SVK SLATES Technical data sheet

SYSTEM VERTICAL DOUBLE LAP SLATING

1. COMPOSITION AND MANUFACTURE

The Montana and Ardonit slates are small size double pressed fibre-cement flat sheets, composed of Portland cement, organic fibres of superior quality, mineral additives and water.

The natural colour of the slates is grey. The front and the sides of the slates are finished with a multi-layer acrylic based coating. In order to prevent moss growth, special moss inhibiting constituents are added to the coating. The underside of the slates is treated with a one layer coating and a colourless water-repellent layer. This finishing offers optimal protection against all weather conditions.

2. DIMENSIONS

	Ardonit Smooth	Ardonit Textured	Montana Smooth	Montana Textured
Format [cm]	**Production-Dimensions [mm]**		**Production-Dimensions [mm]**	
60 x 60	600x600	600x600	595x595	595x595
60 x 30	600x600	600x600	595x295	595x295

3. COLOUR RANGE

Ardonit / Montana	Montana Textured	Ardonit Smooth
60x60 60x30	60x60 60x30	60x60 60x30
		
Blue-black	Welsh blue	Premium black

SVK is entitled to remove or add colours without prior warning. The colour is measured according CieLab. The tolerance is: ΔE* ±1,00.

Important: **Only slates with the same production date should be placed on the same roof/facade surface. Slates with different production dates should not be installed on the same roof/facade surfaces.**

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4. MECHANICAL AND PHYSICAL CHARACTERISTICS

Dimensions		**Tolerances**
Length	200 – 600 mm	± 3 mm
Width	200 – 600 mm	± 3 mm
Thickness	4 mm	- 0,4 mm / + 1,0 mm
Squareness	≤ 2 mm	

Mechanical characteristics		**Norm**
Bending moment		EN 492
$h \leq 350$ mm	30 Nm/m	
$350 < h \leq 450$ mm	40 Nm/m	
$450 < h \leq 600$ mm	45 Nm/m	
Elasticity modulus (wet)	ca. 16.000 N/mm²	
Thermal linear expansion coefficient	7,5 x 10^{-6} m/mK	

Durability		**Norm**
Water impermeabilty	No water drops	EN 492
Wet-dry cycles	L ≥ 0,75	
Warm water	L ≥ 0,75	
Frost-thaw cycles	L ≥ 0,75	
Warm-rain cycles	pass	

Reaction to fire		
Fire reaction class	A2-s1, d0	EN 13501-1

Physical characteristics		
Density – oven dry	ρ ≥ 1.700 kg/m³	
Weight (at moisture content: 12%)	8 kg/m²	
Coefficient of heat conductivity:: λ	0,72 W/mK	
Water uptake (coated slates)	< 4% (Weight)	
Paint adhesion	Class 0	EN ISO 2409

5. QUALITY

CE 0749

BENOR BB - 212 - 683 - 492 - 01

QB 1 QUALITÉ POUR LE BÂTIMENT

CSTB
84 avenue Jean Jaurès - Champs sur Marne
F-77447 Marne-la-Vallée

Ardoises en fibres ciment
http://evaluation.cstb.fr

BSB bouwstoffenbesluit K24136

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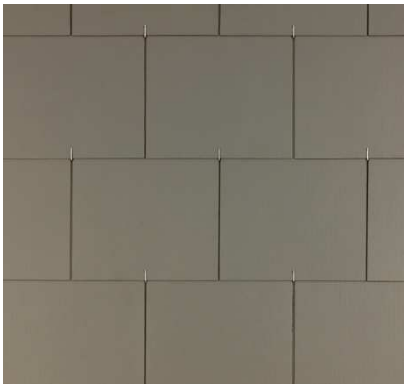
6. PRINCIPLE



Vertical, double-lap slating is the common way of working and is suitable for all rectangular slates. The slates are laid in broken bond. Double-lap means that each row of slates is partly covered by the two rows above. The head-lap is the distance by which the upper course of slates provides a lap with the next but one course below.

This way, each slate can be divided into three areas (see figure below):
- visible area;
- single lap area;
- double-lap area (= head-lap).

The double covered part is called the head-lap. The height of each of the two other parts equals the batten distance and is determined as following:

$$L(batten\ distance) = \frac{H(slate\ height) - A(headlap)}{2} = P(visible\ area) = single\ lap\ area$$

The recommendations apply for rafter lengths of maximum 9m in driving rain exposure of less than 56.5 l/m² per spell and 6 m in driving rain exposures of 56.5 l/m² per spell or more.

The recommendations for laps given below might not be adequate for roof pitches of **30° or less**:
- for driving rain exposure of less than 56.5 l/m² per spell, for rafter lengths greater than 9m;
- for driving rain exposure of 56.5 l/m² per spell or greater, for rafter lengths greater than 6m.

In this case the placement of a sub-roof and/or intermediate gutters should be considered.

The minimum slate width is determined by several factors: the slate length, the head-lap, the roof pitch, the driving rain exposure and the distance from the side edge of the slate to the inner nail hole. Calculation needs to be done according to BS 5534.

The minimum pitch is 25° measured on the slates.

7. MINIMUM HEAD-LAP – ROOF PITCH

The minimum vertical head-lap [A] in mm (according to BS 5534) for following roof pitches is:

Roof pitch [°]	Minimum head-lap [cm]	
	< 56.5 l/m² per spell rafter length ≤ 9 m	**≥ 56.5 l/m² per spell rafter length ≤ 6 m**
22.5	**11**	-
25	**10**	12
27.5	9	**11**
30	8	**10**
35	7	9
40	6	8
45 - < 75	6	7
≥ 75	5	5

For special applications with lower roof pitches, SVK advice should be sought.
For pitches between 15° and 22.5° please contact SVK.

8. FIXING

- Slates greater than 40 x 20 cm are fixed with nails and have a disc rivet at the tail.
- Hooks should not be used for pitches less than 25°.
- Crimped hooks should be used at pitches of 30° or less.

Drive hooks are placed between 5mm and 1 cm higher than the top edge of the slates. This means that the hooks are between 5mm and 1 cm longer than the vertical lap. It is advisable to only use stainless steel hooks.

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9. NUMBER AND DIMENSIONS

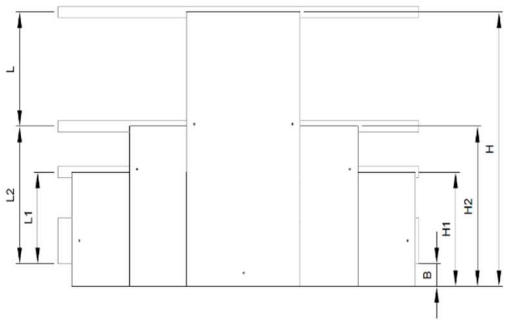
Format [cm]	Head-lap A [cm]	Appx. batten gauge L [cm]		Appx. pieces per m²		Appx. weight [kg/m²]	
		Ardonit	Montana	Ardonit	Montana	Ardonit	Montana
60 x 30	5	27,5	27,25	12,0	12,3	18,3	18,1
	10	25,0	24,75	13,2	13,5	20,1	20,0
	11	24,5	24,25	13,4	13,8	20,5	20,4
60 x 60	5	27,5	27,25	-	-	-	-
	10	25,0	24,75	-	-	-	-
	11	24,5	24,25	-	-	-	-

The numbers are calculated with a perpendicular joint of **4 mm**.

10. DIMENSIONS OF THE BOTTOM SLATES AND THE POSITION OF THE BOTTOM ROW BATTENS

The height of the first row of slates, 1st under-eaves course: $H_1 = L$
The height of the second row of slates, 2nd under-eaves course: $H_2 = L + A$
The bottom slates are fixed with 2 nails.
Batten distances are calculated as following:
$L_1 = L - B$ & $L_2 = L + A - B$

A = head-lap
B = overhang of the bottom slates past the lowest batten (max. 5 cm)
L = batten gauge centre-to-centre, depending on slate height H and head-lap A



Height slate H [cm]	Head-lap A [cm]	Ardonit					Montana				
		L [cm]	H_1 [cm]	H_2 [cm]	L_1 [cm] (B = p. ex. 5 cm)	L_2 [cm] (B = p. ex. 5 cm)	L [cm]	H_1 [cm]	H_2 [cm]	L_1 [cm] (B = p. ex. 5 cm)	L_2 [cm] (B = p. ex. 5 cm)
60	5*	27,5	27,5	32,5	22,5	27,5	27,25	27,25	32,25	22,25	27,25
	10	25,0	25,0	35,0	20,0	30,0	24,75	24,75	34,75	19,75	29,75
	11	24,5	24,5	35,5	19,5	30,5	24,25	24,25	35,25	19,25	30,25