

User Guidelines

Durus[®] S400

Structural toppings
for Beam & Block flooring systems

Flooring
House Builders & Ground Workers
UK

Advice note on the use of Durus S400 in Structural toppings for Beam & Block flooring systems

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- **Durus S400**
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This document is intended as a step by step guide to help house building companies and ground workers order the correct concrete mix and, that the correct laying and finishing techniques are employed.

Concrete mix

The minimum grade of concrete specified for this application is a **C25/30** with a maximum aggregate size of 10 mm. We would recommend that the concrete should have a **minimum sand content of 47.5%** which will aid with the placing and finishing of the fibre entrained concrete mix.

Fibre type

The only **BBA approved** fibre for this system that currently meets with **NHBC** acceptance is **Durus S400** which is to be dosed at **4 kg/m³** of concrete. **Durus S400** complies with BS EN 14889-2 : 2006 and is accredited by the BBA who are the notified body and they have issued a certificate of constancy of performance 0836- CPR-14 / P006. All **BBA** certified systems must be tested with a macro fibre reinforced topping. **Durus S400** has been used in full scale structural testing and is approved for loading for both residential and communal projects.

Workability

The choice of workability is down to the company tasked with actually laying and finishing the structural concrete topping.

The suggested workability is as follows:

- Flowing Concrete: **Slump Flow SF1, SF 2**
- Normal Concrete: we would suggest a target slump of consistence **Class S3** (100 - 150 mm) or **S4** (160 - 210 mm).

It is not advisable to order a low workability concrete and then to add excessive amounts of water on site. This will cause the concrete to suffer from excessive bleed, segregation and lead to excessive surface dusting and a poor quality surface finish.



Durus S400 Macro fibre concrete mix



Fibre type Durus S400



Durus S400 Concrete being poured



Concrete Flow test to ensure workability

Levelling and finishing the concrete

The concrete ground worker must decide on which method to use when getting the levels for the concrete topping.

SF1 & SF2

For concrete using **SF1 & SF2** the concrete should be **dappled** as soon as is practically possible. It is also possible to **skip float the surface** of the concrete 20 - 40 minutes after the concrete has been laid and this will help to make the surface flat and reduce the number of fibres that may protrude at the surface of the concrete.

S3 & S4

For concrete using a target workability of consistence **class S3** (100 - 150 mm) or **S4** (160 - 210 mm) the concrete should be placed and can be **compacted** with a **wooden tamp, bunion tube, beam compaction or magic screeder**. Other similar equipment can also be used.

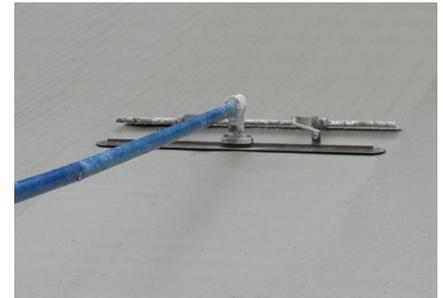
After compaction the concrete should be **skip floated**. This operation will help to push any surface fibres down into the concrete and help create a flat smooth finish. If desired, the concrete can then be panned and power floated to give a final finish.

Curing the concrete

For these structural toppings we would suggest that the concrete is cured as soon as is practically possible using a proprietary spray applied membrane forming compound.



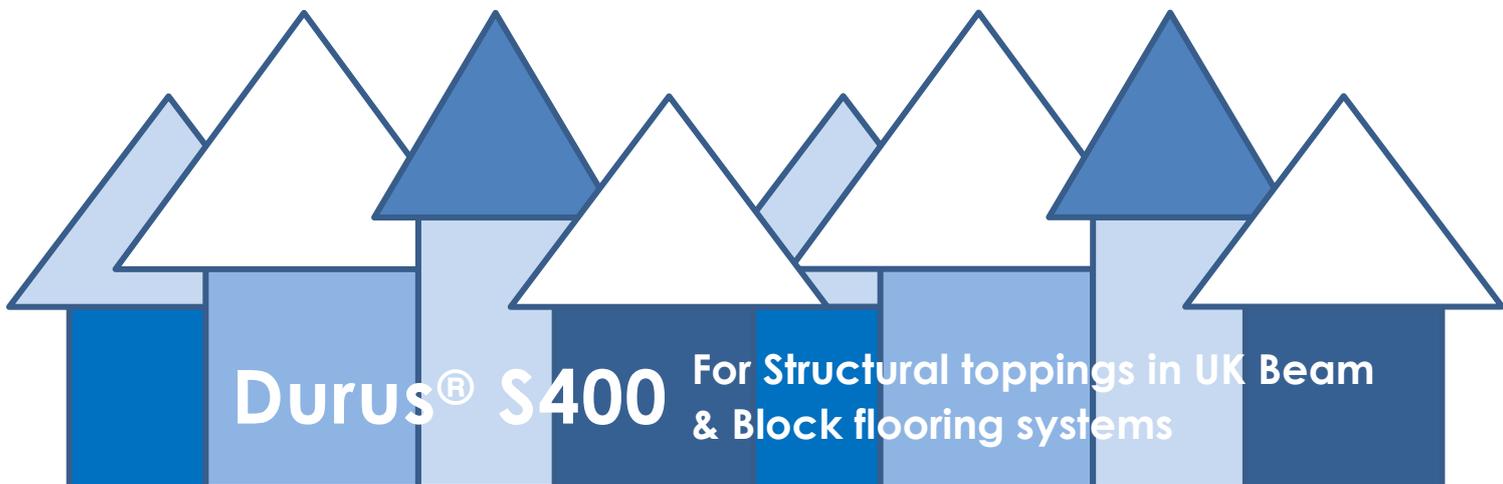
Dappled finishing of Concrete



Skip Float finish pushing down any surface fibres.



Always apply a suitable Curing Agent



Durus® S400 For Structural toppings in UK Beam & Block flooring systems

