

# Kirchbach Formation

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Österreichische Karte 1:50.000  
Blatt BMN 198 Weißbriach

Blatt UTM 3110 Kötschach-Mauthen  
Blatt UTM 3116 Sonnenalpe Naßfeld

## Definition

Grayish shale with layers of carbonate nodules and argillaceous nodular limestone and limestone clasts.

## Description

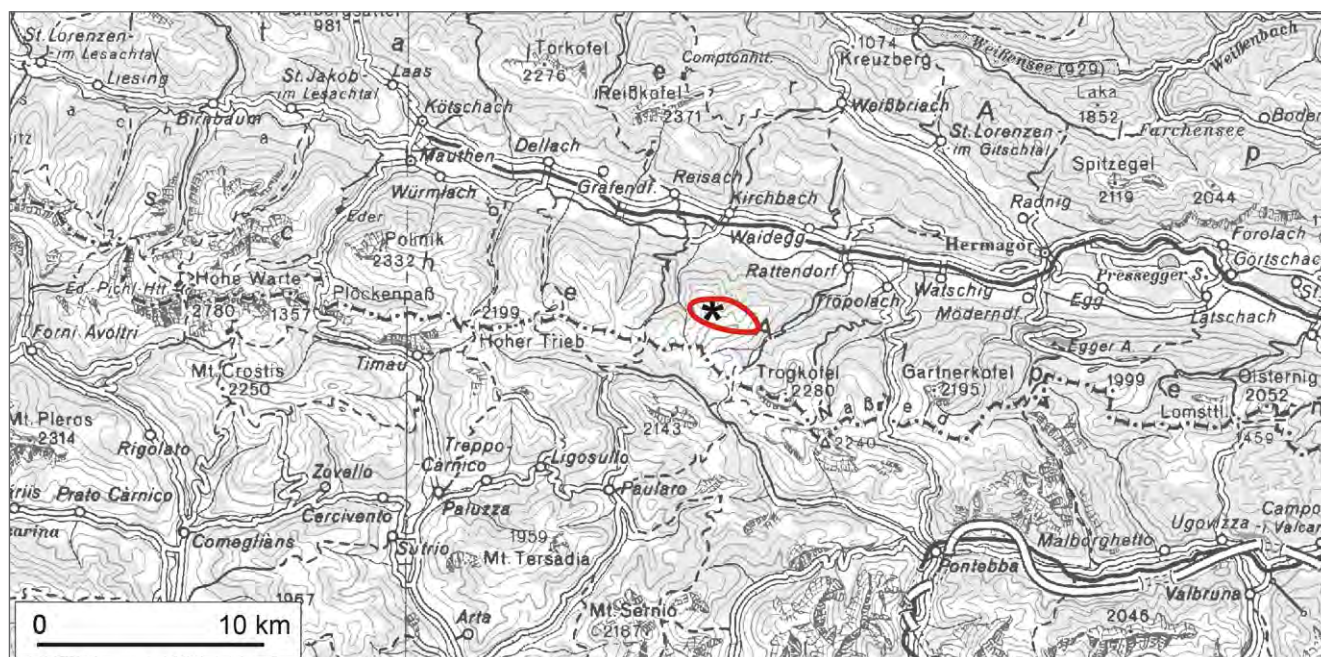
The Kirchbach Formation consists of shale with lenses of carbonate nodules and argillaceous limestone composed of 3 to 10 cm thick layers of carbonate nodules (mudstone to wackestone) separated by thin argillaceous seams. The nodules reach a maximum size of 30-40 cm diameter. Some nodules can be classified as polymict breccia ranging from fine-grained packstone and wackestone to float- and rudstone, including bioclasts, normal ooids, peloids and carbonate intra- and extraclasts. The organic remains are dominated by fragments of crinoids and echinoids, cephalopods, bryozoans, small foraminifers, calcareous algae and microproblematica. In addition brachiopods, heterocorals, molluscs and trilobites occur. Conodonts are fairly abundant mainly in biomicrite and micritic intraclasts.

## Fossil content

Brachiopods, bryozoans, calcareous algae, cephalopods, fragments of crinoids and echinoids, conodonts, small foraminifers, heterocorals, microproblematica, molluscs, ostracods, plant remains, trilobites.

## Depositional environment

The carbonate clasts and nodules of the Kirchbach Formation derived from a shelf area indicating different shallow water platform settings. This platform, however, has totally been reworked. The occurrences of allochthonous bioclasts of packstone, wackestone, rudstone, floatstone, ooids and peloids in a micritic matrix indicate the transport of material from different high-energy shallow-water environments by submarine slides, turbidity currents or down-slope mass movements into a deep marine realm. In conclusion, they may represent fan deposits.



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





View of blocks of the Kirchbach Formation near Kirchbacher Wipfel Alm (photo H.P. SCHÖNLAUB).

### **Stratotype**

Section south of Kirchbacher Wipfel Alm at coordinates N 46°36'33.7", E 13°10'16.9".

### **Reference sections -**

#### **Type area**

Central Carnic Alps.

#### **Main outcrop areas**

The Kirchbach Formation crops out only in lenticular bodies of varying size within the shale of the Hochwipfel Formation north and northeast of Mt. Hochwipfel.

#### **Thickness**

About 4-8 meters.

#### **Boundaries**

*Underlying units* – Hochwipfel Formation (unconformable contact).

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*Lateral units* – Hochwipfel Formation.

#### **Derivation of name**

After the village of Kirchbach.





Views of the Kirchbach Formation in the field (photos H.P. SCHÖNLAUB). a) typical aspect of the Kirchbach Formation, outcrop near Kirchbacher Wipfel Alm; b) remains of *Archaeocalamites* sp. in a limestone block near Kirchbacher Wipfel Alm.

## Synonymy

Kirchbach-Kalk: SCHÖNLAUB (1985, 1987).

Shallow- water fossiliferous limestone: SPALLETTA & VENTURINI (1988).

Shallow water limestone: VENTURINI & SPALLETTA (1998).

Kirchbach limestone: SCHÖNLAUB et al. (2004).

Kirchbach-Kalk/Kirchbach limestone: SUTTNER (2014).

## Chronostratigraphic age

Carboniferous: Lower Viséan to Viséan/Serpukhovian boundary (FLÜGEL & SCHÖNLAUB, 1990; AMLER et al., 1991).

## Biostratigraphy

*Foraminifers*. – Cf4 and Cf6 zones (AMLER et al., 1991).

*Conodonts*. – *texanus-homopuncatus* Zone to *nodosa* Zone (SCHÖNLAUB, 1985; FLÜGEL & SCHÖNLAUB, 1990).

## Complementary references -

## Remarks -

## References

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