



# WALDHAUSEN

DIE GANZE WELT DES REITSPORTS

## Handout E·L·T - ENG

Waldhausen Experience Days 2024

## E-L-T

### Functionality and performance – Trends in equestrian sportswear

#### Functionality of the riding equipment

##### **Waterproof clothing:**

- Water column:
  - indicates the water resistance of a fabric and is measured in millimetres.
  - From a water column of 1,300 mm, a material is considered waterproof according to the DIN standard.
- Material: An outer fabric can be made waterproof using two methods:
  - Coatings: A waterproof synthetic layer is applied to the outside of the outer fabric / can usually only withstand a few washes / have a lower breathability and water column than outer fabrics with a membrane
  - Membranes: A membrane is a semi-permeable plastic film integrated into the outer fabric / cannot be washed out and are therefore more durable / impermeable to water but also breathable
- Heat sealed seams:
  - In addition to the waterproof finish of the outer fabric, the seams must be covered to prevent water from penetrating through the needle holes.
  - Seams can be covered with facings or sealed from the inside with a plastic film.

##### **Breathable clothing:**

- Breathable clothing allows perspiration to escape to the outside. Insufficiently breathable clothing, on the other hand, creates a build-up of heat.
- There are two methods to determine the breathability of a textile:
  - The MVTR (Moisture Vapor Transition Rate) test measures the amount of evaporated liquid in grams per square meter within 24 hours.
  - The Resistance of Evaporation of a Textile (RET). The force required by the water vapor to pass through the tested textile is measured.
- What hinders the breathability of functional clothing? Waterproof materials / Windproof materials / External influences (Heavy sweating, too much insulating clothing, inadequate care of textiles)

##### **Heat-insulating clothing:**

- The clothing ensures that the heat released by the body does not disappear immediately.
- Made from natural fibers such as down & wool or various synthetic fibers
- The outer material of a winter item often consists of a waterproof and windproof synthetic fiber material.

- Filling materials: To increase heat retention, winter jackets usually have additional insulation filling. Synthetic fibers or down are the most commonly used materials here.
  - Down: Loose filling fiber / Sensitive to moisture but insulating / Expensive / Animal welfare aspect
  - Synthetic fibers: dense, three-dimensional mesh / insulating / stable enough to process small-scale quilting / ultra-light / easy-care / warming
- Additional insulating elements: hood, cuffs, pockets with warm lining

#### Fit and features

- **Outer Clothing:** e.g. Riding slits, 2-Ways-Zippers, Reflectors, Mesh-inserts
- **Breeches:** e.g. Dirt-repellent materials, Materials with a compression effect, Different waist heights and different types of seats

#### **E-L-T Equestrian Performance:**

- Waterproof, water column: 5,000mm
- Heat sealed seams
- Breathable, 3000g/m<sup>2</sup>/24h
- Windproof
- Heat insulating (winter article)

#### Trend: Heatable articles:

- Can be used for all indoor and outdoor activities in winter
- Heated clothing actively generates heat, and the body therefore needs significantly less energy to maintain its “feel-good temperature”. This increases the ability to perform and concentrate in cold temperatures and reduces the risk of injury.
- E.g. jackets, gloves, socks
- Heated clothing contains heating elements that are usually operated via a 5V 2A USB power source. A power bank is connected to this USB port.

#### **E-L-T Comfort Heat Heating vest:**

- Material mix: front and back made of woven fabric, sides and shoulders made of fleece
- Wind and water-repellent outer material
- Integrated far infrared heating system with 5 V 2A USB power source
- 6 heating elements: 2 in the front section, 1 on the back collar and 3 in the back section
- Adjustable heating temperature: 45 °C/50 °C/55 °C

#### Trend: 3D-knitwear

- 3D knitting technology is a seamless knitting process that promises maximum freedom of movement and optimum comfort.
- As the items are knitted in one piece, there are no seams or other details that could rub or cause discomfort when worn.
- Breathable thanks to the use of functional yarns
- E.g. Hybrid Steppjacke Oregon + 3D-Knit Funktional shirt Pisa