

JTC™ JTCAC

Standard Copper Foils, Grade 1

- Superior performance and reliability
- Standard foil for rigid laminates, composites and multilayer outside layers
- Low profile for fine line circuitry
- Available with modified acrylic water based resin coating for low cost PP laminates

Overview

JTC, Grade 1

JTC, Grade 1 is a multipurpose foil commonly used for a broad range of rigid laminates, glass epoxy composites and multilayer outside layer applications. The unique GOULD treatment process is designed to provide a consistent and accurately controlled high nodular treatment build-up to satisfy user's requirements of conductor line adhesion, fine-line etching, and dielectric spacing for controlled impedance circuit boards.

JTCAC, Grade 1 Foil with Acrylic Resin Coating

This water based adhesive system is compatible with paper-phenolic laminate grades like XPC, XXXPC, FR1, FR2, FR3 and composites (CEM). Coatings are applied to 35 and 70 µm thick copper foils with a uniform adhesive thickness of 25...35 µm ensuring good wetting and consistent high laminate bond strength.

Advantages

■ Increase Surface Area for Adhesion

Copper nodules are plated on the pyramidal matte side surface in order to increase surface area and maximize laminate bond by interlocking with a variety of different resin systems. When tested on typical epoxy and multifunctional prepregs, in accordance with IPC testing requirements, JTC foils pass all tests, including high temperature peel, solder shock and accelerating aging.

■ Provide a Barrier Layer to Minimize Bond Degradation

JTC's thermal brass barrier layer retards the thermally and chemically induced degradation of foil adhesion often associated with alternative treatments.

■ Resistance to Recrystallization

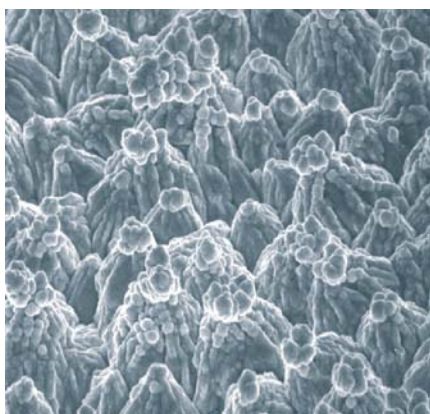
is formulated to resist grain growth after thermal processing which could degrade laminate dimensional stability, warp & twist and drilling characteristics (nail heading).

■ Stabilize the Copper Foil Surface to Prevent Oxidation

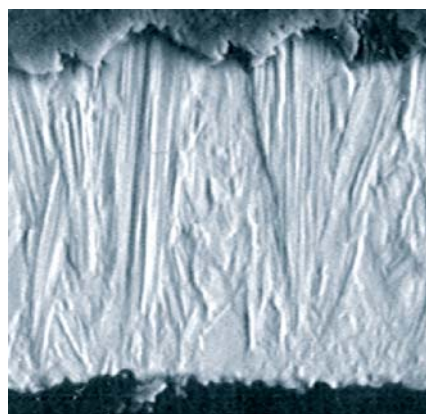
The stabilizer (anti-tarnish passivation) avoids discoloration or oxidation during storage and lamination, and minimizes laminate staining reaction with curing agents. Additionally it facilitates chemical (and mechanical) cleaning.

Specifications

The combination of all GOULD proprietary processes provides the industry with a foil that meets and exceeds the requirements of IPC 4562, Grade 1.



JTC-35 µm, treated matte side



JTC-35 µm, cross-section

Typical Mechanical Properties:

Property	Unit	JTC-Grade 1						JTCAC-Grade 1	
		9 µm	12 µm	18 µm	35 µm	70 µm	105 µm	35 µm	70 µm
Area weight	g/m ²	80	105	155	285	570	870	285	570
Tensile strength	N/mm ²	> 320	> 320	> 320	> 300	> 300	> 276	> 400	> 340
Elongation	%	> 2	> 3	> 4	> 10	> 14	> 14	> 10	> 14
Peel strength FR4-T _G 140	N/mm	> 1.00 ¹⁾	> 1.05 ¹⁾	> 1.18 ¹⁾	> 1.69	> 2.28	> 2.75	> 1.57	> 2.16
Shiny side, R _a	µm	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43	< 0.43
Matte side, R _z	µm	3...5	3...5.5	4...7	5...8	8...13	12...18	5...8	8...13

¹⁾ Without plating up

Supply

JTC foil is routinely available in continuous rolls and sheeted formats. Roll products can be supplied in a variety of widths and thicknesses from 9 µm (0.25 oz/ft²) to 105 µm (3 oz/ft²). Other thicknesses on request. JTCAC is available in 35 and 70 µm (2oz/ft²) in roll or sheet form. Roll products are supplied on cardboard cores with an ID of ~ 79 mm (3 1/8") or 152 (6").

GOULD Electronics is part of the Nikko Materials group. The company is a leading supplier of materials to the electronics industry.



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