

ThyssenKrupp Hotform Blanks.



A ThyssenKrupp
Steel
company

ThyssenKrupp Tailored Blanks



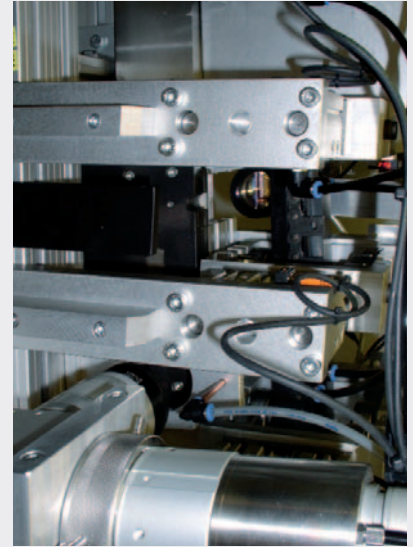
ThyssenKrupp

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New solutions for the auto industry.



Coating
removal line



Lightweight construction meets crash protection.

When it comes to reconciling crash safety and lightweight design, steel remains the no. 1 material in the auto industry. New manganese-boron steel alloys can achieve strengths of 1,500 MPa after hot stamping – far higher than with conventional forming processes. These high strengths have opened up whole new possibilities for lightweight auto construction. Parts made from thinner material can deliver equivalent or even improved crash performance. Our latest innovation are ThyssenKrupp Hotform Blanks.

Advantages of ThyssenKrupp Hotform Blanks

- + Hot stamping can also deliver the classic advantages of tailored products
- + Higher strengths and lower part weight
- + Combination with milder steel grades provides residual elongation in crash-relevant areas



Example application
B pillar

Process

Production of ThyssenKrupp Hotform Blanks: heating and cooling – hot, hotter, hot stamping

The heat is on: the process starts in the furnace, where the manganese-boron steel blanks (ThyssenKrupp Steel MBW® 1500) are first heated to temperatures of 880 to 950 degrees Celsius to impart excellent forming behavior. During subsequent hot stamping, the blanks are formed into parts in a special stamping press and simultaneously cooled at a rate of more than 30 Kelvin per second, resulting in an extremely hard microstructure. The parts generally achieve strengths of 1,500 MPa, a level which is not attainable with conventional steel grades.

Applications

Applications for ThyssenKrupp Hotform Blanks: crash-optimized lightweighting

Hotform blanks are ideal for structural parts which protect the passenger cell such as

- ▶ B pillars
- ▶ Side members
- ▶ Tunnel reinforcements
- ▶ Sidewall frames

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