

convection [tect]

convection [tect] . A process of heat transfer involving movement of mass. During convection, warmer, less dense material rises while cooler, denser material sinks. Convection takes place when buoyancy forces exceed the strength of the material, and heat flow is too great to be accommodated by conduction. Convection occurs in the Earth's mantle beneath the lithosphere; it is not clear whether whole-mantle convection occurs, or whether upper-mantle convection is independent of lower-mantle convection. Convective flow may exert shear stress to the base of plates and thus may affect plate velocity, but shear due to convection is probably not the main cause of plate motion. Cf: *advection [tect]*.

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