

First steps with HTS tapes - info sheet

General information

Congratulations! You made a great choice by buying high quality THEVA HTS tape. We created this overview to help you with the first steps of handling superconductor tapes.

HTS tapes are sensitive to bending, stress and corresponding strain, high temperature and chemical degradation. Degradation can occur even if there is no sign on the outside of the wire. Therefore, special care has to be taken for handling and storage:



Always wear gloves when handling tape



Store tape in dry ambient (< 50 % humidity) below 30 °C



Identification number of each tape printed on reel & report

You need more details or have further questions? Don't worry, we are happy to assist you.

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Delivery

- We deliver one tape/ ID per reel
- Reels are labeled with ID, type & length
- HTS side usually facing outwards
- 1 meter handling area on each side, marked by red arrows. No welding spots.
- Printed on back (substrate): product type, periods (1m, 20cm) and position corresponding to TapeStar plot
- Inspection reports supplied for each reel summarize data from our quality inspection
- Back side markings can be removed by alcohol or organic solvents

Soldering

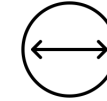
- There is a detailed soldering guide with recommended solders, flux and temperatures for all THEVA Pro-Line products
- We recommend to practice first soldering procedure on test tape sample



Keep temperature as low and exposure as short as possible

- Be cautious when soldering TPL 1000 series, its thin silver layer dissolves easily in solder, leaving a bare HTS tape surface

Winding and bending



Avoid small bending diameters and large tensile forces



Recommended values are given for all Pro-Line products

- If possible, wind with HTS on the inside (compression)
- Microcracks in HTS layer can also happen by localized bending or twisting
- Mechanical properties are given in product spec sheet

In-field properties

- Detailed data available: performance as a function of magnetic field and temperature
- Artificial pinning formula developed for high in-field performance



c-axis is tilted, data always refers to worst field angle

- Indication of c-axis orientation can be marked on request
- We can also provide ready-to-use coils