Framework_E25.qxd 20/8/08 9:29 am Page 1

Back to Basics: A Framework for Leather Manufacture

Richard Daniels and Walter Landmann

Pre-finishing and Finishing

Part 2: Padding Techniques

Overview

The application of finishing products by means of padding may be carried out manually, possibly with some mechanical assistance or with automatic or semi automatic machinery.

Objectives

Padding is used generally for impregnation and the application of base coats. With the manual method the finish is rubbed vigorously into the leather on a supporting table or conveyor, using plush covered blocks or very occasionally soft-haired brushes. In the case of automatic machinery moving plush belts perform this function. Deep penetration and thorough fixing of the product is normally the aim of this process. Suitable products may also be padded using reverse rollcoating.

Methods and machines

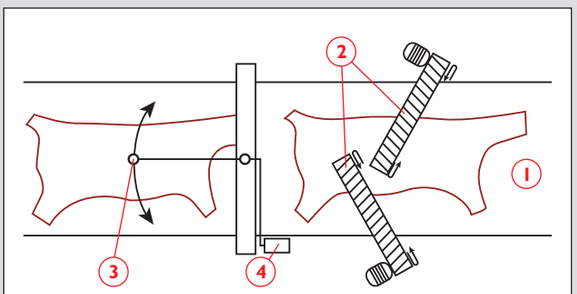
Manual padding: Performed by the operative soaking the applicators, i.e. the plush covered blocks, with the finishing product and by rubbing it in circular motions across the leather surface. One or more operators are placed on the side of the supporting surface. Hard surface support tables or alternatively synthetic material electrically driven conveyors may be used. With this latter equipment operators usually move the conveyor on by pressing a switch when the leather may transfer mechanically into a drying tunnel. The conveyor can incorporate a washing and drying mechanism to avoid staining the backs of the following leathers to be padded.

Limited mechanisation may be introduced employing a swinging arm fitted with a nozzle, which by its to and fro motion across the support conveyor evenly deposits a controllable quantity of product, leaving the operators to spread it. A product holding tank with a pump supplies the nozzle. A drawback of this arrangement is the excess product emitted also requiring more effective conveyor cleaning and there is appreciable waste of product. Manual padding, with or without mechanical assistance, remains highly labour intensive and is more suitable for the padding of small skins.

Mechanised equipment: Where machinery is employed the more generally adopted type uses moving plush bands. An electrically driven smooth conveyor belt carries a gantry with pump supplied distribution nozzles swinging in an arc across the leather depositing the product more or less evenly. A simple electronic device detects the presence of the leathers and commands the supply to the nozzle accordingly. Very little waste occurs as a result. The actual distribution and padding in of the product is performed by a pair of electrically driven plush bands arranged to run at an angle across the conveyor carrying the leathers. The plush bands overlap each other slightly and move in opposite directions in order to provide full coverage and avoiding rucking up of the leathers. Band speed and pressure on the leathers are normally adjustable. Operators are required to load and unload the leather if it is not transferred mechanically. The system is not entirely foolproof, leathers may be displaced or folded over and small areas may not be padded. For this reason an operator generally stands by to rectify problems that might arise, carrying out any necessary hand padding.

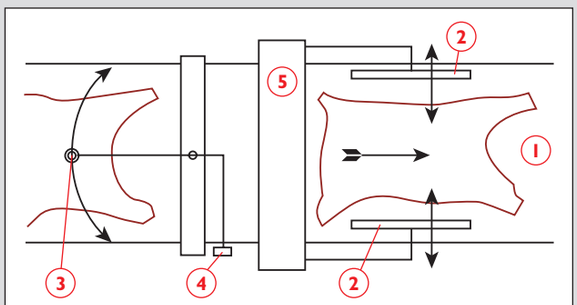
A reciprocating plush pad system is a different device to distribute and pad the product on another type of machine. The product deposition device as described above or a fixed nozzle arrangement forms part of the machine. A pair of plush covered arms, placed parallel to the conveyor travel, effect product distribution and padding in. Left and right hand arms move from the centre to their respective side stroking the leathers. The movement is normally actuated pneumatically. Padding arm translation speed and pressure is usually controllable.

Panel E25/1 Padding machine with driven plush bands



1: Conveyor 2: Plush bands 3: Swinging nozzle 4: Pump

Panel E25/2 Padding machine with reciprocating plush bands



1: Conveyor 2: Plush bands 3: Swinging nozzle
4: Pump 5: Plush band reciprocating mechanism