**LIST OF MACHINERY AND EQUIPMENT WITH SPECIFICATIONS TO BE PROCURED FOR ONDANGWA TANNERY**

**1. Roller Coater**

* Complete with automatic roller store and lifting device.
* Roller finishing machine for whole hides with reverse rotation, arranged to be connected to the foaming machine to work with foaming products.
* Monolithic framework with ultra-high twisting resistance.
* Automatic rollers lifting bridge with the possibility of fitting up to 3 reverse rollers.
* Variable speed from 3 to 100 m/min for the engraved roller and from 5 to 20 for the belt.
* Electronically controlled centesimal variation of the working thickness. Complete access to all the functions of the machine,(drive of AC motors, pneumatic pistons) visualization and set of the various parameters through a Programmable Logic Controller. Rubber conveyor belt lay-out automatically set in relation to the leather to be processed.
* Belt control and drive unit located on the outer return cylinder in order to eliminate any vibration, make operations easier and reduce downtime for maintenance to a minimum.
* The rubber conveyor belt must easily and quickly be replaced by pulling it out from the front side of the machine without moving it away from the drying unit.
* Belt washing system can be switched on/off automatically with exclusion of both the washing brush and scraper.
* Conveyor belt made of rubber featured by high resistance to chemical agents.
* Chromium plated pressure roller with scraper to keep the inside of the belt perfectly clean.
* Pneumatic doctor blade drive with smooth and precise movement to the engraved roller.
* Device for doctor blade oscillation
* Pipe system for distribution of paint and for the washing of the roller directly fastened to the doctor blade assembly
* Pneumatically driven pigment mixer group
* Double diaphragm pigment pump with stainless steel recycling trays
* Equipment for the rubber belt replacement
* Wooden footboard
* Big wheels for easy moving onto guide-rails
* Standard spare parts and extra spare parts including: Introduction PVC conveyor belt, one set of doctor blade
* Electrics must be IP55
* Feeding device to insert the leathers into the machine complete with pneumatic safety device which immediately stops the machine in case of overload due to any leather’s rejection
* Feeding and spreading conveyors unit featured by electronic control belts speed synchronized to the main motor’s speed
* Speed adjustment of the feeding conveyors through the PLC control panel and automatic centring of the feeding conveyors through the PLC control panel and automatic centring of the feeding conveyors, made of washable and oils-solvent resistant materials
* Safety bar for immediate stop of the conveyors and opening of the rubber belt which they are synchronized with
* Motor driven detaching sprocket wheels for the automatic peeling off of the hides from the rubber belt
* Anti-splashes tray at the base of the machine
* Conveyor to spread and convey the hides from the roller coating machine to the dryer-conveyor for steady widening of the hides, synchronized speed to the Roller Coater and adjustable through a potentiometer up to a value 10% higher and can be raised in case of no use
* The steel structure must be robust, corrosion protected by double painted epoxy resins.
* Reverse roller 3400mm wide with helical engraving particularly for the finishing of soft leather, usually hard to feed in, and for the finishing and the coating of any kind of leather attaining the following in processing of thin and soft leather:
* disappearance of the light marks left by the engraving on the surface of the finished leather, spreading of the chemicals by creating a mirror-like surface, disappearance of the uneven shadows caused by the adhesion of the fore edge of the leather to the engraved roller, which is quite frequent when finishing smooth leather with viscous chemicals, Wide range of capacity when varying the chemicals viscosity, possibility to apply stucco and pre-coating on the leather
* Foaming machine for the production of very thin foams having high level features of homogeneity excellent to be used for roller and knife coating finishing process and suitable for water based chemicals only, to be rigid and compact steel structure equipped with wheels, double mixing chamber made of anticorrosive materials equipped for the homogenizing of the chemical which permit to maintain constant and unaltered chemical/physical characteristics, variable capacity from 60 to 300 Kg/h, value of capacity displayed by a digital screen on control panel expressed in Kg/h, micrometric electronic adjustment of the absolute density (specific weight) of the chemical to be foamed - specific weight value of the chemical to be foamed from 0,8 to 1,6 gr/cm3, micrometric electronic adjustment of the foam weight expressed in grams/litre and displayed by a digital screen on the control panel, foam density variable from 150 to 925 gr/l, easy and quick to clean,
* Set of instruction & maintenance manual, machine built in total and full respect of CE regulation

**2. Ironing and Embossing Press**

Hydraulic Ironing and Embossing Press 3200mm wide complete of with ironing chrome roller, embossing roller “Federica”, embossing roller “Madras” and embossing roller “Dollaro”, deposit “P3” over the m/c for 3 rollers storage, heating system by thermic fluid oil, double feeding spreading conveyor, felt for greater resistance to high working pressure, peel of device, automatic timer to cooling and stopping, automatic start timer for the roller heating unit, cooling of rollers by means of water, electrical components housed in an independent cabinet, set of spare hydraulic pipe, automatic stacker behind the press 3400mm wide all complete of electric panel and installed power drive.

**3. Four (4) Milling Drums**

Stainless Steel Drum size Ø 3000mm x 2000mm with auto-unloading, air recycling complete with dust filtration and suction with dust gathering in drawer made in stainless steel, including plant for humidity and temperature control, with possibility of chemicals inflow, standard electric panel for humidity, temperature control, and setting of running time, with manual and automatic running, high safety protections, drive unit with motor reducer, belts and all accessories, higher base structure complete with safety protections, electric panel for the command functions for the motor drives, the control of the door and the control of the conveyor belt, conveyor belt with chute collector in Stainless Steel, inverter to control the unloading speed and all accessories, electric wiring, collector for the distribution of the air to the automatic door, automatic door with four positions, modifications to the pipes for recycling the air of the drum, Electric wiring (400V-50Hz) according to E.C standard, Unit for the chemicals injection in Stainless Steel, level control, pump and fittings

**4. Upholstery Leather Spray Line**

* Rotary spray and drying line complete of introduction heads complete with string cleaning system (string scraper) by rotating counter blades, 3 spray cabins 3400mm wide with structure in stainless steel AISI 304 octagonal shape, spray cabins equipped with 1 set (12 pcs) of spray gun mod.
* DA (normal pressure), 1 set (12 pcs) of spray gun mod. TGA/SF (Airless), 1 membrane pump mod. DN20 with chemical flow stabilizer (pump for normal pressure guns), 1 pump mod. 22/30 MS (pump for airless guns), second spray cabin equipped with 1 set (24 pcs) of spray gun mod.
* DA (normal pressure), 2 new membrane pumps mod. DN20 with chemical flow stabilizer (pump for normal pressure guns), spray cabin 3 equipped with 1 set (24 pcs) of spray gun mod. DA (normal pressure), 2 new membrane pumps mod. DN20 with chemical flow stabilizer (pump for normal pressure guns), carousel equipped with 12 gun-holders, each of them with double graduated support adjustable in height
* Each gun-holder is equipped with two electro valves for the air-flow control which allows using two separate spraying circuits in the cabin, ecological scrubber plant for fumes treatment and exhaustion installed on the side of the spraying machine with monolithic stainless steel AISI 304 structure.
* Noise continuous pressure equivalent level = dB(A) 80. Electronic paint economizer 3400mm to control the spraying system, steam drying tunnel with working width mm. 3400 with 3 drying tunnel total length 21m with ventilation system with air blades, thermal insulation panels of 40 mm.
* thickness, each compartments of the tunnel is fitted with 2 doors for side for a quick inspection, heating system by means of high-performance finned battery made of Aisi 304 stainless steel, each battery equipped with pipes for the drainage of the condensate controlled by a check valve, heat-resistant self-extinguishing filters fitted inside the compartment for the air cleaning, temperature and humidity control panel fitted up sideways of the drying tunnel, cooling system tunnel complete length 4,290m and conveyor made on perlon strings working width 3400 mm, electric equipment for the finishing line consisting of three spraying cabins and three steam drying tunnels.

**5. Buffing Line**

Through feed buffing machine, 3200mm working width equipped with buffing increment device, closed circuit water cooling system, pumps and fittings, leather straightening device, motorised holding roller, including through feed air de-dusting machine 3200mm working width equipped with upper de-dusting heads, conveyor to link buffing and dedusting machine, blower complete with silencer, filter and safety valves, aspiration plant, blower and suction fans, dust collector, dry type, fabric filtering sleeves and dust briquetting machine

**6. Splitting Machine**

Hydraulic whole hide splitting machine for wet blue bovine hides including 10 splitting knives, set of extra sharpening grinding block, spark removal unit.