



Designation: D1517 – 10

## Standard Terminology Relating to

### Leather<sup>1,2</sup>

This standard is issued under the fixed designation D1517; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

#### INTRODUCTION

These definitions are divided into two groups: the first group covers general terms, and the second group covers definitions applicable to sampling.

The definitions of general terms include some of those encountered by personnel concerned with specifications and procurement of hides, leather and leather products by the Federal Government.

The definitions applicable to sampling are mainly to be used in connection with the sampling for, and testing of, physical and chemical properties.

Terms adequately defined by unabridged dictionaries are not generally included.

#### GENERAL TERMS

**alligator**—a general term used for leather made from the skins of all aquatic species with a grain similar to the American alligator which cannot be killed legally and, therefore, is not used by the United States industry.

**alligator-grained leather**—leather of various types, such as calf, sheep or cattlehide embossed to resemble the grain of alligator hide.

**alum leather**—leather produced by alum tannage, usually in combination with other substances. Before the invention of chrome-tanning this was the principal method of tanning with mineral agents.

**aniline dyed leather**—leather which has been colored by transparent dyes as distinguished from leather treated by pigments or other opaque material.

**aniline finish**—a clear finish with little or no pigmentation.

**antelope finish suede**—applied to lambskin, goatskin, or calfskin, sueded and finished to resemble antelope.

**antelope leather**—a fine, soft leather made from an antelope skin, velvety in texture and sheen, sueded on the flesh side.

<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.91 on Terminology.

Current edition approved Oct. 1, 2010. Published October 2010. Originally approved in 1957. Last previous edition approved in 2006 as D1517–06. DOI: 10.1520/D1517-10.

<sup>2</sup> These definitions have been developed in cooperation with the American Leather Chemists Assn. (Definitions of Terms X1-1961).

This leather is so rare, that for practical purposes, it is virtually nonexistent.

**apron leathers**—any one of several varieties of leather used in connection with textile machinery and blacksmith aprons. Comber and Gill Box apron leather is soft, mellow, tough leather, tanned from steerhides, heavily stuffed and boarded or otherwise softened. Rub Roll apron leather is a flexible but firm, dry, strong leather.

**aspergillus niger**—one of the most common mold growths found on vegetable tanning vats and on leather, usually greenish or blackish in color.

*automobile leather*—see **upholstery leather**.

**back**—a crop with the head trimmed off behind the horn holes. (OZUP in Fig. 1.)

**bactericide**—a chemical that kills bacteria.

**bag leather**—a general term for leathers used in traveling bags and suitcases. It does not include the light leathers employed for women's fancy handbags. The staple material for bag and case leather at present is leather made from the hides of animals of the bovine species, but heavy sealskins and goatskins are also used.

**bark tannage**—leather tanned by use of vegetable tannins found in barks, wood, and other plant derivatives, as distinguished from mineral tannages.

**barkometer**—a hydrometer used for determining the specific gravity of tanning solutions. A specific gravity of 1.000 is

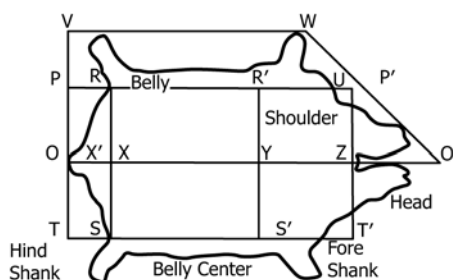


FIG. 1 Hide, Showing Various Cuts

equivalent of 0 deg barkometer (Bk), and each additional degree Bk is equivalent to an increase of 0.001 in specific gravity.

**baseball leather**—leather used for covers of baseballs. The better grades of balls have covers of alum-tanned horsehide front leather. Some cheaper grades are made of kip and sheepskins.

**basil**—uncolored vegetable-tanned sheepskin and lambskin.

**bate**—to treat unhaired hides or skins with a warm aqueous solution of an enzyme in order to remove certain undesirable nitrogenous constituents.

**beam**—a convex wooden slab sloping downward from about waist height over which a hide is placed for trimming off excess flesh and ragged edges and scudding by hand.

**belting butt**—a double back with the tail cut off at the butt line. (RUT'S in Fig. 1.)

**belting butt bend**—a double bend with the tail cut off at the butt line. (RR'S'S in Fig. 1.)

**belly**—that part of the hide below the belly line. (VWPP in Fig. 1.) For steerhide leather, the belly line (RU) passes through a point at or above the top of the rear break. For cowhide leather, the belly line passes through a point at or above the top of the front break and a point not more than 2½ in. (64 mm) below the top of the rear break.

**bend**—a back with the shoulder cut off at right angles to the backbone line at the break of the fore flank. (OYR'P in Fig. 1.)

**biff**—to beat a salted hide that has been placed on a rack, in order to shake loose salt from the hair.

**biocide**—a chemical that destroys microorganisms (for example, bacteria, fungi) that can be detrimental to hides, wet blue, wet white, and leather.

**bison**—leather made from hides of the American Bison, commonly referred to as the North American Buffalo, and not from the domesticated Asian or Eastern Water Buffalo.

**bisulfiting**—the treatment of hot solutions of vegetable tanning extracts with sodium bisulfite in order to increase their solubility and rate of take-up by hides.

**bleaching**—(1) the process of removing oxidized tannins and insoluble materials from the surface layers of leather, in

order to prevent crackiness of the grain. It is performed by dipping the leather in a weak alkaline solution to render the tannin readily soluble, dipping in water, neutralizing in weak acid solution and washing.

(2) the process of lightening the color of chrome leather by treating with synthetic tannins or precipitating white pigment in the surface of the leather.

**bleeding**—the transfer of materials exuded from leather to other materials that come in contact with it.

**blocking**—the adhesion between touching layers of leather such as occurs under moderate pressures during storage or use.

**bloom**—a light-colored deposit of ellagic acid appearing on the grain surface of leather tanned with certain pyrogallo tannins, such as myrabolans, valonia, and dividivi. The appearance may be objectionable for some purposes, but bloom does not significantly affect the other physical properties of the leather.

**blue**—usually in the phrase “in the blue,” applied to hides or skins that have been chrome-tanned but not dyed nor fat-liquored. Also referred to as *blue stock*.

**blushing**—dulling or mottling of the finish of the leather resulting from condensed moisture during the drying of the finish. Also referred to as lacquer bloom.

**boarded leather**—leather on which a false or accentuated grain has been produced by folding the grain side and working the leather back and forth. Hand boarding is done with a curved cork board attached to the worker's arm and rolled over the folded skin.

**boardy**—adjective applied to stiff, inflexible leather.

**box calf or sides**—sides or skins finished by folding with the grain side in and rubbing the flesh side with a cork-surfaced instrument known as a hand board. Machinery is now also used. The effect is sometimes imitated by embossing. Also called “box” or “willow” finish.

**break**—(1) *heavy leather*—the places, in the areas where the fore shank and hind shank join the body of the hide, where the texture of the leather changes quite sharply from the firm, close weave of the bend to a loose, open texture.

(2) *shoe upper leather*—the superficial wrinkling formed when the leather is bent, grain inward. Adjectives commonly used to describe this characteristic are “tight,” “fine,” “loose,” “coarse,” and “pipy,” or “flanky.”

**bridle leather**—a harness-finished strap leather.

**brining**—a process of curing hides by soaking with salt solution (sodium chloride).

**bronzing**—excessive concentration of crystallized dyestuff on the surface of the leather tending to give a metallic sheen.

**brush coloring**—the application of dye-stuff to leather with a brush or swab, the leather being laid on a table. Also called table dyeing.

**buck sides**—cattlehide shoe upper leather finished to resemble buckskin.

**buckskin**—leather from deer and elk skins, used for shoes, gloves, and clothing. Only the outer cut of the skin from which the surface grain has been removed may be correctly defined as “genuine buckskin.” Leather finished from the split or under-cut of deerskin must be described as “split buckskin.”

**buffalo leather**—leather made from the hides of domesticated water buffalo of the Far East, not the American bison.

**buffing**—the mechanical operation of removing a superficial portion of the grain of flesh surface with sand paper or knife in order to produce a velvet surface or to minimize natural surface defects on the grain or flesh.

**buffing dust**—the fine particulate leather fiber that is sanded off during buffing.

**buffing paper**—rolls or continuous paper coated with specially graded and treated abrasive particulates that is used to buff leather on a belt sanding machine.

**bullhides**—hides from bulls are characterized by thick and rough head, neck and shoulders, and coarse flanks. They are often poor in quality and heavy, ranging from 60 lb (27 kg) up.

**burnishing**—similar to buffing but using polishing paper/cloths with no or very fine abrasives that produces a very smooth polished appearance on the leather surface.

**butcher cuts**—damage to hides caused by improper removal from the animal, usually in the form of cuts or furrows on the flesh side.

**butt**—that part of the hide or skin covering the rump or hind part of the animal.

**cabretta**—skin of hair sheep, originally Brazilian, used principally for glove and garment leathers. (See also **cape**.)

**calf leather**—leather made from the skins of young cattle from a few days up to a few months old, the skins weighing up to 25 lb (11.3 kg). It is finer grained, lighter in mass and more supple than cowhide, or kip leathers.

**cape, skin or leather**—skin of South African hair sheep. Fine-grained leather, superior to wool sheep for gloves and garments. Loosely applied to all hair sheep, but should be qualified to show origin, if other than South African.

**carding leather**—a type of tannage of side leather used on the cards of textile machinery.

**carpincho leather**—leather from the skin of the carpincho, a large South American rodent. The skin is used in making glove leather, usually chrome-tanned and washable. In the glove-leather trade, it is classified as a pigskin. It resembles pigskin in appearance, a characteristic being the occurrence of bristle holes in straight-line groups, usually five holes in a group.

*case leather*—see **bag leather**.

**chamois leather**—a soft, pliable absorbent leather which is recognized in this country and abroad as being made from the inner side of a sheepskin, known technically as flesher, from which the outer or grain side has been split prior to tanning.

**chestnut extract**—a vegetable tanning agent extracted from the wood of the chestnut tree and used in tanning/re-tanning heavy leathers.

**chrome retannage**—the process of applying trivalent chromium salts as a secondary adjunct to the main tannage to impart or enhance certain leather properties; usually applied after splitting and shaving.

**chrome tannage**—conversion of raw hides/skin into leather with chromium compounds, thereby substantially increasing strength properties and resistance to various biological and physical agents.

**chrome tanning liquor**—liquid basic chrome sulfate, with chrome concentration typically in the range of 10-17.5 % expressed as chromic oxide, and a basicity typically in the range of 25-45 %.

**coarse rough fiber**—fibers of flesh surfaces of leather or splits which are frayed, separated, and present a shaggy appearance.

**cockle**—hard, firm nodules appearing on the necks and bellies of sheepskins.

**collagen**—the principal fibrous protein in the corium or derma layer of a hide or skin.

**collar leather**—a subdivision of harness leather, made from very light cattlehides in full thickness, or of cattlehide splits, and used for covering horse collars.

**Colorado steer**—a side-branded steerhide, not necessarily from Colorado.

**comber leather**—a steerhide leather, heavily stuffed and usually boarded, used in textile combing machines.

**combination tanned**—formerly, tanned with a blend of vegetable extracts. Today, tanned with two or more types of tanning materials, such as chromium compounds and vegetable extracts, or chromium compounds and synthetic tannins.

**cordovan**—leather made from the tight, firm portion of horse butts. It has very fine pores and characteristic waxy finish, and is very durable.

**corduroy flesh**—a rough condition of the flesh side of leather caused by failure to remove the twitching muscles.

**corrected grain**—portions of the grain surface lightly abraded with emery wheel or sandpaper, so as to lessen the effect of grain damage.

**country hides**—hides taken off by butchers and farmers; their quality is usually lower than that of packer hides because they are removed by less skilled hands and are not cured as well as packer hides.

- cowhide**—term specifically applied to leather made from hides of cows, although it is sometimes loosely used to designate any leather tanned from hides of animals of the bovine species.
- crocking**—the transfer of finish or color when leather is rubbed with a wet or dry cloth.
- crop**—a side with the belly trimmed off. (OO'PP in Fig. 1.)
- croupon**—untanned, whole cattleshide with the belly and shoulder cut off. Comparable to a butt bend in tanned leather.
- crushed leather**—leather made from chrome-vegetable retanned kidskins with the grain accentuated by boarding or other process.
- crust**—used as an adjective or in the phrase “in the crust,” refers to leather than has been tanned but not finished (see also **rough**).
- curing**—treating raw hides or skins so as to minimize putrefaction and bacterial action, but to enable the skins to be wet back conveniently in preparation for tanning (see **brining**, **dry pickling**, **dry salting**, **green salting**, and **pickle**).
- curling temperature**—the temperature at which noticeable curling occurs on gradually heating a leather specimen in water.
- currying**—a process of treating tanned hides with oils and greases to prepare them for belting, sole, harness leathers, etc.
- cut stock**—a term generally applied to bottom stock for shoes, such as soles, taps, lifts, blocks, and strips cut from sole leather. Also applies to cut-to-pattern leather.
- deep buff**—the first cut or split underneath the top grain or machine buff on which no traces of the grain remain.
- deerskin**—a deerskin tanned and finished with the grain surface intact.
- degrained leather**—leather from which the grain has been removed after tanning, by splitting, abrading, or other process.
- degras, moellon**—the partially oxidized oil pressed out of sheepskin after tannage with cod or other marine oil. (See also **moellon**.)
- doeskin**—commercial term for white leather from sheep or lambskin, tanned with alum or formaldehyde or both.
- double shoulder**—the fore part of the hide cut off at right angles to the backbone line at the break of the fore flank, with the belly cut off and the head cut off behind the horn holes. (R'UT'S' in Fig. 1)
- double-dressed**—as applied to chamois skins, with the grain removed and buffed or sueded on both surfaces.
- drawn grain**—shrunken, shriveled, or wrinkled grain surface of leather.
- drum dyeing**—the application of dyestuffs to leather by immersion of the leather in a revolving drum containing the dyestuff solution, as contrasted with table dyeing.
- drumhead leather*—see **parchment**.
- dry pickling**—a method of curing skins from wool sheep with sodium sulfate and sodium chloride.
- dry salting**—a method of curing hides in which the hides are first greensalted and then dried.
- dubbing, (dubbin)**—a mixture, primarily oils and fats, used for restoring fatty matter to military footwear in the field.
- electrified shearling, (electricified lambskin)**—shearling in which the wool has been straightened by a special process.
- elk leather**—trade term used to designate chrome-tanned cattleshide for uppers of work shoes, hunting boots, some children’s shoes, and others requiring flexibility and durability. More properly **elk-finished cowhide**. Leather made from elkhide is known as “buckskin.”
- embossed leather**—leather that has been ornamented with a geometrical or fancy design by heavy pressure in a machine.
- extract**—a liquid, powder, or solid concentrate of vegetable tannin obtained by extracting tannins from natural sources.
- facing leathers**—a lightweight leather generally used for facing seams, and binding the edges of shoe uppers. Also applied to lightweight, smooth calf and lamb, and to skivers, of which the inner surfaces of billfolds and wallets are frequently made.
- factory sole leather**—one of the two principal types of sole leather. It is tanned and finished to have more flexibility and compressibility than Finders’ sole leather, and is more suitable for use in shoemaking machinery. (See also **Finders’ sole leather**.)
- fancy leather**—leathers made from hides and skins of all kinds that have commercial importance and value primarily because of grain, or distinctive finish, whether natural or the result of processing. Such processing may be graining, printing, embossing, ornamenting (including in gold, silver, and aluminum finishes), or any other finishing operation enhancing the appeal of leather.
- fat wrinkle**—wrinkles on the grain of leather caused by fat deposits in the live animal.
- fatliquor**—an emulsion of oils or greases in water, usually with an emulsifying agent, used to lubricate the fibers of leather.
- Finders’ sole leather**—one of the two principal types of sole leather. It has less flexibility and compressibility than factory sole leather and is more suitable for use in shoe repair. (See also **factory sole leather**.)
- finish**—materials applied to the grain and sometimes split surface of the leather to cover blemishes, create smoothness and give uniformity of color and appearance which may vary from dull to glossy.



**flaky finish**—appearance of crazing, checking or flaking with or without separation of finish film.

**flanky**—a characteristic of loose grain leather that forms coarse wrinkles on bending with the grain inward.

**flesh**—the inner side of hide or skin. Also, adjective referring to that side.

**flesher**—the flesh split or under-cut of a sheepskin, split before tanning. (See also **chamois leather**.)

**flint**—usually in phrases “flint-dried” or “flint hides.” Air or sun-dried without other curing.

**float**—the solution in which the hide, skin or leather is immersed during processing.

**formaldehyde tannage**—tannage used especially for white leathers and washable glove leathers.

**French antelope lambskin**—when tanned in France, a lustrous suede finish applied to French, Spanish, Algerian, and Balkan skins; in the United States “French antelope finish” is applied to suede leathers made from South American and New Zealand pickled lambskins.

**French kid**—leather tanned from kidskin by an alum or vegetable process.

**fresh hide**—a recently flayed hide or skin that has not been preserved (such as salt-cured). See **curing**.

**frigorifico hides**—cattlehides from South American slaughtering and freezing plants, cured in brine and salted.

**frizing (friezing)**—in tanning Mocha glove leather, a process of removing the grain surface involving severe liming for not less than a month, during which the elastin structure of the grain layer is destroyed.

**front**—the forepart of a hide or skin. Particularly in horsehide leathers, the front is used for garments, baseballs, etc. It is the part left when the butt is cut off about 22 in. (559 mm) from the root of the tail.

**full grain**—having the original grain surface of the skin.

**garment leather**—a name covering material for leather coats, jackets, hats, and breeches made most commonly from sheep, cabretta, pig, or goat skins, cattle, or horse hides.

**fungicide**—a chemical that kills fungi.

**gasket leather**—a collective term sometimes used for the cattlehide leather, either vegetable, chrome or combination tannages, with special stuffing added, and employed in pump valves, as piston packing, and so forth.

**gill box leather**—a leather used in textile machinery, similar to comber leather.

**glazed finish**—produced by polishing grain surface under heavy pressure of a roller of agate, glass or steel. Infrequently made by a varnish or shellac coating.

**glazed (glace) kid**—chrome tanned goatskin and kidskin leather, in either black or colors, which has a glazed finish.

**glove leather**—term covering two distinct classes:

(1) the leather used for dress gloves, including those for street, riding, and sports wear. Tanned predominately from hair sheep, wool sheep, and lamb skins and to a lesser degree from deer, pig, goat, and kid skins, and

(2) the leather used for utilitarian or work gloves and made of a variety of hides and skins, of which the most important are horsehides, cattlehide splits and bellies, pigskins, and cowhides.

**glove splits**—split chrome-tanned cattlehide leather used for work gloves.

**grain**—the outer or hair side of a hide or skin. Also used as an adjective referring to that side.

**grained leather**—any leather on which the original natural grain, through any method, process, or manipulation, has been changed or altered.

**grassers**—calf skins or kips that have a coarser grain due to poor feeding of the animals.

**green salting**—a process of curing hides in which they are treated with salt on the flesh side and stacked in piles to cure for a period of ten days or more.

**grub hole**—a hole through the hide caused by the penetration of the warble fly.

**gusset leather**—a soft, flexible leather used for gussets in shoes, bags, and cases.

**hair-on leather**—leather tanned without removing the hair from the skins or hide.

**harness leather**—a self-explanatory term sometimes so defined as to include collar and saddlery leathers. Harness leather, including the related items mentioned, is practically all made of cattlehides, vegetable-tanned, except for a considerable quantity of pigskins used for making saddle seats.

**hat leather**—usually sheepskin or calfskin for sweatbands of hats. The grain splits of sheepskin are vegetable-tanned for this purpose.

**head**—that portion of the hide from the snout to the flare into the shoulder.

**heavy leather**—a somewhat indefinite term, generally understood to include vegetable-tanned sole, belting, strap, and mechanical leathers made from unsplit cattlehides. More recently it also refers to thick side leathers.

**hide**—the pelt of a large animal, such as cow, horse, etc. Also used interchangeably with Skin.

**hide grades**—standard hide grades, take-up, and delivery practice are given in the booklet, “Approved Standard Practice Governing the Take-Up and Delivery of Domestic Packer Hides,” published by The Leather Industries of

America, Inc., 1000 Thomas Jefferson Street NW, Suite 515, Washington, DC 20007.

**hide powder**—purified, shredded rawhide as a reagent in the determination of tannins.

**Hide Powder, Standard**—any lot of hide powder officially approved by the American Leather Chemists Association.

**hide substance**—nitrogen content of hide or leather multiplied by 5.62.

**horsehide leather**—leather made from the hide of a horse or a colt. (See also **cordovan** and **front**.)

**hydraulic leathers**—see **gasket leather**.

**indian tanned**—combination tanned with alum and vegetable tannins.

**India-tanned**—Term applied to hides and skins from India, considered as a semitanned raw material and generally retanned in the United States before finishing.

**iron**—a term used for measuring thickness of sole leather. One iron equals  $\frac{1}{48}$  in. (0.53 mm).

**Iron tannage**—tannage with salts of iron.

*japanned leather*—see **patent leather**.

**kangaroo**—leather made from the hide of the kangaroo.

**kid**—originally referring to leathers made from the skins of immature goats, the term is now rather loosely applied to glove and shoe leathers made from goatskins.

**kip**—skin from a bovine animal in size between a calf and a cow, weighing in green-salted condition approximately from 15 to 35 lb (6.8 to 15.9 kg).

**kosher hide**—hide of an animal that has been slaughtered according to Jewish religious custom by having its throat cut crosswise, resulting in a different pattern of the hide sometimes referred to as a “cutthroat” or “stuckthroat”.

**lace leather**—a form of rawhide leather (from cattlehides) for lacing together sections of power-transmission belts, sometimes prepared also with an alum and oil, chrome, or combination tannage.

**lambskin leather**—term applied to leather from either lambskins or sheepskins, which are practically indistinguishable after tanning.

**larrigan leather**—oil-tanned light cattlehides, used for moccasins.

**latigo leather**—a type of lace leather, alum and vegetable tanned, used in saddlery.

**leather**—a general term for hide or skin that still retains its original fibrous structure more or less intact, and that has been treated so as to be imputrescible even after treatment with water. The hair or wool may or may not have been removed. Certain skins, similarly treated or dressed, and without the hair removed, are termed “fur.” No product may be described as leather if its manufacture involves breaking

down the original skin structure into fibers, powder or other fragments by chemical or mechanical methods, or both, and reconstituting these fragments into sheets or other forms.

**leatherboard**—a type of fiberboard in which the fiber content is at least 75 % leather, usually with asphaltic or resinous binder.

**Levant**—term applied to goatskin on which the grain pattern is accentuated in tannage. Goatskin embossed to give a Levant pattern is properly described as “Levant-grained goatskin.” Sheep, seal, and other skins bearing this pattern should not be described as “Levant leather” but as “Levant-grained sheepskin,” etc.

**lining leather**—any leather used for making shoe linings which includes sheep, lamb, kid, goat, cattle, calf, kip and splits.

**load**—(1) the amount of nonprotein material in vegetable-tanned leather.

(2) the amount of tannin in vegetable-tanned leather.

**loading**—the addition of glucose, magnesium sulfate, or other materials necessary to give leather the physical properties needed for working in modern shoe machinery. (Also known as filling or stuffing.)

**machine buffs**—that cut of the hide from which a buffing of approximately  $\frac{1}{64}$  in. (0.4 mm) (1 oz) in thickness has been removed from the grain. This should leave a portion of the grain on approximately the entire hide.

*manufacturer’s leather*—see **factory sole leather**.

**mat finish**—smooth dull finish applied to leather for shoe uppers, handbags, belts, etc.

**Matadero hides**—Argentinian cattlehides corresponding roughly to city butcher or small packer hides in the United States.

**mechanical leather**—a collective term for many types of leather used in connection with textile and other machinery.

*medium buffs*—see **upholstery leather**. Formerly often referred to as “special machine buffs.”

**meter leather**—a specialty leather made from sheepskins, treated to make it impermeable and used for the measuring bags of gas meters.

**mineral tanned**—leathers which have been tanned with chemical compounds of mineral origin without the use of vegetable tanning materials, notably the salts of chromium, aluminum, and zirconium.

**mocha leather**—leather from any variety of hair sheep; after the grain has been removed by a liming process known as frizing, the fine fibers below the grain are sueded.

**mocha suede**—a washable and durable suede produced from chrome-tanned Arabian blackhead hair sheepskins (commonly called blackhead mochas) mechanically abraded on the flesh side. Tightness of fiber structure found in these skins imparts the characteristic fineness of finish associated with mocha suede.