

ICS 85.010
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 465.2-2008

**Paper and board -- Determination of tensile strength after
immersion in water
(English Translation)**

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1 Scope

This Part of GB/T 465 specifies the method of determining the tensile strength of paper and board after being immersed in water for a specified time and uses this to measure the wet strength of paper and board.

This Part is applicable to various types of paper and board with wet strength requirements.

2 Normative References

Through the reference in this Part of GB/T 465, the clauses of the following documents become clauses of this Part. In terms of references with a specified date, all the subsequent modification sheets (excluding the corrected content) or revised versions are not applicable to this Part. However, the various parties that reach an agreement in accordance with this Part are encouraged to explore the possibility of adopting the latest version of these documents. In terms of references without a specified date, the latest version is applicable to this Part.

GB/T 450 Paper and Board - Sampling for Testing and Identification of Machine and

Cross Direction, Wire Side and Felt Side (GB/T 450-2008, ISO 186:2002, MOD)

GB/T 10739 Paper, Board and Pulps - Standard Atmosphere for Conditioning and

Testing (GB/T 10739-2002, ISO 187:1990)

GB/T 12914 Paper and Board - Determination of Tensile Properties (GB/T 12914-2008,

ISO 1924-1:1992, ISO 1924-2:1992, MOD)

3 Terms and Definitions

The following terms and definitions are applicable to this Part of GB/T 465.

3.1 Wet Tensile Strength after Immersion for X Hours

Wet tensile strength after immersion for X hours refers to the maximum tension that the paper or board can withstand before it breaks after being immersed in water for a certain time under the specified test conditions.

3.2 Wet Strength Retention after Immersion for X Hours

If it is a sample with quite strong water absorption, it is recommended to merely wet the central part of the sample; maintain both ends dry. Generally speaking, bend the sample into a ring; immerse the central part of the sample in water; when the water evenly touches the full width of the sample and exceeds its upper surface, the wetted length, including the central part of the sample, shall be at least 25 mm, but not greater than 50 mm. After immersing the sample in the water for the specified time, take out the sample; gently absorb the water on the surface of the sample.

7.2 Quickly place the sample, which has been immersed in water and with the surface water absorbed, on the tensile strength tester, so as to determine its tensile strength.

Generally, there shall be respectively 10 samples in the vertical and horizontal directions for the determination of wet tensile strength.

If the tensile strength retention rate is determined, then, the determination of dry tensile strength shall also take 10 samples respectively in the vertical and horizontal directions.

In terms of papers with extremely low wet tensile strength, multi-layer samples shall be used for the determination, and respectively 10 results shall be determined in the vertical and horizontal directions.

8 Result Expression

8.1

The average value of the determined wet tensile strength after immersion shall be expressed in (kN/m) and accurate to three significant figures. If multi-layer samples are used for the determined, then, calculate in accordance with Formula (1):

Where,

P---the wet tensile strength of each layer after immersion in water, expressed in (kN/m);

S---the wet tensile strength of multiple layers after immersion in water, expressed in (kN/m);

n---the number of layers being determined.

8.2

The wet tensile strength retention rate after immersion shall be expressed in (%) and accurate to one decimal place. It shall be calculated in accordance with Formula (2):

Where,

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