

OUTSOLE

This is where the rubber hits the road. Generally, the outsole is made of a generic rubber compound and must be both flexible and durable. Different colors may signify different textures or densities of rubber. For example, rubber may be thicker in the heel than in the forefoot.

- **FLEXGROOVES:** Areas in the forefoot of the outsole that allow the forefoot to flex easily when walking and running.
- **HERRINGBONE TREAD** (zig-zag pattern): A fishbone-like tread pattern in the rubber of the outsole. Designed for self-cleaning, herringbone patterns release clay from the grooves when the shoe is flexed.
- **HARDCOURT TREAD:** More about durability than tread patterns, hardcourt treads can have a combination of herringbone and added thicknesses in the ball-of-foot and medial heel areas.
- **SHANK:** Located under the midfoot or arch area of the foot for support, the shank is often made of Thermal Plastic Urethane. Some shoes use a shank plate or TPU, attempting to reduce weight and retain torsional rigidity while other shoes just fill the shank area with EVA.

MIDSOLE

Providing knees with more comfort the midsole is a shoe's predominant cushion support. The softer section sandwiched between the outsole and upper, the midsole can consist of several densities and materials such as:

- **EVA (Ethyl Vinyl Acetate):** The most common form of midsole cushioning, an EVA midsole helps reduce a shoe's weight. The trade-off is that the material tends to break down faster than Polyurethane, but not significantly. EVA usually falls within two categories: Sheet EVA is typically used on lower end, less expensive shoes that are cup sole construction (\$50 and less); molded EVA enhances a shoe's appearance because it is compressed into a more stable, permanent shape and typically used in shoes priced \$55 and higher.
- **PU (Polyurethane):** This material is stronger, more durable and lasts longer than EVA, but adds weight. It is also prone to yellowing and hardening and breaks down with water.

