

Freikofel Formation

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Österreichische Karte 1:50.000

Blatt BMN 197 Kötschach

Blatt UTM 3109 Oberdrauburg

Blatt UTM 3110 Kötschach-Mauthen

Blatt UTM 3116 Sonnenalpe Naßfeld

Carta Topografica d'Italia 1:50.000

Foglio 018 Passo di Monte Croce Carnico

Foglio 031 Ampezzo

Foglio 032 Tolmezzo

Definition

Prevalent floatstone/rudstone interbedded with lithoclastic packstone/grainstone and pelagic mudstone/wackestone (BANDEL, 1972; SPALLETTA et al., 1982; SPALLETTA & VAI, 1984; SCHÖNLAUB, 1985; KREUTZER, 1990, 1992a, b; SCHÖNLAUB et al., 2004; SCHNELLBÄCHER, 2010; PAS et al., 2014).

Description

The Freikofel Formation consists of three well-bedded facies listed in order of decreasing abundance.

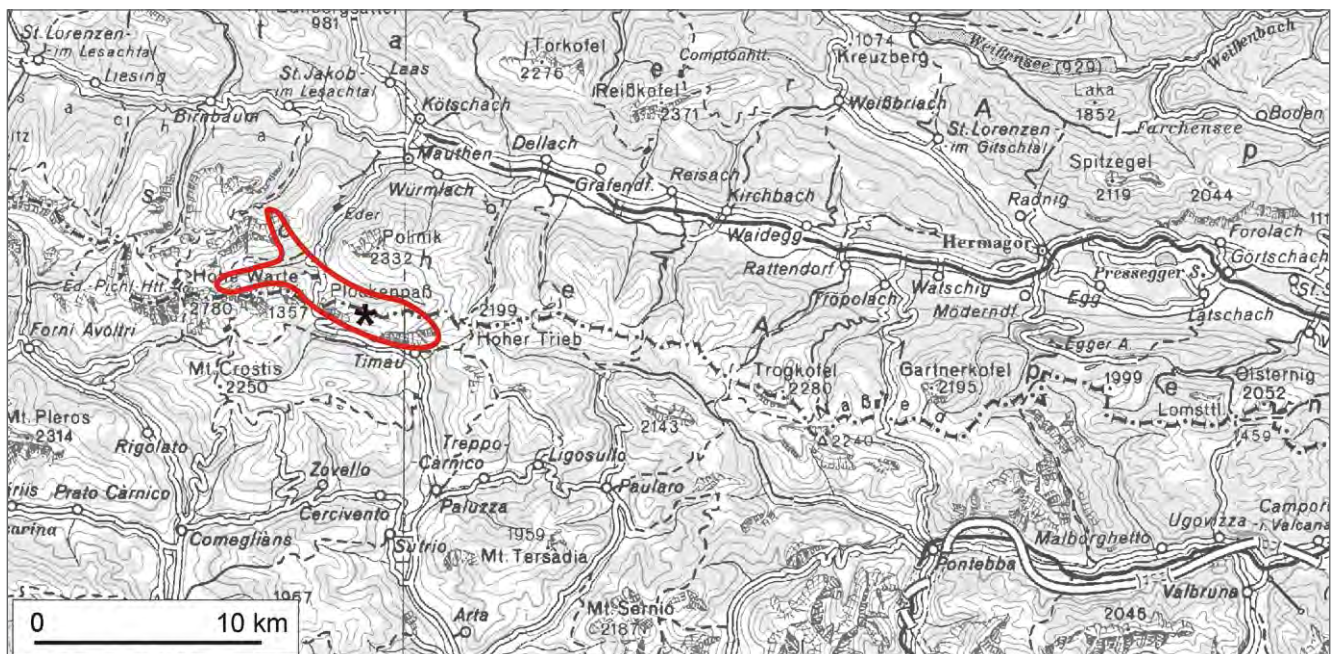
Facies A: medium dark gray, medium to thick bedded, moderately sorted lithoclastic rudstone (subordinately floatstone) sometimes showing fining upward grading; matrix consists of grainstone (subordinately wacke-/packstone);

Facies B: medium dark gray, thin to medium bedded grainstone and subordinate packstone locally showing fining upward grading; planar and subordinate cross lamination is present;

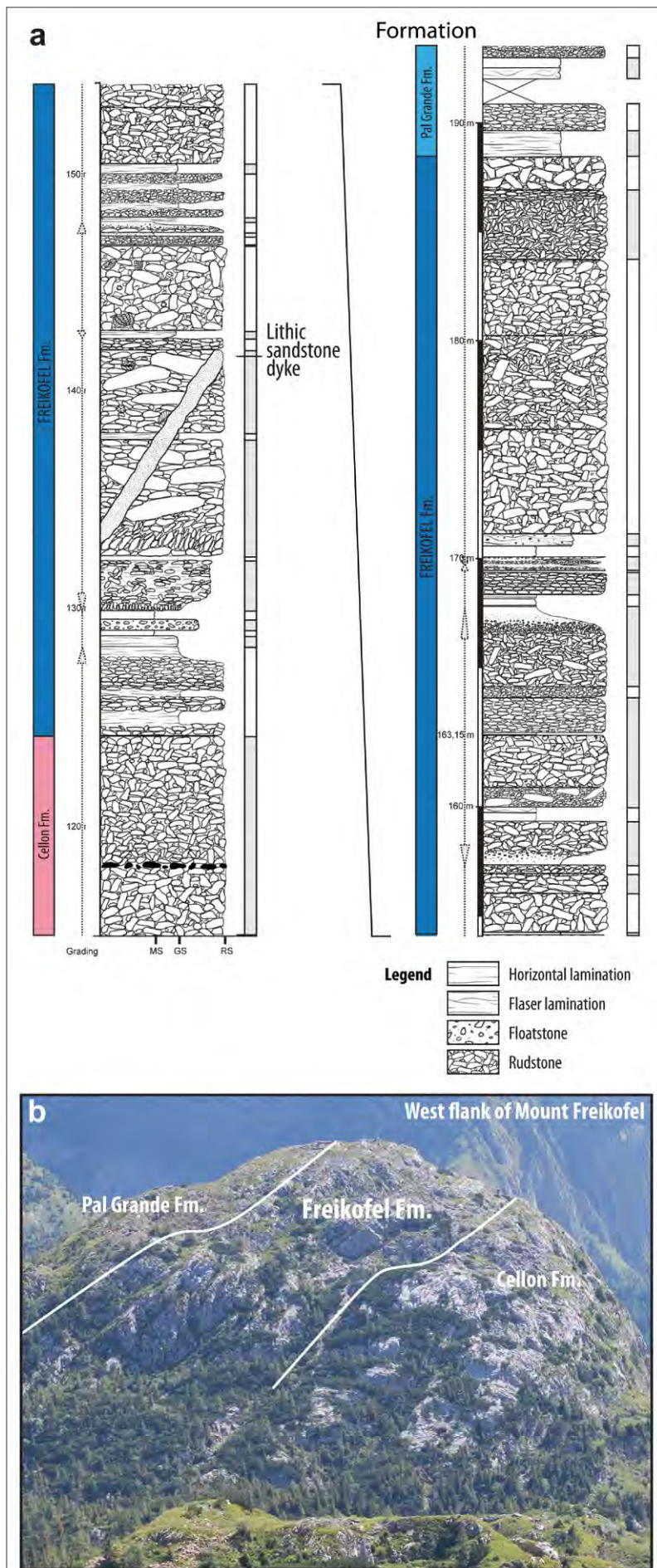
Facies C: very thin to thin bedded, moderate pink to gray mud-/wackestone.

Fossil content

Brachiopods, calcispheres, cephalopods, conodonts, crinoids, foraminifers, trilobites, ostracods, rugose corals, stromatoporoids and styliolinids have been documented (KREUTZER, 1992b; PAS et al., 2014).



Areas of outcrop of the Freikofel Formation with indication of the stratotype (asterisk).



The Freikofel Section. a) log of the Freikofel Formation (SCHNELLBÄCHER, 2010); b) view of the section taken from the west (photo M. PONDRILLI).

Depositional environment

The Freikofel Formation was formed at the slope of a carbonate apron (SCHNELLBÄCHER, 2010; PAS et al., 2014). Deposits of hyperconcentrated and concentrated density flows (Facies A) and turbidity flows (Facies B) predominate. Thin interbeds of pelagic sediments (Facies C and D) are rarely preserved.

Stratotype

Freikofel Section, located on the western slope of Mt. Freikofel (BANDEL, 1972; SCHNELLBÄCHER, 2010; PAS et al., 2014), between coordinates N 46°36'05.1", E 12°58'33.9" (base of the section) and N 46°36'08.0", E 12°58'35.0" (top of the section).

Reference sections -

Type area

Central Carnic Alps.

Main outcrop areas

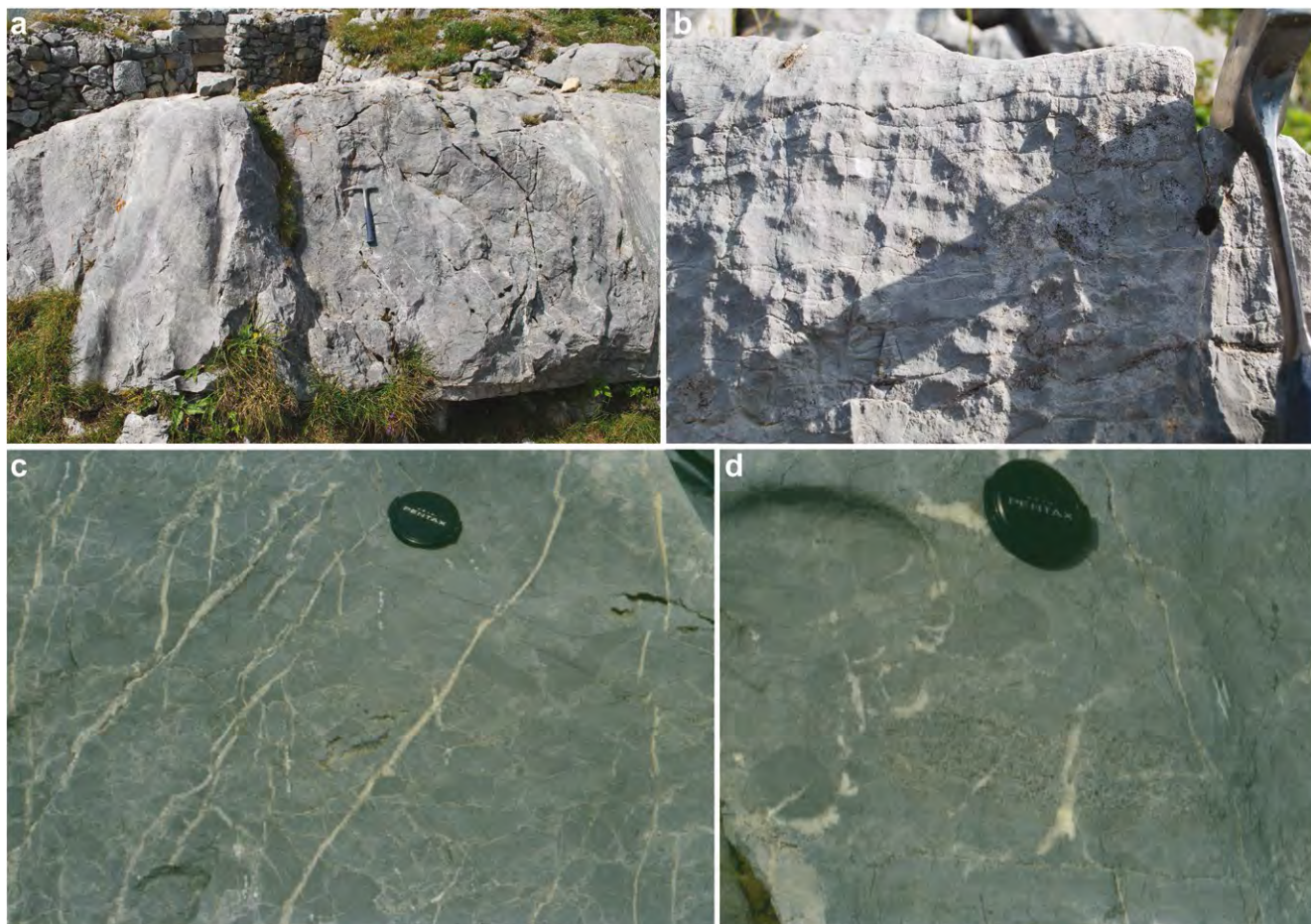
The Freikofel Formation crops out in the Rauchkofel area, in the south side of the Valentintal and between the Cellon/Creta di Collinetta and the Creta di Timau.

Thickness

About 65 m (Freikofel) to about 100 m (Kellerwand).

Boundaries

Underlying units – Cellon Formation (conformable sharp contact).



Views of the Freikofel Formation in the field. a) breccia bed: top of Mt. Freikofel (photo M. PONDRELLI); b) part of a breccia bed showing a crude fining upward trend: Freikofel Section (photo M. PONDRELLI); c) rudstone: PR327 section (photo C. SPALLETTA); d) particular of a rudstone bed: PR327 section (photo C. SPALLETTA).

Overlying units – Pal Grande Formation (conformable interfingering contact).

Lateral units – Kellergrat Formation, Creta di Collina Formation (proximal part); Hoher Trieb Formation, Pal Grande Formation (distal part).

Derivation of name

After Mount Freikofel.

Synonymy

‘Lithoklastkalk’ [partim]: BANDEL (1974).

Freikofel Kalk: SCHÖNLAUB (1985).

Freikofel limestone: KREUTZER (1992b).

Calcareniti di transizione prossimali [partim]: VENTURINI (2006).

Freikofel Rudstone [partim]: BRIME et al. (2008).

Calciruditi del Freikofel [partim]: SPALLETTA & PONDRELLI (2009).

Chronostratigraphic age

Devonian: Givetian to Frasnian (KREUTZER, 1990, 1992a, b; SCHNELLBÄCHER, 2010; PAS et al., 2014).

Biostratigraphy

Conodonts. – The Freikofel Formation spans to Frasnian Zone 13b (*linguiformis* Zone) (Freikofel T section)-Frasnian Zone 13a (middle-upper part of the Upper *rhenana* Zone) (Pramosio A section).

Complementary references -

Remarks -

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