09315 PORCELAIN TILE

Ceramics of Italy

NovaBell® Ceramiche Gruppo Bellei

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EXTRA levigato

The international reference standards: ISO – EN:
The values of the main technical characteristics measured on our products, compared with international standards, are clearly shown and reproduced on our contractual documents (catalogs, price lists, etc.).
The values given in this document are common to groups of articles or series of our tiles and therefore are to be used as a guide for a first orientation in choosing the product. If required, the specific values for a given product of a determined supply can be provided depending on its intended use, when formally brought to our attention by notice in writing.

Characteristics and Test methods	Requirements EN 14411(1) - G / ISO 13006(2) - G		Our general values
Determination of water absorption - (ISO 10545-3)	Average value $E_b \leq 0,5$ % / Individual maximum 0,6%		≤ 0,5 % Average value and individual maximum
Classification	Definition § 3.2 and § 3.7		BI_a – Porcelain tiles
			Physical properties
Modulus of rupture - (ISO 10545-4)	Average ≥ 35 N/mm²		≥ 35 N/mm²
Breaking strength - (ISO 10545-4)	Average ≥ 1300 N for thickness ≥ 7,5 mm Average ≥ 700 N for thickness < 7,5 mm		Complies
Resistance to deep abrasion - (ISO 10545-6)	Max volume abraded ≤175 mm³		<175 mm³
Coefficient of linear thermal expansion - (ISO 10545-8)	Declared value(1) / Test method available(2)		< 7,1 x 10^{-6} °C^{-1}
Thermal shock resistance - (ISO 10545-9)	Pass according to EN ISO 10545-1(1)/ Test method available(2)		Complies
Crazing resistance - (ISO 10545-11)	Pass according to EN ISO 10545-1(1)/ Required(2)		Complies
Frost resistance - (ISO 10545-12)	Pass according to EN ISO 10545-1(1)/ Required(2)		Complies
Moisture expansion - (ISO 10545-10)	Declared value(1) / Test method available(2)		≤ 0,2 mm/m
Small colour differences - (ISO 10545-16)	$\Delta E_{cmc} < 0,75$(1)		If agreed
Impact resistance - (ISO 10545-5)	Declared value(1)/Test method available(2)		COR > 0,75
Reaction to fire	Class A1 or $A1_{FL}$ (1)		$A1_{FL}$ (Classified Without Testing (CWT) – 96/603 EC)
			Chemical properties
Chemical resistance - (GL) (ISO 10545-13): • Resistance to low and high concentrations of acids and alkalis • Resistance to household chemicals and swimming pool salts	Declared value(1) / Manufacturer is to state classification(2) Minimum class B		**Household Chemicals:** Ammonium Chloride 100g/l GA(V) **Swimming pool salts:** Sodium hypochlorite 20mg/l GA(V) **Acids:** Hydrochloric acid 3% V/V GLB(V) Citric acid 100g/l GLA(V) **Alkali:** Potassium Hydroxide 30g/l GLB(V) **Acids:** Hydrochloric acid 18%V/V GHA(V) Lactic acid 5% V/V GHA(V) **Alkali:** Potassium Hydroxide 100g/l GHB(V)
Resistance to staining - (ISO 10545-14)	Minimum class 3		≥3 see "Maintenance and care" section
			Dimensions and surface quality
Dimensions - (ISO 10545-2)	See ANNEX G		Complies
Surface quality - (ISO 10545-2 § 7)	A minimum of 95% of the tiles shall be free from visible defects that would impair the appearance of a major area of tiles		Complies
			Slipperiness
Dynamic Coefficient Friction wet and dry condition (BCR – ex BCRA) Italy	DM n. 236 / 1989	μ > 0,40	μ > 0,40

CLASSIFICATION (Pencil test and/or reflexion test **are not** applicable:)

U: Unglazed tiles	*Class A(V): no visible effect*
G: Glazed tiles	*Class B(V): definitive change in appearance*
L: Low concentration chemicals	*Class C(V): partial or complete loss of the surface*
H: High concentration chemicals	

(1) Requirements according to EN 14411 (2) Requirements according to ISO 13006

PRODUCT INFORMATION - IMPORTANT NOTES FOR THE CONSUMER - CLEANING AND CARE - PROPERTY RIGHTS: www.novabell.it

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CARE and MAINTENANCE

Our porcelain stoneware tiles are made from raw materials of great technical potential. This potential is enhanced by means of a production process where the body and surface of the material are treated in exactly the same way, where the tile's shape and appearance are rendered permanent by firing at temperatures which may even exceed 1200°C. This ensures that the surface and body of the tile become one, adding style and beauty to its intrinsic strength. Consequently, tiles' natural surfaces are stable against and unaffected by the chemicals and staining substances specified by the toughest international standards (ISO, EN, ASTM/ANSI), as documented by our product technical data sheets, including the statements of applicability which precede them. Maintenance performed at frequencies and by methods which effectively remove dirt will not only ensure hygiene but also conserve the material's beauty and, above all, its functional and safety characteristics: remember that the antislip properties declared refer to clean, new surfaces, as required by the standards. Inadequately removed dirt can, in itself, cause slipping unrelated to the properties of our coverings. Similarly, failure to remove or prevent abrasive dirt (e.g. by means of devices for cleaning the soles of shoes before coming indoors) may modify the structure of surfaces, reducing antislip properties below the values originally declared. Reference should be made to the ISO 13006/EN 14411 Annex N and ANSI A 137.1 § 6.2.2.1 standards.

Similarly, these surfaces are so compact as to be impenetrable by many potentially staining substances, and this is also documented by the results of the tests performed in accordance with the above standards.These exceptional performance values mean that surfaces can also undergo a mechanical finishing or honing process, which leaves them absolutely flat and with a bright shine, fully revealing all the beauty provided by the raw materials and the innovative surface decoration technologies used by Novabell. The result is a very fine surface, which brings immense prestige to the locations where it is installed. As with other choice coverings, prolonged contact with dirt or aggressive substances, which might even temporarily impair the overall effect of the covering's appearance, should be avoided or prevented. If not removed frequently enough or prevented, dirt may stratify to the point where strong chemical cleaning, hazardous for the people who carry it out and with negative environmental impact, is required. In line with our policy of environmental sustainability, we do not intend to provide lists of acid or alkaline chemicals for the various types of dirt. We prefer to advise you to adopt preventive measures and make a careful choice from the various cleaning products available on the market, many of which are sustainable and effective. These products can easily be identified from their labels, which are required by law to state chemical compositions as well as instructions for use. With a view to prevention, our honed surfaces have a low environmental impact protective coating which renders them more impermeable to staining substances in order to simplify maintenance procedures. It is important not to damage this coating with aggressive cleaning products (including methylated spirits and jets of steam) , and if measures of this kind are required the cleaner should first be left on a small, concealed area for a few hours. If changes in the surface are noted, less hazardous products, certainly available on the market, should be used once the type of dirt left to stain the surface has been identified.

WARNING: During the laying operation, the use of black and / or rich in colored pigments for the creation of the joints is strongly discouraged.
The use of these sealants could lead to the formation of stains / halos on the surface of the material, which are difficult to remove with normal household cleaning agents.

WARNING: It should be remembered that all ceramics are intrinsically vulnerable to attack by hydrofluoric acid and its compounds. It is equally important to remember that this acid may cause serious, permanent injury, even merely by contact, to anyone who uses it without the necessary precautions. Sometimes, products containing this acid are offered on the market to remove some types of stains (e.g. rust) or to increase the grip of a ceramic surface, since it is strongly corrosive.

WARNING: "Tiles not intended for contact with food"

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North America reference standards: ANSI - ASTM

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Characteristics and Test methods	Requirements ANSI A 137.1	Our general values
Determination of water absorption - (ASTM C 373)	Average value $E_b \leq 0,5$ %	Average value $\leq$ 0,5%
Classification	Definition § 3.0	Porcelain tiles
		Physical properties
Breaking strenghth - (ASTM C 648)	Average ≥ 250 lbf (1.11 kN) Individual ≥ 225 lbf (1.00 kN)	Complies
Thermal shock resistance - (ASTM C 428)	Pass	Complies
Crazing resistance - (ASTM C 424)	Pass	Complies
Resistance to freeze/thaw cycling - (ASTM C 1026)	As reported	Resistant
Bond strength - (ASTM C 482)	≥ 50 psi (0.34 MPa)	> 1 MPa
Color Uniformity - (ASTM C 609 and ANSI A 137.1 Section 9.3) (2)	V0 – 3 Judds	See the specific section
		Chemical properties
Chemical resistance - (ASTM C 650)	As reported	

RESULTS

Pencil test	applicable	X		Not applicable	

Chemical test solution (item 1.2 of the standard)		Visual test	Pencil test	N. of specimens affected
Common Household and Cleaning	Acetic acid 3 % (V/V)	Not affected	Not affected	0
	Acetic acid 10 % (V/V)	Not affected	Not affected	0
	Ammonium chloride 100 g/l	Not affected	Not affected	0
	Citric acid 30 g/l	Not affected	Not affected	0
	Citric acid 100 g/l	Not affected	Not affected	0
	Lactic acid 5 % (V/V)	Not affected	Not affected	0
	Phosphoric acid 3 % (V/V)	Not affected	Not affected	0
	Phosphoric acid 10 % (V/V)	Not affected	Not affected	0
	Sulfamic acid 30 g/l	Not affected	Not affected	0
	Sulfamic acid 100 g/l	Not affected	Not affected	0
Swimming Pool	Sodium hypochlorite 20 mg/l	Not affected	Not affected	0
Acids:	Hydrochloric acid 3 % (V/V)	Affected	Affected	1
	Hydrochloric acid 18 % (V/V)	Not affected	Not affected	0
Bases:	Potassium hydroxide 30 g/l	Affected	Affected	1
	Potassium hydroxide 100 g/l	Affected	Affected	1

Stain resistance - (ASTM C 1378)	As reported	Resistant
		Dimensions - Calibrated tiles
Dimensions - (ASTM C 499) - (ASTM C 485) - (ASTM C 502)	See ANSI A 137.1 - Tab.10	Complies
		Dimensions - Rectified tiles
Dimensions - (ASTM C 499) - (ASTM C 485) - (ASTM C 502)	See ANSI A 137.1 - Tab.10	Complies

(1) For level interior spaces expected to be walked upon when wet (2) For V0 tiles only

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