



Muris Mujkić<sup>1</sup>

Nikica Marković<sup>2</sup>

Reuf Kadrić<sup>3</sup>

## **GEOLOŠKE OSOBINE ULAZNOG PORTALNOG PREDUSJEKA TUNELA PEČUJ**

### **Sažetak:**

Tunel Pečuj je dio zeničke zaobilaznice, koridora Vc i gradi se kao dvocijevni tunel, po jedna cijev za svaki smjer. Ulazni portal tunela Pečuj nalazi se na vrlo strmom terenu gdje formira usjek složenog oblika. Maksimalna visina kosine predusjeka iznosi do 30,0m. Složenost portalnog predusjeka povećavaju složeni inženjerskogeološki uslovi i strukturno tektonski odnosi masiva u kome je izведен portal. Ulazni portal tunela Pečuj izvodi se u sedimentima jursko krednog fliša (JK), tzv. Subgrupe Vranduk. Na ovom dijelu fliš je predstavljen uslojenim silikatnim pješčarima, laporima i škriljcima. Odnos mehko-tvrde stijene je promjenjiv. Jasno je izražen heterogen litološki sastav, promjenjiv stepen dijageneze zastupljenih litoloskih članova i promjenjiv stepen podložnosti vremenskim uslovima. Na ovom području teren pripada pojusu Unutrašnjih Dinarida i odlikuje se složenom strukturno-tektonskom građom. Tektonska jedinica jursko-krednog fliša predstavlja rub nabornog fliša tako da su naslage u ovom dijelu snažno tektonizirane. Zbog toga su primarni odnosi u sedimentima očuvani samo mjestimično. Pravilno predstavljeni odnosi u stijenskom masivu kao što su složena geološka građa, promjenjivi inženjerskogeološki uslovi, složeni strukturno-tektonski uslovi, poslužili su kao osnova za definisanju potrebnih geotehničkih mjera zaštite kosina portalnog usjeka tunela Pečuj.

### **Ključne riječi:**

Ulazni portal, jursko-kredni fliš, složena građa, inženjerskogeološki uslovi, strukturno-tektonski uslovi.

## **GEOLOGICAL CHARACTERISTICS OF ENTRANCE PORTAL PRE-CUT, TUNNEL PECUJ**

### **Summary:**

Tunnel Pecuj is part of the Zenica bypass, Corridor Vc and is built as a two-tube tunnel, one tube for each direction. The entrance portal of tunnel Pecuj is located on a very steep slope where he forms a side cut of complex shape. The maximum height of the slope side cut is 30,00m. The complexity of the portal cut increases a quite complex engineering-geological conditions, and structural tectonic relations of the massif in which the portal had been made. The entrance portal of tunnel Pecuj has been performed in sediments of Jurassic Cretaceous flysch (JC), so-called. Subgroup Vranduk. In this part, the flysch is presented with layered silicate sandstone, marl and shale. The relation of soft-hard rocks is variable. There is a clear heterogeneous lithological composition, a variable degree of diagenase of the represented lithological members, and a variable degree of susceptibility to weather conditions. In this area, the terrain belongs to the belt of the Inner Dinarides and is characterized by a complex structural-tectonic structure. Because of this, the primary relations in sediments are only partly preserved. Properly presented relations in rock masses such as complex geological structure, variable engineering geological conditions, complex structural and tectonic conditions, served as a basis for defining the necessary geotechnical measures for protection of slopes of the tunnel Pecuj side cut.

### **Key words:**

Entrance portal, Jurassic Cretaceous flysch, complex structure, engineering geological conditions, structural-tectonic conditions.

<sup>1</sup> Muris Mujkić, dipl.inž.geol., EURO-ASFALT d.o.o., Rajlovac bb, Sarajevo, Bosnia and Herzegovina, murism79@gmail.com

<sup>2</sup> mr. Nikica Marković, dipl.inž.rud., EURO-ASFALT d.o.o., Rajlovac bb, Sarajevo, Bosnia and Herzegovina, nikica.markovic79@gmail.com

<sup>3</sup> Reuf Kadrić, dipl.inž.rud., JP Autoceste FBIH, Dubrovačka 6, Sarajevo, Bosnia and Herzegovina, k.reuf@jpautocest.ba