

# Patent Leather: Back in Fashion – Again and Again

***Patent leather has its charms – and its drawbacks. Patent leather is temperature sensitive; moreover, under some circumstances the shiny coating can sometimes become detached from the leather base material. Caution is therefore warranted in the production process. Shoe manufacturers are well advised to examine the properties of the patent leather they plan to use in order to avoid unpleasant surprises. Which tests are recommended?***

Patent leather, like synthetic patent materials, belongs to the classical shoe upper materials. From time to time, variants such as imitation croc or wet-look or crinkled leather also come to the fore.

As a rule, the glossy layer on the leather consists of a two-component polyurethane; its composition determines the properties and quality of the patent leather.



On using patent leather it should be borne in mind that this kind of leather may not show the same resistance to cold temperatures as can be expected from a “normal” finish. The flex resistance (DIN EN ISO 5402-1) of patent leathers should therefore not be determined only under normal climatic conditions at  $23 \pm 2^\circ\text{C}$  and  $50 \pm 5\%$  relative humidity but also at lower temperatures down to  $10^\circ\text{C}$ . Differences between individual patent leather qualities then become clear. However, state-of-the-art patent leathers should all pass these tests in the cold state.

In this context mention should also be made of another property of patent leather which usually only becomes apparent after passing through a heat setter or on exposure to other thermal stresses. In particular at places where the coating is subjected to greater tension (for example, in the region of the toe caps and the counters) or is slightly damaged (for example, by stitching or other perforations such as holes for eyelets or decorative punching), exposure to elevated temperatures of about  $90$  to  $100^\circ\text{C}$  in a stretched state may cause the top layer to rupture. In its appearance, the damage closely resembles “cold cracking”.

For this reason, the temperature behaviour of a patent leather in the stretched state should be specified prior to its use. Testing according to DIN EN ISO 17232 is appropriate here.

A further point concerns the adhesion of the coating to the leather or other backing material. Inadequate adhesion may already become apparent during shoe manufacture. In particular, adhesion in

the wet state repeatedly gives cause for complaint. The influence of moisture during the production process (for example, during steaming) can reduce the adhesion of the coating to such an extent that that it may become detached under additional stress, such as is caused by pulling over and lasting.

Insufficient wet adhesion may also give grounds for complaint on wearing the finished shoe because moisture from the foot can condense under the coating, which can lead to a slight detachment or breakage of the coating, particularly in the area of the walking folds.

**If you have any further questions do not hesitate to contact:**

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