TECHNICAL DATA SHEET

Spacer (3D sandwich) Mesh

Weight	220–350 g/m^2 (6.5–10.3 oz/yd^2)
Composition	100% polyester (durable monofilament polyester in the core); some versions use PES/elastane on the faces.
Knit type	Spacer (3D sandwich) mesh · Mesh & Net
Use class	Outer / structured
Stretch	Mechanical stretch
Knit	A three-layer sandwich (spacer) where two knit faces are joined by vertically knitted monofilament polyester pile yarns; an air gap forms in the middle.
Hand	Thick, full and sponge-like/springy; firm-balanced, low-stretch, stands upright.
Typical use	Padded sport panels/outerwear details · shoe uppers/padding · backpack back panels
Strength	Breathable cushioning without foam — it unites structure, padding and airflow in one fabric.
Watch for	Heavy and bulky; low in-plane stretch — recovery comes mostly from compression/loft; not for thin, fluid-draping garments.

CERTIFICATIONS

ISO 9001 · ISO 14001 · ISO 45001 · OEKO-TEX STEP · STANDARD 100 · GRS · RCS

Width, gauge, finishing options and test standards are shared on request.

Typical technical ranges

Weight tolerance	±5% (typical, dense/fine mesh); coarse open sports net and jacquard can run ±5–7% due to hole size/spacing and heat-set width-opening (very coarse builds may locally exceed ±7%)
Width	Open width typically ~150–190 cm; tubular ~30–100 cm. Spacer (double-bed) and jacquard on narrow machines usually sit near the low end. Exact width depends on machine diameter/needle count and finishing/heat-set set
Shrinkage (wash)	Up to ±3% after wash (with good heat-set usually ±1–3%); open/loose circular-knit net can reach ±4–5%, mainly lengthwise, with length/width difference being normal. PES has inherently low hygroscopic shrink; the main source is knit-tension relaxation, so it tracks heat-set quality
Color fastness	Wash 4–5, rubbing (dry) 4–5 / wet 3–4, light 4–6 (min grade). Disperse-dyed PES is generally good; deep/bright shades can sit near the low end for wet rub and perspiration
Abrasion / pilling	Typical Martindale ~15,000–40,000+ cycles; dense/fine builds (bird's-eye, jacquard, spacer) toward the top, coarse open net toward the bottom (on coarse open net, Martindale over the holes is of limited representativeness). Pilling typically 3–4 (filament PES sheds little fuzz). Main risk is snagging/laddering at large holes — not fuzzy pilling
Gauge / yarn	Typical machine gauge ~E18–E28 (coarse sports net E18–E22, fine lining/bird's-eye mesh E24–E28; spacer double-bed machines are a separate class). Yarn typically ~50–150 denier filament PES; fine microfilament lining mesh 50–75 den, structural/spacer heavier

These ranges are industry-TYPICAL / indicative values based on construction and fiber, not Fersan's binding QC measurements. Exact values are confirmed per order, approved sample and lot-based QC report.

Related reading: **Mesh and Piqué: Breathable Polyester Knits** · **Moisture-Wicking Finishing in Polyester Knits** · **Piqué, Bird's-Eye and Mesh: The Anatomy of Breathable Polyester Knits** · **The Physics of Moisture Transport: Capillarity and MMT**