



SYNSHIELD®

Description The flexible copper conductor consists of soft-annealed copper tape available in various versions and insulated either on one side or completely

Properties The copper laminates are produced according to two different methods:

1. The insulation is fixed onto the copper tape without adhesive according to a special method. Due to a lack of adhesive, the laminate is thinner and easy to solder.
2. In case of larger copper thicknesses, the insulation is fixed onto the copper tape using an adhesive. Due to the adhesive, the laminate is softer and more flexible.

The following types are available depending on the version:

- Type 1 Laminated on one side with overlap
- Type 2 Laminated on both sides with overlap
- Type 3 Completely insulated without soldering slot
- Type 4 Completely insulated with soldering slot

Insulation consists of:

- PET film (thermal class B, 130 °C)
- PEN film (thermal class F, 155 °C)
- Nomex® (thermal class F, 155 °C)
- Kapton® (thermal class H, 180 °C)

Copper conductors are flexible and easy to wind. They provide the following advantages due to the nonadhesive insulation connection:

- Excellent complete solderability
- Residue-free processing

Application EMC protection
Copper conductors are used for EMC protection in toroid transformers or as insulated tape conductors for coils in electrical engineering or electronic components.

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Nomex®, NOMEX, Kapton®, KAPTON are a registered Trademark of E.I. Du Pont de Nemours and Company

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Synflex Elektro GmbH
Auf den Kreuzen 24
D-32825 Blomberg
Phone +49 / 5235 / 968-0
Fax: +49 / 5235 / 968-222
Email: info@synflex.de
Internet: www.synflex.de



Static shielding

The laminates are placed and earthed between primary and secondary windings to prevent capacitive couplings.

Direct winding

SYNSHIELD® replaces magnet wires in primary and secondary windings since, in contrast to conductive wires, it has the advantage of a larger surface compared to the cross-section. The largest current flow through a conductor is on the surface since the skin effect grows with increasing frequency. It can, therefore, be used for the production of high frequency transformers. It is possible to tightly wind copper tapes at high tensile forces. This effectively prevents vibration of the coil.

Standards	Thermal class B, F, H, depending on the insulation RoHS compliant according to 2011/65 EC UL-No E301705 (only SYNSHIELD® with PET)
Delivery format	Length 100, 200 m on roll with 76 mm core. Other lengths are possible. Other versions available on request.
Storage	The storage period should not exceed 6 months. The laminates should be stored in a cool and dry place at 20 °C and 50-60 % relative humidity.

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Technical data

	Unit	Copper	PET	PET (adhesive tape)	Nomex®	Kapton®
General						
Width	mm	6-50	6-50	6-50	6-50	6-50
Thickness	mm	0.035-0.300	0.030	0.023	0.050	0.025
Dielectric strength*	kV		6.4	4.5	2.0	6.0

* Listed values are typical values for the respective film in an unprocessed state.

Dielectric strength in association with the conductive material must be agreed with SYNFLEX®.

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