

1. General information

These recommendations contain information about the processing of hicoTEC® TP material on the basis of the properties Frenzelit is aware of as well as about the general specifications for processing this material resulting from this. The customer has sole responsibility for the processing of hicoTEC® TP into final products. Frenzelit cannot assume any liability for processed products!

2. Processing information

2.1. Reel storage

See **TechInfo – hicoTEC® TP storage conditions.**

2.2. Reel processing

- The heating material must be removed from the reel at right angles. Wavy or crooked edges may lead to inconsistent heat distribution at the edges. Undefined kinks, tears and cuts in the web and the conductors (Cu electrode) are not allowed and may lead to functional damage and to the risk of short circuiting and/or overheating.
- If hicoTEC® TP is combined with other materials, care must be taken to make sure that the surface of the substrate is clean. It is essential that this surface is free of contamination, edges, recesses or materials that may cause tears, cuts and/or shearing of the hicoTEC® TP.
- The surfaces and edges of the material, including the edge outside the copper strip, conduct electricity. hicoTEC® TP must be processed in such a way that no electric short circuiting can occur due to conductive connections to other materials, such as rails, screws or other connections that conduct electricity. If several different webs are being installed, the heating webs must not cross or touch each other. The minimum distance between the heating webs or from conductive surfaces and/or objects is 5 mm.
- In the case of applications outside safety extra-low voltage environments, the user and/or processor must make sure that protection against direct or indirect contact with the supply voltage is guaranteed. If the hicoTEC® TP material in reels has already been provided with comprehensive electrical insulation, the cut edges of the material needs to be insulated subsequently.
- When the material is being glued and laminated, care must be taken to make sure that no air is trapped, in order to guarantee homogeneous heat transfer and to avoid inadmissible increases in temperature in the material or material combination. Please note the maximum temperature for continuous use in the technical data leaflet.

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Recommendations for the use of hicoTEC® TP

- If cut-outs are made in the heating surface, tests definitely need to be carried out in order to check heat distribution. We recommend that you consult our application engineering department for details about specific cases.
- hicoTEC® TP may only be contacted at the Cu electrodes specified by the manufacturer and the contacting processes used must be suitable for the application.
- The following parameters and their tolerances must be observed in determining the dimensions of the heating area
 - Voltage
 - Resistance
 - Maximum current level at the contacts
 - Cross section and length of the supply line
 - Cross section and length of the Cu electrode

2.3. Splices and faults

- Splices may occur within the hicoTEC® TP reels in the ongoing hicoTEC® TP manufacturing process (see **TechInfo – hicoTEC® TP material inspection form**).
- The user must eliminate these splices and may not allow them to be included in downstream material processing.
- Even though the greatest of care is taken, faults may still occur (see **TechInfo – hicoTEC® TP fault characteristics**). Faulty material must be removed before processing is continued and can be credited subsequently via a fault report (**TechInfo – hicoTEC® TP material inspection form**). The faulty material that is removed must be kept in storage until the credit has been made.

3. Testing

Before the product manufactured with hicoTEC® TP is brought into operation, a functional test and a safety test have to be carried out in accordance with the relevant standards and/or the specifications in the country concerned. This testing includes all the electrical connections, contacts and cables.

Tests made in this context could be:

- Electrical resistance
- Protective earth test

Recommendations for the use of hicoTEC® TP

- Insulation test
- High voltage test
- Voltage and current test
- Leakage current test
- Spotlight test

In the case of gluing, care must be taken to make sure that the heating material is glued completely and flat.

- Contacts

Secure connection of the electrical contacts and the cable connection to the heating material.

- Freedom from kinks and tears

Care must be taken to make sure that the heating material is kink-, tear- and wrinkle-free in all processing operations.

- Consistent heat distribution

With the help of a thermographic camera.

4. Safety data leaflet

The safety data leaflet must be observed in all applications.

If you have any application engineering questions, we will be delighted to answer them. Just contact: info@frenzelit.com, phone: +49 9273 72-0

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TECHNISCHE TEXTILIEN

KOMPENSATOREN

ISOLATIONEN

NEUE MATERIALIEN

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