



# The Warche Quarries

SCHISTOSE SANDSTONE ■

SCHIST ■



Rubble stone cleaver

## LOCAL QUARRIES FOR A QUALITY SERVICE

The S.A. Nelles Frères has been established for almost fifty years at the foot of the Hautes Fagnes (High Fens), in Xhoffraix, and was basically a road works company.

Composed of sixty or so dynamic staff members, this family concern forms a versatile team, whose adaptability is reflected through a range of various activities.

In addition to its civil engineering sphere of activity, the Nelles Group operates two quarries producing ornamental stone. The Warche Quarries are located in Bévercé-Malmedy, where the company extracts schistose sandstone. In 2008, the company brought a schist quarry in Vielsalm back into operation.

Rubble stone : schistose sandstone

Rubble stone : schist



## WORKING SITE

Carrières de Vielsalm - 6690 VIELSALM

## TECHNICAL CHARACTERISTICS\*

### MINERALOGICAL COMPOSITION

Combination of dominant clayey minerals, siliceous, ferruginous and aluminiferous minerals

### ATTRIBUTES

Apparent density  
**2780 kg/m<sup>3</sup>**

Open porosity  
**2.2 % vol**

### PERFORMANCE

Compressive strength  
**117 N/mm<sup>2</sup>**

Flexural strength  
**19.7 N/mm<sup>2</sup>**

## MAXIMUM DIMENSIONS OF BLOCKS

Length	Width	Thickness
3 m	1 m	0.5 m

## MINIMUM THICKNESS FOR APPLICATION

Flagstones	Rubble stone
3 cm	17 cm

# Schist

ALSO KNOWN AS	TYPE	STRATIGRAPHICAL AGE
<i>Schiste de la Salm</i>	Schist	Ordovician (Palaeozoic)

## APPEARANCE, COLOUR AND PATINA

This materials displays a range of shades between grey, dark blue and brown. The uniform colours are totally consistent.

## FINISHED PRODUCTS AND STANDARD DIMENSIONS

The range of available products is comparable to the products proposed for schistose sandstone. Schist can be used outdoors for masonry work and paving. It is perfectly suitable for indoor purposes and interior decoration and also has particularly interesting garden and landscape applications.

### Rubble stones

depth 15-25 cm

### Slabs for dry-stone walls

height 3-7 cm, 7-10 cm

### Floor paving

constant thickness 3-5 cm, polygonal shapes, sizes from 30 to 60 cm (diagonal)

Schist mulch, rock fill and decorative steles

All non-standard products are obtainable on demand.

## SURFACE TREATMENTS AVAILABLE

Natural, sawn, polished or flamed.

## DESCRIPTIVE SPECIFICATIONS

«*Fine, compact schist, colour [to specify], stratigraphical age Ordovician (Palaeozoic)*».



Bercheux-Vielsalm, private house

## WORKING SITE

Carrières de la Warche - 4960 BÉVERCÉ  
MALMEDY

## TECHNICAL CHARACTERISTICS\*

### MINERALOGICAL COMPOSITION

Combination of silica, clayey, ferruginous and aluminiferous minerals

### ATTRIBUTES

Apparent density  
**2653 kg/m<sup>3</sup>**

Open porosity  
**3.34 % vol**

### PERFORMANCE

Compressive strength  
**128 N/mm<sup>2</sup>**

Compressive strength after freeze  
**139 N/mm<sup>2</sup>**

Flexural strength  
**23 N/mm<sup>2</sup>**

Flexural strength after freeze  
**17 N/mm<sup>2</sup>**

Abrasion resistance (Capon method)  
**23.6 mm**

## MAXIMUM DIMENSIONS OF BLOCKS

Length  
**2 m**

Width  
**1 m**

Thickness  
**1 m**

## MINIMUM THICKNESS FOR APPLICATION

Natural flagstones  
**3 cm**

Marblework flagstones  
**2 cm**

Rubble stone  
**17 cm**

# Schistose sandstone

ALSO KNOWN AS	TYPE	STRATIGRAPHICAL AGE
Warche stone, Nelles stone	Schistose sandstone	Ordovician (Palaeozoic)



Chaîneux, private house, arch. V. Salmon



Xhofferix, private house, arch. L. Nelles



Clôdes, private house, arch. www.craibajajmaigne.com

## APPEARANCE, COLOUR AND PATINA

There are several reasons why the use of Warche schistose sandstone brings great advantages:

- > It is rich in quartz, so has good mechanical properties;
- > Its texture; made up of very slender, undulating layers, it displays a remarkable variety of rust-coloured, grey and blue shades resulting from the effects of oxidization;
- > Its structure enables it to be cut into pieces.

It combines perfectly with other fine materials such as wood, blue stones, marble, zinc and copper.

Masonry work with this stone inspires respect for the age-old rules of construction. It lends itself well to the re-interpretation or re-discovery of various techniques and details for façades, such as arches, columns or angles.

## FINISHED PRODUCTS AND STANDARD DIMENSIONS

Schistose sandstone is used for lintels, doorsteps, wall coatings, angles and surrounds for doors and windows, in addition to facing. Dry-stone walls and large embankments built from this material blend perfectly with the surrounding landscape. It can also be used to make street furniture, in the form of tables and benches. Indoor: steps, risers, tiles – flagstones and wall coping, decoration.

### Rubble stone

height and length variable, depth 17-22 cm, one straight side  
delivered loose or in Big-Bags

### Slabs for dry-stone walls

depth 20-40 cm, thickness 7-10 cm, one straight side, delivered on pallets

Cut additional elements (lintels, door and window surrounds, angles, doorsteps, steps, sills, wall-coatings)

sawn to size, front natural and back sawn, delivered in Big-Bags or on pallets

### Paving slabs

depth variable, thickness 3-7cm, delivered on pallets

All non-standard products are obtainable on demand.

Marblework products are also cut up and marketed: doorsteps, shower tubs, hand basins, steps, risers, etc.

## SURFACE TREATMENTS AVAILABLE

Natural, sawn, Honed, polished, brushed or flamed.

## DESCRIPTIVE SPECIFICATIONS

«Schistose sandstone, colour [to specify], stratigraphical age Ordovician (Palaeozoic)».

[\*] Data are the most recent available, measured according to applicable European standards.

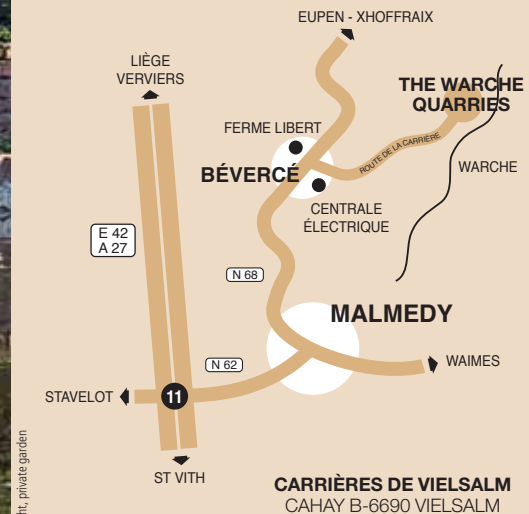


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Recht, private garden



Xhoffraix, private house, arch. Luc Nelles



Chaneux, private house, arch. V. Salmon



Harre, private garden, Nelles Frères



**PIERRES & MARBRES WALLONIE**

