

The background of the entire page is a photograph of a CNC machine in operation, with a red semi-transparent overlay on the left side. The METYX composites logo is positioned in the upper left area, featuring the word 'METYX' in a large, bold, white sans-serif font, followed by a stylized 'X' and a registered trademark symbol. Below this, the word 'composites' is written in a smaller, white, lowercase sans-serif font.

**METYX**®  
c o m p o s i t e s

**STRENGTH. SUPPORT. SOLUTIONS.**

**TOOLING  
SERVICES**



## ABOUT METYX Composites

**METYX**, supplies an extensive range of multiaxial, RTM and woven fabrics at its three production locations in Turkey and Hungary

Industries using METYX products today include: wind energy, marine, transportation, infrastructure, building and construction, sport and leisure.

METYX has also invested in facilities, equipment and highly skilled staff to offer customers added value through custom solutions and technical services such as engineering support, prototyping, large scale tool making and a customized kit cutting service from both Turkey and Hungary, for cores, fabrics and vacuum consumables.

### Your 'Solutions Partner'

METYX offers exceptional service, quality and logistical support which can help to reduce costs and add real value to your business.

"Our vision has always been to deliver a range of high quality products and services which give our customers a competitive advantage. We are totally committed to meeting the individual needs of our customers with tailor made solutions that add real value."

*Uğur Üstünel,  
METYX Composites Co-Director*



## METYX Composites Tooling Centre

METYX has invested in a Tooling Business Unit, located in the 23,000 sq. m 'state-of-the-art' production facility at Manisa, Turkey.

The METYX Composites Tooling Centre was set up in response to customer and market needs. It aims to offer design engineering and manufacturing support to customers looking for affordable, high quality tooling solutions.

**The METYX Composites tooling team has particular expertise in large scale tooling projects for:**

- Wind blade mould components
- Multiple component architectural projects
- Hull and deck plugs and moulds for boatbuilding
- Direct negative mould for limited volume parts
- Complex design tooling for automotive & transportation

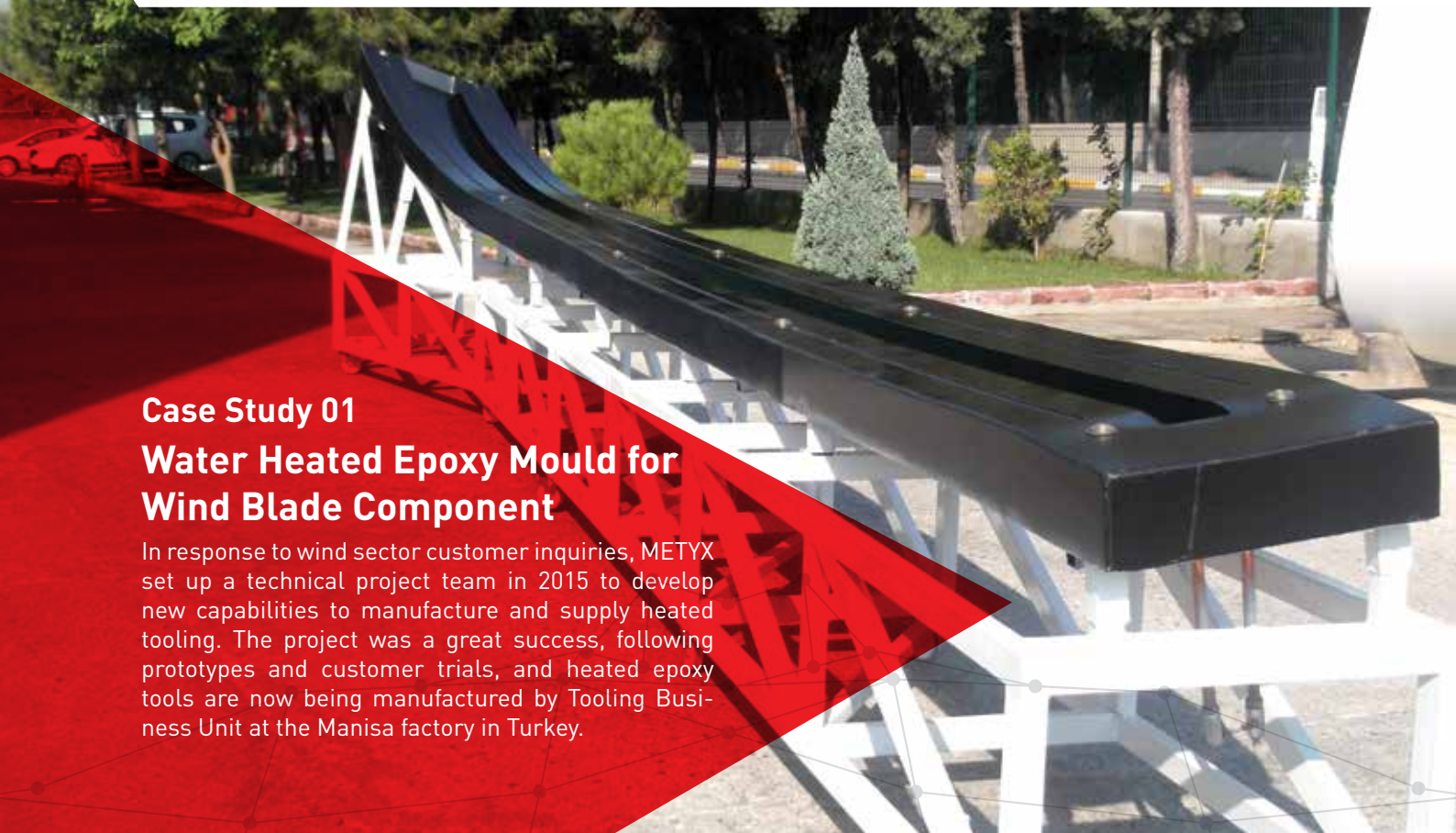
## Tooling Engineering Services & Support

METYX offers engineering support, reverse engineering, rapid prototyping and tooling consultancy using 'state-of-the-art' design and production software, to customers in all industrial market sectors.

### Case Study 01

#### Water Heated Epoxy Mould for Wind Blade Component

In response to wind sector customer inquiries, METYX set up a technical project team in 2015 to develop new capabilities to manufacture and supply heated tooling. The project was a great success, following prototypes and customer trials, and heated epoxy tools are now being manufactured by Tooling Business Unit at the Manisa factory in Turkey.



## Master Plug (Pattern) Production

Standard master plugs are typically manufactured using a tooling board or foam-based glass reinforced laminate base, onto which and epoxy or polyester paste is applied. Once set, the paste is then precision

CNC milled to create the final surface before finishing. The last step is the application of a primer and top coat, which is finely sanded and polished to a high gloss surface finish.

### Master Plug Making Materials:

- Tooling board
- PU and Epoxy foam
- Polyester and Epoxy paste
- Primer and Top coat

### Master Plug Features:

- Shape stability, with 5-axis CNC milled accuracy and finish
- Large plug production capabilities - up to 10m x 6m x 4,5 m
- High gloss polished surface finish
- Modular production of single or multi sectioned plugs
- Double gel coating and post curing to order



“The industry needed a reliable tooling provider, technically able to handle customers’ challenges – rapidly and effectively. This approach triggered our investment decision. We now deliver cost efficient complete tooling solutions, enabling our customers to stay focused on growing their core business”

**Tunç Şerif Üstünel,**  
**METYX Composites Co-Director**

### Case Study 02

## Precision METYX Plugs for Damen Water Bus Modular Parts

METYX supplied more than 20 precision CNC machined plugs (total area about 200 sqm) to Damen Shipyards Antalya for the key modular tooling needed for the various modular FRP hull and superstructure composite parts needed to produce its range of catamaran design Water Bus vessels.





## FRP Mould Tool Production

FRP moulds with the required mechanical properties needed for moulding finished composite components are produced from the high quality, surface defect

free master plugs. Large scale single and multi-split FRP moulds are produced for: hand lay, spray up, RTM, and infusion processes.

## Direct Negative Moulds

**Tooling Centre** also produces large-scale moulds using a direct moulding technique, which is a very cost effective solution for producing prototypes and for one

off or limited run components, especially for projects with a limited budget or tight timescale needed a fast tooling solution.

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### FRP Mould Tool Making Materials:

- Polyester rapid tooling resins
- Epoxy tooling resins
- Vinyl ester and epoxy tooling gelcoats
- Custom reinforcement solutions manufactured by METYX Composites

### FRP Mould Tool Features:

- Only quality tooling materials used for high durability
  - Mould shell supports as needed for tool life.
  - Excellent part production repeatability
  - Water based heating system
  - Laser scanning
  - QC documentation
  - Mould commissioning
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The METYX Composites Tooling Centre provides customers with a cost effective complete composite tooling solution from **concept to delivery.**





# METYX®

c o m p o s i t e s

## HEADQUARTERS

Şehir İlknur Keleş Sk. Hüseyin  
Bağdatlıoğlu İş Merkezi No:7/5  
Kozyatağı, İstanbul / TURKEY

**Phone:** +90 216 394 32 60  
**Fax:** +90 216 394 32 58

## ISTANBUL FACTORY

Orhanlı Beldesi  
Gülsüm Sok. No:14 34956  
Tuzla, İstanbul / TURKEY

**Phone:** +90 216 394 32 60  
**Fax:** +90 216 394 32 58

## MANISA FACTORY

MOSB Bölgesi 1.Kısım  
Malazgirt Cad. No:2 45030  
Manisa / TURKEY

**Phone:** +90 236 302 04 04  
**Fax:** +90 236 302 04 05

## KAPOSVAR FACTORY

7400 Kapošvár,  
Dombóvári út  
3657/93. hrsz. HUNGARY

**Phone:** +36 82 510 126  
**Fax:** +36 25 510 127

info@metyx.com - www.metyx.com

