

STEEL S4 EV

STEEL Solutions for Safe and Smart Structures of Electric Vehicles

Manufacturing solutions

MIG/MAG

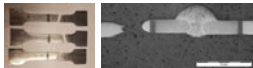


Laser welding



- Fiber connector
- Laser optics
- Cross jet
- Shielding gas nozzle
- Turret
- Robot
- Clamping device

Evaluation to ensure mechanical properties in joints even in fatigue loads



Materials

Advance High Strength Steels (AHSS)

- | Materials | Color |
|---------------------------|------------|
| Steel DP800 | Grey |
| Steel DP1200 | Orange |
| Rigid element | Yellow |
| Aluminum | Cyan |
| Rubber | Dark Grey |
| Plastic (by rotomoulding) | Light Blue |
| Composite battery tray | Dark Blue |



Modular design

Modular structure



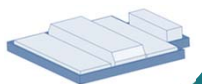
Modular powertrain

4WD through two identical motorised axles



Modular battery pack

up to 50 kWh to satisfy different market demands



LCA



- Energy demand and GHG emissions reduction of the chassis production by replacing primary steel with secondary steel
- Vehicle safety improvements does not mean a higher price nor higher environmental impacts.

Plan for efficient **recycling** and facilitated disassembling of the designed vehicles



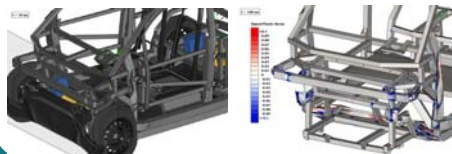
Structural design for frontal and lateral crash and VRU protection

Designed and tested under Euro NCAP protocols for M1 vehicles



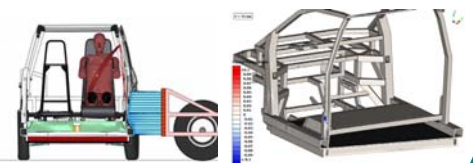
Frontal crash

- OLC: 44.2g
- Intrusions:
 - Floor areas < 40 mm
 - Steering column < 60 mm
 - Cockpit < 50 mm



Lateral crash

- Maximum deceleration < 45g
- No important intrusions



Conclusions

- Optimised modular vehicle design
- Selected manufacturing processes to ensure HSS properties
- Good safety performance
- Minimum environmental impact and costs

Learn more: www.steel-s4-ev.eu

Consortium



Acknowledgment

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