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

GB/T 46615-2025

**Unvulcanized rubber - Determination of self-adhesion and
co-adhesion**

未硫化橡胶 自粘性与互粘性的测定

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Foreword

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1. Personnel using this document should have practical experience working in a formal laboratory. This document does not cover all possible safety hazards. Problem. Users are responsible for taking appropriate safety and health measures and ensuring compliance with relevant national regulations. Warning 2

---Some steps outlined in this document may involve the use or generation of certain wastes, which may pose a hazard to the local environment. The relevant documents should specify appropriate safe operating procedures and post-use disposal provisions.

1 Scope

GB/T 46615-2025 is the Chinese national standard covering the tack of green rubber to itself and to another compound - the contact pressure and dwell, the separation rate, and the force measured, which decides whether the plies of a tyre hold together on the building drum before they are ever cured. First edition, in force from 1 May 2026. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document describes two methods (Method A and Method B) for determining the self-adhesion and mutual adhesion of uncured rubber surfaces. This document applies to the self-adhesion test between surfaces of the same type of uncured rubber, and also to uncured rubber and different types of uncured rubber. Tests on the mutual adhesion of adhesives or other materials.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2941 General Procedures for Specimen Preparation and Conditioning in Physical Testing Methods for Rubber

GB/T 6038 Rubber testing compound batching, mixing and vulcanization equipment and operating procedures

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Self-adhesion The ability of the same type of uncured rubber to self-adhere between surfaces under a certain compression time and load, expressed as the energy consumed during separation. The magnitude or maximum peak force is expressed as a value.

Note. The unit of energy value is millijoule (mJ), and the unit of maximum peak force is newton (N).

3.2 Co-adhesion The ability of uncured rubber to bond with different types of uncured rubber or other materials under a certain pressing time and load. Force is expressed as the energy consumed during the separation process or the maximum peak force.

Note. The unit of energy value is millijoule (mJ), and the unit of maximum peak force is newton (N).

4 Method A

4.1 Principle Two cylindrical uncured rubber specimens are fixed on a special specimen clamping device, and controlled by PID at a certain load and speed. After pressing and holding for a specified time, separate at a certain speed and measure the force-displacement curve. The maximum peak force during separation and the...