 52	...	T 200
Moisture in Pulp	31 – 33	...	T 210
Neutral Aqueous Extractable Hardness in Pulp	16 – 22	D202, D1126, & D2576	...

¹ These test methods are under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and are the direct responsibility of Subcommittee D09.01 on Electrical Insulating Products.

Current edition approved Nov. 1, 2018. Published November 2018. Originally approved in 1975. Last previous edition approved in 2014 as D3376 – 14. DOI: 10.1520/D3376-18.

Procedure	Sections	ASTM Method Reference	TAPPI Method Reference
Pentosan Content of Pulp	29 & 30	...	T 223
Resistance of Pulp to Disintegration (Standard RPG)	44 – 50	...	T 239, UM 252
Shive Count	34 – 39	...	...
Solvent-Soluble Matter in Pulp	25 & 26	D202	...
Tensile Properties	65 – 69	D202	...
Water-Extractable Chlorides	14 & 15	D202	...

1.3.2 Handsheet characteristics determinable by these procedures appear in the following sections:

Procedure	Sections	ASTM Method Reference	TAPPI Method Reference
Air Resistance (Porosity)	57 & 58	D202	T 205
Apparent Density	63 & 64	D202	T 205
Bursting Strength	59 & 60	D202 & D774/D774M	T 205
Folding Endurance (M.I.T.)	51 & 52	D202 & D2176	T 205
Forming Handsheets for Physical Tests of Pulp	55 & 56	...	T 205
Tensile Strength	65 & 66	D202 & D828	T 205

NOTE 2—Methods for Ash, Silica, selected cations from Ash, Heat Stability, α, β, and γ Cellulose, Viscosity, Total Chlorine, Tear, and Dissipation Factor and Relative Permittivity, will be considered for addition as methods are developed.

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

1.5 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

*A Summary of Changes section appears at the end of this standard