for Better Quality & Durability

CONSTRUCTION POLYPROPYLENE FIBRES – CPP

For ages fibres have been used in construction industry. Old houses, made of mud but reinforced by straw, have stood against various natural calamities. Historical evidences prove the usage of hair of various animals particularly of horse mane in the construction of monuments and palaces.

XETEX Industries Pvt. Ltd. offers a wide range of high strength synthetic fibres which are readily available and easy to use. Depending on the requirement, one can chose among the various types of fibres available.

TYPES OF THE FIBRES

CPP06 :These are polypropylene fibres with 6 mm cut length. They are mainly used in plasters. Suitable care has been taken to insure dispersion of fibres for hand mixing of mortar.

CPP12 : These are polypropylene fibres with 12 mm cut length. They are used in mortar mix where the thickness of the application of the mortar is 15 mm or more. They are suitable for initial coat of plaster, waterproofing of structure. They are also added in concrete mix for additional reinforcement.

CPP24 :These are polypropylene fibres with 23 – 25 mm cut length. They are used in concrete. The long length of fibre holds together different components of concrete together. Necessary care has been taken for proper dispersin of fibres in the concrete mixing machines.

CPPST: These are graded (mixed length) polypropylene (PP) synthetic fibers suitable for various concrete structural works. It is a blend of CPP24 & CPP40. Being longer than maximum size of aggregate, each and every strand of fiber is effective.

ADVANTAGE

- ✓ Concrete possesses high compressible strength but it is very brittle and weak in tension. Unlike traditional steel bars, **CETEX** fibres are uniformly distributed throughout the concrete mix and they become an integral part of the concrete. The fibers form network of reinforcement that reaches every cubic inch of the concrete section for uniform 3-dimensional reinforcement. Additional reinforcement results in increase in strength. Hence it is ideal for seismic designs and high strength concrete.

- ✓ Cracks are caused mainly because of plastic shrinkage or thermal stress due to fluctuation in ambient temperature. Use of **CETEX** fibres results in substantial reduction in crack formation by discouraging the segregation of the ingredients while adding tensile strength to plastic concrete. These fibres control formation of micro cracks by absorbing the stresses, which if left unchecked, results in larger cracks. This is achieved by dispersion of millions of **CETEX** fibres which form a high strength 3-dimensional reinforcement network. This reduction or elimination of plastic cracks enables the concrete to develop its optimum long-term integrity.

- ✓ Water permeability decreases due to the reduction in formation of micro cracks. The formation of 3-dimensional network of **CETEX** fibres in the cast, reduces water migration in it.

- ✓ **CETEX** fibres hold together fine particles of sand, cement and stone chips. This increases the abrasion and impact resistance when exposed to excessive wear from tyres, foot movement, impact forces, etc.

- ✓ **CETEX** fibres provide increased adhesion and reduce the rebound 'splattering' during plastering, shotcrete and guniting. This results in increased coverage in the first attempt, thereby it reduces the wastage of material and labour time. Moreover, thicker layers of concrete can be applied in one pass.

- ✓ Another advantage of **CETEX** fibres is their ability to mitigate the explosive tendency of concrete during fires, because they melt and relieve volatile steam pressure in concrete. When used in plaster mortar, **CETEX** fibres provide a 3- dimensional reinforcement, unlike chicken mesh which provides 2-dimensional reinforcement.

- ✓ In applications where aesthetics are especially important, one can choose **CETEX** fibres. It gives smooth finish with common tools; any fibers which might appear on the surface are quickly worn away by foot or vehicle traffic.

- ✓ Its safe and easy to use and cost effective. Its usage does not require any installation of extra machinery. It can be added directly to the concrete mixture of RMC truck. In certain applications one can do away with the wielded wire mesh, there it does not require fabrication or forming, and hence no generation of scraps. This results in lower labour and in-place costs and reduced liability, thus saving construction time-quicker pouring schedule.

- ✓ **CETEX** fibres are environment friendly and non-hazardous.

WHY USE CETEX FIBRE?

CETEX fibres are specially made from pure and virgin polypropylene. The polypropylene fibers are hydrophobic, which do not absorb the water, and are non-corrosive. Moreover, CETEX - Polypropylene Fibers have the excellent resistances against alkalis, chemicals and chloride, and have the low heat conductivity. By these characteristics polypropylene fibers have therefore no significant effect on the water demand of the fresh concrete. They do not intervene the hydration of cement and do not influence unfavorably the effects of all constituents in the concrete mixture.

Polyproplene is the lightest synthetic polymer. Hence the count of fibre for a given weight is maximum in case of polypropylene. It is 52% lighter than polyester and 26% lighter than nylon and acrylic. Hence polyproplylene fibres are ideal for reinforcement.

CETEX PP fibers are easy to use and they disperse easily.

Note: The addition of fibers to a given mix may appear to decrease the slump. The workability, however, will not be affected and additional water should not be added.