

# STRUCTURAL SCREED/ CONCRETE TOPPING FOR NHBC HOUSING

**This guidance refers to block and beam floors where the infill blocks are manufactured from polystyrene. NHBC Technical Extra Note 20. Details a change in the type of topping that can be used, the change only affects the reinforcement to be used.**

Where in the past micro fibres have been allowed instead of steel mesh reinforcement this is now no longer acceptable to NHBC; approved macro structural fibres or steel fibres are acceptable for use as reinforcement.

According to the guidance, structural toppings on insulating block and beam systems requiring approval by NHBC must use one of the following reinforcement options, this is mandatory;

- ▶ Macro 'structural' synthetic fibres
- ▶ Steel Fibres
- ▶ Steel Mesh Reinforcement

## **NHBC Technical Note 20 states the following**

In all situations where the cast in-situ concrete topping is required to perform the function of a structural screed, the reinforcement of the topping should consist of a welded mesh in accordance with BS EN 15037-1. Alternatively, cast in situ structural topping reinforced with polypropylene macro fibres or steel fibres may be acceptable to NHBC for residential suspended ground floor construction providing that the adequacy of the complete structural floor system (including beams, blocks and structural concrete screed) has been satisfactorily verified by calculation to BS EN 1992-1-1, together with full scale testing (detail to be agreed with NHBC prior to testing) by an appropriate independent technical approvals authority in accordance with NHBC Standards Technical Requirement R3.

## **AGGREGATE INDUSTRIES CONCRETE OPTIONS**

As a major supplier to the housing sector Aggregate Industries has developed a range of options for the housebuilder to select from and use in accordance with NHBC approved flooring systems.

### **HIGHPAVE (NHBC)**

A concrete containing macro structural fibre reinforcement with 3.84kg of polypropylene macro fibres. Highpave can be supplied in a range of consistence and strength requirements to suit your flooring system.

### **AGILIA H (NHBC)**

A self compacting structural topping can continue to be used in conjunction with steel mesh reinforcement.

Currently Aggregate Industries have the following fibre options available for this particular application;

- ▶ BBA Certified/NHBC Approved 3.84kg Macro Fibres
- ▶ BBA Certified/NHBC Approved 11.5kg Steel Fibres

Both of these are approved for use on structural toppings to beam & block house floors. We recommend using the Steel Fibre option in Agilia (self-compacting concrete) mixes as they produce a superior finish.



## AGGREGATE INDUSTRIES GUIDANCE NOTE

The guidance in this document should be applied to all homes registered with NHBC where the foundations are begun on or after 1st January 2017, however, we strongly encourage it to be adopted at the earliest opportunity.

This guidance will be kept under review to take account of additional test data etc. that may become available.

### REINFORCEMENT TO CONCRETE TOPPING ABOVE SUSPENDED BEAM AND BLOCK FLOORS

(for structural purposes or crack control only)

#### TABLE BELOW - FLOOR STRUCTURE(1) AND OPTIONS FOR REINFORCEMENT.

	Suspended concrete beam and concrete block floor			
	Micro-fibre (Class I)	Macro-fibre (Class II)	Steel fibre	Steel mesh
a) Load-bearing block with compressive strength $\geq 7\text{N/mm}^2$ or type SR or type RR [Declared by manufacturer]	✓	✓	✓	✓
b) Non load-bearing block	X	✓ <sup>(2)</sup>	? <sup>(3)</sup>	✓
	Suspended concrete beam and EPS/XPS block floor			
	Micro-fibre (Class I)	Macro-fibre (Class II)	Steel fibre	Steel mesh
a) Load-bearing block [Type R2 declared by manufacturer]	✓	✓	✓	✓
b) Non load-bearing block	X	✓ <sup>(2)</sup>	? <sup>(3)</sup>	✓

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#### NOTES:

Most commonly adopted types of floor construction.

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| <p>(1) This guidance is applicable to structural toppings and finishing screeds that are applied above beam and block floors, or where the beam and block floor is overlaid with insulation.</p> <p>(2) 3rd party certification or test evidence acceptable to NHBC is required.</p> <p>(3) 3rd party certification or test evidence acceptable to NHBC is required. Note: At the time of writing, NHBC are not aware of any products that hold suitable certification or test evidence for use in this situation.</p> | <p>✓ Acceptable to NHBC when used in accordance with manufacturer's technical literature, British Standards, 3rd party certification or test evidence, as applicable.</p> <p>X Not acceptable to NHBC. The structural capacity of concrete toppings reinforced with micro-fibres have not been verified to the satisfaction of NHBC, and are not supported by manufacturers' technical literature.</p> <p>? May be acceptable to NHBC. Refer to note (3).</p> |
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#### CONTACT US

Telephone: **01530 610098**  
 Email: **concrete@aggregate.com**