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# 带肋钢筋与混凝土间粘结滑移本构模型

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# ON BOND-SLIP CONSTITUTIVE MODEL BETWEEN RIBBED STEEL BARS AND CONCRETE

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全文: PDF (5161 KB) HTML (0 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 研究了带肋钢筋和混凝土之间的粘结滑移性能，推导了楔形体在尖部受集中力作用的位移解答，然后基于锥楔作用的受力机制建立了滑移量与位移边界条件的关系。根据拔出试验的破坏特征，将粘结滑移曲线的上升段按混凝土开裂与否分为两个阶段，分别采用不同的理论模型进行计算。理论模型中把滑移量作为位移边界条件引入，通过对滑移量的改变实现边界条件的变化，从而得出峰值粘结强度前各级滑移量下的粘结应力。分析了影响下降段的主要因素并拟合了呈负指数衰减规律的下降段。最后，将该文的理论本构模型与试验进行了对比、 分析。

关键词： 混凝土 粘结-滑移 弹性理论 带肋钢筋 锥楔作用

Abstract: This paper conducts a research into the bond-slip performance between ribbed steel bars and concrete and derives the displacement solution of a wedge-shaped body with a concentrated force at the tip, and then the relationship between the slip and boundary condition is established based on the wedging action. According to the failure characteristics of a pull-out process, the ascending branch of a bond-slip curve, divided into two stages characterized by whether concrete has been cracked or not, is obtained respectively based on different theoretical models. The slippage is introduced as a boundary condition in the theoretical models, and the variation of boundary conditions is achieved by changing the slippage, so bond stress before the peak value can be obtained at all levels of slippage. The primary factors of descending branch are analyzed; in addition, a negative exponential degrading law is fitted. Finally, the theoretical and the experimental results are compared and analyzed.

Key words: concrete bond-slip elastic theory ribbed bars wedging action

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