Anchorage of FRP strengthening systems where the deformation perpendicular to the FRP material is restrained or a compressive force is applied on the strengthening, seems to provide ductility, increased utilization of the FRP and failure modes which can be controlled through the anchorage method. This paper presents theoretical model which can predict the response of transversely compressed and restrained single- and double lap shear joints. The interface material model is based on a cohesive law in the shear-slip plane with a descending branch and a uniform frictional stress added due to the friction in the crack, emanating from the transverse pressure or restraint. The theoretical model is compared with experimental results from transversely compressed single- and double shear joints. Also theoretical predictions of a mechanical integrated sleeve-wedge anchorage load capacity are carried out and compared with tests. It is seen that the theory correlates well with the experimental results.

General information
State: Published
Organisations: Department of Civil Engineering, Section for Building Design, Section for Structural Engineering
Contributors: Schmidt, J. W., Hansen, C. S.
Number of pages: 10
Publication date: 2013

Host publication information
Title of host publication: Proceedings of the 11th International symposium on fiber reinforced polymers for reinforced concrete structures
Keywords: Analytical analysis, Reinforced concrete, Debonding, Structural design, Laminate, CFRP, Flexural strengthening, Joint, Bond tests
Electronic versions:
prod21377761895476.03_593_J.Schmidt_al_Paper.pdf

Bibliographical note
© UM, Guimarães, 2013
Source: dtu
Source-ID: u::8544
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013