



COLOURFAST UNLINED SHOES

Footwear can be both lined and unlined depending on the style and purpose. Unlined moccasins and sandals, in particular, are comfortable to wear simply because they are so lightweight. On the other hand, climbing shoes need to be a perfect and tight fit, and producing them without linings makes this possible. Other footwear such as lifestyle models and the classic boat shoe have also traditionally been offered unlined. Thicker softer leathers can be used so that there is still adequate support for the foot and, at the same time, provide a natural look to the overall design. Unlined shoes however have unfortunately always had two specific problems.

Dark coloured leathers would inevitably react with sweat from the foot causing them to leach dyestuff inside the shoe resulting in stained feet or socks. The normal poor colourfastness of leather has therefore made unlined shoes unpopular with many potential wearers. Continually washing or replacing socks has been the only answer unless the shoes were worn without socks, which of course is not always possible or convenient.

The second point is care and cleaning, particularly with activity and sports shoes. The dirt should be removed by

simple washing or brushing. Activity shoes should also ideally be waterproof. If every drop of rain were to leave a spot on a nubuck leather moccasin, it would be very annoying indeed. BASF's patented Lugafast Colorlock system combined with Densodrin waterproofing is the ideal solution to both problems.

The combination works in two stages. To begin with, the Colorlock dyeing system produces leather with new levels of colourfastness whereby the dyestuff is fixed directly to the collagen by covalent bonding and can no longer migrate. Sweat and water can no longer affect the dyeing as explained in the two previous articles dealing with Colorlock that appeared in *World Footwear* September/October and November/December 2009. Staining of the sock or foot now ceases to be an issue (Figure 1).

The standard leather clearly stains and discolours the backing material. It is not the case with the leather dyed with Colorlock technology. This development promises a real benefit for both retailers and consumers, as the former will now find it easier to sell unlined shoes and the latter will have less cause for complaint in the future.

In the second part of the equation, the Densodrin

Figure 1: Comparing standard against Colorlock leather for perspiration fastness.



Perspiration fastness DIN EN ISO 11641
Split suede shoe upper leather

Figure 2: Comparing standard against Densodrin leather for water resistance



Water permeability acc. to DIN EN ISO 105-E02

Figure 3: Water resistance properties.



Seawater fastness acc. to DIN EN ISO 105-E02
Split suede shoe upper leather

waterproofing impregnation protects the shoe against dirt and water spotting. The whole shoe can now be thoroughly washed or cleaned rather than just the outer grain surface, while water splashes will no longer wet the leather either (Figure 2).

This second comparison shows that leather impregnated using Densodrin technology does not take up any water even after 360 minutes contact time. The standard leather, on the other hand, starts to absorb water after just 15 minutes and leaves unsightly spots after drying. This level of performance will be good news for wearers of sports shoes and boat shoes in particular (Figure 3).

The combination of Lugafast Colorlock and Densodrin technologies also offers the possibility of a huge range of practical colours for unlined shoes that were not previously thought possible (Figure 4). Even blue and red leathers which are known to be particularly problematic colours will not cause any staining.

This new dyeing and waterproofing package offers a wealth of possibilities for shoe designers and technicians that were previously denied to them. Innovative design and excellent comfort can now be colourfully combined on all types of unlined footwear for even the most demanding applications. 🌐

Figure 4: Shade variations possible with Colorlock dyes



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