

# Slipper socks

A hybrid between shoes and hosiery, slipper socks need to grip indoor floors just as well as conventional slippers. MIKE GEORGE considers how they are tested.

Slipper socks feature a polymeric tread on the underfoot surface. They may be worn in the home instead of slippers, and appeal particularly to the younger or female market. Some wearers choose to wear slipper socks on top of ordinary hosiery, as regular slippers would be. However, whether worn in this way or directly against the foot, they can be regarded as super-comfortable indoor shoes, albeit with virtually none of the constructional features or performance requirements of regular shoes.

The key exception to this is grip (or slip resistance) against indoor floor coverings. Ordinary hosiery can be quite slippery on certain types of indoor flooring, but such products are not intended for direct contact against floors. Wearers who go unshod on their own floors in their own homes do so at their own risk. It is highly unlikely that a claim of poor slip resistance against ordinary hosiery will ever be upheld. However, suppliers of slipper socks – by virtue of the sole tread – are effectively stating that these products can be used as slippers. This raises an implicit expectation (and requirement) that they will perform as such. Slip resistance must therefore be

sufficient to permit safe walking on a range of typical indoor floorings. In fact, most slipper socks highlight a claim of slip resistance on the packaging or in the marketing information.

## Testing slipper socks

The SATRA TM144:2011 – ‘Friction (slip resistance) of footwear and floorings’ test method is well established for conventional shoes, and was described in the October 2015 issue of *SATRA Bulletin*. This test measures the coefficient of friction between the sole or heel and the floor under realistic dry and wet conditions, and on a standard surface (presently a quarry tile). The shoe is mounted on a rigid plastic shoemaking last, but a modification to this method is appropriate for slipper socks. If we simply mount the sock directly to a hard last, we do not achieve a realistic contact area, and the sock may be damaged due to pinching and shearing between the last and the floor. This is overcome by placing soft foam between the last and the sock (to act like the flesh of the foot and to provide a fairer spread of contact and distribution of pressure). SATRA uses a

double layer of insock foam totalling 6mm, which is very similar in hardness to the fleshy sole of the human foot (about 15 Shore A or 30 Asker C). Even conventional slippers benefit from a similar approach if they have exceptionally thin and flexible bottoms.

Another issue is whether slipper socks should be tested on wet surfaces. Wearing them outdoors in wet weather is clearly not sensible, but water spills may be encountered on kitchen or bathroom floors. However, it is worth considering that firstly, manufacturers of indoor flooring are under no obligation (at least in Europe) to offer wet slip resistance, and secondly, the householder (who may also be the wearer) has the opportunity and responsibility to mop up any spills.

It may therefore be reasonable to only test in dry conditions. However, the range of floor types should include at least vinyl tile, polished wood or laminate flooring and carpet, as well as the standard quarry tile. Additional tests under selected wet conditions are, of course, available and may be advisable when slip resistance claims are made.

Sometimes a polymeric tread is subject to excessive friction, which may inhibit normal gait due to adherence to the floor. Candidate polymer materials may be moulded into test plates for pre-production testing to anticipate any such problems.



Using the SATRA TM144 test method to assess the slip resistance of a slipper sock

## How can we help?

Please email SATRA's footwear testing team for further information on the design and testing of slipper socks.



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