

MODEL	EQUIPMENT
ST300	"ST300 Softness Tester" Purpose: determining the softness of leather without defacing the hide or skin
LM6	"Humimeter LM6" Purpose: hand-held device for non-destructive determination of leather moisture. It helps to detect the water content in leather.
H010C	"Vamp" flexometer with 12 stations in cold chamber Standards: EN ISO 22288; EN ISO 5402-2; ISO 4643; ISO 5423; SATRA TM25 Purpose: Determine the propensity of upper materials to crack.
H011	"BENNEWART" flexometer Standards: ISO 17707; EN ISO 20344:8.4 ; SATRA TM161 Purpose: Determine the resistance of whole footwear soles to cut growth during repeated flexing. It is also suitable to assess the effect of surface patterns.
H011C	"BENNEWART" flexometer in cold chamber Standards: ISO 17707; EN ISO 20344:8.4; SATRA TM161 Purpose: Determine the resistance of whole footwear soles to cut growth during repeated flexing. It is also suitable to assess the effect of surface patterns.
H012	Rigidity tester for soles Standards: ISO 17707; EN ISO 20344:8.4; SATRA TM161 Purpose: Assess the rigidity of the complete footwear, to determine if it should be subjected to the "Bennewart" flexing test
H013	"BELT" Flexing Tester Standards: ISO 16177; SATRA TM133 Purpose: Determine the resistance of soles or material to crack initiation and growth due to repeated flexing.
H014	"ROSS" flexometer Standards: ISO 4643; ISO 5423; ASTM D1052; BS 5131-2.1 SATRA TM60 Purpose: Determine the resistance of polymeric materials to cut growth during repeated flexing.
H014C	"ROSS" flexometer in cold chamber Standards: ISO 4643; ISO 5423; ASTM D1052; BS 5131-2.1; SATRA TM60 Purpose: Determine the resistance of polymeric materials to cut growth during repeated flexing.
H015	Whole shoe flexometer in water Standards: SATRA TM 230; EN ISO 20344:5.15.2 Purpose: Assess the resistance to water penetration of complete footwear, during flexing.
H017	Elastics repeated extension tester Standards: EN ISO 10768; SATRA TM103 Purpose: Assess the resistance of elastics to repeated stretching to the limit of its useful extension.

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H018	Velcro closing tester Standards: EN ISO 22776 Purpose: Press the two parts of the touch and close fastener together, under controlled conditions, before peel and shear strength test.
H019	Velcro fatigue tester Standards: EN ISO 22776 Purpose: Simulate the use of the velcros by repeated closing and opening, before performing other physical tests.
H020	Electronic Lastometer Standards: EN ISO 3379; EN ISO 17693; ISO 17695 Purpose: Determine the lastability of uppers or complete upper assembly irrespective of the material in order to assess the suitability for the end use.
H020WT	Modified Lastometer, with heating source Standards: ISO 17232 Purpose: Determine the heat resistance of patent leathers
H021	Zipper fatigue tester Standards: EN 16732; SATRA TM50 Purpose: Assess the resistance of slide fasteners to repeated opening and closing, under load
H022/12	"Bally" flexometer with 12 stations Standards: EN ISO 17694; EN ISO 5402-1; SATRA TM55 Purpose: Determining the wet or dry flex resistance of leather and finishes applied to leather. It is applicable to all types of leather below 3,0 mm in thickness.
H022/24	"Bally" flexometer with 20 stations Standards: EN ISO 17694; EN ISO 5402-1; SATRA TM55 Purpose: Determining the wet or dry flex resistance of leather and finishes applied to leather. It is applicable to all types of leather below 3,0 mm in thickness.
H022C	"Bally" flexometer with 12 stations in cold chamber Standards: EN ISO 17694; EN ISO 5402-1; SATRA TM55 Purpose: Determining the wet or dry flex resistance of leather and finishes applied to leather. It is applicable to all types of leather below 3,0 mm in thickness.
H023	Fibreboard flexometer Standards: BS 5131-4.2; SATRA TM3; TM4 Purpose: Assess the resistance of fibreboard material to repeated flexing
H024	Midsole flexometer Standards: EN ISO 20344:5.9; ISO 22568:3-4; CAN/CSA Z195 Purpose: Assess the resistance of midsole materials to repeated flexing
H027	Heat resistance tester Standards: EN ISO 20344:8.7 Purpose: Assess the ability of the finish of shoemaking materials to withstand the heat involved in various shoemaking operations.
H028	Heat insulation tester Standards: EN ISO 20344:5.12; ISO 20877; EN 15090 Purpose: Assess the heat insulating properties of the sole complex of protective footwear.

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H029	<i>Cold insulation tester</i> Standards: EN ISO 20344:5.13; ISO 20877 Purpose: Assess the cold insulating properties of the sole complex of protective footwear.
H030	<i>Longitudinal/torsional stiffness of insole back parts and shanks</i> Standards: EN 12959; ISO 18896; SATRA TM58; TM59; TM88 Purpose: Assess longitudinal and torsional stiffness of shanks and insole back parts
H031	<i>Longitudinal/torsional stiffness of complete footwear</i> Standards: SATRA TM194; TM256 Purpose: Assess longitudinal and torsional stiffness of complete footwear
H032	<i>“MAESER” waterproofness tester with 4 stations</i> Standards: ASTM D-2099; EN ISO 5403-2; SATRA TM34 Purpose: Determining the resistance of a material to water penetration on
H033/4	<i>“Bally” penetrometer with 4 stations</i> Standards: EN ISO 5403-1; EN ISO 20344:6.13; ISO 17702; SATRA TM171; Purpose: Determining the dynamic water resistance of leather.
H033/6	<i>“Bally” penetrometer with 6 stations</i> Standards: EN ISO 5403-1; EN ISO 20344:6.13; ISO 17702; SATRA TM171; Purpose: Determining the dynamic water resistance of leather.
H033S	<i>Stiffness tester for leathers</i> Standards: EN ISO 5403-1; EN ISO 17702; SATRA TM171 Purpose: Determining the stiffness of leathers as preparation to “Bally” test
H034	<i>Shock absorption tester</i> Standards: SATRA TM142 Purpose: Evaluate the shock absorption properties of materials or assemblies of footwear bottom.
H035	<i>Dynamic compression tester</i> Standards: SATRA TM159 Purpose: Evaluate the changes in dimensions of a material after a prolonged period of dynamic compression.
H036	<i>Toe and Heel Adhesion Tester</i> Standards: SATRA TM404 Purpose: Determine the resistance of the bond, between upper and sole
H037	<i>“Mattia” Flexometer, with 12 stations</i> Standards: ISO 132; ISO 7854-Met. A; EN ISO 20344:6.5.2 Purpose: Assessing the resistance of coated fabrics to damage by repeated flexing and determination of flexing cracking of rubber, vulcanized or thermoplastic
H040	<i>Perspiration tester</i> Standards: ISO 11641; ISO 11642; ISO 105-E01; ISO 105-E04 Purpose: Determine the resistance of the colour of the leathers to the human sweat.
H043	<i>Laboratory Milling Machine</i> Standards: ISO 4044 Purpose: Milling materials to be used in chemical tests

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H044	Laboratory Shaker, with 8 containers Standards: ISO 4045; ISO 4098; TM329 Purpose: Agitate up materials in chemical solutions
H045	Laboratory press Standards: SATRA TM402 Purpose: press sample assemblies during bonding process
H046/1	Thickness measuring gauge for leather and soles material Standards: ISO 2589; ISO 2286-3; ISO 23529:9.1 Purpose: Determining thickness of the leather and sole materials
H046/2	Thickness measuring gauge for leather Standards: ISO 2589; ISO 23529:9.1 Purpose: Determining thickness of the leather and sole materials
H046/3	Thickness measuring gauge for soles material Standards: ISO 2286-3; ISO 23529:9.1 Purpose: Determining thickness of the leather and sole materials
H046/4	Thickness measuring gauge for textile material Standards: EN ISO 5084 Purpose: Determining thickness of textile materials
H048	Radiant heat tester Standards: EN ISO 6942 Purpose: Assess the resistance of personal protective equipments against a radiant heat source.
H050	Water vapour permeability tester, w/ 6 bottles Standards: EN ISO 20344:6.6; EN ISO 14268; ISO 17699; EN 13515; EN 420; SATRA TM172 Purpose: Determining the “breathability” of the leather and non-leather upper materials
H050/2	Water vapour permeability tester, w/ 12 bottles Standards: EN ISO 20344:6.6; EN ISO 14268; ISO 17699; EN 13515; EN 420; SATRA TM172 Purpose: Determining the “breathability” of the leather and non-leather upper materials
H052	Water vapour absorption tester Standards: EN ISO 17229; EN 13515; EN ISO 20344:6.7; SATRA TM172 Purpose: Determining the coefficient of water vapour on leather and non-leather upper materials
H053	Water vapour absorption tester for gloves Standards: EN 420 Purpose: Determining the coefficient of water vapour on leather and non-leather used on gloves.
H054	Dynamic water-resistance tester Standards: EN ISO 20344:7.2; ISO 22649; EN 12746; EN ISO 5404; Purpose: Determining the dynamic water-resistance of sole leather.

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H055	<i>Leakproofness tester</i> Standards: EN ISO 20344:5.7; EN 374-2 Purpose: Assess the leakproofness of whole footwear and gloves
H057	<i>Laboratorial Reactivator</i> Standards: None specific Purpose: Used in specimens bonding process.
H061	<i>"TABER" Abrasion Tester</i> Standards: ISO 17076-1; ISO 5470-1; ASTM D-3884 Purpose: Assessing the abrasive wear resistance of coated fabrics
H062/4	<i>"Martindale" abrasion machine, with four stations</i> Standards: EN ISO 20344:6.12; EN 13520; EN ISO 17704; ISO 12947-1; EN ISO 5470-2; EN 530; EN ISO 12945-2; SATRA TM31 Purpose: Determining the resistance of uppers, linings and insoles irrespective of the material, to wet and dry abrasion.
H062/9	<i>"Martindale" Abrasion Tester, with nine stations</i> Standards: EN ISO 20344:6.12; EN 13520; EN ISO 17704; ISO 12947-1; EN ISO 5470-2; EN 530; EN ISO 12945-2; SATRA TM31 Purpose: Determining the resistance of uppers, linings and insoles irrespective of the material, to wet and dry abrasion.
H063	<i>Wear and corrosion apparatus</i> Standards: EN 12472:2005+A1:2008 Purpose: Accelerated wear and corrosion to be used for detection of nickel
H064	<i>"Veslic" Rub Fastness Tester</i> Standards: EN ISO 20344:7.3; EN ISO 11640; EN 12747; EN ISO 17700; ISO 20868; SATRA TM173 Purpose: Determining the behavior of the surface of a leather on rubbing with a felt
H064/2	<i>"Veslic" rub fastness tester, with two stations</i> Standards: EN ISO 20344:7.3; EN ISO 11640; EN 12747; EN ISO 17700:Met.A; ISO 20868; SATRA TM173 Purpose: Determining the behavior of the surface of a leather on rubbing with a felt
H064H	<i>Ironing Element, for "Veslic"</i> Standards: IUF 450 Purpose: Assess the behavior of the surface of a leather on rubbing w/ an ironing element.
H065	<i>Rotating rub fastness tester</i> Standards: EN ISO 17700:Met. B; SATRA TM8; TM14 Purpose: Assess the degree of damage (marring) and transfer of a material 'surface colour during mild dry or wet abrasion.
H066	<i>Crockmeter Tester, hand driven</i> Standards: ISO 20433; ISO 105-X12; SATRA TM167 Purpose: Determine colour fastness to wet and dry rubbing.
H066M	<i>Crockmeter tester, motorized</i> Standards: ISO 20433; ISO 105-X12; SATRA TM167 Purpose: Determine colour fastness to wet and dry rubbing.

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H067	<i>Lace to lace abrasion tester with 6 stations</i> Standards: EN ISO 22774; SATRA TM154 Purpose: Determine the abrasion resistance of a lace to repeated rubbing against a similar lace, a eyelet or a lace carrier.
H068	<i>Lace to eyelet abrasion tester with 6 stations</i> Standards: BS 5131:3.6; SATRA TM93 Purpose: Determine the abrasion resistance of a lace to repeated rubbing against a standard eyelet. Could be also assessed the abrasive action of a lace over the eyelet.
H070	<i>Chainsaw cutting tester</i> Standards: ISO 11393-1; ISO 11393-3 Purpose: Assess the resistance to cutting by chainsaw of personal protective devices
H071	<i>Circular blade cutting resistance tester</i> Standards: EN ISO 20344:6.14; EN 388:6.2 Purpose: Assess the resistance of upper and glove materials to be cut by blade
H072	<i>Sole abrasion tester</i> Standards: EN 12770; ISO 4649; ISO 20871; ASTM D5963:A/C; SATRA TM174 Purpose: Assess the abrasion resistance of a polymeric material normally used in sole footwear
H072R	<i>Sole abrasion tester with rotating sample holder</i> Standards: EN 12770; ISO 4649; ISO 20871; ASTM D5963:B/D; SATRA TM174 Purpose: Assess the abrasion resistance of a polymeric material normally used in sole footwear. Test could be performed with rotating or fixed sample holder
H073	<i>Blade Cutting Resistance Tester</i> Standards: EN 388:6.3; ISO 13997 Purpose: Assess the resistance of textile and glove materials to be cut by blade
H076	<i>Leather Grain Crack Tester</i> Standards: ISO 3378; SATRA TM48 Purpose: Determine the propensity of the grain leather to crack during bending
H077	<i>Electrical conductivity tester</i> Standards: EN ISO 20344:5.10 Purpose: Measure of electrical resistance of conductive footwear.
H080	<i>Slip Resistance Tester</i> Standards: EN ISO 13287; SATRA TM144; ASTM F2913-11 Purpose: Determining the coefficient of friction between footwear outsoles and flooring surfaces.
H080_ICE	<i>Ice Slip Apparatus</i> Standards: SATRA TM144 Purpose: Perform slip resistance test on ice surface, using slip resistance equipment.
H081	<i>Toe Caps Impact Tester</i> Standards: EN ISO 20344:5.4; EN ISO 22568-1; EN ISO 22568-2; ASTM F2412; CAN/CSA Z195 Purpose: Assess impact resistance of toes caps for safety and protective footwear

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H009	“Whole Shoe Flexometer” with 4 stations Standards: SATRA TM92 Purpose: Assess the resistance of a complete shoe to the repeated flexing.
H010	“Vamp” flexometer with 12 stations Standards: EN ISO 5402-2; ISO 4643; ISO 5423; SATRA TM25 Purpose: Determine the propensity of upper materials to crack
H081/1	Thickness measuring gauge for modeling clay cylinders Standards: EN ISO 20344:5.4.1.4 Purpose: Measure modeling clay cylinders before and after impact or compression test
H081/2	Vacuum equipment Standards: EN ISO 20344:5.16 Purpose: Prepare the wax test forms for metatarsal test
H081/3	Metatarsal Device Standards: EN ISO 20344:5.16 Purpose: Perform metatarsal impact test
H082	Ankle shock absorption tester Standards: EN ISO 20344:5.17 Purpose: Assess shock absorption properties of ankle protective materials and assemblies.
H084	Heel fatigue tester Standards: EN ISO 19956; SATRA TM21 Purpose: Assess the ability of ladies’ heels shoes to withstand the repeated small impacts of normal walking.
H085	Heel impact tester Standards: EN ISO 19953; SATRA TM20 Purpose: Assess resistance of ladies’ heels shoes to occasional heavy impacts during wear.
H090	Combustion chamber Standards: ISO 3795; FMVSS 302 Purpose: Determination of horizontal rate of flame spread of materials and components used in interiors of cars, trucks and other vehicles.
HED05	Electronic Dynamometer with 5KN capacity
HED10	Electronic Dynamometer with 10KN capacity
HED20	Electronic Dynamometer with 20KN capacity
HED-EXT	Extensometer, for dynamometers HED10 and HED20
HED-LC	Extra Load Cells (500N; 1KN; 5KN; 10KN; 20KN)
HED-**	Grips and devices, on request

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