

ISBN	978-93-88122-14-6
Website	www.veltech.edu.in
Received	12-May-2020
Article ID	NISDCE215

VOL	01
eMail	nisdce@veltech.edu.in
Accepted	27-May-2020
eAID	2020.nisdce.215

## LINEAR ANALYSIS OF BRICK MASONRY PRISM USING ABAQUS

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**ABSTRACT:** In this study, the response of brick masonry specimen subjected to vertical loads is analytically calculated using existing formulas and numerically investigated using a popular software ABAQUS. For the analytical investigation purpose a small part of the old building which was constructed with brick masonry was taken as test specimen. It consists of three layers of brick and two layers of mortar. The height, width and thickness of the specimen is 245 mm, 220 mm, and 100 mm respectively. Macro and micro model of the specimen was developed using ABAQUS software. Vertical load from 0 to 30.0kN at interval of 3.0kN was applied on the specimen. It is very difficult to analyse for stresses of brick and mortar separately of brick masonry considering the effect of continuity of materials at the joints between brick and mortar. From the macro model deflections and stresses of brick masonry at design load were predicted and these values were compared with analytical calculations. From the micro model stresses in brick and mortar of masonry at design load were predicted independently and these values were compared with analytical calculations. It was found from the investigation, that the increase in stress and deflection are almost linear to the applied loads.

**Keywords:** Brick Masonry, Macro and Micro Model, ABAQUS

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