



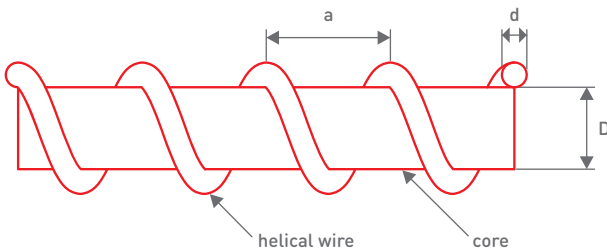
## COMPOSITE WIRES

### THE BEST OF TWO WORLDS

#### HELICAL COMPOSITE WIRES.

the **ELSCHUKOM** helical composite wire consists of a core material and one or more helical materials. these are wound around the core material in different variations.

depending on your requirements we can wind the wire with a specific pitch at a defined distance or with a contacting or overlapping helical wire.



for the core we can use metallic wire material or non-conductive multi-fibre components. we usually use textile glass yarn as the fibre material. this consists of two or more multiple-wound, loose or knotted individual yarns. various other materials, e.g. plastic fibres, can also be used in the selection of the core material.

on request we also offer alternately coiled helical composite wires. in the example given below, the spiral distance changes regularly.

#### helical composite wires

|   |  |
|---|--|
| D | <b>metallic core wires:</b><br>$\varnothing$ 0.01 – 0.50 mm<br>corresponding flat wires can also be used<br><br><b>fibres:</b><br>we select the number and size of the individual yarns as well as the glass and fibre type specifically for the respective application. |
| d | 1 to 16 helical wires<br>$\varnothing$ 0.01 – 0.25 mm<br>correspondingly, flat wire can also be used   |
| a | flexible<br>$a > d$ : any spacing<br>$a = d$ : contacting windings<br>$a < b$ : overlapping (b = width, flat wires only)   |

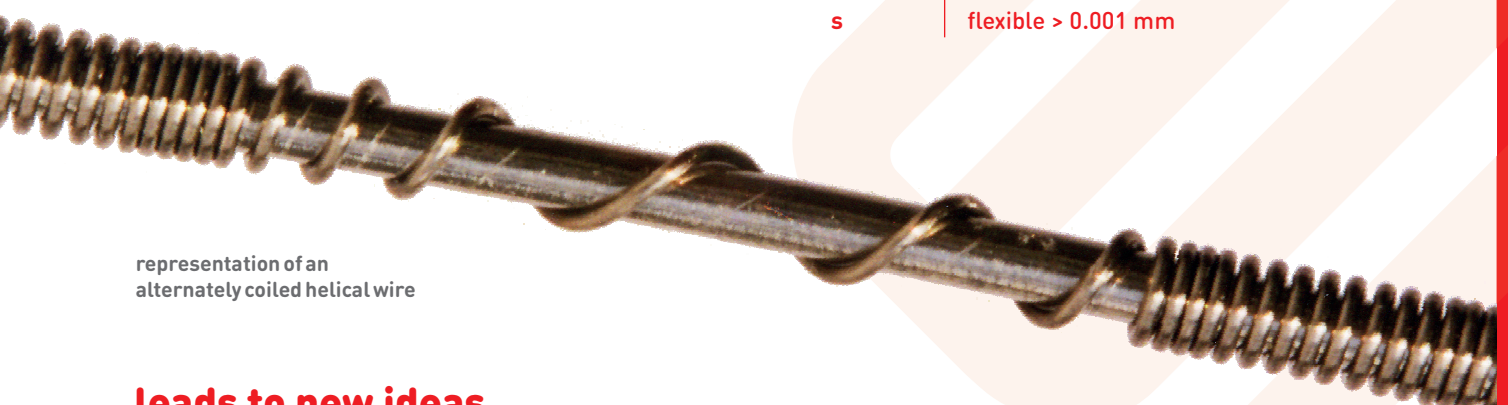
#### METALLISED FIBRE.

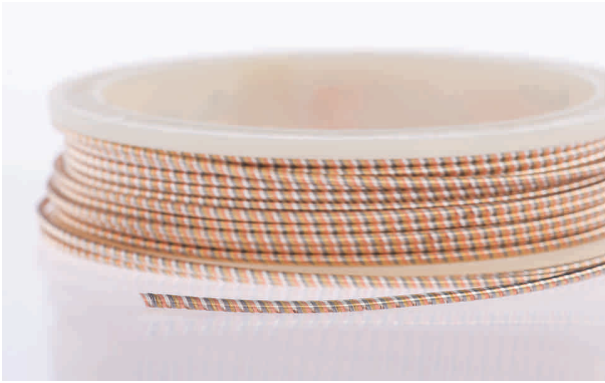
in special cases it is possible that a **metallised fibre** offers decisive advantages over the helical composite wire. in such cases, a single non-conductive fibre with a defined thickness **D** is metallised to a precise layer thickness **s**.

#### metallised fibre

|   |                              |
|---|------------------------------|
| D | $\varnothing$ 0.05 – 1.00 mm |
| s | flexible > 0.001 mm          |

representation of an alternately coiled helical wire





16-fold helix made of silver, nickel, copper and brass wires

## DELIVERY TYPE.

**ELSCHUKOM** supplies helical composite wires in very small quantities as well as customized on request. for the material selection of our helical composite wires almost any wire from the material range of **ELSCHUKOM** can be used.

the geometry of the helical wire can be selected either round or flat.

for more details, for example refer to our information sheets „**ELCON**“, „flat and profiled wires“, „wire compositions insulated“ or „**ELCu**“.



different spiral geometries/-variants

the **ELSCHUKOM** composite wire made of several wires or different materials (metallic and non-conductive components) provides the opportunity to combine specific properties. for example, a core fibre carries the mechanical characteristics and a metal wire coiled on top of it carries the electrical ones.

compared to a singular round wire form, there are various advantages. these include, for example:

- higher conductive resistance with better manageability
- increased stability
- larger wire surface, thus defined chemical interaction (reaction surface)
- flexible adjustment of special „thermal properties“ (e.g. the fibre cools, while a larger wire surface heats)
- surface aesthetics spiral pattern metal colours/ enamelled wire colours

## AREAS OF APPLICATION.



**FUSES.**



**TEXTILE INDUSTRY.**



**MUSICAL INSTRUMENTS.**



**HEATING WIRES.**



**JEWELLERY.**

if you would like to learn more about our composite wires, please do not hesitate to contact us:



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