



## HX220BD+ZM

Steels with high yield strength  
for cold forming – bake hardening

Material no.	1.0919
according to	DIN EN 10346/ DIN EN 10143

### General properties of StronSal®

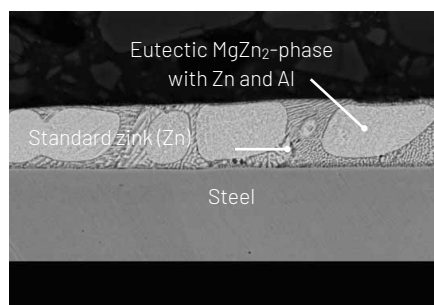
StronSal®, a newly developed hot-dipped coating for steel products, provides ultimate corrosion protection properties that add up to a high performance coating for all applications where zinc-plated steel is essential.

- StronSal® consists of zinc and small fractions of magnesium (1 to 2%) and aluminium (1 to 2%).
- StronSal® offers extraordinary corrosion protection with coating layers of constant properties and considerably reduced thickness by comparison with standard hot-dip galvanized layers (Z). Salt spray tests returned a corrosion resistance four to five times higher compared to standard zinc coating.
- StronSal® convinces with superior varnish adhesion.
- StronSal® offers improved cutting edge protection. Thanks to its special resistance against corrosion, the protective effect achieved with this anticorrosive plating is significantly higher than the effects produced by standard products, in many cases also after processing.
- StronSal® offers tremendous resource saving potential thanks to the zinc savings achieved. Our latest product developments make substantial, sustained contributions to environmental protection.

### StronSal® layer - cross section

The cross-section polish of the StronSal® coating shows the difference: The Mg- and Al-alloys are visible as a high-contrast phase within the zinc layer.

They effectively influence the anti-corrosion mechanism in a positive way.



### Surface finish

Thickness range	
MB	0.50 – 1.98

### Chemical composition<sup>1)</sup>

(in percent by weight)

	min. in %	max. in %
C		0.06
Si		0.5
Mn		0.7
P		0.080
S		0.025
Al	0.020	

1) Heat analysis

2) Ti + Nb + V ≤ 0.22%. Addition of boron is permitted.

### Mechanical properties (transverse)

Yield strength $R_e^{3)}$ in MPa	220 – 280
Tensile strength $R_m$ in MPa	320 – 400
Total elongation $A_{80}^{4)}$ in %	≥ 32
Hardening exponent $n_{90}$	≥ 0.15
Anisotropy $r_{90}$	≥ 1.20
Bake Hardening $BH_2$ in MPa	≥ 35

The samples for the tensile test are taken at right angles to rolling direction unless the product is opposed to this.

3)  $R_{eL}/R_{p0.2}$

4) Reduced minimum values of elongation are valid for thicknesses ≤ 0.5 mm (minus 4 units) and for thicknesses > 0.5 mm and ≤ 0.7 mm (minus 2 units).

### Available dimensions

Thickness in mm	Width in mm
0.50 – 0.55	900 – 1,590
0.56 – 0.69	900 – 1,610
0.70 – 1.98	900 – 1,610

Thickness > 1.98 mm and ≤ 3.00 mm on request

Commitments regarding certain properties or a certain purpose of use require written agreements. Technical changes as well as typesetting and printing errors reserved.