RFID RADIATION CLEARANCE DECLARATION

Dear customer,

The transponders distributed by the company THERMOTEX NAGEL GmbH are so-called **passive transponders.** They **do not have their own energy source** and can only reflect radio signals from the reader.
There is no radiation from these passive transponders!

This is clarified by the explanation of the fundamental RFID systems functions:
A RFID system generally consists of a writer/reader on which at least one antenna is connected and several transponders where information is stored. The transponder must be within the reading field of the reader to read-out the data.

Only passive transponders are used by THERMOTEX for data transmission.

- At inductive coupled transponders in HF and LF frequency range (13,56 MHz respect. 100 kHz/125 kHz) the energy from the antenna coil of the reader is inductively transmitted to the antenna coil of the transponder by a magnetic field. A voltage is generated at the antenna coil of the transponder which is rectified and used as energy supply of the transponder. The transponder modulates the signal by different pressure of the antenna coil which is detected by the receiver (load modulation).

- However, UHF transponders (868 MHz) get their energy from the electromagnetic far field which is emitted from the transmitting antenna of the reader. The data are transmitted by modulated backscattering of this signal (backscatter procedure).

- Passive transponder are generally composed by an electronic data carrier (IC) and an extensive coil (HF, LF) or an antenna (UHF).

Electromagnetic waves are therefore only emitted by the RFID writer/reader in the small restricted area. Due to the fact that the maximum transmission level is restricted by legal regulations, the reading field is usually only a few centimeters around a RFID writer/reader for inductive coupled transponders and several meters for UHF transponder.

A transponder used for workwear therefore does not represent a radiation risk and no hazard to health.

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