

Era	Formation	Series	Start (Ma)	Geomorphological processes	Climate
Cenozoic	Quaternary	Holocene	0.01	weathering, erosion, especially of unconsolidated material	moderate humid
		Pleistocene	2.8	East Eifel volcanism, formation of the transverse valley of the Rhine river through the Rhenish Massif, strong tectonical uplift, formation of river terraces and periglacial layers	alternation of cold periglacial periods and moderately warm interglacial periods
	Tertiary	Pliocene	5	weak tectonical uplift, weathering and strong denudation of the old weathering mantle due to climatic change, deposition of quartz gravels at river terraces	change from warm humid to moderate humid, warm arid phases
	Neogene	Miocene	23	volcanism (e.g. Vogelsberg), phase of kaolinitic deep weathering, denudation, sedimentation of kaolinitic clays formation of the recent river system	warm humid, warm arid phases
	Tertiary Paleogene	Oligocene	38	strong tectonic uplift, formation of fault blocks and fault troughs, weathering and denudation, sedimentation of kaolinitic clays western Eifel volcanism, sub-volcanoes of the Siebengebirge	warm humid with moderate and arid phases
		Eocene	55	penplanation, kaolinitic deep weathering and soil formation, phases of tectonic uplift with denudation of soils and sedimentation of kaolinitic clays.	warm humid, warm arid phases
		Palaeocene	65	penplanation, kaolinitic deep weathering and soil formation	warm humid
Mesozoic	Cretaceous	Upper Lower	100 145	penplanation, deep weathering, marine transgressions at the margins of the Rhenish Massif	warm humid