Summarised description

Unit name

Hierges Formation

Code

FEP

Status

Formal Formation

Parent unit

none

Child units

Bois Chestion Member, Barrage Member, Hamoûle Member

Characteristic description

Quartzitic or argillaceous sandstone and grey or grey-greenish, fossiliferous shale passing upwards to fossiliferous calcareous sandstone, siltstone and shale and non-carbonate sandstone.

Age

Late Emsian

Thickness

300 to 350 metres

Area of occurrence

Southern margin of the Dinant Synclinorium.

Type locality

Section along the Eau Noire south of Couvin.

Alternative names

Grauwacke d'Hierges

Authors

Sauvage & Buvignier (1842)

Modified after

Denayer, J. & Mottequin, B., 2024. Lower Devonian lithostratigraphy of Belgium. Geologica Belgica, 27/3-4, 115–154.

Date

23/09/2025

Cite as

Denayer, J. & Mottequin, B., 2025. The Hierges Formation, 23/09/2025. National Commission for Stratigraphy Belgium. https://ncs.naturalsciences.be/lithostratigraphy/Hierges-Formation

Full description

Hierges Formation

Code

HIE

Status

Formal Formation

Parent unit

None

Child units

Bois Chestion Member, Barrage Member, Hamoûle Member

Origin of the name

After the village of Hierges in the Meuse River valley (France).

Alternative names

Grauwacke d'Hierges

Authors

Sauvage & Buvignier (1842, p. 13) : *Schistes calcaires de Hierges*

Modified after

Denayer, J. & Mottequin, B., 2024. Lower Devonian lithostratigraphy of Belgium. Geologica Belgica, 27/3-4, 115–154.

Date

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Denayer, J. & Mottequin, B., 2025. The Hierges Formation, 23/09/2025. National Commission for Stratigraphy Belgium. https://ncs.naturalsciences.be/lithostratigraphy/Hierges-Formation

Characteristic description

In the Meuse River valley, the Hierges Formation begins at the first bed of sandstone that overlies the last red-coloured bed of the Chooz Formation. It was divided into two members by Godefroid & Stainier (1994b, p. 80). The lower member, the **Bois Chestion Member** (*Membre du Bois Chestion*; c. 20 m thick), is essentially made of quartzitic or argillaceous, locally fossiliferous, sandstone that forms two or three bundles separated by grey or grey-greenish, fossiliferous shale. The lowermost part (2–2.5 m thick) of this member usually consists of thin beds of argillaceous sandstone alternating with shale. The upper member, the **Barrage Member** (*Membre du Barrage*; 308 m thick south of Couvin), consists of shale and siltstone, locally carbonated, in which many beds of fossiliferous calcareous sandstone and non-carbonate sandstone with or without fossils are incorporated. The fossils are usually dissolved on the outcrops and preserved as steinkerns (*Grauwacke de/d'Hierges* in the literature).

Between the Ourthe River and the Aisne River valleys, the Hierges Formation is only represented by a the **Hamoûle Member** (*Membre de Hamoûle* in Stainier, 1994a, p. 91) that is comprised between the Chooz and the Burnot formations. The Hamoûle Member starts with the occurrence of gravelly or

conglomeratic sandstone overlying the red, green and mottled detrital rocks of the Chooz Formation. The sandstone is coarse-grained, quite often contain crinoids, brachiopods and ostracods.

Area of occurrence

South and south-eastern flank of the Dinant Synclinorium. The Hierges Formation stricto sensu is recognised until the meridian of Chanly (Dumoulin & Blockmans, 2013). Eastwards, this unit becomes sandier and, at Tellin, a gravely sandstone level is present at its top (Blockmans et al., 2019). This transitional facies of the Hierges Formation was named *facies mixte* or *facies de Jemelle* by Asselberghs (1946).

Type locality

No section presents the entire unit in the eponymous locality. The stratotype for the lower limit, with the underlying Chooz Formation, is along the Vireux–Mazée road, west of the crossroads with the Givet road whereas that for the upper limit, established by Godefroid & Stainier (1994b) at Saint-Joseph near Nismes, has entirely disappeared nowadays. A new stratotype for this limit is proposed along the Eau Noire south of Couvin (also stratotype of the Moulin de la Foulerie Formation, see Denayer eta l., 2024). The Hamoûle Member is exposed along the Ourthe River south of Hampteau.

Age

Until 1985, the top of the Hierges Formation was traditionally considered as the top of the Emsian in Belgium and northern France, but the conodont *Polygnathus costatus partitus*, which was chosen for defining the base of the Eifelian (Werner & Ziegler, 1982), is found higher stratigraphically, i.e. in the upper part of the Eau Noire Member of the Moulin de la Foulerie Formation (Bultynck, 1991; Bultynck et al., 1991, 2000). In matter of conodont zonation, the lower part of the Barrage Member spans the interval of the *laticostatus* to the *serotinus* zones (Bultynck, 1970; Bultynck & Godefroid, 1974; Godefroid & Stainier, 1994b). Among the very rich brachiopod fauna of the Hierges Formation (e.g. Godefroid, 1994), spiriferides are important for correlation with the nearby Rhenish Massif. *Arduspirifer arduennensis arduennensis*, *Brachyspirifer carinatus rhenanus* and *Paraspirifer* (*Mosellospirifer*) *sandbergeri sandbergeri* appears few metres above the base of the unit (Godefroid, 1977, 1994, 2001; Godefroid & Stainier, 1994b).

Thickness

The Formation is 320–330 m thick at Hierges (Godefroid & Stainier, 1994b) and 300–350 m thick in the Lesse River valley (Dumoulin & Blockmans, 2013), the Hamoûle Member is c. 140 m thick in the Ourthe River valley at Hampteau (Dejonghe, 2008).

Lower boundary

The first bed of sandstone that overlies the last red-coloured bed of the Chooz Formation.

Upper boundary

The top of the Hierges Formation is defined below the first massive shelly limestone bed of the overlying Saint-Joseph Member of the Moulin de la Foulerie Formation.

Regional correlations

In the Ourthe River valley near the Hampteau meridian, the lower part of the Hierges Formation (Hamoûle Member) tends to entirely fade away whereas its upper part passes to the conglomerate of the Hampteau Facies of the Burnot Formation.

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