

TENCATE MATERIALIZED

Advanced composites



Protective Fabrics
Space Composites
Aerospace Composites
Advanced Armour

Geosynthetics
Industrial Fabrics
Grass

 **TENCATE**
materials that make a difference

ADVANCED COMPOSITES

SOLAR TEAM TWENTE 2007

Like the aviation sector, the auto industry too has a great deal to gain from the use of more composite materials. After all, these are lighter than aluminium, stronger than steel and in theory recyclable. The Twente One, the solar car of the Solar Team Twente 2007 – a student team from the University of Twente and Saxion – is light thanks to aerospace composite material from TenCate. This sustainable vehicle achieved speeds as high as 126 kilometres per hour during the 2007 World Solar Challenge through Australia.

AEROSPACE COMPOSITE

Thermoplastic and thermosetting materials like TenCate Thermo-Lite and TenCate Cetex contribute to more sustainable transport.

The car racing world is already making considerable use of these innovative materials, which are widely used in the aircraft industry. The Solar Team Twente 2007 finished the more than 3000 kilometre journey, achieving sixth position and won on technology and innovation, thanks to the integrated pivoting wing, made of aerospace composite: a novelty in the world of mobility.

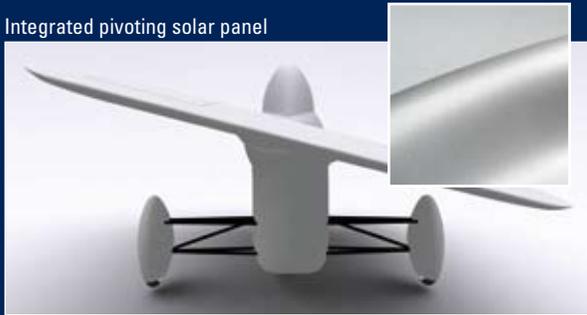
MOBILE SOLAR PANEL

The Twente One 2007 is equipped with a solar panel that can be pivoted during the journey. This allows the most ideal angle of the sun – focused directly onto the solar cells – to be achieved for the greater part of the day. In addition, a patented lens system is used,

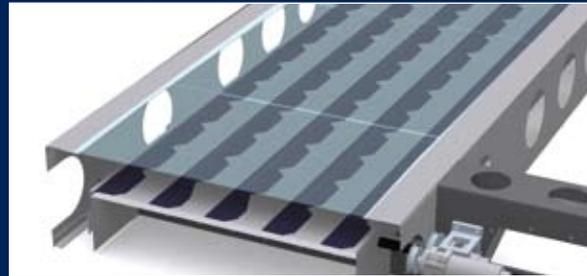
in which the solar cells can move under the lenses so that they always remain in focus. This also produces extra energy.



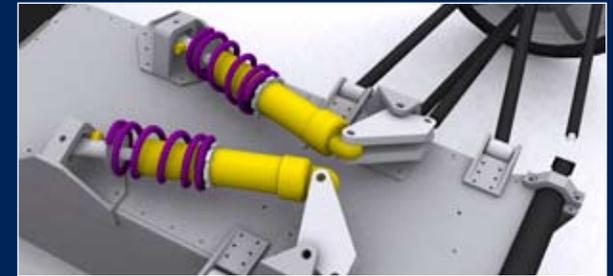
Integrated pivoting solar panel



Patented lens system



Horizontal shock dampers



ADVANCED COMPOSITES

SOLAR TEAM TWENTE 2009

Solar Team Twente is doing the utmost in realising its technological dream for the World Solar Challenge 2009, part of the Global Green Challenge. Not without reason the motto of this student team from University of Twente and Saxion is: 'Challenging future technology'. Thanks to the latest techniques – mostly from the Twente region – the team wants to show that its solar car can substantially contribute to a sustainable future.

The new solar car is a further development of the 2007 vehicle, winner in technology. The team's aim is to improve aerodynamic properties, further reducing the weight, and an even higher technical reliability. The presented draft of the new solar car

underlines these ambitions. A lead in the final ranking and a new winning position concerning technique, are within reach.

SUSTAINABLE TECHNOLOGY

Different technologies are used to achieve the objectives. In addition to the special lens system and the tilting wing, the team uses a renewed steering system - with one steering wheel in the front and two rear wheels - and the light weight body and frame structure, thanks to composite materials. TenCate has the most innovative space and aerospace fabrics and resins available. The final composite material is lighter than aluminium, stronger than steel and in principle recyclable. Thus, this project generates

maximum contribution to the development of sustainable transport, whether by air, space or on the road.

RENEWED SOLAR WING

The solar car has a renewed wing with solar cells, that now have even been fitted so as to overlap each other. As in the previous vehicle, the wing has an integrated solar panel that can be tilted to the sun during the trip from Darwin to Adelaide. Thanks to new (patented) technology and a state of art lens system, the sunlight is focused into the solar cells, making maximum use of the solar energy. In the new wing, fabric and reinforcing material of TenCate are processed.



Flexible connection between wing and body



Composite frame with integrated roll bar

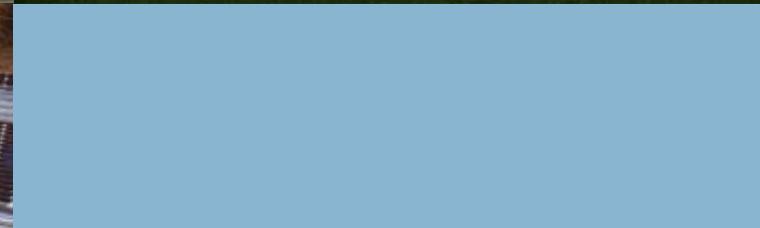
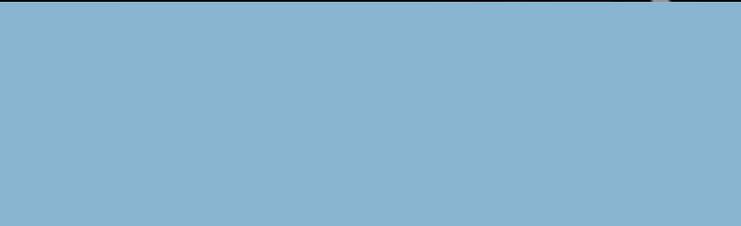


Light composite wing construction



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North America
South America

Europe
Middle East
Africa

Asia
Australia

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