

Tensile Roof Structure

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Abstract: Membrane Structures are highly popular in architectural design now a days. There is trend of using membrane structures. It satisfies both attractive architect's design as well as structural design. The preliminary type of structure most commonly used by man was Tents. As the name suggests, Tension fabric structures utilize fabric in complete tension, as a primary building material. Every part of structure is loaded only in tension with no requirement to resist bending or compression. Soap film model is the classic example of Tensile Structures. Assembly of tensile membrane structures creates a unique structural system, indeterminate in its behavior and nonlinear in its deflection patterns. Tensile structures are gaining popularity due to their light weight, structural efficiency, serviceability, aesthetic appearance, installation and dismantling feasibility, climate regulation effects and less maintenance expenditures. Due to its light weight and stretch property, they can be used on places such as stadiums, large parking etc. Computer aids like Form Finder, Dlubal RFEM and AutoCAD is used for modeling and analysis.

Keywords: Tensile membrane Structures, Material, Form-Finding, Analysis, Dlubal RFEM

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