AMALGAMATION DURING THE BRASILIANO OROGENY IN THE PIANCÓ - ALTO BRÍGIDA FOLD BELT, BORBOREMA PROVINCE, NE – BRAZIL

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The Piancó-Alto Brígida Fold Belt is composed of three sequences: 1) Riacho Gravatá Complex, metavolcanosedimentary sequence, developed during a Mesoproterozoic crustal extensional regime, with characteristics of both platform and continental slope sedimentation; 2) Cachoeirinha Complex, Neoproterozoic metavolcanosedimentary sequence of volcanic arc affinity; and 3) Serra do Olho D'Água Sequence, Late Neoproterozoic molasse. Sequences 1 and 2 where affected by the main metamorphic foliation (S2) and sequence 3 was affected only by later deformation phases. The structural framework of the Piancó-Alto Brígida Fold Belt is characterized by a system of transcurrent shear zones related to the third phase of deformation (D3), which define several structural domains. The D3 shear zones overprinted older structures related to the sub-horizontal foliation S2, developed during the second deformation phase (D2). The peak of metamorphism occurred synchronously to the S2 foliation. Geothermometry and geobarometry data show that the conditions metamorphic peak in the Riacho Gravatá Complex are similar to those recorded in subduction zones, while in the Cachoeirinha Complex are similar to those recorded in extensional basins. Locally, the S2 foliation is milonitic, with S-C type arrangement developed in the sub-horizontal shear zones (D2), which defines thrust systems with transport to the southeast. The thrust systems promoted the crustal shortening and amalgamation of the Riacho Gravatá and Cachoeirinha Complexes. Later transcurrent shear zones, related to the third deformation phase deformed and transposed the thrust systems (D2), locally. The Olho D'Agua Sequence was deposited in small and discontinuous basins, formed by the later transcurrent shear zones.