



中国认可
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TESTING
CNAS L1978



INSPECTION & QUARANTINE
TECHNOLOGY CENTER

TEST REPORT



REPORT NO. : 25202402877

SAMPLES: PORCELAIN TILE

APPLICANT: FOSHAN NINE DEGREE BUILDING MATERIALS LIMITED

DATE OF TEST: 24/07/2024 – 06/08/2024 (dd/mm/yy)

STATE KEY TESTING LABORATORY OF BUILDING CERAMICS AND SANITARY WARE
COMPREHENSIVE TECHNOLOGY CENTRE OF FOSHAN CUSTOMS



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ISO 13006:2018 <i>Ceramic tiles – Definitions, classification, characteristics and marking</i> Annex G Dry-pressed ceramic tiles with low water absorption $E_v \leq 0.5\%$ Group B I a						
Clause	Properties	Test Method	Requirements	Results	Verdicts	
Table G.1	Dimensions and surface quality					
	Length The deviation, of the average size for each tile from the work size	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.3\%$	-0.03%~-0.02%	P
				$\pm 1.0\text{mm}$	-0.3mm~-0.2mm	P
	Width The deviation, of the average size for each tile from the work size	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.3\%$	-0.03%~-0.01%	P
				$\pm 1.0\text{mm}$	-0.2mm~0	P
	Thickness The deviation of the average thickness of each tile from the work size thickness	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 5\%$	-0.8%~+0.4%	P
				$\pm 0.5\text{mm}$	-0.1mm~0	P
	Straightness of sides The maximum deviation from straightness related to the corresponding work sizes					
	Length	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.3\%$	-0.01%~0	P
				$\pm 0.8\text{mm}$	-0.1mm~0	P
	Width	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.3\%$	-0.02%~0	P
				$\pm 0.8\text{mm}$	-0.1mm~0	P
	Rectangularity The maximum deviation from Rectangularity related to the corresponding work sizes					
	Length	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.3\%$	+0.01%~+0.03%	P
				$\pm 1.5\text{mm}$	+0.2mm~+0.4mm	P
	Width	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.3\%$	-0.04%~-0.02%	P
				$\pm 1.5\text{mm}$	-0.3mm~-0.1mm	P
	Surface flatness: The maximum deviation from flatness					
	a)centre curvature, related to diagonal calculated from the work size;	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.4\%$	+0.02%~+0.04%	P
				$\pm 1.8\text{mm}$	+0.3mm~+0.5mm	P
	b)edge curvature, related to the corresponding work sizes;					
	Length	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.4\%$	-0.02%~-0.01%	P
				$\pm 1.8\text{mm}$	-0.2mm~-0.1mm	P
	Width	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.4\%$	0~+0.05mm	P
$\pm 1.8\text{mm}$				0~+0.3mm	P	
c)warpage, related to diagonal calculated from the work size.	ISO10545-2:2018	$N \geq 15\text{cm}$	$\pm 0.4\%$	+0.03%~+0.04%	P	
			$\pm 1.8\text{mm}$	+0.4mm~+0.5mm	P	

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ISO 13006:2018 <i>Ceramic tiles – Definitions, classification, characteristics and marking</i> Annex G Dry-pressed ceramic tiles with low water absorption $E_v \leq 0.5\%$ Group B I a					
Clause	Properties	Test Method	Requirements	Results	Verdicts
Table G.1	Surface quality	ISO10545-2:2018	A minimum of 95% of the tiles shall be free from visible defects inspected vertically at 1.0m.	100%	P
	Physical properties				
	Water absorption Percent mass fraction	ISO 10545-3:2018	$E_v \leq 0.5\%$	0.43%	P
			Individual maximum 0.6%	0.40%~0.45%	P
	Breaking strength, in N	ISO 10545-4:2019	≥ 1300	1764	P
	Modulus of rupture, in N/mm ² Not applicable to tiles with breaking strength $\geq 3000\text{N}$	ISO 10545-4:2019	Minimum 35	35.3	P
			Individual minimum 32	35.1~35.6	P
	Impact resistance: Coefficient of restitution (COR)	ISO 10545-5:1996/Cor.1:1997	Test method available	0.85	—
	Abrasion resistance Resistance to surface abrasion of glazed tiles intended for use on floors	ISO 10545-7:1996	Report abrasion class	Class 3	—
			Report cycles passed	1500	—
	Coefficient of linear thermal expansion: from ambient temperature to 100°C	ISO 10545-8:2014	Test method available	$5.4 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$	—
	Thermal shock resistance	ISO 10545-9:2013	Test method available	Fully resistance	—
	Crazing resistance: glazed tiles	ISO 10545-11:1994	Required	Fully resistance	P
	Moisture expansion, in mm/m	ISO 10545-10:2021	Test method available	<0.06	—
	Frost resistance	ISO 10545-12:1995/Cor1:1997	Required	Fully resistance	P
	Chemical properties				
	Resistance to staining				
	a)Green staining agent in light oil	ISO 10545-14:2015	Minimum Class 3	Class 5	P
	b)Red staining agent in light oil	ISO 10545-14:2015	Minimum Class 3	Class 5	P
	c)Iodine, 13g/L solution in alcohol	ISO 10545-14:2015	Minimum Class 3	Class 5	P
d)Olive oil	ISO 10545-14:2015	Minimum Class 3	Class 5	P	
Resistance to chemicals					
Resistance to household chemicals and swimming pool salts					
a)Household chemicals: Ammonium chloride, 100g/L	ISO 10545-13:2016	Minimum B	A	P	
b)Swimming pool salts: Sodium hypochlorite solution, 20mg/L	ISO 10545-13:2016	Minimum B	A	P	

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Clause	Properties	Test Method	Requirements	Results	Verdicts
Table G.1	Resistance to low concentrations of acids and alkalis				
	a) Hydrochloric acid solution, 3% (v/v)	ISO 10545-13:2016	Manufacturer to state classification	LA	—
	b) Citric acid solution, 100g/L	ISO 10545-13:2016	Manufacturer to state classification	LA	—
	c) Potassium hydroxide, 30g/L	ISO 10545-13:2016	Manufacturer to state classification	LA	—
	Resistance to high concentrations of acids and alkalis				
	a) Hydrochloric acid solution, 18% (v/v)	ISO 10545-13:2016	Test method available	HA	—
	b) Lactic acid, 5% (v/v)	ISO 10545-13:2016	Test method available	HA	—
	c) Potassium hydroxide, 100g/L	ISO 10545-13:2016	Test method available	HA	—
	Lead and Cadmium release				
	a) Lead release, in mg/dm ²	ISO 10545-15:2021	Test method available	<0.02	—
b) Cadmium release, in mg/dm ²	ISO 10545-15:2021	Test method available	<0.003	—	

Possible test case verdicts

1. P(ass) : Test item does meet the requirement.
2. F(ail) : Test item does not meet the requirement.
3. —: Verdict was not carried out.
4. N/A : Test case does not apply to the test item.

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End of Test Report