



MALAYSIAN STANDARD

MS 1546:2002

RUBBER – DETERMINATION OF CRYSTALLIZATION EFFECTS BY HARDNESS MEASUREMENTS (ISO 3387:1994, MOD)

ICS: 83.060

Descriptors: rubber, cruck rubber, vulcanized rubber, tests, determination, crystallization, hardness measurement

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Committee representation

The Rubber and Rubber Products Industry Standards Committee (ISC N) under whose supervision this Malaysian Standard was developed, comprises representatives from the following organisations:

Association of Malaysian Medical Industries

Jabatan Standard Malaysia

Kementerian Kesihatan Malaysia

Malaysian Association of Tyre Retreaders and Dealers Society

Malaysian Automotive Tyre Manufacturers Industry Group

Malaysian Latex and Rubber Thread Manufacturers Association

Malaysian Rubber Board

Malaysian Rubber Glove Manufacturers Association

Malaysian Rubber Products Manufacturers Association

Plastic and Rubber Institute of Malaysia

Universiti Kebangsaan Malaysia

Universiti Sains Malaysia

The Technical Committee on Methods of Test for Vulcanized Rubber which developed this Malaysian Standard was managed by the Malaysian Rubber Board in its capacity as an authorised Standards-Writing Organisation and comprised of the following organisations:

Linatex Rubber Products

Malaysian Rubber Board

Malaysian Rubber Products Manufacturers Association

SIRIM Berhad

Universiti Teknologi MARA

NATIONAL FOREWORD

This Malaysian Standard was developed by the Technical Committee on Methods of Test for Vulcanized Rubber under the authority of the Rubber and Rubber Products Industry Standards Committee. Development of this standard was carried out by the Malaysian Rubber Board which is the Standards-Writing Organisation (SWO) appointed by SIRIM Berhad to develop standards for rubber and rubber products.

This Malaysian Standard corresponds to ISO 3387:1994, Rubber – Determination of crystallization effects by hardness measurements, and its Technical Corrigendum 1:2000 published by the International Organization for Standardization (ISO) with the following modifications:

- a) The addition of a new note, NOTE 4, giving the Glass Transition Temperature (T_g) values of various types of rubber as follows:

"Note 4 - The Glass Transition Temperature of commonly used rubber are as given below:

Rubber polymer	*Glass Transition Temperature (T_g)/°C
Polychloroprene	-40
Polyurethane (polyether type)	-55
Natural Rubber (1,4 - cis-polyisoprene)	-70
Dimethyl silicone rubber	-80 to -125
1,4 - cis-polybutadiene	-75
Acrylonitrile butadiene rubber (50 % acrylonitrile)	-15
Epoxidized Natural Rubber (ENR 50)	-20
Acrylonitrile butadiene rubber (40 % acrylonitrile)	-20
Fluoroelastomer	-30
Epoxidized Natural Rubber (ENR 25)	-45
Acrylonitrile butadiene rubber (28 % acrylonitrile)	-45
Styrene butadiene rubber (23 % styrene)	-60
Ethylene propylene diene rubber	-40 to -60
Butyl rubber	-60

*T_g is the function of frequency."

- b) in the source text, "this International Standard" should read "this Malaysian Standard"; and
- c) the comma which is used as a decimal sign (if any), to read as a full point.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

NOTE. MOD on the front cover indicates a modified standard i.e. a standard adapted from an International Standard with permitted technical deviations, which are clearly identified and explained. The changes in structure are permitted provided that the agreed structure permits easy comparison of the content of the two standards. Modified standards also include the changes permitted under identical correspondence.