



TECHNICAL BULLETIN #3

SAMICel Cellulose Fibre

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Description

SAMICel is a cellulose fibre product, which is used as a stabilising agent in the manufacture of Stone Mastic Asphalt (SMA), SAMI's FricSeal, and other asphalt mixes such as porous asphalt (open-graded asphaltic concrete). It is produced from long wood based cellulose fibres, which have very strong absorbent capabilities. SAMICel fibres absorb a significant amount of the free binder within the mix, which results in a coating of uniform binder film thickness around the aggregate surfaces.

Benefits

The inclusion of SAMICel avoids the problems of binder drainage or "drain-down" through the material during transportation from production plant to site, and also during the paving operation and compaction of the mix. Generally 0.3% (by weight) is added during the manufacturing process. This results in the stability of the binder coating on the aggregate, and ensures the binder is held in suspension within the voids throughout the laying operation and continues to do so throughout the operational life of the mix.

Application

SAMICel bulk pellets are supplied in recyclable bags containing 300kgs. In this form the pellets are ideally suited to drum plants (continuous mix) plants. The pellets are fed into the mix by an auger system from a hopper. The auger feed system is calibrated to ensure the correct amount of pellets are introduced into the production of the mix.

SAMICel bagged pellets are packaged in 3kg bags for use in batch plants, and are added to the pugmill at the start of the dry mixing cycle. Mixing time is increased by 5 – 15 seconds for both the dry and wet cycles to ensure even distribution of the fibre. The polyethylene bags melt at relatively low temperature and have no effect on the binder, or the end product.

Temperature

The manufacturing temperature of the mix must be kept below 180°C otherwise damage to the fibres will result. If the temperature of the mix is too high fuming may occur.

Typical Properties

| | |
|-------------------------|---------------------------|
| Structure | Greyish, long fibres |
| Apparenty Density | 25 - 35 g/l |
| Maximum Fibre Length | 5000 μm |
| Average Fibre Length | 1000 - 1200 μm |
| Average Fibre Diameter | 25 - 45 μm |
| Bulk Density of Pellets | 0.25 – 0.35 |

Packaging

SAMlcel pellets are supplied in 300kg bulk bags and in 3kg plastic meltable bags packaged on pallets (351kgs per pallet).

SAMlcel can also be packaged in to other bag sizes of 1kg, 4.5kg and 9kg. Packaging of these sizes are not standard and are done so by special arrangement only.

Bulk SAMlcel is recommended for use in drum (continuous mix) plants, and the 3kg bagged pellets are suited for batch plants.

Storage

SAMlcel has an indefinite storage life and should at all times be kept dry and stored under cover.

NOTE: *Whilst every care is taken in the preparation of this bulletin, no responsibility is accepted for the interpretation of the information contained herein, nor is any warranty expressed or implied for the suitability of the material for a particular application.*