



Experimental Behaviour of Structural Size Glued Laminated Guadua Bamboo Members

<https://research.thinkwood.com/en/permalink/catalogue528>

Author: Correal, Juan
Echeverry, Juan
Yamin, Luis
Ramirez, Fernando

Year of Publication: 2014

Format: Conference Paper

Material: Other Materials

Application: Beams
Columns

Topic: Mechanical Properties

Keywords: Bending Strength
Flexural Tests
Compression Tests

Conference: World Conference on Timber Engineering

Research Status: Complete

Notes: August 10-14, 2014, Quebec City, Canada

Summary:

This study presents the experimental evaluation of the behaviour of beams and columns made of Glued Laminated Guadua (GLG) bamboo. Flexural tests were conducted on structural size beams of various span lengths and two lamination orientations (horizontal and vertical) in order to evaluate the different capacities achieved according to the predominant induced stresses, bending or shear. Experimental results indicated a reduction of bending strength as the member's size increased whereas lamination in the vertical direction presented 12% higher values of modulus of rupture (MOR), and 9% higher values of modulus of elasticity (MOE) compared to equivalent results for lamination in the horizontal direction. Additionally, compression tests were performed on structural size columns with various slenderness ratios and two lamination orientations. Although minor differences were found for lamination orientation, lower capacities were observed as the slenderness ratio increased. This experimental data is expected to be used in order to propose adjustment factors for structural size beams as well as the determination of the column stability factor.

Online Access: Free

Resource Link

http://schr.ws/hosted_files/wcte2014/e6/ABS500_Correal_web.pdf