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Volcanic rocks and carbonates; the two common aggregate resources of Hungary

Á. Török

Budapest University of Technology and Economics, Department of Construction Materials and Engineering Geology, H-1111 Budapest, Stoczek u. 2, Hungary, torokakos@mail.bme.hu

Due to the geological built up of Hungary; the country has limited geological resources with respect to raw materials. Hard workable stones are located in relatively small hilly regions in central western, in northern and in southern Hungary since most part of present Hungary are covered by soft Quaternary sediments. Despite the limited occurrences of solid rocks there are several areas where workable reserves of aggregates are found. From geological point of view aggregate resources can be divided into two main groups: volcanic rocks and carbonates including limestones and dolomites. Eocene and Miocene andesitic and Miocene rhyolitic volcanic rocks are found in central western, northern, north eastern and southern Hungary providing good quality crushed stones for construction industry, road and railway development. Pliocene and Pleistocene basalts are mostly known from the area of Balaton Highland (central western Hungary), where operating quarries are facing to environmental concerns, since many of these are located in the vicinity of a National Park. Workable metamorphic and plutonic igneous rocks are underrepresented in Hungary. Limited occurrences of granite and gabbro are not used as aggregates any more, especially due to environmental considerations. Triassic compact limestones and dolomites are the most widely used raw materials. The workable stones belong to Upper Triassic Dachstein Limestone Formation, the Main Dolomite Formation and a few Middle Triassic limestone and dolomite formations. The quarries are mostly found in Transdanubian Central Range (Central Hungary) and in Bükk Mountains (NE Hungary). Middle Triassic Muschelkalk-type carbonates, Jurassic and Cretaceous limestone quarries are located in southern Hungary in Mecsek and Villány Mountains. Crushed stones are sparsely applied as aggregate in concrete since gravel deposits are more widespread throughout the low-lying country. The use of dimension stone quarry by-products as

aggregates is also very limited in Hungary and recycling of former stone quarry damp sites is not in common practice, yet.