YFR | APPLICATION CONCEPT

Infrared Heating for Solar Cell Paste Drying

Match the drying step to the paste and cell process.



Existing website image; project and performance not verified.

The Process Challenge

Screen-printed metallization paste needs a defined drying step before the next specified operation. The thermal profile must suit the paste formulation and cell architecture while handling emitted vapors and limiting unwanted thermal exposure.

The Infrared Approach

A controlled infrared-assisted conveyor section can be evaluated for paste drying. Heating zones, belt speed and managed exhaust are reviewed together. Drying, contact firing and tabbing or stringing are separate operations; the appropriate process depends on the cell technology and paste supplier requirements.

1. PRINT
Apply the specified paste

2. DRY
Follow the approved thermal profile

3. EXHAUST
Manage released vapors

4. TRANSFER
Continue the specified process

Application Features

- Radiant heating can be evaluated within a controlled conveyor section
- Zone layout can match the wafer path and process recipe
- Heating demand can follow belt movement and process interlocks
- Airflow and exhaust are reviewed with the paste chemistry
- Emitter and reflector selection follows absorption and thermal trials

Typical Configuration

PROCESS SCOPE
Screen-printed paste drying; not a universal PV recipe

INPUT MATERIAL
Cell architecture, wafer dimensions and paste formulation

EMITTER SELECTION
Spectrum, reflector and power confirmed by trials

PROFILE CONTROL
Zone settings, residence time and temperature measurement

AIR MANAGEMENT
Airflow and exhaust suited to the released vapors

ACCEPTANCE
Drying endpoint and downstream cell-quality criteria

APPLICATION NOTE

Application concept, not a documented YFR customer installation or efficiency result. No universal temperature, heat-up time or accuracy is claimed. Confirm paste requirements, thermal profile and process interfaces before final selection.

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