



Aluminum Foil Temper Guide

Gengfei Steel - Your Trusted Aluminum Foil Supplier

1. What Is Aluminum Foil Temper?

Aluminum foil temper refers to the mechanical condition of the material after processing. It describes how soft or hard the foil is, based on the amount of cold working and heat treatment applied.

Two Main Categories of Temper:

- O Temper (Annealed / Soft): Fully annealed aluminum, very soft, with excellent formability.
- H Temper (Strain-Hardened): Cold-worked aluminum, with varying levels of strength and hardness (e.g., H14, H18).

2. Common Aluminum Foil Grades & Their Properties

Temper Code	Name	Processing	Main Features	Typical Applications
O	Soft / Annealed	Fully annealed	Maximum ductility, very soft	Household foil, pharmaceutical foil, can
H12	Quarter Hard	Cold-rolled	Lower strength, good formability	Seals, labels, flexible packaging
H14	Half Hard	Cold-rolled	Medium strength, good balance	HVAC fins, lids, packaging foil
H18	Full Hard	Cold-rolled	High strength, low elongation	Battery foil, capacitor foil, electronics
H24	3/4 Hard	Cold-rolled + slight anneal	Stronger than H14, still formable	Semi-rigid containers, automotive foil
H26	Extra Hard	Cold-rolled + minimal anneal	High strength, slightly more ductile	Battery foil, blister foil, composite pane

3. How Are Tempers Created?

Cold Working

Aluminum is cold-rolled to increase strength by distorting its grain structure. This produces H-tempers.

Annealing

A heat treatment process that softens aluminum by relieving internal stress, producing the O temper.

4. Industry Applications by Foil Temper

Industry	Recommended Temper	Why
Household Foil	O	Easy to fold, soft, safe for direct food contact
Pharmaceutical Foil	O	Deep drawing capability and sterile sealing
HVAC / Heat Exchangers	H14 / H24	Good rigidity and structural strength

Battery & Capacitors	H18 / H26	High tensile strength, stable under electrical load
Semi-Rigid Containers	H22 / H24	Balance of strength and formability
Industrial Wraps	H14 / H18	Durable, heat-resistant, easy to process

5. Choosing the Right Foil Grade

Use this quick guide to select the right aluminum foil temper for your application:

Need maximum flexibility? -> Choose O temper

Need a mix of strength and forming ability? -> Choose H14 or H24

Need high strength and durability? -> Choose H18 or H26

6. Final Thoughts: Choose Smart, Use Right

The temper of aluminum foil determines its true capabilities. Whether you need deep-draw performance, structural rigidity, or high electrical conductivity, selecting the correct temper is crucial for performance and cost-effectiveness.

At Gengfei Steel, we supply a full range of aluminum foil tempers and alloys to meet your exact application needs. Contact us today for expert support and custom solutions.

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