

General Product Description

Hot-dip coated steel for lightweight vehicles. Docol 600CP is a steel for complex shapes with energy absorbing capability and corrosion resistance. Examples include complex body-in-white (BIW) and other automotive components. Galvanic corrosion protection of these zinc-based coated products makes them ideal for wet area components.

Dimension Range

Cold rolled / GI, GA, ZA: thickness 0.70-2.50 mm, width up to 1520 mm.

Slit strip and cut to length sheets are available upon request.

Grade and coating specific restrictions on available dimensions may occur.

Mechanical Properties

| Steel grade | Standard | Coating | Test direction | Yield strength R _{p0.2} (MPa) | Tensile strength R _m (MPa) | Elongation A ₈₀ ¹⁾ (min %) | BH ₂ (min MPa) | Min. inner bending radius for 90° ²⁾ |
|-------------------------|----------|------------|----------------|--|--|--|------------------------------|---|
| Docol CR350Y 600T-CP | SSAB | GI, GA, ZA | L | 350 - 500 | 600 - 740 | 16 | 30 | 1.0 x t |

¹⁾ For GA coatings the minimum elongation value is reduced by 2 units.

²⁾ In some cases tight bending radius may cause micro-cracking of the coating in the bend area. Where design permits, users are encouraged to employ larger radius.

Chemical Composition (Ladle analysis)

| Steel grade | Coating | C (max %) | Si (max %) | Mn (max %) | P (max %) | S (max %) | Al (%) | Nb+Ti (max %) | Cr+Mo (max %) | B (max %) |
|-----------------------------|------------|--------------|---------------|---------------|--------------|--------------|--------------|------------------|------------------|--------------|
| Docol CR 350Y600T- CP | GI, GA, ZA | 0.18 | 0.80 | 2.20 | 0.050 | 0.010 | 0.015 - 1.50 | 0.15 | 1.00 | 0.005 |

Tolerances

Hot-dip metal coated (GI, GA, ZA): Tolerances in accordance to EN10143.

Customized dimensional and shape tolerances are available upon request.

Coatings and Surface Treatments

Coatings

The metal coating options for Docol products include:

Hot-dip zinc coating (GI) consists almost entirely of zinc (>99%). It is lead free, resulting in a small zinc spangle size. The coating provides good corrosion protection.

Galvannealed coating (GA) is a zinc-iron alloy coating having an iron content of approximately 10%. Galvannealed is produced by post-heat treatment in continuous hot-dip coating process. Galvannealed provides excellent resistance weldability and corrosion protection of painted products.

Galfan coating (ZA) is a zinc-aluminium alloy coating having the eutectic composition approximately of 95% Zn and 5% Al. Galfan is produced in continuous hot-dip coating process. Galfan has better anticorrosive and forming properties than conventional hot-dip zinc coating (GI).

Grade specific availability of metal coatings for Docol products is given in the Mechanical properties table (Coating).

| Coating type | Coating class | Standard | Closest in EN10346, informative | Coating mass per side, Single spot test (g/m ²) | Thickness per side, informative (µm) |
|--------------|---------------|--------------|---------------------------------|---|--------------------------------------|
| GI | 40/40 | VDA239-100 | Z100 | 40 - 60 | 5,6 - 8,5 |
| GI | 50/50 | VDA239-100 | | 50 - 70 | 7,0 - 9,9 |
| GI | 60/60 | VDA239-100 | Z140 | 60 - 90 | 8,5 - 12,7 |
| GI | 70/70 | VDA239-100 | | 70 - 100 | 9,9 - 14,1 |
| GI | 85/85 | VDA239-100 | | 85 - 115 | 12,0 - 16,2 |
| GI | 115/115 | VDA239-100 | Z275 | 115 - 155 | 16,2 - 21,8 |
| GA | 40/40 | VDA239-100 | ZF100 | 40 - 60 | 5,6 - 8,5 |
| GA | 50/50 | VDA239-100 | ZF120 | 50 - 80 | 7,0 - 11,3 |
| ZA | 95 | Upon request | ZA95 | | 7 - |
| ZA | 130 | Upon request | ZA130 | | 10 - |

Docol metal coated products are available with surface quality for unexposed applications.

In addition to these coating masses, OEM specific coatings are available upon request.

Surface Treatments

Hot-dip galvanized (GI, GA, ZA): available as oiled and/or chemically passivated

All surface treatments are in accordance with RoHS directive (2011/65/EU) and do not contain Chromium VI (Cr^{6+}). Surface treatments provide only temporary surface protection during transportation and storage. In order to avoid corrosion damages, care must be taken to keep the products dry during transportation and storage. If they become wet, they must be separated and situated so that they are dried quickly.

Fabrication and Other Recommendations

For information concerning fabrication, see SSAB's brochures on www.ssab.com or consult Tech Support, techsupport@ssab.com.

Appropriate health and safety precautions must be taken when bending, welding, cutting, grinding or otherwise working on the product.

Contact Information

www.ssab.com/contact