Summarised description

Unit name

Sainte-Marie Formation

Code

STM

Status

Formal Formation

Parent unit

none

Child units

none

Characteristic description

Dark grey and bluish, usually laminar, siltstone, slate and sandy shale with frequent porphyroblasts of biotite, magnetite, garnet and ilmenite.

Age

Most probably late Lochkovian

Thickness

1400-2000 metres

Area of occurrence

Ardenne Anticlinorium east of the Mogimont Fault near Vivy and north-eastwards up to the Vencimont Fault near Sainte-Ode.

Type locality

There is no continuous section exposing the Sainte-Marie Formation, but the typical facies can be observed in the small cliff below the Notre-Dame de Lorette Chapel, north of Remagne.

Alternative names

Schistes de Sainte-Marie

Authors

Gosselet (1880)

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 Sainte-Marie Formation, 23/09/2025. National Commission for Stratigraphy Belgium. https://ncs.naturalsciences.be/lithostratigraphy/Sainte-Marie-Formation

Full description

Unit name

Sainte-Marie Formation

Code

STM

Status

Formal Formation

Parent unit

none

Child units

none

Origin of the name

After the town of Sainte-Marie-Chevigny in the Ardenne.

Alternative names

Schistes de Sainte-Marie

Authors

Gosselet (1884, p. 177): *Schistes gris de Sainte-Marie*

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 Sainte-Marie Formation, 23/09/2025. National Commission for Stratigraphy Belgium. https://ncs.naturalsciences.be/lithostratigraphy/Sainte-Marie-Formation

Characteristic description

The Sainte-Marie Formation consists of thin-bedded dark grey and bluish siltstone, slate and sandy shale that are usually laminar. The lower part of the Formation includes isolated beds or bundles of beds of sandstone and quartzite. The sandstone is light grey and greenish-grey coloured, coarse-grained, micaceous, argillaceous or quartzitic. Oblique laminae and ripple-marks are frequent in the sandstone beds. The fine-grained facies locally include masses of hard silt-sized quartzite with plurimillimetric porphyroblasts of biotite, magnetite, garnet and ilmenite (known as *cornéite* in the old literature, e.g. Stainier, 1907). Carbonate shale and siltstone and shale with decalcified nodules, limonitic or cellular on the outcrop, occur locally. The boundary with the overlying Mirwart Formation is transitional with the progressive disappearance of the biotite and ilmenite and the reappearance of thicker sandstone beds.

Area of occurrence

Ardenne Anticlinorium east of the Mogimont Fault near Vivy and north-eastwards up to the Vencimont Fault near Sainte-Ode.

Type locality

There is no continuous section exposing the Sainte-Marie Formation, but the typical facies can be observed in the small cliff below the Notre-Dame de Lorette Chapel, north of Remagne (Michel, 2024). The *cornéite* facies of the Sainte-Marie Formation are well exposed in the La Flèche quarry, north-west of Bertrix.

Age

The Sainte-Marie Formation has not yielded any biostratigraphic elements but, by extrapolation with the laterally equivalent Saint-Hubert Formation, it is most probably Lochkovian.

Thickness

1400 m in the Haute Lesse River valley (Belanger & Ghysel, 2017) and c. 2000 m in the Ourthe occidentale River valley (Asselberghs, 1946).

Lower boundary

First sandstone bed overlying the reddish shale and siltstone of the Anloy Formation.

Upper boundary

First thick bed of greenish or bluish quartzitic sandstone or siltstone with parallel or oblique stratification of the overlying Mirwart Formation.

Regional correlations

North of the Vencimont Fault, the Sainte-Marie Formation passes in the Ardenne Anticlinorium to the Laforêt Formation (in the Semois River valley) and to the Saint-Hubert Formation (west of Paliseul).

References

Asselberghs, E., 1946. L'Éodévonien de l'Ardenne et des régions voisines. Mémoires de l'Institut géologique de l'Université de Louvain, 14, 1–598.

Belanger, I. & Ghysel, P., 2017. Carte géologique de Wallonie : Vivy – Paliseul 64/5-6. 1/25 000. Service public de Wallonie, Direction générale de l'Agriculture, des Ressources naturelles et de l'Environnement, Namur, and its explanatory booklet, 48 p.

Gosselet, J., 1884. Sur la faille de Remagne et sur le métamorphisme qu'elle a produit. Annales de la Société géologique du Nord, 11, 176–190.

Michel, J., 2024. Carte géologique de Wallonie : Sainte-Marie-Chevigny – Sibret 65/1-2. 1/25 000. Service public de Wallonie, Agriculture, Ressources naturelles et Environnement, Namur, and its explanatory booklet, 48 p.