



RenShape[®]
solutions

Innovative two-seater
sports car developed
using RenPaste[®] materials

Case History

Latest Picchio race car designed using RenPaste[®]

RenPaste[®] Seamless Modelling Paste (SMP) from Huntsman Advanced Materials has once again proved instrumental in the successful design and development of the latest model for race and GT car specialists, Picchio, in Italy.

Based near Teramo in Central Italy, Picchio design and manufacture highly specialised racing cars for the European and US super-car circuits. Picchio previously used RenPaste[®] materials on their highly successful Daytona Prototype race car in 2003.

The company's latest model – the highly innovative CN2 Light - is a two seat open top vehicle that combines super streamlined design with a range of new safety features. The CN2 Light is the first car in the Prototype Sports vehicle category to comply with the latest FIA safety regulations for crash tests.

When developing the CN2 Light prototype, Picchio's engineers tested a range of rapid prototyping materials and eventually specified RenPaste[®] epoxy SMP SV/HV 4503 as the most suitable for this demanding application.

The SMP was used to make the model of the car body. This comprised a range of separate complex, highly styled components including all the front, rear and side panels and front and rear spoilers, which provide the critical streamlined balance for the car.

To produce the full sized prototype, a slightly undersized model of the car was milled, using CAD design data, from an expanded polystyrene block. Each individual component part was then covered in a 30mm-40mm thick layer of RenPaste[®] SV/HV 4503, dispensed through a meter/mix machine.

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- **Application:**
 - seamless modeling paste used for prototype model of two-seater sports car
- **Special service conditions:**
 - highly styled complex components
 - finished prototype produced in just three months
- **Advantages for customer:**
 - rapid production of model parts straight from CAD data to milling machine
 - improve overall building and production methods
 - simple design modification
- **Advantages over the competition:**
 - highly accurate machine application
 - very high quality surface finish
 - minimal additional finishing and waste
- **RenShape[®] tooling material used:**
 - RenPaste[®] SV/HV 4503 seamless modeling paste
- **Customer location:**
 - Teramo, Italy

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These SMP models were all cured at room temperature for two days but those with the most irregular contour were also post-cured at 50°C for 4-6 hours as an extra precaution.

The RenPaste® models were then CNC machined to the exact dimensions for the car body parts, with just minimal hand finishing required. The SMP models were subsequently used to build the fibreglass moulds from which the GRP prototype parts were produced.

“In this new project, we capitalised on the experience gained with the original Daytona Prototype RenPaste® model,” explained Guido Pandoli, Head of Project Design at Picchio. “This enabled us to improve the whole building and production process both at Picchio and at our RenPaste® materials supplier, Fuchs S.p.A.

“This mainly affected the milling procedures, paste application and the post-curing of the models. By maximising resources, we were able to produce the first CN2 Light car body, from CAD data in just three months.”

“We have also achieved an unprecedented surface quality finish and level of design accuracy with this model,” added Mr Di Pietrantonio, Managing Director at Picchio. “With this vehicle we not only wanted to produce the prototype of a radical new racing car range but also make a definitive style statement which will be reflected in the road car version, in 2006. This will be the first road car designed by Picchio.”

Guido Pandoli, Head of Project Design at Picchio said “Using RenPaste® enabled us to improve our whole building and production process ... by maximising resources we were able to produce the CN2 Light car body from CAD data in just three months.”

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