

RESEARCH

## TEXTILE HYBRID M1 THE WIND RESPONSE

REPORT

## TENS-SCL 2012 SPEEDKITS

PROJECTS

Foil constructions fit  
for the highest mountains

SÖLDEN, AUSTRIA

The new Energy  
Efficiency Center

WÜRZBURG, GERMANY



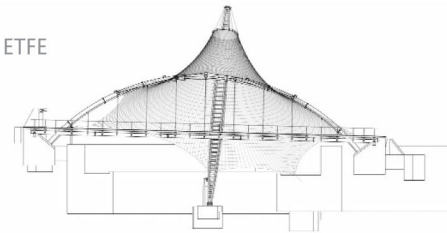
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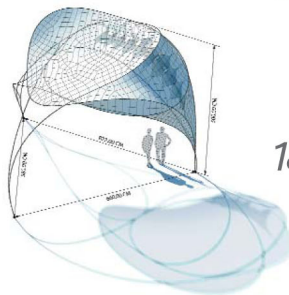


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www.ceno-tec.de

Dyneon  
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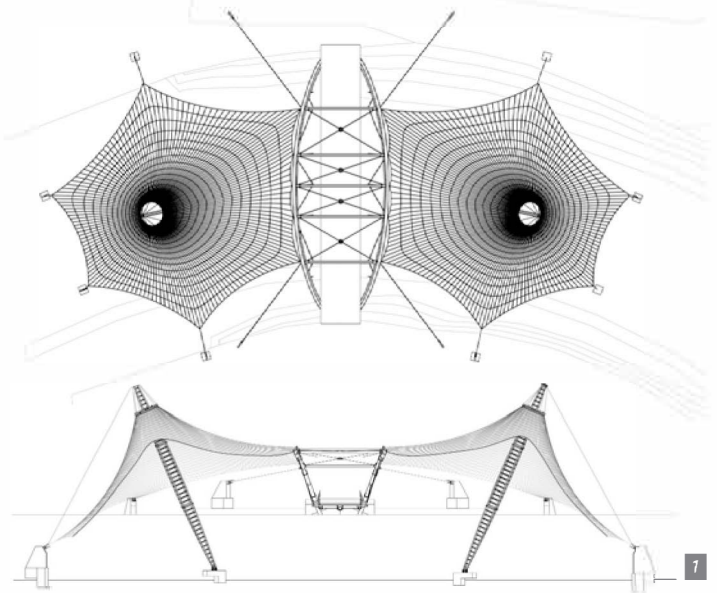
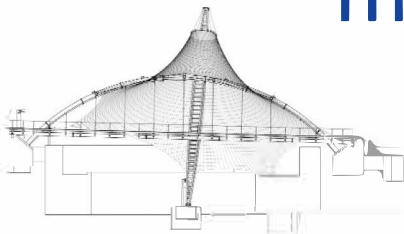
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Tehran, Iran

# Eye-catching membrane cones

## BAZAAR GOL



### Context

Bazaar Gol (The Flower Market) is located in a small valley to the west of recreational area of Abbas Abad lands. The Abrisham Bridge II connects the two sides of this small valley together and therefore provides a pedestrian-only link between Norouz and Safarhaye Asemani Parks. Two membrane cones which form part of this structure cover an area of 2000m<sup>2</sup> above this market. What led to the design of Abrisham Bridge II and its membrane coverings was the aim to create a distinctive landmark for Bazaar Gol in Abbas Abad lands (Fig. 1 & 2).

### Objectives

For the membrane roof and the bridge, the following objectives had been determined:

- Linking the two sides of the valley;
- A special and attractive design to build a monumental structure;
- Protection from wind and rain for the stalls of the market;
- Eliminating direct solar radiation that can disturb ongoing activities;
- and, last, an easy installation.

### Membrane material

To meet our needs as mentioned above, a PVC-PVDF coated polyester membrane was chosen to provide a great view along with lightness and translucency.

### Description of the design

Taking advantage of axial forces and avoidance in use of bending moments in the design of this bridge has resulted in significant weight reduction and

enhancement of its aesthetic appearance. Tare affixed at centre to a hinged spindle-shaped truss column and from sides to the foundation and central arches of the bridge.

### Building process

Construction works started with the concrete casting of the foundations. When the iron anchorages were placed, the bridge and masts were installed, with high precision. Masts were temporarily

stabilized with safety cables, the next step was to clamp the membrane together (which was fabricated in 3 large pieces in order to ease the installation process) and fix it on the ring. After that the whole membrane was elevated to the top of the mast to be fixed and finally pretensioned (Fig. 3).

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Name of project:	Bazar Gol
Location of project:	Tehran, Iran
Year of Construction:	May 2011
Architect:	Diba Tensile structures
Engineering:	Massimo Maffei Engineering and Consulting
Manufacturing, Fabrication & Installation:	Diba Tensile Structures
Material:	Verseidag PES-PVC-PVDF (2x1700m <sup>2</sup> )
Covered Area:	2x1028m <sup>2</sup>



Figure 1. Plan view

Figure 2. View from the market place & from the bridge

Figure 3. Installation of the membrane