Leather is one of the most versatile materials known. This is due to the unique arrangement of complex natural fibers that give the variations on the types of hides skins. Chemical and physical processes are tailored to give specific properties and performance to the hides and skins as they are being converted into leather. The skins of small animals are called skins, and the skins of large animals are called hides. Here we will highlight some of the most important variations of key leather properties.

**Water resistance** Leather can be made to absorb water, resist water or be completely waterproof. Most leathers manufactured for the shoe, bag, upholstery and leather goods industries offer a degree of water resistance that allows the leather to get wet and after drying retain the properties of elasticity and shape. Waterproofing can be made for specific applications, particularly for outdoor shoes and boots that allow for walking several hours in the rain without getting wet feet. Most waterproof leathers are made from cattle hides.
**Thickness** Skins produce thin leathers that can be used for bookbinding, gloves, lining and garments; they have outstanding softness. Cow hides can have a great variation of thicknesses because they can be split in layers. When split thin, leathers can be used for garment, gloves and leather goods; medium thickness leathers are the most widely used for upholstery, automotive, shoes, bags and leather goods. Thick leathers are used for footwear soles and crafts.

![Measuring thickness](image1.jpg)

**Softness** The softness of a leather is usually associated to its thickness. The thinner the leather, the softer it will be. But there are other variables that make leather softer, particularly the type of tannage: chrome tanned will be softer; aldehyde tanning less soft and vegetable tanned leather firmer. The amount of fatty materials added influence the softness; the higher the amount of fatty material added to the leather the greater the softness. Process variations allow us to get a wide range of softness, from a leather glove to a footwear sole from the same raw material.

![Thick leather that has been processed to make it incredibly soft](image2.jpg)
**Water absorption/desorption** This is a unique property to leather, allowing the leather to absorb the moisture and with time release it to the environment. For shoes this property creates outstanding comfort that is not replicated by any other material.

**Water vapor permeability** Often called ‘breathability’, it is a characteristic that allows moisture and air to permeate through the leather. This property is particularly important for shoes; as the foot sweats it produces moisture that move through the leather to the outside, keeping the inside of the shoe drier and more comfortable, with a lower moisture level. Waterproof leathers that are engineered to maintain breathability while providing protection from wet conditions will provide an outstanding combined performance.

Your feet never sweat in natural leather shoes and boots as they do in synthetic and rubber footwear

**Aesthetics and surface pattern** That are many variations to the color, texture, feel, smell, surface resistance and handle of leather that makes this product unique and valuable. Leathers can be as natural as observed in pure vegetable leather or as refined with outstanding performance as an automotive seat. Leather is fashionable in all colors while maintaining outstanding technical performance.

Leather is versatile