

TECHNICAL SHEET
PSO CMTO CEMENTO PLS BCO 45X45 EXT 2.03

EVALUATED CHARACTERISTICS	TEST METHOD	NORM ISO 13006 REQUIREMENTS (BIIB)	RESULT	CONCLUSION
DIMENSIONS AND SURFACE QUALITY				
* Length and Width, mm Manufacturing Size: 451.0 mm Average Size: 452.2 mm	ISO 10545-2	± 0.6%; ± 2.0mm	(%) 0.27 (mm) 1.20	Comply
* Thickness, mm Manufacturing: 7.5 mm Average result: 7.8 mm	ISO 10545-2	± 5.0%; ± 0.5mm	4.00 0.30	Comply
* Straightness of sides, %	ISO 10545-2	± 0.5%; ± 1.5mm	0.09 0.40	Comply
* Rectangularity, %	ISO 10545-2	± 0.5%; ± 2.0mm	-0.18 -0.80	Comply
* Surface flatness Edge curvature, % Centre curvature, % Warpage, %	ISO 10545-2 ISO 10545-2 ISO 10545-2	± 0.5%; ± 2.0mm ± 0.5%; ± 2.0mm ± 0.5%; ± 2.0mm	0.18 0.00 0.80 0.00 0.24 0.00 1.50 0.00 0.14 -0.02 0.90 -0.10	Comply Comply Comply
* Surface quality, %	ISO 10545-2	A minimum of 95 % of the tiles are to be free from visible defects which can impair the appearance of a major area of tiles	96.3%	Comply
PHYSICAL PROPERTIES				
* Water absorption (E _v), %	ISO 10545-3	6 % < E _v ≤ 10 % Individual maximum 11 %	6.9 7.0	Comply Comply
* Breaking strength, N (Thickness ≥ 7.5 mm)	ISO 10545-4	Not less than 800	1012	Comply
* Modulus of rupture, N/mm ²	ISO 10545-4	Minimum 18 Individual minimum 16	33 31	Comply Comply
* Abrasion resistance - CU	ISO 10545-7	Report abrasion class and cycles passed	Class 4 Cycles 2100	-
* Craze resistance	ISO 10545-11	Required	No crazing	Comply
CHEMICAL PROPERTIES				
* Resistance to staining - Green Oxide - Iodo - Olive oil	ISO 10545-14 ISO 10545-14 ISO 10545-14	Minimum class 3 Minimum class 3 Minimum class 3	Class 5 Class 5 Class 5	Comply Comply Comply
* Resistance to low concentrations of acids and alkalis - 3% Hydrochloric Acid (V / V) - Potassium hydroxide, 30 g / l		Manufacturer is to state classification	LB LA	- -
* Resistance to high concentrations of acids and alkalis - 18% Hydrochloric Acid (V / V) - Potassium hydroxide, 100 g / l	ISO 10545-13	Test method available	HB HA	- -
* Resistance to household chemicals and swimming pool salts - Ammonium Chloride 100 g / l - Sodium hypochlorite, 20 mg / l	ISO 10545-13	Minimum B	A A	Comply Comply
<p>Requirements verified as indicated in the INTERNATIONAL STANDARD, ISO 13006 "Ceramic Tiles - Definitions, Classification, Characteristics and marking", Annex k (normative), Table k.1. Dry-pressed ceramic tiles 6 % < E_v ≤ 10 % Group BIIB₆ The weight, tone and dimensions are subject to some of the inevitable variations typical of ceramic firing processes.</p>				
DATE OF ISSUE			Tuesday, November 15, 2022	
Prepared by: Quality Supervisor			Reviewed by: Manager Quality Assurance	
César Prado R.			Marlene Chauca R.	

EVALUATED CHARACTERISTICS	TEST METHOD	NORM ISO 13006 REQUIREMENTS (BIIB)	RESULT	CONCLUSION
DIMENSIONS AND SURFACE QUALITY				
* Length and Width, mm Manufacturing Size: 451.0 mm Average Size: 452.2 mm	ISO 10545-2	± 0.6%; ± 2.0mm	(%) 0.27 (mm) 1.20	Comply
* Thickness, mm Manufacturing: 7.5 mm Average result: 7.7 mm	ISO 10545-2	± 5.0%; ± 0.5mm	2.67 0.20	Comply
* Straightness of sides, %	ISO 10545-2	± 0.5%; ± 1.5mm	0.14 0.64	Comply
* Rectangularity, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.13 0.59	Comply
* Surface flatness Edge curvature, % Centre curvature, % Warpage, %	ISO 10545-2 ISO 10545-2 ISO 10545-2	± 0.5%; ± 2.0mm ± 0.5%; ± 2.0mm ± 0.5%; ± 2.0mm	0.20 0.00 0.90 0.00 0.22 0.00 1.41 0.00 0.15 -0.06 0.93 -0.42	Comply Comply Comply
* Surface quality, %	ISO 10545-2	A minimum of 95 % of the tiles are to be free from visible defects which can impair the appearance of a major area of tiles	96.5%	Comply
PHYSICAL PROPERTIES				
* Water absorption (E _v), %	ISO 10545-3	6 % < E _v ≤ 10 % Individual maximum 11 %	6.8 7.0	Comply Comply
* Breaking strength, N (Thickness ≥ 7.5 mm)	ISO 10545-4	Not less than 800	902	Comply
* Modulus of rupture, N/mm ²	ISO 10545-4	Minimum 18 Individual minimum 16	33 32	Comply Comply
* Abrasion resistance - CU	ISO 10545-7	Report abrasion class and cycles passed	Class 3 Cycles 1500	-
* Crazeing resistance	ISO 10545-11	Required	No crazeing	Comply
CHEMICAL PROPERTIES				
* Resistance to staining - Green Oxide - Iodo - Olive oil	ISO 10545-14 ISO 10545-14 ISO 10545-14	Minimum class 3 Minimum class 3 Minimum class 3	Class 5 Class 5 Class 5	Comply Comply Comply
* Resistance to low concentrations of acids and alkalis - 3% Hydrochloric Acid (V / V) - Potassium hydroxide, 30 g / l		Manufacturer is to state classification	LB LB	- -
* Resistance to high concentrations of acids and alkalis - 18% Hydrochloric Acid (V / V) - Potassium hydroxide, 100 g / l	ISO 10545-13	Test method available	HB HB	- -
* Resistance to household chemicals and swimming pool salts - Ammonium Chloride 100 g / l - Sodium hypochlorite, 20 mg / l	ISO 10545-13	Minimum B	A A	Comply Comply
<p>Requirements verified as indicated in the INTERNATIONAL STANDARD, ISO 13006 "Ceramic Tiles - Definitions, Classification, Characteristics and marking", Annex k (normative), Table k.1. Dry-pressed ceramic tiles 6 % < E_v ≤ 10 % Group BIIB₆ The weight, tone and dimensions are subject to some of the inevitable variations typical of ceramic firing processes.</p>				
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DIMENSIONS AND SURFACE QUALITY				
* Length and Width, mm Manufacturing Size: 451.0 mm Average Size: 451.8 mm	ISO 10545-2	± 0.6%; ± 2.0mm	(%) (mm) 0.18 0.80	Comply
* Thickness, mm Manufacturing: 7.5 mm Average result: 7.7 mm	ISO 10545-2	± 5.0%; ± 0.5mm	2.67 0.20	Comply
* Straightness of sides, %	ISO 10545-2	± 0.5%; ± 1.5mm	0.11 0.51	Comply
* Rectangularity, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.12 0.53	Comply
* Surface flatness Edge curvature, %		± 0.5%; ± 2.0mm	0.18 0.00 0.82 0.00	Comply
Centre curvature, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.25 0.00 1.58 0.00	Comply
Warpage, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.14 -0.03 0.91 -0.25	Comply
* Surface quality, %	ISO 10545-2	A minimum of 95 % of the tiles are to be free from visible defects which can impair the appearance of a major area of tiles	97.1%	Comply
PHYSICAL PROPERTIES				
* Water absorption (E _v), %	ISO 10545-3	6 % < E _v ≤ 10 % Individual maximum 11 %	6.8 6.9	Comply Comply
* Breaking strength, N (Thickness ≥ 7.5 mm)	ISO 10545-4	Not less than 800	877	Comply
* Modulus of rupture, N/mm ²	ISO 10545-4	Minimum 18 Individual minimum 16	32 31	Comply Comply
* Abrasion resistance - CU	ISO 10545-7	Report abrasion class and cycles passed	Class 3 Cycles 1500	-
* Crazeing resistance	ISO 10545-11	Required	No crazeing	Comply
CHEMICAL PROPERTIES				
* Resistance to staining - Green Oxide	ISO 10545-14	Minimum class 3	Class 5	Comply
- Iodo	ISO 10545-14	Minimum class 3	Class 5	Comply
- Olive oil	ISO 10545-14	Minimum class 3	Class 5	Comply
* Resistance to low concentrations of acids and alkalis - 3% Hydrochloric Acid (V / V)		Manufacturer is to state classification	LB	-
- Potassium hydroxide, 30 g / l			LB	-
* Resistance to high concentrations of acids and alkalis - 18% Hydrochloric Acid (V / V)	ISO 10545-13	Test method available	HB	-
- Potassium hydroxide, 100 g / l			HB	-
* Resistance to household chemicals and swimming pool salts - Ammonium Chloride 100 g / l		Minimum B	A	Comply
- Sodium hypochlorite, 20 mg / l	ISO 10545-13		A	Comply
<p>Requirements verified as indicated in the INTERNATIONAL STANDARD, ISO 13006 "Ceramic Tiles - Definitions, Classification, Characteristics and marking", Annex k (normative), Table k.1. Dry-pressed ceramic tiles 6 % < E_v ≤ 10 % Group BIIB₆ The weight, tone and dimensions are subject to some of the inevitable variations typical of ceramic firing processes.</p>				
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DIMENSIONS AND SURFACE QUALITY				
* Length and Width, mm Manufacturing Size: 451.0 mm Average Size: 450.5 mm	ISO 10545-2	± 0.6%; ± 2.0mm	(%) -0.11	(mm) -0.50 Comply
* Thickness, mm Manufacturing: 7.5 mm Average result: 7.4 mm	ISO 10545-2	± 5.0%; ± 0.5mm	-1.33	-0.10 Comply
* Straightness of sides, %	ISO 10545-2	± 0.5%; ± 1.5mm	0.20	0.91 Comply
* Rectangularity, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.13	0.51 Comply
* Surface flatness Edge curvature, %		± 0.5%; ± 2.0mm	0.20	0.00 0.91 0.00 Comply
Centre curvature, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.18	0.00 1.15 0.00 Comply
Warpage, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.15	-0.07 0.93 -0.48 Comply
* Surface quality, %	ISO 10545-2	A minimum of 95 % of the tiles are to be free from visible defects which can impair the appearance of a major area of tiles	98.1%	Comply
PHYSICAL PROPERTIES				
* Water absorption (E _v), %	ISO 10545-3	6 % < E _v ≤ 10 % Individual maximum 11 %	6.8 7.0	Comply Comply
* Breaking strength, N (Thickness ≥ 7.5 mm)	ISO 10545-4	Not less than 800	835	Comply
* Modulus of rupture, N/mm ²	ISO 10545-4	Minimum 18 Individual minimum 16	32 30	Comply Comply
* Abrasion resistance - CU	ISO 10545-7	Report abrasion class and cycles passed	Class 2 Cycles 600	-
* Crazeing resistance	ISO 10545-11	Required	No crazeing	Comply
CHEMICAL PROPERTIES				
* Resistance to staining - Green Oxide	ISO 10545-14	Minimum class 3	Class 5	Comply
- Iodo	ISO 10545-14	Minimum class 3	Class 5	Comply
- Olive oil	ISO 10545-14	Minimum class 3	Class 5	Comply
* Resistance to low concentrations of acids and alkalis - 3% Hydrochloric Acid (V / V) - Potassium hydroxide, 30 g / l		Manufacturer is to state classification	LB LB	- -
* Resistance to high concentrations of acids and alkalis - 18% Hydrochloric Acid (V / V) - Potassium hydroxide, 100 g / l	ISO 10545-13	Test method available	HB HB	- -
* Resistance to household chemicals and swimming pool salts - Ammonium Chloride 100 g / l - Sodium hypochlorite, 20 mg / l	ISO 10545-13	Minimum B	A A	Comply Comply
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* Thickness, mm Manufacturing: 7.5 mm Average result: 7.7 mm	ISO 10545-2	± 5.0%; ± 0.5mm	2.67 0.20	Comply
* Straightness of sides, %	ISO 10545-2	± 0.5%; ± 1.5mm	0.16 0.71	Comply
* Rectangularity, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.11 0.50	Comply
* Surface flatness Edge curvature, %		± 0.5%; ± 2.0mm	0.08 0.00 0.35 0.00	Comply
Centre curvature, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.07 0.00 0.47 0.00	Comply
Warpage, %	ISO 10545-2	± 0.5%; ± 2.0mm	0.14 0.00 0.92 0.00	Comply
* Surface quality, %	ISO 10545-2	A minimum of 95 % of the tiles are to be free from visible defects which can impair the appearance of a major area of tiles	98.1%	Comply
PHYSICAL PROPERTIES				
* Water absorption (E _v), %	ISO 10545-3	6 % < E _v ≤ 10 % Individual maximum 11 %	6.9 7.0	Comply Comply
* Breaking strength, N (Thickness ≥ 7.5 mm)	ISO 10545-4	Not less than 800	837	Comply
* Modulus of rupture, N/mm ²	ISO 10545-4	Minimum 18 Individual minimum 16	32 30	Comply Comply
* Abrasion resistance - CU	ISO 10545-7	Report abrasion class and cycles passed	Class 2 Cycles 600	-
* Crazeing resistance	ISO 10545-11	Required	No crazing	Comply
CHEMICAL PROPERTIES				
* Resistance to staining - Green Oxide	ISO 10545-14	Minimum class 3	Class 5	Comply
- Iodo	ISO 10545-14	Minimum class 3	Class 5	Comply
- Olive oil	ISO 10545-14	Minimum class 3	Class 5	Comply
* Resistance to low concentrations of acids and alkalis - 3% Hydrochloric Acid (V / V)		Manufacturer is to state classification	LB	-
- Potassium hydroxide, 30 g / l			LB	-
* Resistance to high concentrations of acids and alkalis - 18% Hydrochloric Acid (V / V)	ISO 10545-13	Test method available	HB	-
- Potassium hydroxide, 100 g / l			HB	-
* Resistance to household chemicals and swimming pool salts - Ammonium Chloride 100 g / l	ISO 10545-13	Minimum B	A	Comply
- Sodium hypochlorite, 20 mg / l			A	Comply
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