

National Commission for Stratigraphy Belgium

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Aachen Formation - AAC

Cretaceous

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Authors: Dumont (1849), W.M. Felder (1975).

Description: A complex unit, in the type area primarily sands with intercalations of clayey and silty sands and sandy and silty clays in the lower part. The Aachen Formation rests on eroded Palaeozoic carbonate and psammitic/pelitic rocks, and comprises three members:

- Hergenrath Member (thickness 10-35m): alternation of light to dark grey, sandy and silty clays with silty and clayey, light grey fine to coarse-grained sands, with subordinate fine-grained gravel, silts, minor red clays and ferruginous horizons. Locally, with large quantities of wood debris, marcasite and pyrite concretions. Root horizons are common, and in part they are associated with lignite deposits, especially in the upper part.

- Aken and Hauset members (thickness up to about 40 m): well-sorted, yellow-white to clean white, limonite-stained fine sands, locally with irregular gravelly sandstone beds and concretions, with small- and large-scale cross-bedding. Flaser cross-bedding occurs commonly; bioturbation of varying intensity. In the lower part, locally lenticular bodies of silty clays.

Stratotypes:

Hergenrath Member: Schampelheide quarry at Kelmis (La Calamine), Liège province.

Aachen Member: Käskorb Quarry (outcrop 62D-74 of W. M. Felder) at Kelmis (La Calamine), Liège province.

Hauset Member: Flög Quarry at Hauset, Liège province.

Area: Type area is the wooded area south of Aachen (Aachener Wald), on German/Belgian border

Thickness: Varying from less than 1 m to 60 m.

Age: Middle Santonian to earliest ?Campanian on associations of spores, pollen and dinoflagellates (Batten et al., 1987, 1988; Streel et al., 1994).

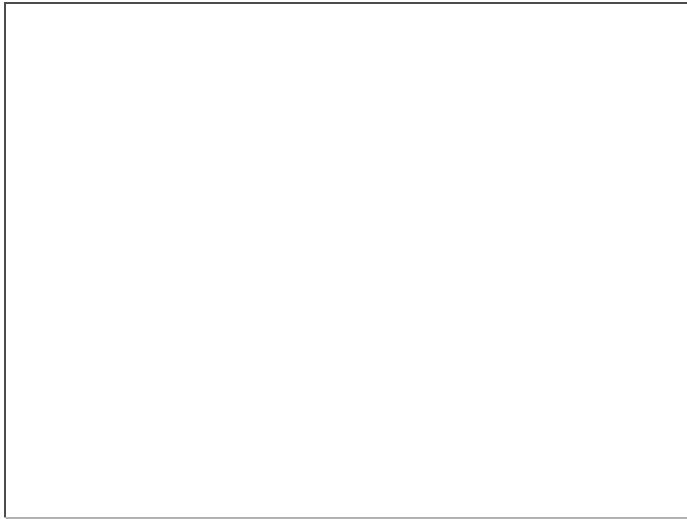
Remarks: - Formerly described as "grès blanc" (Dumont, 1832), "Aachénien" (Dumont, 1849), "Sables d'Aix -la- Chapelle" auctorum, "Assise d'Aix-la-Chapelle" (Purves, 1883; Rutot, 1892; Stockmans, 1946), "Akens Sand" (Netherlands Geological Survey, 1957).

- Recent references: W.M. Felder (1975), Albers et al. (1978), Albers & W.M. Felder (1979), Batten et al. (1987, 1988), Streel et al. (1994), Jagt (1999), Meyer (2000).

Complementary data (M. Dusar, 2011):

Contiguous deposits assigned to the Aachen Formation are limited to the Belgian - Dutch - German boundary area and the eastern part of the Pays d'Herve. Further west, thin residual or channelised deposits consisting of black clays, organic muds and/or white sands are known till the Meuse valley and also occur in the eastern Campine. The up to 15 m thick weathered sand-clay deposits preserved in dissolution pockets within the Dinantian limestones of the watershed north of the Vesdre valley, classified as (Tertiary) SBL in the new geological map of Wallonia, yielded ages ranging from Cenomanian to Santonian based on K-Ar dating of neoformed Mn oxides (Demoulin et al., 2010).

Demoulin, A.; Quesnel, F.; Dupuis, C.; Gerrienne, Ph. & Yans, J., 2010. Cenomanian sands and clays north of the Vesdre valley: the oldest known Cretaceous deposits in eastern Belgium. *Geologica Belgica* 13/3: 241-255.



Legend : Borehole core showing greensand with flint gravel of Vaals Formation (upper row), violet clayey silt with phytoclasts of Aachen Formation (second row from top) in contact at 19,40 m with the paleosol developed during the Cretaceous on Dinantian limestones and consisting of leached kaolinitic silicites (middle part of core box) grading into carbon-enriched silicites (lower row). Corehole SC1 in Lixhe, commune Visé, Geodoc 108W0431 (photo M. Dusar).