Telephone: 01787 226995
Fax: 0845 3016853
E-mail: mail@btmauk.com
Website: www.btmauk.com
Registered Office: Peershaws
Berewyk Hall Court
White Colne
Colchester
Essex, CO6 2QB

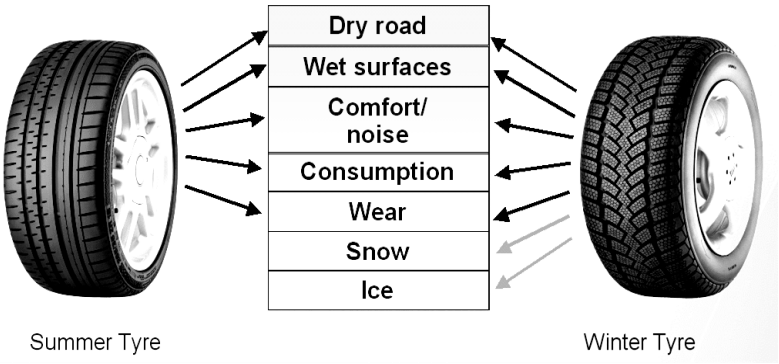
Tyre Technical Advisory Committee
Issued: 12/08/2010 Reviewed: 15/06/2016

Winter tyres

Ask any British driver about winter tyres and their answer is likely to relate to snow covered roads and to old-style "M+S" tyres with chunky tread patterns often fitted only to the drive axle. The perception that winter tyres only give benefits on heavy snow is years out of date. Today's winter tyre also provides greatly improved performance on cold and damp road surfaces.

As temperatures fall towards zero the tread rubber on summer tyres progressively hardens. This means the tyre is less able to adapt to the contour of the road surface, reducing grip. The rubber compounds used in modern winter tyres are specially formulated to remain flexible at lower temperatures. In addition, highly developed multi-sipe tread patterns give greatly improved grip on slush, snow and ice.

However, it is unrealistic to expect one type of tyre to provide maximum performance across a temperature range from below -10°C to more than 30°C as is increasingly experienced in the UK. This is why specialist tyres have been developed over many years. To enable them to deliver their full potential there is one crucial aspect – they must have balanced characteristics.



Winter driving

Most drivers adapt their driving style to the conditions when snow is on the ground or temperatures drop below zero. However, cold damp conditions are visibly no different from damp conditions in the warmer months. As a result drivers tend not to adjust their driving style despite the reduced grip available from their tyres. This heightened risk is confirmed by the increase in vehicle insurance claims that coincides with the onset of the cold season even when there is no snow on the ground.

In many European countries the benefits of winter tyres are so clearly recognised that their use is required by law. In the UK winter tyres are increasingly the choice of professionals who recognise the value of reliable mobility including the emergency services, utility companies and supermarket home deliveries.

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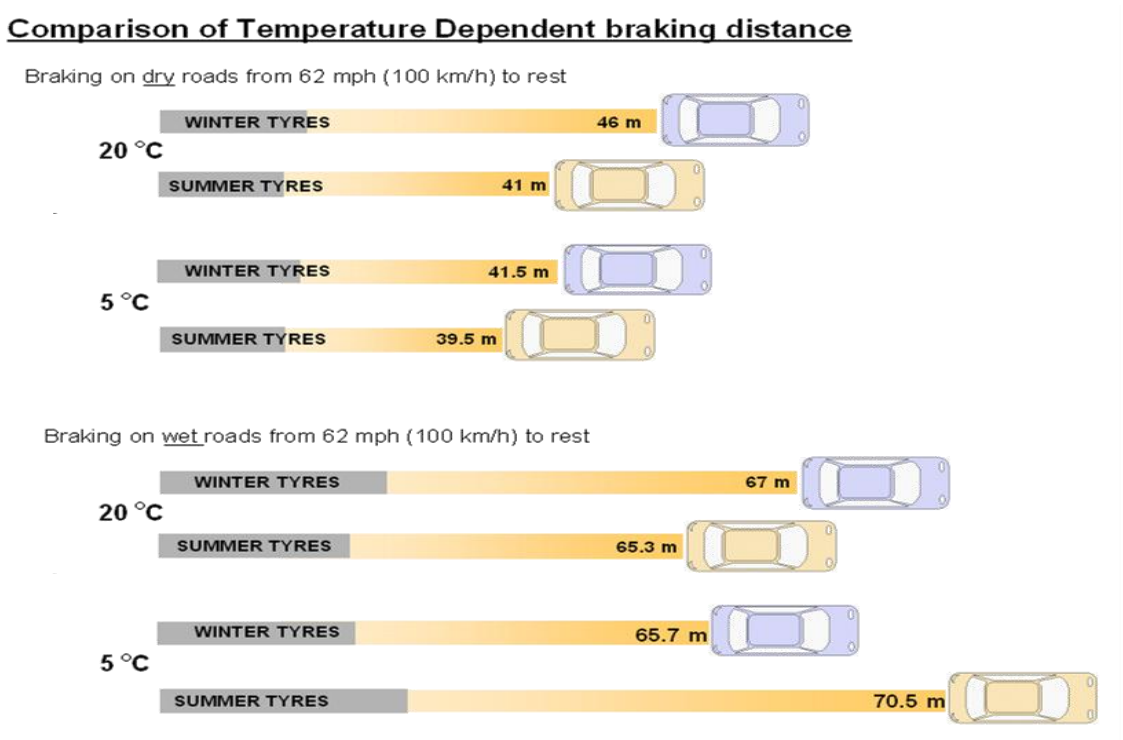
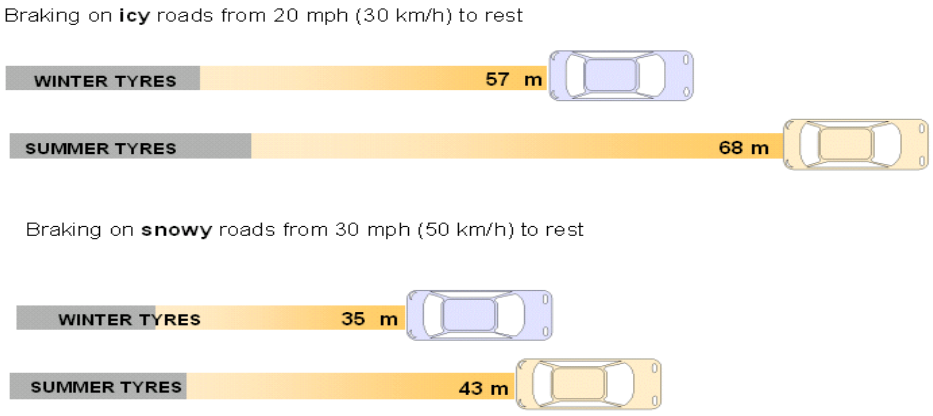
Braking on wet roads

On damp or wet roads, tyres grip differently and braking distances are substantially longer. Under these conditions matching the tyre with the temperature is even more important.



Braking on snow or ice covered roads

On snow- or ice-covered roads winter tyres reduce the braking distance by those vital metres. The comparison below proves the point.



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Fitting winter tyres

Winter tyres offer greatly improved grip in adverse winter conditions. If under these conditions winter and summer tyres are mixed on the same vehicle the difference in grip may seriously affect the handling and stability of the vehicle. ***For this reason it is strongly recommended to fit winter tyres as a full set to all wheel positions***. When not in use, seasonal tyres should be stored under cover and protected from direct sunlight, chemicals, solvents and accidental damage.

Winter tyre sidewall markings

Historically, tyres offering improved winter mobility have been marked "M + S". This reflects the manufacturer's assessment that the tyre has better performance on snow when compared to a tyre without the marking. However, there is no regulatory requirement to demonstrate this superior performance. Although not mandatory, the vast majority of all tyres sold in the US are marked M + S. Many of these tyres are available in the UK.

More recently the "Three peak mountain snowflake" (3PMSF) or "Alpine symbol" marking has been introduced in Europe by UNECE regulation. This identifies that the tyre has met objective performance standards contributing to improved winter mobility.

Many tyres make claims for their multi-season capabilities. There is now an objective performance standard and sidewall marking destined to improve consumer understanding.

If you are taking your car outside the UK during the winter season you should check the requirements of the countries that you are visiting regarding the fitment of winter tyres. Up to date information can be found on the websites of motoring organisations and some tyre manufacturers.

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