In all areas of our daily life, we have exposed to radiation from both natural ways and technological developments. We can’t remove radiation from our lives, that’s why we should look for ways to minimize the harmful effects of radiation. In order to absorb the radiation beam armour panel wall partitions are used. For the contemporary requirements of our century; not burden to concrete structures, aesthetic, contemporary looking and when necessary demountable wall systems using has become inevitable. The partition wall systems are according to the design workspace, fastly and economically dividing modular wall systems. Nowadays it is often used plaster partition walls. But lead is placed between plaster partition walls for radiation shielding in the intense radiation exposed buildings. Not burden to structures alternative solutions must be found to lead because of hampered by the application of lead, damage to human health etc. In this investigation, plastering coatings produced with barite which is highly radiation proof. The compressive strength, flexural strength and radiation repellent properties have been investigated of plaster coatings with barite aggregate.