

# Silicon Steel Specification Sheet

Cold rolled electrical steel under 2 mm in grain oriented and non-oriented grades.

Silicon steel, also called electrical steel, is a silicon-bearing soft magnetic alloy whose properties create a hysteresis region, increase permeability and reduce core losses. For transformers it is cold rolled and typically under 2 mm thick, stacked into laminations for transformer and motor stator and rotor cores. It is supplied in grain oriented and non-oriented grades, and cut by dimple die, laser or EDM.

1 products in this category. Every figure below is published on the product pages at [trueglowimaging.com/categories/silicon-steel.html](https://trueglowimaging.com/categories/silicon-steel.html)

## Silicon Steel for Transformer

Electrical Steel · Grain oriented and non-oriented

Silicon steel, also called electrical steel, is a silicon-bearing steel with magnetic properties that create a hysteresis region, increase permeability and reduce core losses. It is a soft magnetic alloy used throughout electrical engineering. For transformers it is cold rolled and typically less than 2 mm thick, and multiple pieces are pressed into stacks known as silicon steel sheets for use in transformer and motor stator and rotor cores. After stacking, the steel is cut and shaped using a dimple die, laser or EDM process. Two main categories are supplied: grain oriented and non-oriented.

### Specification

|                     |                                                                |
|---------------------|----------------------------------------------------------------|
| Also Known As       | Electrical steel                                               |
| Material            | Silicon-bearing soft magnetic alloy                            |
| Categories          | Grain oriented and non-oriented                                |
| Form                | Cold rolled                                                    |
| Thickness           | Typically less than 2 mm                                       |
| Magnetic Properties | Hysteresis region, increased permeability, reduced core losses |
| Shaping Processes   | Dimple die, laser, EDM                                         |
| Applications        | Transformer cores, motor stator and rotor cores                |

### Key benefits

**Core Loss Is the Whole Point.** A transformer's no-load loss runs for every hour of its life whether it is carrying load or not. Silicon steel grade is what sets that figure, and it compounds over decades.

**Grain Oriented and Non-Oriented Both Supplied.** Grain oriented steel has far lower loss in the rolling direction, which suits a transformer core; non-oriented suits rotating machines where flux direction changes.

**Cold Rolled Below 2 mm.** Thin laminations are what limit eddy current losses. Cold rolling to under 2 mm is the standard construction for transformer cores.

**Three Shaping Processes.** Dimple die, laser and EDM cutting after stacking, so the lamination shape follows the core design rather than a standard punch set.

### Where it is used

Transformer core lamination stacks • Motor stator and rotor cores • Distribution transformer manufacture • Repair and replacement of damaged cores • Reactor and inductor cores • Prototype cores cut by laser or EDM

## How To Enquire

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Minimum order is one unit on the process, packaging, utility and crane ranges. Machined, fabricated and moulded parts are quoted from single pieces upward.