

TEST REPORT

No. : XMIN2106006023CM

Date : Jun 24, 2021

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scan to see the report



XMIN2106006023CM

CUSTOMER NAME: XIAMEN NEW SOURCE CO.,LTD.
ADDRESS: NO.285, LONGSHANZHONG ROAD, XIAMEN, FUJIAN, CHINA

Sample Name : TILQUA BLUESTONE
Place of origin : Hainan
Surface treatment : Rubbed

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

Date of Receipt : Jun 08, 2021
Testing Start Date : Jun 08, 2021
Testing End Date : Jun 24, 2021
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for
SGS-CSTC Standards Technical
Services Co. , Ltd Xiamen Branch
Testing Center

Civi Huang
Authorized signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Xiamen Branch Testing Center (Commercial Construction Material Laboratory)

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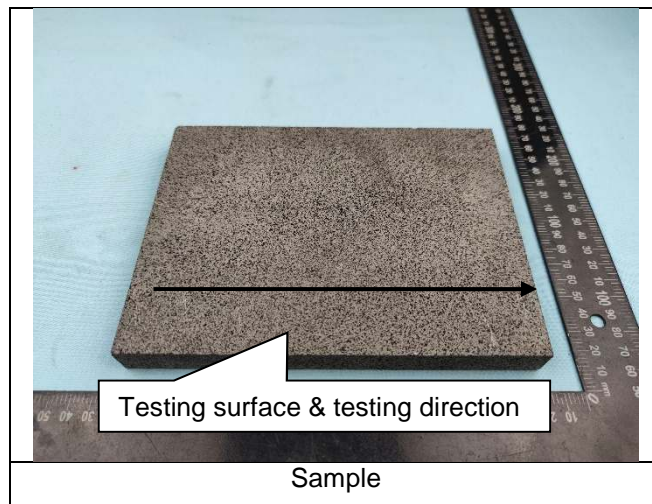
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Summary of Results:

No.	Test Item	Test Method	Result
1	Abrasion Resistance	ASTM C1353/C1353M-20 ^{e1}	H _a : 45.7
2	Flexural Strength	ASTM C880/C880M-18	Dry Condition: 16.9 MPa Wet Condition: 14.9 MPa
3	Compressive Strength	ASTM C170/C170M-17	Dry Condition: 188 MPa Wet Condition: 174 MPa
4	Absorption and Bulk Specific Gravity	ASTM C97/C97M-18	1.01% 2640 kg/m ³
5	Pendulum friction test	AS 4586-2013 Amdt 1-2017 Annex A	SRV "wet": 65 Pass: P5
6	Petrographic Description*	EN 12407:2019	Vesicular basalt

Original Sample Photo:



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1. Test Item: Abrasion Resistance

Sample Description: Natural Stone, See photo(s)

Test Method: ASTM C1353/C1353M-20^{e1}

Test Condition:

Load: 1000g/wheel(total 2000g)

Speed: 60rpm

Wheel: H-22

Cycle: 1000

Test Result:

Specimen No.	1	2	3
Abrasion resistance, H _a	47.0	46.0	44.0
Mean abrasion resistance, H _a	45.7		



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2.Test Item: Flexural strength

Sample Description: Natural Stone, See photo(s)

Test Method: ASTM C880/C880M-18

Test Condition:

Specimen: 350mm×100mm×30mm, 10pcs

Dry Condition: Dry in an oven at 60±2°C for 48h→Cool them to room temperature in a desiccator

Wet Condition: Immerse in distilled water at 22±2°C for 48h

Support Span: 300mm

Testing speed: 4.0MPa/min

Test Result:

Dry Condition:

Specimen No.	1	2	3	4	5
Individual flexural strength value (MPa)	19.5	18.7	15.9	13.7	16.9
Mean flexural strength value (MPa)	16.9				
Standard deviation (MPa)	2.4				

Wet Condition:

Specimen No.	1	2	3	4	5
Individual flexural strength value (MPa)	14.7	12.4	16.9	15.0	15.7
Mean flexural strength value (MPa)	14.9				
Standard deviation (MPa)	1.7				



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3.Test Item: Compressive Strength

Sample Description: Natural Stone, See photo(s)

Test Method: ASTM C170/C170M-17

Test Condition:

Specimen: 50mm×50mm×50mm, 10pcs

Dry Condition: Dry in an oven at 60±2°C for 48h→Cool them to room temperature in a desiccator

Wet Condition: Immerse in distilled water at 22±2°C for 48h

Testing speed: 0.5MPa/s

Test Result:

Dry Condition:

Specimen No.	1	2	3	4	5
Individual compressive strength value (MPa)	190	192	191	194	175
Mean compressive strength value (MPa)	188				
Standard deviation (MPa)	8				

Wet Condition:

Specimen No.	1	2	3	4	5
Individual compressive strength value (MPa)	175	167	187	176	167
Mean compressive strength value (MPa)	174				
Standard deviation (MPa)	9				



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4. Test Item: Absorption by weight and density

Sample Description: Natural Stone, See photo(s)

Test Method: ASTM C97/C97M-18

Test Condition:

Specimen: 50mm×50mm×50mm, 5pcs

Condition: Dry in an oven at 60±2°C for 48h → Cool them to room temperature in a desiccator →

Immerse in distilled water at 22±2°C for 48h

Test Result:

Specimen No.	1	2	3	4	5
Absorption by weight (%)	0.97	0.99	1.08	1.05	0.96
Mean water absorption (%)	1.01				
Standard deviation (%)	0.06				
Density (kg/m ³)	2646	2654	2624	2619	2659
Mean density (kg/m ³)	2640				
Standard deviation (kg/m ³)	18				



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5. Test Item: Wet pendulum test

Sample Description: Natural stone, See photo

Test Method: AS 4586-2013 Amdt 1-2017 Annex A

Test Condition:

Specimen: 200mm×150mm×20mm, 6pcs

Type of slider: slider 96 (4S rubber)

Testing surface: sawn, see photo

Testing direction: see photo

Test result:

Specimens identification No.	1	2	3	4	5	6
Mean of British Pendulum Number (for each test surface)	65	66	65	65	65	65
Slip resistance value (SRV "wet")	65					
Class	P5					

Classification of pedestrian surface materials according to the wet pendulum test:

Class	Pendulum SRV (slider 55)	Pendulum SRV (slider 96)
P5	>44	>54
P4	40-44	45-54
P3	35-39	35-44
P2	20-34	25-34
P1	<20	12-24
P0	-	<12



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6. Test Item: Petrographic description*

Test Method:

EN 12407:2019 Natural stone test methods - Petrographic examination

Test Result:

CLASSIFICATION: Vesicular basalt

HAND SAMPLE DESCRIPTION

Very strong, fresh and black.It doesn't cut easily with a knife.There are many pores in the rock.

MICROSCOPIC DESCRIPTION

Texture	Intergranular texture
Structure	Vesicular structure
Major Minerals	Plagioclase (45%), Pyroxene (55%)
Accessory mineral	Metallic (Opaque) Particles, Zircon, Sphene
Secondary mineral	Sericite ,Saponite

MATERIAL COMPONENT	PETROGRAPHIC DETAILS
Plagioclase	The plagioclase is semi-idiomorphic, with a size of 0.15-0.6mm. It is slightly sericized and is distributed like a lattice. It is filled with other-shaped granular pyroxene, and locally there is poikilophitic texture.
Pyroxene	Pyroxene is granular columnar, 0.15-1.25mm in size, monoclinopyroxene and plagioclase can be seen, distributed in the plagioclase, less carbonation

Alterations:

A large number of pores can be seen in the rocks, which are irregular, and the edges are filled with Saponite.

Remarks:

The rock assemblage is composed of plagioclase and pyroxene.According to the content, mineral composition and structure of the rock, it is named as **Vesicular basalt**



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Photomicrographs:

<p>Intergranular texture (crossed polarizers)</p>	<p>Vesicular (Plain light)</p>
<p>Plagioclase and Pyroxene (crossed polarizers)</p>	<p>Saponite (Plain light)</p>



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Metallic (Opaque) particles (Plain light)

Note: * test project/method was carried out by subcontractors.
 ***** End of report*****



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