

# Orange Peel

**Also known as:** poor flow, poor levelling, pebbling

## **Description**

Uneven surface formation - much like that of the skin of an orange - which results from poor coalescence of atomized paint droplets. Paint droplets dry before they can flow out and level smoothly together.



## **Origin and Potential Causes:**

- Improper gun adjustment and techniques. Too little air pressure, wide fan patterns or spraying at excessive gun distances causes droplets to become too dry during their travel time to the work surface and they remain as formed by gun nozzle.
- Extreme shop temperature. When air temperature is too high, droplets lose more solvent and dry out before they can flow and level properly.
- Improper dry. Gun fanning before paint droplets have a chance to flow together will cause orange peel.
- Improper flash or recoat time between coats. If first coats of enamel are allowed to become too dry, solvent in the paint droplets of following coats will be absorbed into the first coat before proper flow is achieved.
- Wrong thinner or reducer. Under-diluted paint or paint thinned with fast evaporating thinners or reducers causes the atomized droplets to become too dry before reaching the surface. Too high viscosity.
- Low shop temperature.
- Too little thinner or reducer.
- Materials not uniformly mixed. Many finishes are formulated with components that aid

coalescence. If these are not properly mixed, orange peel will result.

- Substrate not sanded thoroughly

### **Prevention Techniques:**

- Use proper gun adjustments, techniques, and air pressure.
- Schedule painting to avoid temperature and humidity extremes.
- Select the thinner or reducer that is suitable for existing conditions. The use of a slower evaporating thinner or reducer will overcome this.
- Allow sufficient flash and dry time. Do not dry by fanning.
- Allow proper drying time for undercoats and topcoats. Not too long or not too short.
- Reduce to recommended viscosity with proper thinner/reducer.
- Stir all pigmented undercoats and topcoats thoroughly.
- Prepare and sand substrate correctly.
- Follow recommendations on technical data sheets.

### **Remedy**

- For mild cases, sand and polish using recommended materials and techniques.
- In extreme cases, sand down to smooth surface and refinish, using a slower evaporating thinner or reducer at the correct air pressure.