

Figure F1. A. Kapton-insulated Hot Disk sensor (Model 5465), showing the 6.4 mm diameter spiral-shaped heating element and temperature sensor (image source: Hot Disk Instruments). B. Experimental setup, with the sensor placed between two cylindrical subsamples (~2 cm diameter) in a symmetrical sandwich configuration for two-sided heat flow into the sample material.

Figure F2. Example thermal property measurements and model fitting results. A. Observed temperature rise vs. time for three repeated experiments conducted under identical conditions using the transient plane source method. B. Linearized fit of the same temperature rise data vs. theoretical function $H(\tau)$, used to determine thermal conductivity and diffusivity. C. Residual temperature (observed minus modeled) plotted as a function of the square root (sqrt) of time, highlighting the excellent fit quality and stability of the measurement procedure.

Figure F3. Thermal property measurements, Site U1518. A. Thermal conductivity ($W/[m \cdot K]$). Black circles = measurements from this study, cyan circles = ship-board measurements. B. Thermal diffusivity ($\times 10^{-7} m^2/s$). C. Volumetric heat capacity ($MJ/[m^3 \cdot K]$). Error bars (± 1 standard deviation from replicate measurements) are smaller than the marker size. Along the left-hand depth axis, core recovery is shown alongside lithologic units as defined in Saffer et al. (2019a) for Site U1518.

Figure F4. Thermal property measurements, Site U1519. A. Thermal conductivity ($W/[m \cdot K]$). Black circles = measurements from this study, cyan circles = ship-board measurements. B. Thermal diffusivity ($\times 10^{-7} m^2/s$). C. Volumetric heat capacity ($MJ/[m^3 \cdot K]$). Error bars (± 1 standard deviation from replicate measurements) are smaller than the marker size. Along the left-hand depth axis, core recovery is shown alongside lithologic units as defined in Barnes et al. (2019) for Site U1519.