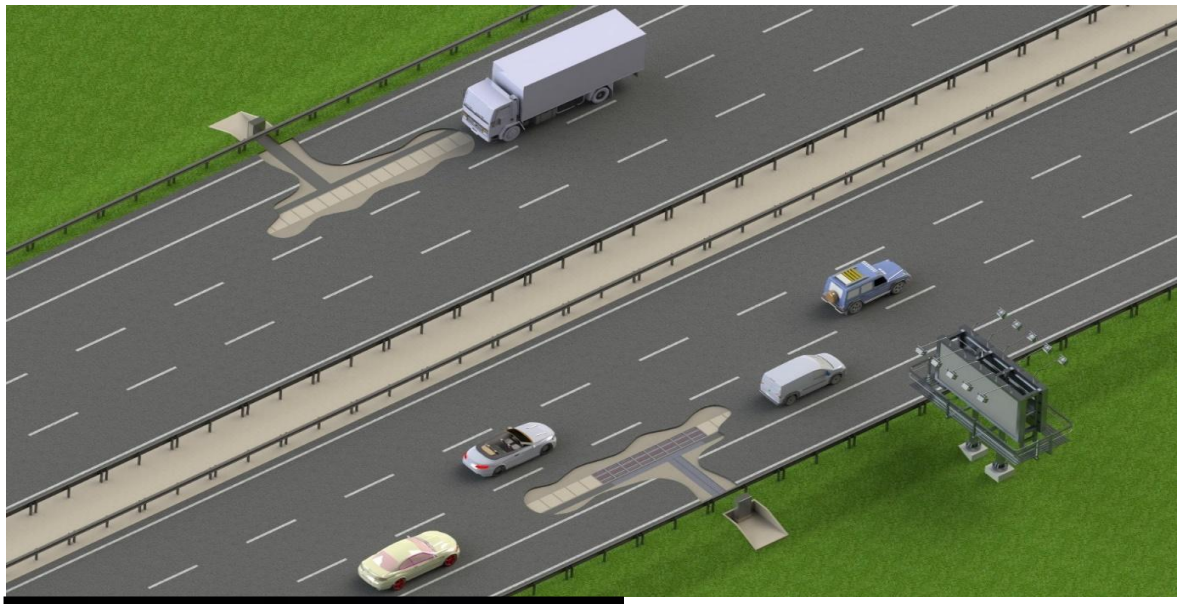

# MAGNETIZABLE CONCRETE

# MC120™

MAGMENT ENERGY

September 2026

**MATERIAL DATA SHEET**

# Material Properties

| | | | | |
|---|---|---|---|---|
| **Initial permeability** | 25°C | $\mu_i$ | | **120 ± 20%** |
| **Saturation @H=8 kA/m (100 Oe)** | 25°C | Jmax | [mT] | **390** |
| | 100°C | Jmax | [mT] | **340** |
| **Coercitive field strength** | 25°C | $H_C$ | [A/m] | **35** |
| **Curie-Temperature** | | $T_C$ | [°C] | **> 210** |
| **Resistivity** | DC | $\rho$ | [$\Omega$ m] | **20** |
| **Density** | | $\gamma$ | [kg/m³] | **4200** |
| **Relative loss factor** | @1 MHz | tan$\delta$/$\mu$i | [$10^{-3}$] | **< 2.5** |
| **Relative temperature coefficient** | -40°C…150°C | $\alpha_F$ | [$10^{-6}$/K] | **< 50** |
| **Hysteresis material constant** | 10kHz | $\eta_B$ | [$10^{-6}$/mT] | **< 20** |
| **DC-Bias (percent permeability change)** | @2kA/m (25 Oe) | $\mu_{rev}/\mu_i$ | | **60%** |
| | @4kA/m (50 Oe) | $\mu_{rev}/\mu_i$ | | **32%** |
| **Realtive core losses** | @ 85KHz, 50 mT | $P_V$ | [kW/m³] | **120** |
| **Specific heat** | | $c_p$ | [J/kg K] | **700** |
| **Thermal conductivity** | | $\lambda$ | [W/mK] | **5** |
| **Young's modulus** | | $E_c$ | [GPa] | **80** |
| **Compressive strength** | | $f_c$ | [MPa] | **120** |
| **Tensile strength** | | $f_t$ | [MPa] | **10** |
| **Linear expansion coefficient** | | $\Delta l/l$ | [$10^{-6}$/K] | **12** |

*Magnetic parameters measured on R140/30 and R250/50 ring cores in accordance with IEC60401-3 & IEC62044-1,-2, and -3.*

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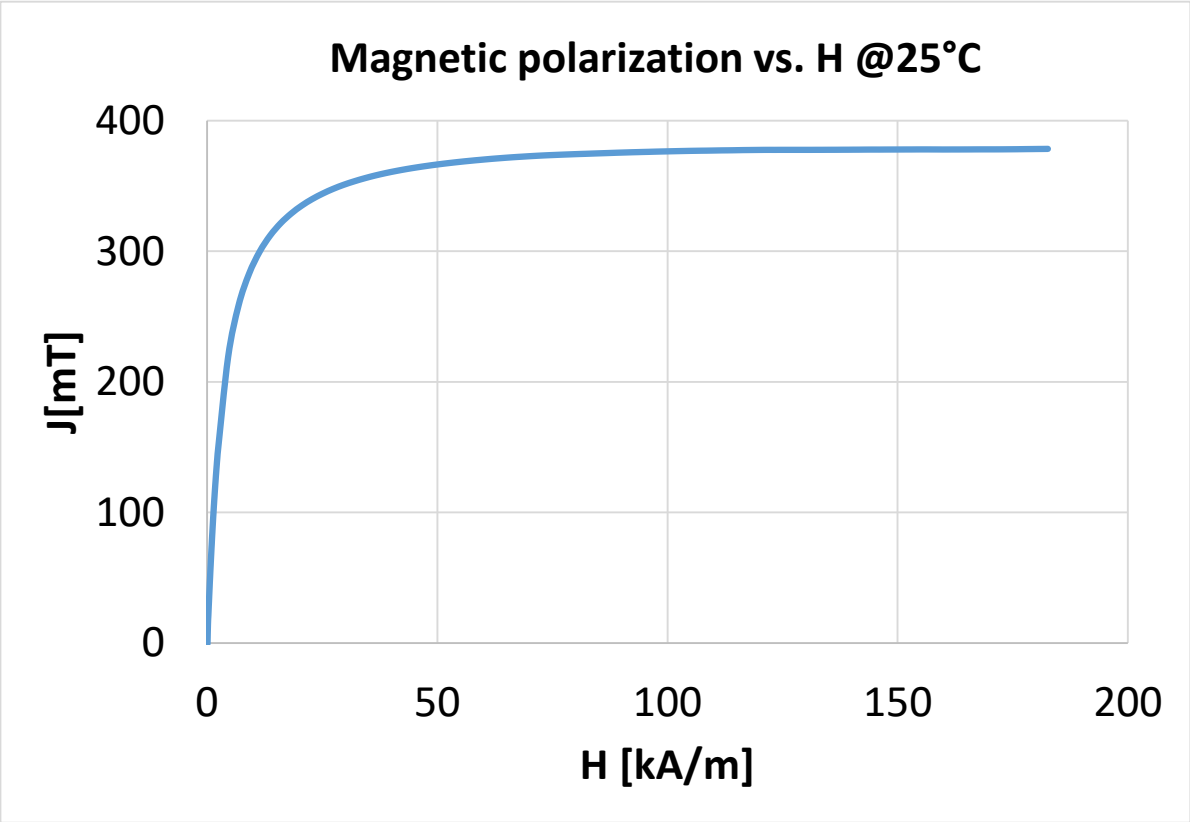


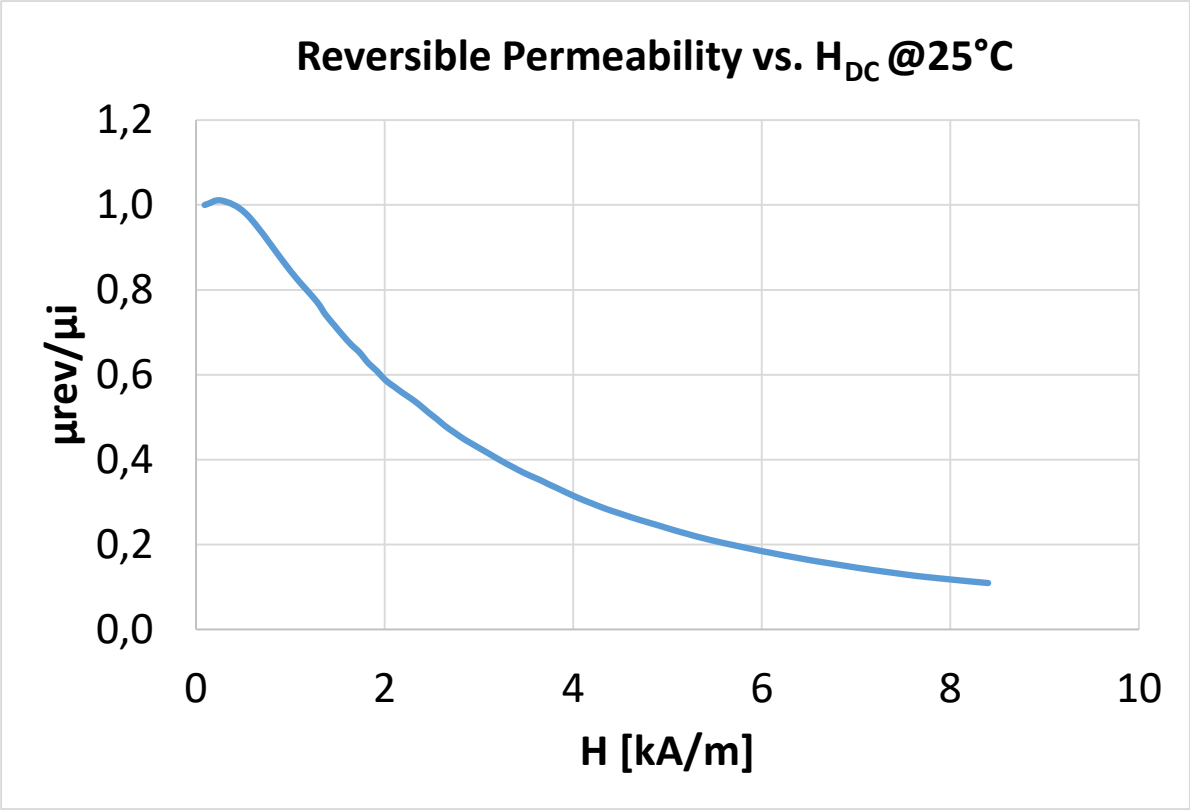


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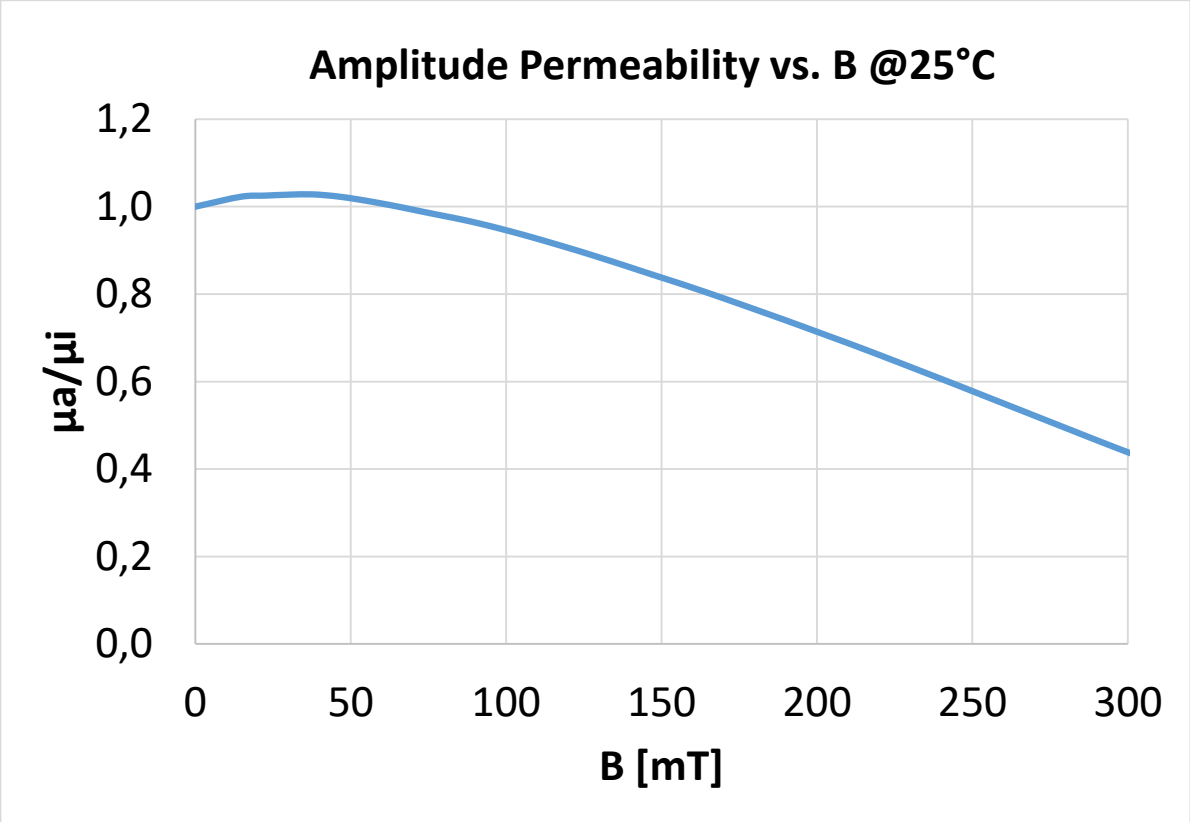


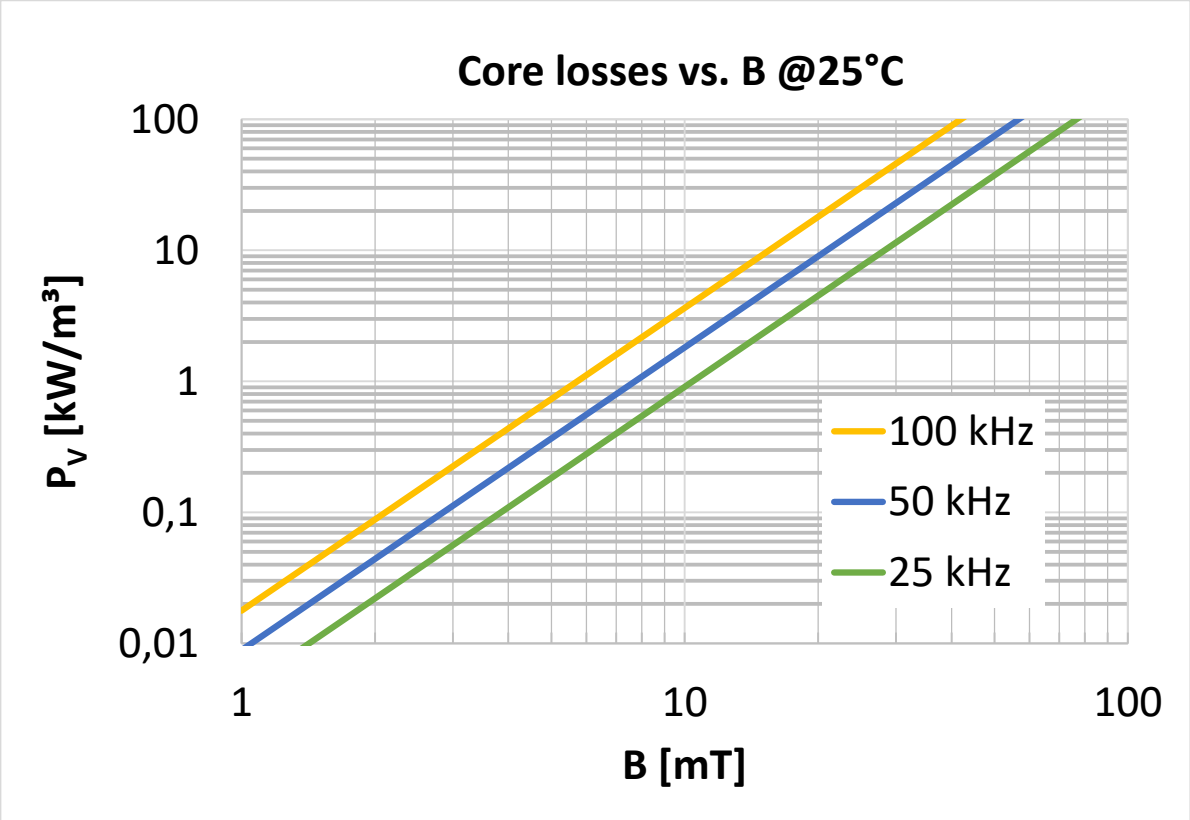


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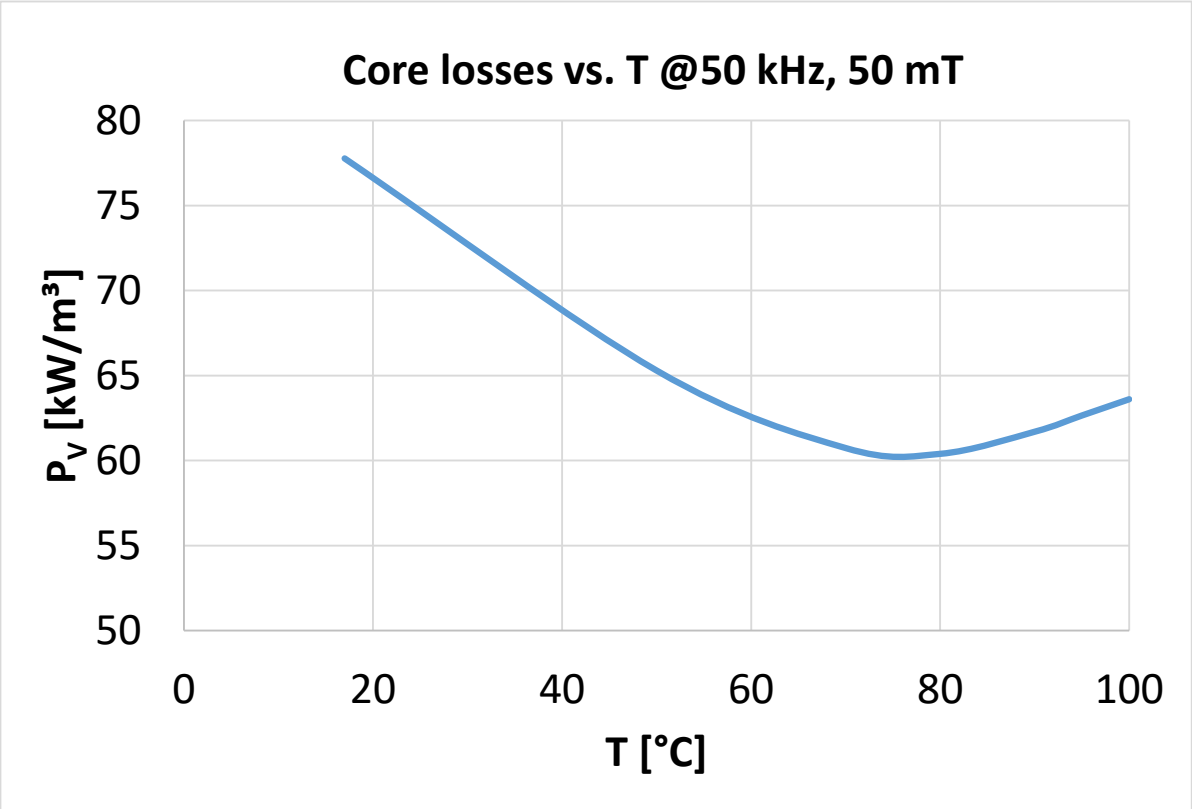


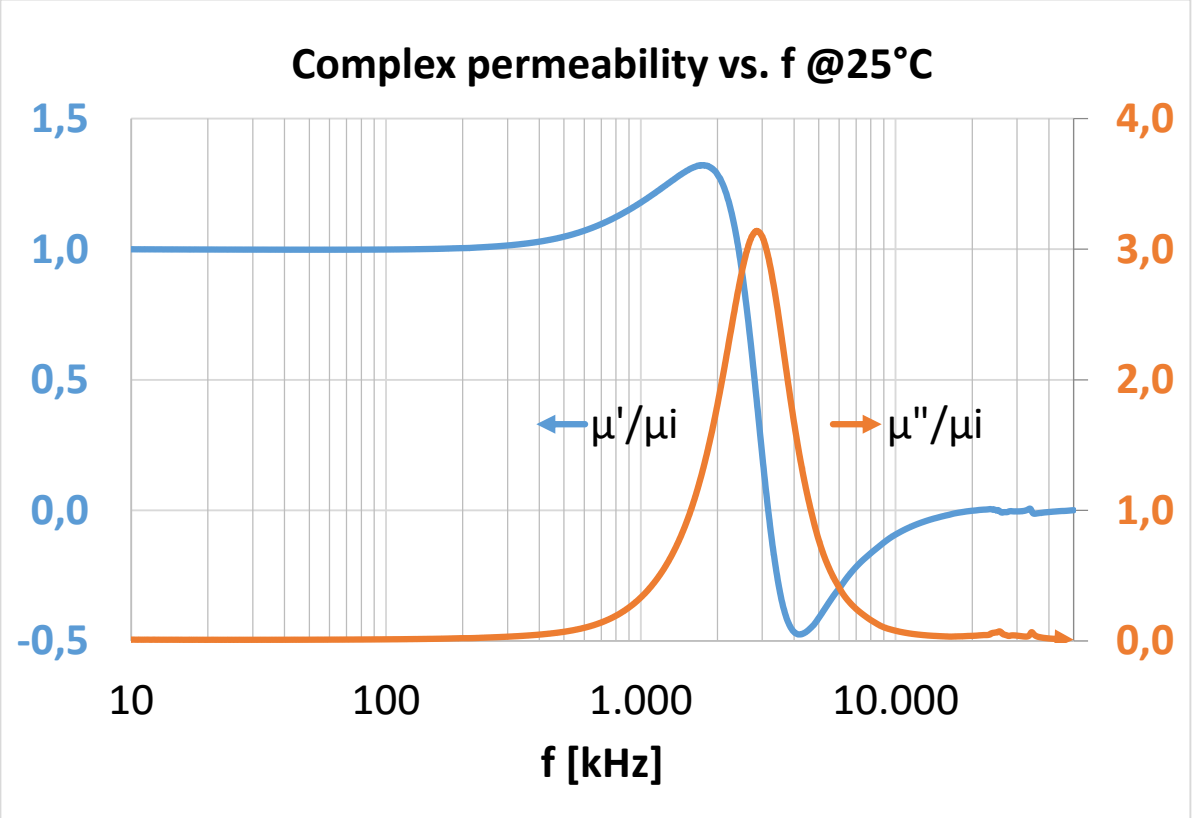


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