

Electric Underfloor Heating Selection Guide

A practical four-step guide to choosing the right heating film, mat, cable and thermostat

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Step 1 - Identify the floor finish

The floor you are heating decides the element family. Ceramic, porcelain and natural stone accept electric heating mats and graphene heating film. Engineered wood and laminate suit a thin film or an aluminium-film mat, which spreads heat evenly without a thick screed. Screed, new builds and specialist jobs (pipe freeze protection, snow melting) take flexible heating cable. If the floor is an existing renovation with low height allowance, film or aluminium mat is the practical route.

Step 2 - Choose the heating system

System	Typical output	Best under	Why choose it
Graphene heating film	100-200 W/m2	Laminate, wood, tile, dry areas	Fast response, low profile, even far-infrared warmth
Electric heating mat	160 W/m2 typical	Ceramic, stone, tile	Pre-spaced element, quick tile-floor installation
Heating cable	10-20 W/m typical	Screed, pipes, roofs, ramps	Flexible layout, custom lengths, freeze protection
Aluminium-film mat	150-200 W/m2	Renovation under floating floors	Even spread, low build height

Output ranges are typical factory figures, per SunAura factory records.

Step 3 - Size the wattage

A simple rule: plan 100-160 W/m2 for living areas and 160-220 W/m2 for bathrooms, adjusting for heat loss in glazed rooms and the floor finish's insulation. Always pair the element with a thermostat with a floor probe so the floor temperature, not just the air, is controlled. For a worked example with spacing tables and running-cost maths, see the article 'Underfloor Heating Wattage Calculation' on sunaura.ltd.

Step 4 - Choose the control

SunAura thermostats come in three control styles: a smart WiFi thermostat for underfloor heating with 7-day scheduling and app pairing, a touchscreen panel with a bright display, and an RF wireless thermostat for buildings where WiFi is unreliable. All accept the same floor probe, so the controller choice does not change the wiring plan.

Factory and compliance

SunAura Thermal manufactures heating film, mats, cables and thermostats at one factory in Qingdao Huangdao, China, producing heating elements since 2008 - 17 years of continuous manufacturing. The factory operates under ISO 9001, ISO 14001 and ISO 45001, and the product range carries CE, RoHS, LVD and EMC compliance for the European market. Products are exported to more than 50 countries, and every shipment leaves with its batch record and compliance file. Figures per SunAura factory records.

Need a quote? Send your floor areas, floor type and project country to Ethan@sunaura.com.cn or message the SunAura team on WhatsApp for a factory-direct wholesale price.