

Summary of Decisions of the Structural Engineering Committee  
SEC 08/2012 held on 29.03.2012

(a) Case 08/2012

Issue: Use of Polypropylene Fibres in concrete to replace the use of reinforcement mesh within the concrete cover of reinforced concrete linings for tunnel construction

Recommendation: The use of Monofilament Polypropylene (PP) Fibres (dosage 1 kg/m<sup>3</sup> of concrete) in concrete mix to replace the use of reinforcement mesh within the concrete cover which is more than 40mm thick as specified in Tables C & E of the Code of Practice for Fire Resisting Construction 1996 (FRC Code) for the precast and cast-in-situ reinforced concrete linings for tunnel construction be accepted subject to:

- (a) Fire test and assessment in accordance with BS476-20:1987 and BS476 21:1987 on the performance of PP fibres concrete under fire situation with respect to insulation, integrity and strength performance; and
- (b) Qualified supervision of the PP fibre concrete works including dosage, mixing and distribution by an experience and competent person should be provided to ensure works are carried out in accordance with the accepted plan and the required standards are complied with; and.
- (c) Post-fire investigation and assessment be conducted to ascertain the residual strength and fire-resisting capacity of the reinforced concrete tunnel lining after fire. The reinforced concrete lining shall be repaired and/or replaced according to the outcome of the post-fire assessment.

Decision: Noting RSE's justification insufficient, members did not endorse the recommendation.