The Office of Technology Management
UNIVERSITY OF TEXAS ARLINGTON

Reinforcing Bar Support for Bond Beam Blocks

Tech ID: UTA 19-14

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TECHNOLOGY NEED
Concrete masonry unit lintels are typically constructed without the use of reinforcement bar supports. Lintels are U-shaped concrete masonry units that span the space or opening between two jamb supports, and require steel reinforcing bars embedded in coarse grout for tensile strength. Since lintel block units are solid along the bottom, the underside can be exposed at openings for doors or windows. Horizontal reinforcement with no reinforcing supports are commonly used in the construction of CMU lintel. The major drawback faced in the construction of CMU lintels is that if the ‘Building Code Requirements and Specifications for Masonry Structures’ developed by the Masonry Standard Joint Committee(MSJJC) are not followed completely, the outcome results in reduced load bearing capacity of the lintel beam, since the reinforcing bars are not properly embedded in the coarse grout fill.

INVENTION DESCRIPTION/SOLUTION
We have developed a castle rack positioner to provide proper rebar support to improve the performance of bond beams and meet the MSJC specification. Castle rack positioner is a chair, which could be used in bond beams to meet the Masonry Code specifications for the distance between the reinforcements and, also the thickness of concrete cover between the reinforcement and lintel unit. This design improves the flexible structural behavior in the concrete beams and improves the load bearing capacity.

APPLICATIONS
- Concrete lintel construction.

KEY BENEFITS
- Improved load bearing capacity.
- Improved ductility of concrete lintel.
- Adherence to codes and standards of MSJC.

STAGE OF DEVELOPMENT
Prototype
Extensive tests done

INTELLECTUAL PROPERTY STATUS
Patent issued - USD724418S