

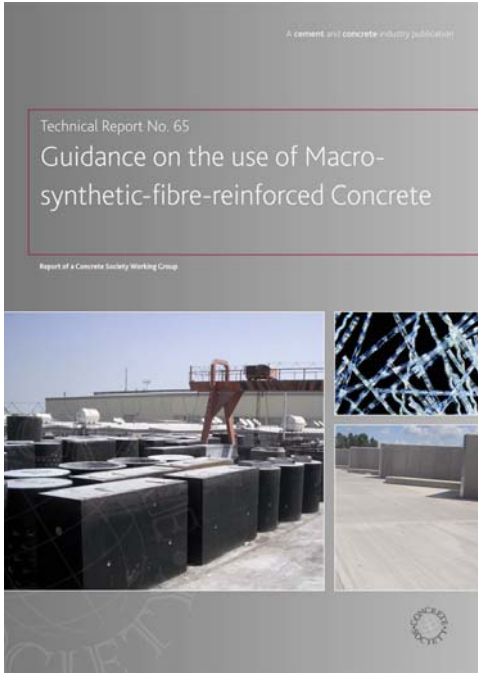


# THE CONCRETE SOCIETY

## Press Release

### New Technical Report - TR65 Guidance on the use of Macro-synthetic Fibre Reinforced Concrete

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The use of fibres in concrete as a replacement for nominal reinforcement is nothing new. Steel fibres are widely used in a range of applications, such as industrial floors, external paving, composite slabs on steel decking and sprayed concrete for tunnel lining. Further information is given in Concrete Society Technical Report 63, *Guidance for the design of steel-fibre-reinforced concrete*. Polypropylene micro fibres are also widely used, to enhance some of the properties of the wet or hardened concrete.

A recent innovation has been the development of macro synthetic fibres (sometimes referred to misleadingly as 'structural' synthetic fibres) that, unlike the micro fibres, give the concrete a significant post-cracking capacity, similar to that provided by steel fibres. They are starting to be used in a range of applications, including ground-supported slabs, coastal structures and sprayed tunnel linings.

Much of the development of the use of macro synthetic fibres has been by individual manufacturers, supported by a limited amount of published research. Concrete Society Technical Report 65, which was developed with the active support of fibre suppliers and a number of specialist designers and suppliers, is intended to provide some independent guidance on the use of macro synthetic fibres and review their use in construction. Given the stage of their development and the relatively limited experience of their use in service, the guidance is necessarily circumspect in some areas. Design methods are in their infancy but where possible the approaches being used have been outlined.

The Report is concerned mainly with Class II fibres under the European classification, i.e. those that have the potential to improve the post-cracking properties of the hardened concrete. Fine mono-filament, multi-filament or fibrillated fibres (Class I in the European definition), which may be used to control plastic shrinkage and to improve the fire performance, are not specifically included, though some mention is made of their use in combination with the macro synthetic fibres. Similarly, high modulus fibres such as carbon and aramid have not been included in this Report.

The Report is intended for designers, clients and users who are familiar with concrete containing conventional reinforcing bars or welded fabric, but who may have little experience of the use of fibres for improving the post-cracking properties of concrete. Where appropriate and applicable, comparisons are made with steel-fibre-reinforced concrete and with concrete containing conventional steel reinforcement, and an extensive list of references is included as a source of further information.