Reconstruction of Cretaceous rifts incorporated in the Outer West Carpathian wedge by balancing

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Two balanced cross-sections are constructed through the Polish Outer Carpathians to restore Early Cretaceous rifts, the fill of which is incorporated into the Tertiary Carpathian accretionary wedge. The data indicate that the Early Cretaceous rifting in the area of the Silesian Basin was followed by the Late Cretaceous–Paleocene basin inversion, Eocene pelagic deposition, and Oligocene accretionary prism depo-

sition. The wedge shortening ranges between 31–58%, being 57–58% in the Silesian Nappe. The original width of the Silesian Basin is about 130–138 km. The rifting started at the Jurassic/Cretaceous boundary and formed the horst and graben structure, defined by normal faults. Parts of horsts became emerged during various rifting stages. Sedimentation rates in grabens varied around 4.7, 2.1 and 1.3 cm/ka during 3 rifting stages, whilst sedimentation rates on their slopes varied around 0,0–1.26 and 0 cm/ka. The altitude difference between horst tops and graben floors did not exceed 2 km. The reconstructed width of horsts ranges between 17.5–18.3 km. The reconstructed width of several grabens has values 14.5, 45.7, 57.7 and 79.3 km. The rifting-related extension was NE–SW directed. Sometimes, the very low $(\sigma_2-\sigma_3)/(\sigma_1-\sigma_3)$ stress ratio of the driving stress configuration resulted in polydirectional extension when the value decreased below 0.1.