

Abstract

High-pressure granulites – felsic, metapelitic and clinopyroxene-bearing ones – from the vicinity of the Saxothuringicum / Teplá–Barrandian boundary, N Bohemia, have experienced polyphase metamorphism and deformation.

P–T conditions of granulite facies metamorphism were determined as 15–17 (even 22) kb, and 750–800°C (up to 930°C for pyroxene-bearing granulites). P–T values of 33kb and 890–1020°C characterize HP metamorphism of the associated garnet peridotites.

The P–T–t path of granulites corresponds to the initial isothermal decompression, followed by cooling under less significant pressure decrease. Initial decompression has been documented also for peridotites. Absence of HT/LP overprints on granulites distinguishes them from granulites of the Moldanubicum.

Studied granulites were derived from magmatic (felsic and pyroxene-bearing granulites) and metasedimentary (metapelitic granulites) protoliths. Granulites are undepleted with respect to LILE and REE abundances, that correspond to the upper continental crust.

Granulite formation and uplift are interpreted as a result of the crustal thickening and tectonic thinning at the convergent plate margin, associated with continental collision (subduction). It is suggested that there is an important discontinuity in the area, which can have a character of a suture.

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