

# FRAME MATERIAL

The chosen material for the space-frame chassis is a steel alloy: **25CrMo4 (AISI 4130)**

The reasons for this choice are:

- High strength: The **yield strength is 600 MPa** and the ultimate strength is **800 MPa**.
  - ⇒ The frame can bear **higher load cases** (typically, it can **bear strong crash situations**).
  - ⇒ Alternatively, a lighter design can be achieved by using **thinner wall section** for tubes that are not imposed by the rules.
  
- High fatigue resistance: The **fatigue limit is 310 MPa**.
  - ⇒ **Better durability** of the frame.
  
- Good impact resistance: The **resilience is 70 J/cm<sup>2</sup>**.
  - ⇒ This tough steel alloy has a good resistance to impact and is therefore **safer** in case of crash.
  
- Good weldability: No problem to weld the frame when done by a professional.
  
- Marketing advantage: 25CrMo4 is known for its high strength and toughness; it is even used for aeronautical applications.
  - ⇒ **Gives the customers confidence in the safety of the car.**