

Protact® for 3-piece cans

Optimised laminated steel for rationalised canmaking

Protact laminated steel from Tata Steel is a fully approved and controlled food-safe product. In addition, Protact is also suited for paint and general line applications. Already a proven material solution in 2-piece canmaking, we have now developed Protact to meet the needs of 3-piece canmakers.

The material's coating-free zones are tailored to enable welding of the required can diameter and height. It removes the need for cost-intensive lacquering on the internal side of the can material and if present the external side. This frees up capacity and simplifies 3-piece canmaking operations.

Protact for 3-piece cans offers good side stripe adhesion performance. It is suitable for all 3-piece canmaking operations including welding, flanging, beading and double seaming.

Product features

Protact for 3-piece cans comprises:

- a tinplate substrate – delivering the required elongation properties for successful welding, flanging, beading and seaming
- a three-layer polymer coating system- can be applied on each side of the substrate or on one side only. The coating system is optimised for food, aerosol, beer and beverage, and general line product applications
- polymer coating-free zones – customised to can diameter requirements for H-grain welding, resulting in a coating that does not shrink or delaminate during welding, side strip curing and can be sterilised.

Polymer coating system and food safety

Protact's multi-layered polymer coating system can be tailored to meet a variety of needs (see Figure 1). The coating comprises PolyEthylene Terephthalate (PET). Internal polymer layers have proven product contact performance for the products contained within Protact packaging. Protact is available with a total coating thickness ranging from 15 to 30 µm. Protact is fully compliant with all relevant European Food Safety Authority and US Food and Drug Administration food contact regulations. Compliance is certified by the independent and respected European research institute, TNO Triskelion.

Current food safety focus for cans is on Bisphenol A (BPA) in lacquers. Protact is BPA-free. The chemical substances used in Protact are also specifically formulated without Bisphenol A diglycidyl ether (BADGE), novolac glycidyl ether (NOGE) or Bisphenol F diglycidyl ether (BFDGE). Kosher certification is available with Protact.



Can making

The coating-free zones in Protact for 3-piece cans allow for H-grain welding (see figure 2). The position and width of the zones can be varied to accommodate all standard can and aerosol diameter requirements from 45 mm and up. The consistent width and position of the coating-free zone and close control of tolerances enable stable and efficient welding operations. Side striping can be applied with good adhesion. The choice of substrate ensures the required elongation properties for successful flanging and double seaming. Protact's optimised polymer coating system is entirely compatible with these operations and its performance levels remain intact. Protact for 3-piece food cans is suitable for beading.

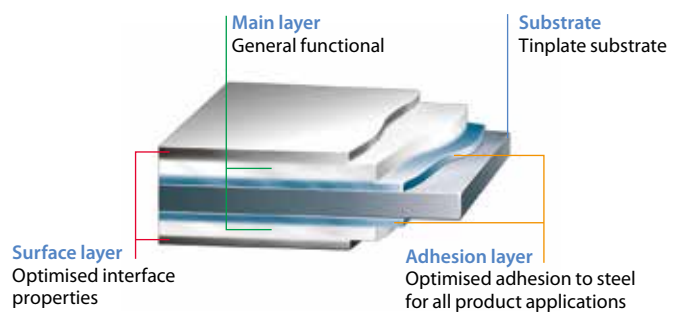


Figure 1. The independently optimised layers of Protact's coating system offer unique advantages. These include improved welding efficiency and enhanced product aesthetics for market differentiation.

Polymer coated sheet layout

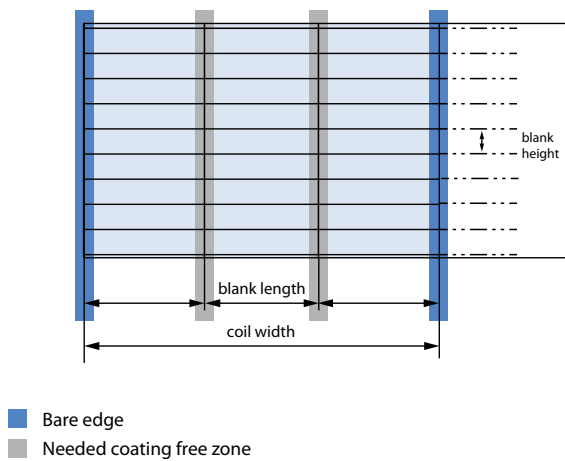


Figure 2

Corrosion protection

Protact's optimised layer system ensures a low level of porosity. Compared with lacquered cans, this delivers superior corrosion protection for corrosive and hard-to-hold substances such as solvents used in aerosols and other general line applications. The product area affected by the heat of welding and side stripe curing has shown a good corrosion performance. The product can also be applied for food applications. This also applies to the overlapping area of the side stripe and the laminate (see figure 3). However we advise our customers to verify the corrosion performance with the fill goods to be used.

Dimensions

Protact for 3-piece cans is available in a range of widths up to 1058 mm and in a thickness range of 0.15 mm to 0.60 mm. Welding margins can be created to produce cans from a diameter 45 mm and upwards. Obviously the layout is determined by your requirements. Ongoing product development is extending the choice of dimensions. Please contact us to discuss your needs.

Welded product

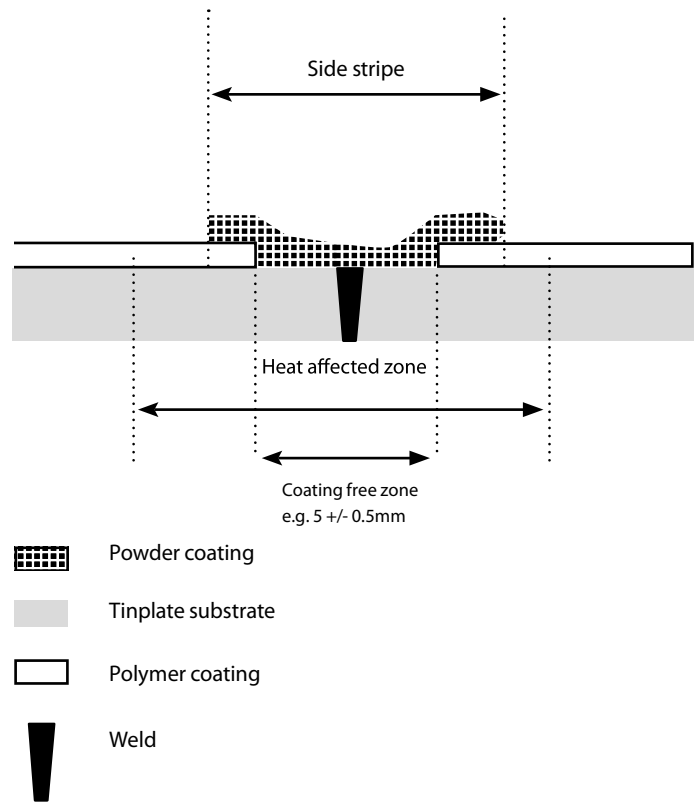


Figure 3

Product support

Our material experts and customer technical support are available to support the deployment of our products in your individual can format and product application. This includes support for adoption of H-grain welding to realise the benefits offered by Protact for 3-piece cans.

For more information:

E: infopackaging@tatasteel.com

Tata Steel

Packaging
PO Box 10.000
1970 CA IJmuiden
The Netherlands
T: +31 (0)251 498217
E: infopackaging@tatasteeleurope.com
@TataSteelPackag
www.tatasteeleurope.com/packaging

PA0317:1000:EN:0317

www.tatasteeleurope.com

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