

LOAD-BEARING CAPACITY OF SOLID TIMBER BEAMS WITH SMALL CROSS SECTION HEIGHT STRENGTHENED WITH COMPOSITE SHEETS

NOŚNOŚĆ NA ZGINANIE LITYCH BELEK O NISKIM PRZEKROJU POPRZECZNYM WZMOCNIONYCH MATAMI KOMPOZYTOWYMI

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Abstract

The paper presents the results of experimental tests focused on strengthening a solid pine beams with lightweight plastics. Glass fiber reinforced sheets S&P G-Sheet E 90/10 B and carbon fiber reinforced sheets S&P C-Sheet 240 applied to the soffit of the element were used as a reinforcement. The four point bending strength test were carried out on the laboratory scale elements. Test results indicated a significant increase in ductile behavior as well as increase in load bearing capacity of beams.

Streszczenie

W pracy przedstawione zostały wyniki próby wzmocnienia litych belek sosnowych wykorzystując lekkie tworzywa sztuczne. Zbrojenie stanowiły maty zbrojonej włóknem szklanym S&P G-Sheet E 90/10 B oraz maty z włóknem węglowym S&P C-Sheet 240 przyklejone do podbitki elementów. Próby te przeprowadzone zostały na elementach w skali laboratoryjnej poddanych czteropunktowemu zginaniu. Wyniki badań wskazały na istotny wzrost ciągliwości elementów oraz przyrost wytrzymałości na zginanie.

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