In addition to providing a protective barrier between athletes’ bodies and the environment, Sportswear is one of the important parameters that affect their performance. Balancing the change in body temperature depending on the level of activity is of great importance in athlete performance. Perspiration is the most important mechanism for the removal of the high heat generated by the rise of body temperature from the body and for maintaining thermal balance. In this scope, the heat, moisture conduction and air permeability properties of the fabric constituting the sports garment and the ability to transmit heat and moisture from the human body surface to the environment are important factors in establishing this balance. In this study, a sweating index was formed in order to evaluate the effects of the above factors on athlete sweating. The relationship between a sweating index containing thermophysical comfort properties (water vapor resistance, liquid moisture transfer property, air permeability and thermal resistance) and sweating rates after activity was investigated by objective measurements and subjective trials. Using knitted fabrics containing high elastane ratio, sleeveless T-shirts were sewn in a specified pattern and dressed to the participants and running on a treadmill for 15 minutes at a speed of 9 km / h. The differences between the weights of the t-shirts and the pre-activity t-shirt weights were compared and the sweat weights absorbed by the garments were compared. The relationship between perspiration index and sweat weight was investigated and it was understood that the perspiration index created by using thermophysical properties of fabrics could give an idea about athlete sweating.