



RESET
Interreg Europe



European Union
European Regional
Development Fund

Kompozitex

*Composite textile materials for protection of humans and devices against
the effect of electromagnetic and electrostatic fields*

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20 June, 2017 | RESET



Nyklíček a spol. s.r.o.



Location

Rašínova 278

Nové Město nad Metují

Czech Republic



www.novemestonm.cz





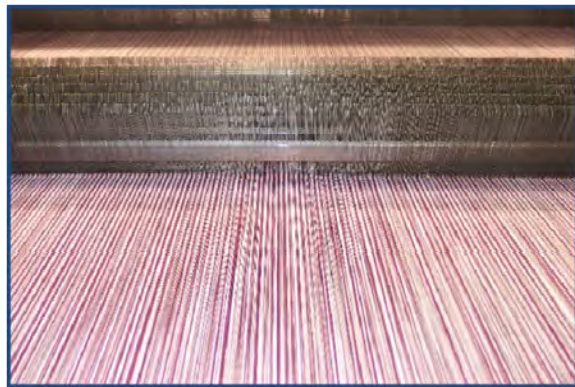
Nyklíček a spol. s.r.o.



Company introduction

Traditional Czech textile company

- Private weaving company
- 85 employees
- Certified according to the standard ČSN EN ISO 9001.



We weave your dreams

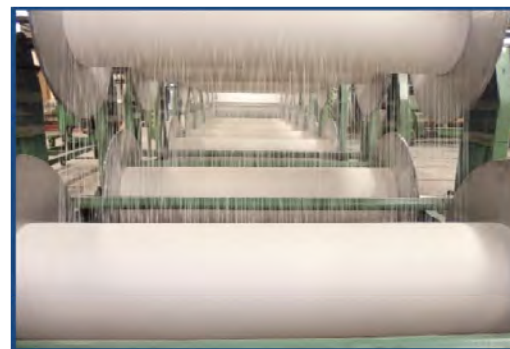


Company structure

- Plant Nové Město nad Metují
 - air-jet and rapier weaving



- Plant Česká Skalice
 - warp preparation
 - direct warping



- sectional warping





Production program

- Production of sheet fabrics by weaving
- Fabrics for technical purposes made of cotton, viscose, flax, polyester and their mixtures

Technical fabrics



Home textile



Shirting fabrics



Healthcare textile



Innovations

Continual process

- Introducing new materials
- Innovations of products
- Using modern warping and weaving technique
- Adjusting to customers' needs





Nyklíček a spol. s.r.o.



Research & Development projects

- BE-TEX Protection of Humans and Technology against High Frequency Radiation – Research and Development of New Textiles
 - (2008-2010)
 - funded by the Ministry of Industry and Trade of the Czech Republic
- Electronic Components in Textiles
 - (2012-2014)
 - funded by the EU funds



MINISTRY OF
INDUSTRY AND TRADE





Nyklíček a spol. s.r.o.



Partners

- Members of



Cluster of
Technical
Textiles



Association
of Textile –
Clothing –
Leather
Industry

- R&D partners



Technical
University of
Liberec
Faculty of Textile
Engineering



Czech Technical
University in Prague
Faculty of Electrical
Engineering



Textile
Testing
Institute



VÚB a.s.

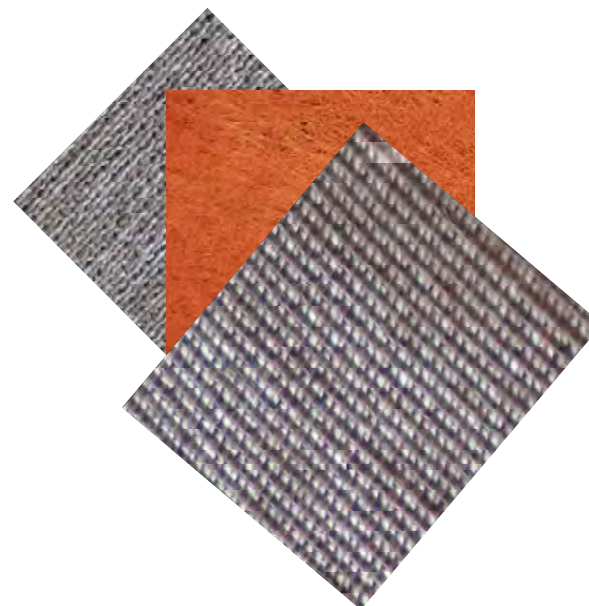


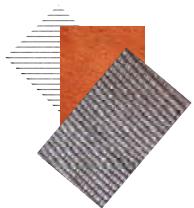
KOMPOZITEX

- KOMPOZITEX - Composite textile materials for protection of humans and devices against the effect of electromagnetic and electrostatic fields (FR-TI4/202)
 - (2012-2015)
 - funded by the Ministry of Industry and Trade of the Czech Republic



MINISTRY OF
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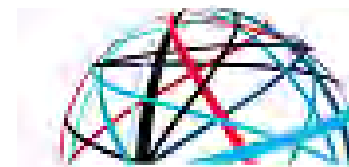
KOMPOZITEX

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Project partners



Nyklíček a spol. s.r.o.
Textile production



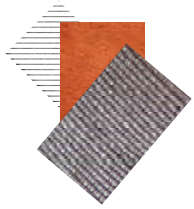
**MINISTRY OF
INDUSTRY AND TRADE**



Czech Technical University in Prague
Faculty of Electrical Engineering

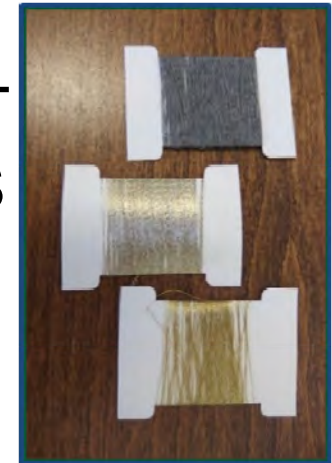


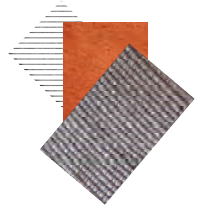
VÚB a.s.
**Machinery manufacture, textile
production, R&D**



Project outputs

- 96 different types of special yarns
 - Conductive fibres – Shieldex and SilveR.STAT together with traditional materials, mainly PES
- More than 130 different types of woven fabrics
 - Differences in yarn (composition, twist, thickness) and construction (fabric sett)





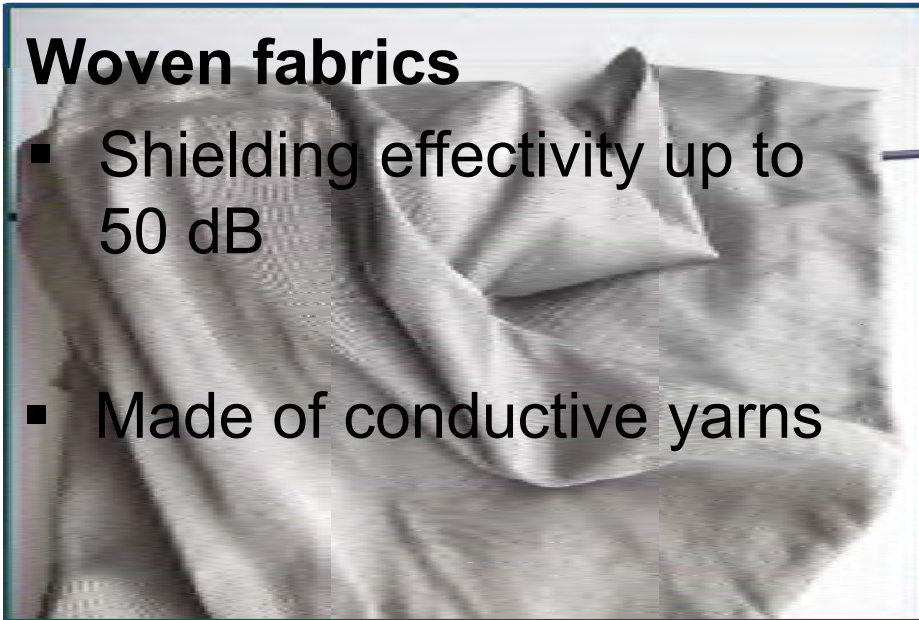
Project outputs

Shielding materials with high conductivity and high electromagnetic shielding efficiency

- Shielding of/from mobile phones, wi-fi, hardware, electronic devices
- Protection from static electricity
- Advantages of textile material – light, flexible, easy to cut or fold
- Mainly in the range 3 MHz to 4 GHz

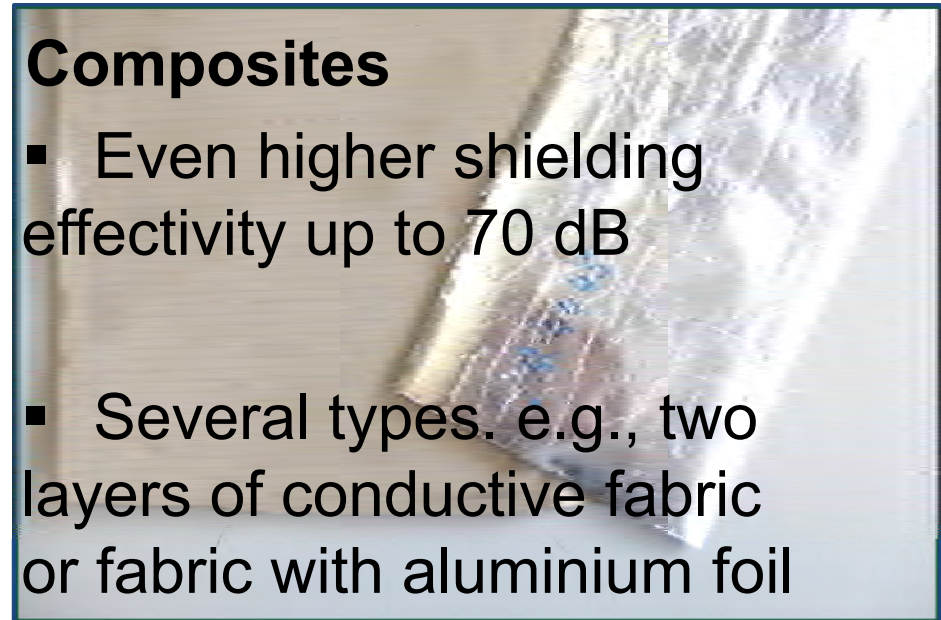
Woven fabrics

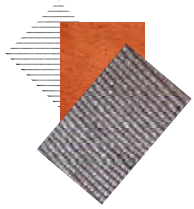
- Shielding effectivity up to 50 dB
- Made of conductive yarns



Composites

- Even higher shielding effectivity up to 70 dB
- Several types. e.g., two layers of conductive fabric or fabric with aluminium foil

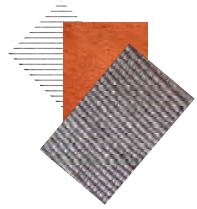




Project outputs

- **Pilot technology line for spinning of special conductive yarns**
- **Pilot technology line for preparing warps from special conductive yarns**
- **Verified technology of production of composite material for protection against electromagnetic and thermal radiation**





Project outputs

Utility model - Heated textile for tents mainly for decreasing of static load by snow

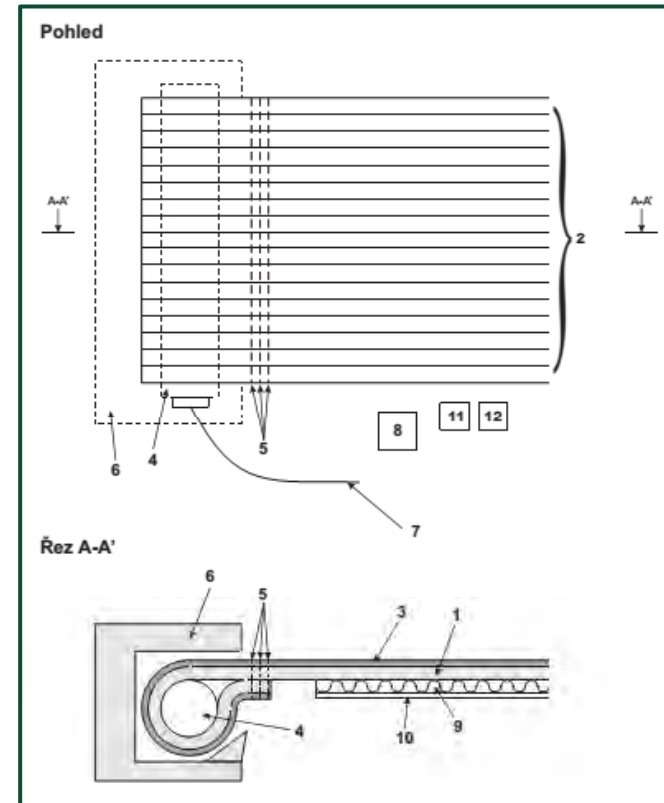
- For big tents with metal construction.
- Technical textile material with electrically heated elements.

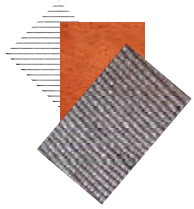
7 functional samples

(textile antenna, EKG measurement device, device for measurement of conductivity, textile electrode...)

Scientific publications

8 peer reviewed papers, 6 abstracts, 2 book chapters, reports.





Final products

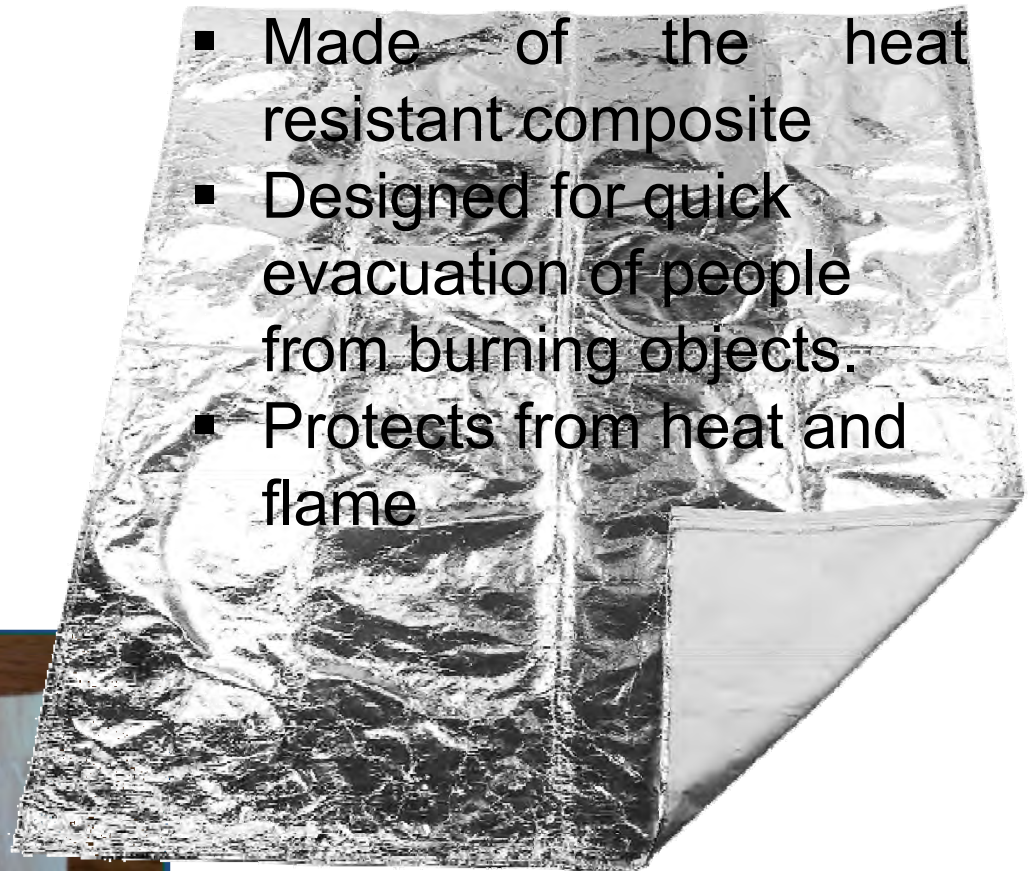
Heat resistant composites

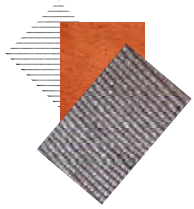
- Best properties achieved by the composite made of aluminium foil laminated on cotton fabric
- Heat resistance was tested by the Fire Protection Institute in Prague



Evacuation blanket

- Made of the heat resistant composite
- Designed for quick evacuation of people from burning objects.
- Protects from heat and flame





KOMPOZITEX

Final products

Emergency evacuation suit

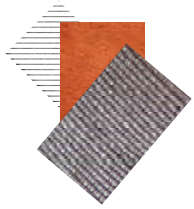
- Made of special fabric
- Infused with extinguishing agent
- Protects the user for up to 15 minutes from heat and flames
- Designed for quick evacuation of people from burning objects



Fire blanket

- Made of the same material





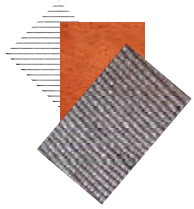
Emergency evacuation suit

EN 469 - Protective clothing for firefighters -
Performance requirements for protective clothing for firefighting

The protection level was achieved by the clothing assembly in these parameters:

- Flame spread
- Heat transfer – flame
- Heat transfer – radiation
- Heat resistance



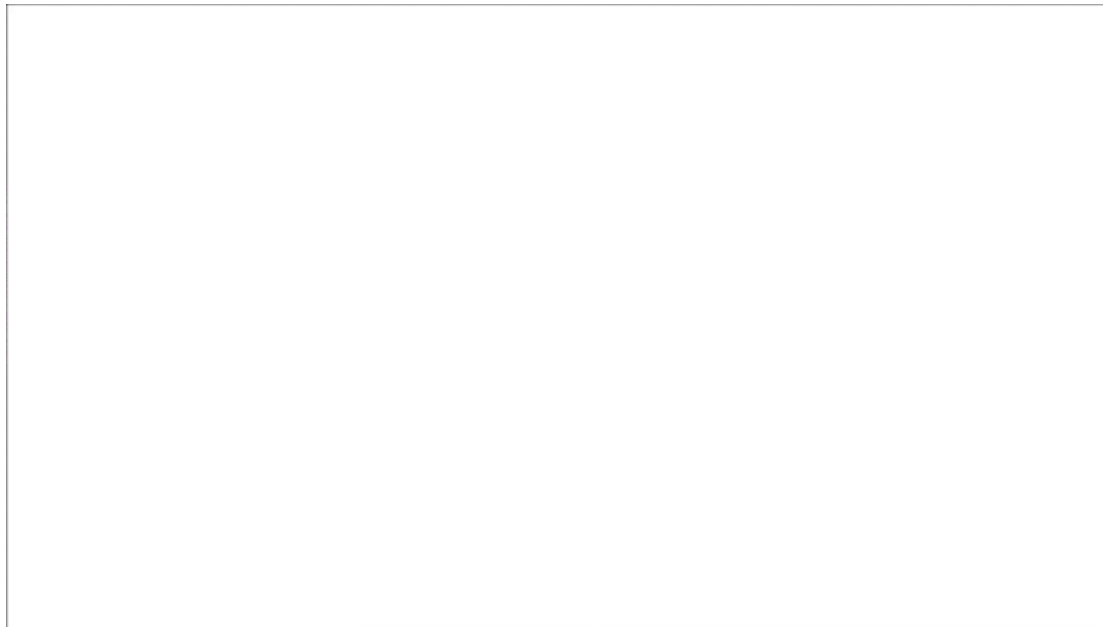


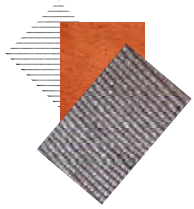
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Emergency evacuation suit

**ISO 13506 -
Protective clothing
against heat and
flame**

Suit undamaged.
Burn injury prediction results
comparable with a mid-range
weight firefighters suit.





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Emergency evacuation kit

The kit includes:

- Emergency evacuation suit
- Emergency evacuation mask
- Efficient fire extinguisher





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Thank you!



Questions welcome



Project smedia

15 MINUTES

CAN SAVE A LIFE



