



NANO-X GmbH

Scale protection coil coating products for press hardening of high-strength steels



2024



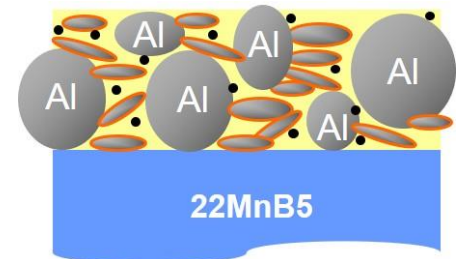
Generation 1: x-tec[®] ZS 4019

Series Production VW 2005 to 2014

For two step process: cold and hot forming in two steps

- Coil coating on high-strength steel 22MnB5
- Austenitization through heat treatment at approx. **920-950°C (2-10 min)**
- Load-bearing body parts, e.g. B-pillar, beams, tunnels, reinforcements, etc.

- Aluminum pigments in inorganic titanium matrix
- Optional waxes and graphite for tribological properties
- Solids content between 35 and 60% (product-specific)
- Coating thickness 5-8 μm



Additional advantages (for all products Gen1-4):

- Excellent heat absorption for quick heating
- Short cycle times
- Inductive and conductive heating possible
- FIR and NIR heating possible
- No contamination of ovens and transport rolls





Generation 2: AlSi Coat (4001) 4003

Series Production Since 2006

For one step press hardening

- High-strength steels 22MnB5 and 34MnB5
- Coating thickness 2-3 μm
- Heat treatment at approx. 920-950°C (2-10 min)
- Load-bearing body parts, e.g. B-pillar, beams, tunnels, reinforcements, etc.

- Only a forming aid
- Has to be removed
- Sand blasting or etching processes possible



Galvanizing possible
in a further process

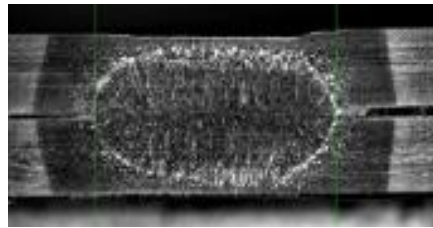


Generation 3: AlSi Coat 4004

Since 2018

For one step press hardening

- High-strength steels 22MnB5 and 34MnB5
- Coating thickness 2-3 μm (limited)
- Limited process window 920°C at 2-2.5 min! (very important)
- Adhesion of the electrophoretic coating
- Can be spot welded



But no corrosion protection!



Generation 4: AlSi Coat 4005

Since 2020

For one step press hardening

- High-strength steels 22MnB5 and 34MnB5
- Coating thickness 2-3 μm (limited)
- Limited process window 920°C at 2-2.5 min! (very important)
- Adhesion of the electrophoretic coating
- Can be spot welded
- Additional corrosion protection (48 h salt spray test)



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