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SAŽETAK

Istraživanje utroška energije kod rezanja arhitektonsko-građevnoga kamena

U industriji arhitektonsko-građevnoga kamena važno je predvidjeti utrošak energije kod njegova rezanja. Utvrđivanje odnosa strojnih varijabli s tim utroškom važan je postupak. Konstruirani su ispitni, laboratorijski rezači strojevi s mogućnošću promjene radnih varijabli. Prikupljeni rezultati statistički su analizirani usporedbom s potrošnjom energije. Testiranje je načinjeno na sedam uzoraka karbonatnih stijena, uz različite vrijednosti dubine zarezivanja, jakosti i brzine. Tako je dobiven model utroška energije, postavljen u odnosu na svaku promatranu, nezavisnu varijablu. Statistička analiza načinjena je paketom SPSS. U njoj su primijenjeni t-test i F-test. Vrijednosti predviđene takvim modelom prikazane su dijagramom raspršenja. Rezultati su vrlo bliski linearnom modelu predstavljenom pravcem pod kutom od 45 stupnjeva. Takav model odlikuje se visokim stupnjem točnosti te korelacije između predviđenih i opaženih vrijednosti. Stoga on može biti korišten za izračun utroška energije uz različite ulazne varijable.

Ključne riječi:

utrošak energije, brzina punjenja, periferna brzina, dubina urezivanja, SPSS, arhitektonsko-građevni kamen

Authors' contribution

Reza Mikaeil (Associate Professor): initializing the idea, completing literature review and participating in all work stages such providing rock samples, running experimental tests and data analysis. **Babak Sohrabian** (Assistant Professor): executing experimental tests, data analysis and test of its accuracy and helping with field work. **Mohammad Ataei** (Full Professor): managing the whole process and supervising it from the beginning to the end.