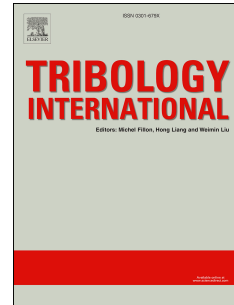


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Effect of Specimen Thickness on Growth of Real Contact Area of Rubber with Two-Dimensional Regular Wavy Surface

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Abstract

Is there a critical thickness over which the solids can be considered as an elastic half-space? If it exists, what is the crucial factor determining the critical thickness? And how the specimen thickness affects the real contact area growth of the textured surface? The reply to these questions could surely provide a proper guideline for elastomer product design such as seals. With this in mind, the elastic contact of two-dimensional regular wavy surface with a flat surface are studied by using four types of blocks of silicone rubber as specimen under decompression and wet environments. The results suggest there exists the critical thickness depending on the sizes of the contact surface and the pitch of asperities of the wavy surface.

Key Words: Texture, Real contact area, Coating, Elastomer

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