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New Model for Post-Fatigue Behaviour of CFRP to Concrete Bond Interface in Single Shear

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Notation

- b_c : The width of the concrete substrate beneath the FRP plate
- b_f : The width of the FRP plate
- c_1 : Constant obtained through calibration with test results
- D: Degradation factor
- E_f : Young's modulus of FRP plate
- f'_c : The concrete compressive strength
- f_{ct} : The concrete tensile strength
- G_f : The interfacial fracture energy
- k_0 : The stiffness of the adhesive layer
- k_b : Geometry factor depending on the width of the FRP sheets and the RC beam
- k_c : A constant = 1
- L_e : The effective bond length
- n: The number of FRP plate layers
- t_f : Thickness of FRP plate
- t_n , t_s and t_t : The contact stress components in the normal, the first and second tangential directions, respectively
- α : A constant = 0.9
- β_w : Width factor
- δ_t^f , δ_t^m and δ_t^0 : The values of the effective slip at complete failure

μ : Fatigue reduction factor

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