

Pre-finished metals for consumer products

Non-stick and heat resistant pre-finished metals

Suitable for use in consumer product applications where release properties and resistance to high temperatures are required.

- Domestic bakeware such as roasting tins, cake moulds and spring forms.
- Kitchen appliances including oven interiors and wrappers, sandwich makers, coffee pot bases and deep fat fryers.
- Specialist cooking products such as rice cookers and oil filters.
- Small domestic appliances such as use in Iron Sole Plates
- Domestic heating applications including fires and boilers.

Non-stick and heat resistant products

The range includes non-stick, high temperature and more basic easy clean coatings, all applied to various metal substrates.

Firsteel's non-stick and heat resistant products are a blend of PES (polyethersulfone), pigments, PTFE (polytetrafluoroethylene) and other low friction polymers.

Products differ greatly in their:

- Release properties.
- Food safety.
- Resistance to colour and gloss changes at high temperature.
- Damage resistance.
- Durability.
- Forming quality.
- Choice of colour.

Abrasion resistant non-stick

These are the ultimate products for applications that demand excellent release properties and high temperature resistance combined with resistance to damage. The products contain high levels of PTFE supported by an abrasion resistant base coat. The coatings can either be applied with a decorative or low cost backing coat or to both sides of the metal substrate. This product is ideal for high wear applications such as coffee pot bases, oven interiors and the most demanding bakeware applications.

Premium non-stick

These products have unrivalled release properties and high temperature resistance, and are ideally suited for the premium end of the bakeware market. The coatings can either be applied with a decorative or low cost backing coat or to both sides of the metal substrate. Special products that have good resistance to hot oils are also available on request.

Standard non-stick

Standard non-stick products have good release properties and high temperature resistance, but only limited resistance to damage. The coatings can either be applied with a decorative or low cost backing coat or to both sides of the metal substrate.

Heat resistant

These products are designed to add colour and special effects, including patterns and provide an opportunity to visually differentiate the final product. They have good temperature resistance, colour and gloss stability and low friction properties that are a benefit in the drawing process. For extremely high temperature applications (above 300°C applications), super high temperature products are available.

Colour range

Heat resistant products are available in a wide range of solid and metallic colours and print effects. Gloss levels can range from 10 to 70%, providing an attractive overall appearance. Non-stick coatings are available in a wide range of colours. Non-stick print effects are available on request, please contact Firsteel for information.

Pre-finished metals for consumer products

Non-stick and heat resistant pre-finished metals

Table 1. Typical properties

| | Temperature stability | | Resistance to temperature | Durability ^[1] | Flexibility ECCA T07 ^[2] | | Film Build ECCA T01 (µm) | Release properties | Safe for food contact ^[3] |
|-------------------------------|-----------------------|--------------|---------------------------|---------------------------|-------------------------------------|--|--------------------------|--------------------|--------------------------------------|
| | Constant | Intermittent | | | | | | | |
| Abrasion Resistant non-stick | 260°C | 280-290°C | Good | Excellent | 0-1.0 T 0-0.5T | | 12-18 | Best | Yes |
| Premium non-stick | 260°C | 280-290°C | Good | Good | 0-1.0 T 0-0.5T | | 10-14 | Better | Yes |
| Standard non-stick | 260°C | 280-290°C | Good | Satisfactory | 0-1.0 T 0-1.0T | | 5-12 | Good | Yes |
| Heat resistant ^[4] | 260°C | 280-290°C | Good - Excellent | Satisfactory | 0-1.0T 0-1.0T | | 4-14 | - | - |

Notes to the table - All figures are based upon target values and do not constitute a specification

[1] Assessment based on results of laboratory abrasion-tester.

[2] No tape removal and bend free from cracks.

[3] Certified to comply fully with European Commission Directive 90/128/EC; complies with regulation US FDA 21 CFR 175.1550, providing extractability limits are met for a particular food contact article (consult Tata Steel for further details).

[4] Higher temperature products are available.

Table 2.

| Substrate | Standards | Performance |
|--|----------------|---|
| Electrolytic chromium/chromium oxide coated steel (Hi Top) | EN 10202 | Good corrosion resistance and adhesion at high temperatures, good food safe properties |
| Aluminium-silicon alloy coated steel | EN 10327 | Very good corrosion and temperature resistance, with particularly good adhesion |
| Aluminium | EN 573/485/515 | Excellent corrosion resistance and adhesion, lower damage resistance than steel based products, light-weight solution |

Substrates

All substrates are flexible, strong and have a good surface finish. However, they differ in the amount of resistance offered against heat and humidity. Table 2 provides guidance on substrate specification.

substrates and 0.4 to 1.4mm for aluminium. The product can be supplied as wide coil, slit coil down to 6.5mm wide and blanks. For applications where damage may occur during forming or drawing, handling or transit, products are available with a protective film.

Dimensional capability and further processing

Products come in widths ranging from 200mm up to a maximum of 600mm and in gauges from 0.20mm to 1.4mm for ferrous

Compliant with EU Directive REACH. Food approval statements provided on request.

Care has been taken to ensure that the contents of this publication are accurate, but Firsteel Limited do not accept responsibility or liability for errors or information that is found to be misleading. Suggestions for, or descriptions of, the end use or application of products or methods of working are for information only and Firsteel Limited and its subsidiaries accept no liability in respect thereof.

Before using products or services supplied or manufactured by Firsteel Limited and its subsidiaries, customers should satisfy themselves as to their suitability.

Copyright Firsteel Limited 2020

Firsteel Limited
Brockhurst Crescent
Bescot, Walsall
West Midlands WS5 4AX
United Kingdom
T: +44 1922 629 593

www.firsteel.co.uk

Registered Office
Atlas Centre
Union Road, West Bromwich
West Midlands
B70 9DR
United Kingdom

Registered in England No: 11863208 VAT Reg No: GB 322 0718 42

