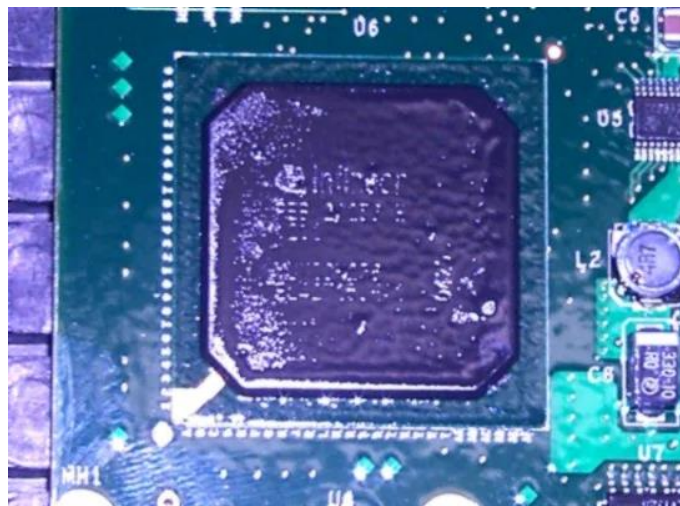


Conformal Coating Defect

Orange Peel

Summary

Orange peel in conformal coating is a surface defect where the cured coating develops a textured, uneven finish that looks like the skin of an orange. This defect can reduce coating thickness and compromise PCB protection.



Definitions

What is Orange Peel in Conformal Coating?

- Definition: An uneven, textured surface that appears dull and looks like the skin of an orange.
- Main Issue: The conformal coating layer may be too thin in places to provide adequate protection.

Root Causes

- Improper spray application – coating applied too far from the PCB dries before it can level.
- Incorrect thickness – insufficient coating deposited to self-level.
- Viscosity too high – coating cannot flow out smoothly.
- Poor cure profile – inadequate flash-off before heat cure or oven wrongly profiled.

Prevention / Best Practices

- Adjust viscosity – reduce viscosity so the coating can level out.
- Optimise spray setup – reduce air pressure and set correct spray distance per material guidelines.
- Apply sufficient coating – especially when using aerosols, ensure enough passes for a level finish.
- Allow flash-off – extend solvent evaporation time before heat cure.
- Check cure profile – re-profile the oven using the supplier's recommended settings.

Troubleshooting & Diagnosis

- Pattern boards/UV inspection — verify finish uniformity, meniscus, and edge definition.
- Viscosity & solids checks — monitor solvent loss; restore target windows.
- Spray gun setup validation — document head type, spray gun distance, fan width, and pressures.
- Pass strategy — switch to multiple lighter passes with proper flash.
- Cure profile review — ensure progressive ramping so the film levels before skinning.

Related Defects (Links)

- [Pinholes, Bubbles & Foam](#)
- [Orange Peel](#)
- [De-wetting](#)
- [Delamination](#)
- [Cracking](#)
- [Corrosion & Ionic Contamination](#)
- [Capillary / Wicking Around Components](#)

Training & Services (SCH)

SCH offers conformal coating training that goes beyond theory—recognising and preventing pinholes, bubbles, foam, orange peel, de-wetting, delamination, and cracking. We cover process analysis, troubleshooting, materials, and application methods.

Why Choose SCH Services?

Partnering with SCH Services means more than just outsourcing — you gain a complete, integrated platform for Conformal Coating, Parylene & ProShieldESD Solutions, alongside equipment, materials, and training, all backed by decades of hands-on expertise.



25+ Years of Expertise – Specialists in coating technologies trusted worldwide.



End-to-End Support – Guidance on coating selection, masking, inspection, and ProShieldESD integration.



Scalable Solutions – From prototype to high-volume production.



Global Reach – Support across Europe, North America, and Asia.



Proven Reliability – Built on quality, consistency, and customer satisfaction.