

Record breakers running on air

Achieving record-breaking sprint speeds requires more than just athletic ability – external factors such as climate, clothing and running surface have a crucial influence on the transfer of power from legs to track and the ease with which the athlete is propelled forwards

FOOTWEAR

Lightweight shoe

Spikes on ball of foot up to 9mm long allow efficient transfer of force

Thin sole gives better feeling of direct contact with track

Shoes fit tightly and are worn without socks to prevent sliding

CLIMATE: Higher altitudes and dry, warm conditions reduce density of air and lower air resistance

Typical August temperature in Helsinki – average 21°C – 70% humidity and low altitude of 20m likely to result in high air resistance

SURFACE: Hard track aids transfer of power in sprint
Non-slip embossed surface

Closed-cell isoprene rubber

Mondo Sportflex – cost \$55/m²

13mm

Asphalt

Compression and return

Different elasticity between two layers aids shock absorption and release of energy in elastic return

Even track deformation allows muscles to perform using “motor-memory”

New Helsinki track identical to that in Athens – where Asafa Powell set new 100m record in June