TECHNICAL TEXTILES – PART XXI

REF: TT/ APR 2022/ WK 1

BuildTech or Construction Textile (Continued)

Few examples of application areas of construction textile in permanent, semi-permanent and temporary set ups are:

- **Hoardings / Signages** - These are made of translucent flexible textile substrate called flexible-face sign fabric. Flexible-face sign fabric, also known as flex was developed as an alternative to rigid-faced substrates like acrylic, plastic and polycarbonates. Besides hoardings, this material is also used in light boxes, trade show displays and other static out of home advertising. Flex is made of a PVC coated polyester warp knitted fabric. The fabric is made from high tenacity polyester filament yarn of denier. The fabric is coated with PVC and surface treated with lacquer. The material has the features like light transmission, printability, UV resistance, heat sealability, mildew resistance, anti-wicking.
- **Tarpaulin** - A tarpaulin is a large sheet of strong, flexible, water resistant or waterproof material. Traditionally tarpaulins were made out of cotton, now nylon and polyester fiber fabrics are also being increasingly used. Tarpaulin is used for rain water protection in sheds, transportation - trucks and other automobiles, storage go downs, construction sites, grain storage, temporary storages, tents, etc. Tarpaulins are sheets made out of polyethylene, cotton canvas, jute, etc. Polyethylene tarpaulin is also known as HDPE tarpaulin, laminated tarpaulin, plastic tarpaulin, etc.

Fig 1.1 Tarpaulin
Ref: safetynet.co.in

- **Architectural textiles –** Architectural textiles are fabric-reinforced membranes used in buildings and constructions of static enclosed environments. The applications of architectural membranes

include construction of permanent and semi-permanent structures like car park covers, walkways, outdoor entertainment areas, pool surrounds, stadiums, sports halls, exhibitions, display halls etc. Architectural membranes are strong, energy efficient and aesthetically superior products.

The textile material used for construction purpose should be waterproof, fire retardant, and resistant to deformation and extension under tension, resistant to abrasion and mechanical damage, resistant to sunlight, air, wind acid rain and microbial attack. Architectural textile material should be designed with the desired level of translucency with UV-blocking agents specific to a regions' climate. So that it allows natural light to enter the structure which reduces the need for artificial lighting as well as lowering energy costs.

Seismic forces are proportional to a structure's mass. Heavy steel and concrete structures experience large forces in the earthquake whereas architectural textile materials have high strength-to-weight ratios. Therefore, properly designed fabric-based structures perform well during seismic activity or earthquake. Architectural textiles are also used in civil engineering for temporary and permanent structures.

- **Scaffolding nets** - Scaffolding nets are used mainly to protect the construction from weather and failing debris from height. The lightweight netting is manufactured from high density polyethylene monofilaments and its main features are –high strength, withstanding harsh climate and durability.

Fig 1.1 Scaffolding nets

Ref: indiamart.com

References:

1. https://www.technicaltextile.net/
2. http://bch.in/
3. http://ittaindia.org/
4. https://textilevaluechain.in

.....To be continued.....

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Last week`s Answers: 1) CONCRETE 2) DURABILITY 3) UNDERGOING 4) ELONGATION

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