Advanced Steel Manufacturing and Stamping

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Module Overview

- Hot stamping advanced steels
- What are tailored blanks?
- Where are tailored blanks used?
Hot Stamping
Hot Forming of a B-pillar
Hot Stamping of Boron Steel

- Ferrite: ≈600 MPa
- Austenite: ≈300 MPa
- Martensite: ≈1500 MPa
Tailored Blank

• A tailored blank is a sheet of steel that combines several grades and / or various thicknesses and / or different coatings, the different parts being laser welded together, in order to place the best material at the best place in the right thickness for a real “tailor-made” solution for the customer after stamping.
Vehicle Applications

1. Rear Rails
2. Roof Reinforcement
3. B-Pillar
4. A-Pillar
5. Shock Tower
6. Tailgate
7. Cross Member
8. Side Member
9. Wheel House
10. Engine cross member
11. Body side
12. Seat cross member
13. Bumper reinforcement
14. Front rail
15. Rear door
16. Floor panel
17. Front door
18. Tunnel reinforcement
Laser Welded Tailor Blank
Tailor-Rolled Blank
Boron Steel welded to HSLA

B pillar Reinforcement

Tailored Blank

HSLA 350 t=1.0 mm

Boron t=1.5 mm

HSLA 350 t=1.0 mm