Using radiation in industry and medicine brings its hazardous effects. On account of this, people have started to be exposed to extra radiation. Thus radiation protection is developed in parallel with the utilization of radiation. In order to be protected from radiation three different criteria have to be taken into account, these are time, distance and the shielding. Shielding is the most effective way. An effective shield should cause a large energy loss on a small distance without emission of more hazardous radiation. In the world, more than three-hundred nuclear facilities have been used to fulfill the needs in the fields of scientific research, energy, agriculture and industry. In addition to this in medical centres radiation beams have been used for treatment and diagnosis. It is extremely important to protect the human body from radioactive rays. Barite is a mineral which can be used for shielding because of barium, which is a high atomic number element. The shielding property of barite is utilized in fabrics. Barite coated fabrics having characteristics of retaining radiation was obtained by penetrating barite into the fabrics via coating method. The linear attenuation coefficients (\(\mu\)) of the coated barite fabrics were measured at the photon energies of 662, 1173 and 1332 keV obtained from 137Cs and 60Co ?-ray sources, respectively. As detailed elsewhere, the measurement has been performed using the gamma spectrometer that contains NaI (Tl) connected to 16k channels multi-channel-analyser. In this study, cotton polyester blend fabric was used. To apply barite mineral to fabric via coating method, it was grinded to a size of 2–10 microns by using jaw crushers. FK 800/N type transparent compound was used as adhesive. The coated fabrics were prepared with different volumes of barite. For this purposes four different types of fabrics have been produced, where the rate of barite was 0%, 40%, 50% and 60%. The results of experiments show that barite coated fabrics have blocked radiation. When barite ratio increases, the amount of absorbed radiation also increases.