

P O R T Z E L A N[®]

PORCELAIN STONEWARE

TECHNICAL DATA

Physical Properties	Method/Norm	Required standard	Standard achieved
Water absorption	EN 99	< 0.5%	< 0.04%
Dimensions	EN 98	Length +/- 0.6%	+/- 0.2%
		Thickness +/- 5%	+/- 2%
		Linearity +/- 0.5%	+/- 0.2%
		Wedging +/- 0.6%	+/- 0.2%
		Warpage +/- 0.5%	+/- 0.2%
Bending Strength	EN 100	> 27 N/mm ²	56.6 N/mm ²
Scratch Resistance	EN 102	< 205 mm ³	125 mm ³
Moss hardness	EN 101	> 6	8
Thermal expansion coefficient	EN 103	< 9MK-1	6.2 MK-1
Thermal shock resistance	EN 104	No sample must show visible effect	Resistant
Frost resistance	EN 202	No sample must show physical alterations to surface	Frost proof
Chemical resistance	EN 106	No sample must show visible signs of chemical attack	Unaffected
Color resistance to light exposure	DIN 51094	No noticeable colour change	No change in brightness and colour
Impact strength	RD.16/11/39 N.2234	> 20 Kgm	20 Kgm
Slip resistance	DIN 51130		R10 Matt

	1	2	3	4	5	6	7
Force applied (N)	2895	3077	3213	2986	3075	3131	3009
Modulus of rupture (N/mm ²)	64.4	68.5	77.2	69.9	73.9	77.2	60.8

Average modulus of rupture (N/mm²) : **70.3**



P O R T Z E L A N[®]

DETERMINATION OF STAIN RESISTANCE TEST In accordance with BS 6431 Part 1 Procedure CCB T 040193/R.S.UGL

Staining Agent	Stay Time	Cleaning Agents/Method	Visual Examination Class
Dark wine/vinegar	24 hours	I	6
Coffee	24 hours	I	6
Extra virgin olive oil	24 hours	I	6
Coca Cola	24 hours	I	6
Cigarette burning ash	10 minutes	V (**)	6
Methylene blue solution 10g/l	24 hours	I	6
Potassium permanganate solution 10g/l	24 hours	V (**)	6
Blue ink (ink pad)	24 hours	II (*)	6
Indelible red ink	24 hours	VI d (**)	6

Key	
Cleaning Agents	
I	Hot running water (T= 60 Deg)
II	Weak commercial non abrasive detergent with Ph 6.5-7.5
III	Strong commercial non abrasive detergent with approx. Ph 9-10
IV	Strong commercial non abrasive detergent with approx. Ph 3-4
V	Strong commercial non abrasive detergent
VI	Suitable solvents
VI a	Hydrochloric (3% see UNI EN 122 -3.4)
VI b	Potassium hydroxide (200 g/l, see UNI EN 106 3.4)
VI c	Sodium hypo chlorite (20 g/l, see UNI EN 106 3.2)
VI d	Trichloro-ethylene etc.
Cleaning Method	
(*)	Manual cleaning with soft sponge
(**)	Mechanical cleaning
(***)	Immersion of the sample into cleaning agents
Result Classification	
0	Deterioration or alteration of the working surface that can not be restored by cleaning
1	Persistent Stain
2	Partial stain persistence I.e. the stain persists but is weakened
3	Persistence of well visible halos
4	Persistence of hardly visible halos
5	Permanence pf pinholes on a clean background
6	Surface completely restored in its original appearance Test carried out on light coloured matt finish tile



P O R T Z E L A N[®]

Porcelain stoneware is a ceramic product obtained from a compacted mass of fine clay, quartz, kaolin and metal oxides-dry pressed at high pressure and fired at a temperature of 1300°. For optimum results Italgraniti Portzellan® adds a further step: before firing the tiles are heated at approx.200° and then sprayed with a ceramic solution. The heated tile absorbs the solution immediately, so that during firing it binds perfectly with the tile. However the most important thing is the composition of the solution: it contains mainly liquid feldspar mixed together with liquid clay and quartz; in other words the same raw materials as the tile itself. Thanks to this an optimal ceramic hardening is obtained by firing, since both the tile and the liquid have the same molecular structure.

The result is a slightly satin surface, compact even at the microscopic level (resistant even to graffiti) impervious to any type of stains.

However the following recommendations apply:

Initial Cleaning

Initial cleaning is of vital importance for the subsequent care and performance of the porcelain stoneware tiles. It must be carried out to remove all residues of cement/adhesive and grout, and must take place immediately after the necessary drying period following installation. A diluted acid product should be used to remove the cement residues (such as Lithofin KF).

Routine Cleaning and Maintenance

As on all floors, dirt, dust and other residues accumulate on vitrified stoneware surfaces, but thanks to the compactness of the material they are unable to penetrate. In conditions of normal use, it should be washed with lukewarm water to which a little ordinary commercial detergent should be added. To remove animal and vegetable fats, we recommend the use of an alkaline detergent. The concentration of the detergent will depend on the type and amount of dirt.

Excellent cleaning results are obtained, above all with very little detergent, if a micro fibre cloth is used for washing.

To remove every trace of dirt, finish by wiping with a dry woollen cloth. For tiles with textured surface a coarse leather cloth is better.

For large areas in commercial and industrial applications mechanical cleaning machinery may be employed. Daily use of these appliances not only allows rapid, thorough cleaning but completely removes the dirty washing liquid, preventing the formation of surface films of dirt and grease which would then be difficult and very costly to remove.

The following discs, for use by hand or with a machine, are recommended depending on the type of floor:

Polished surface- white or yellow
Matt surface - yellow and green
Textured surface- green and brown

We recommend the Lithofin – Porcelain Stoneware Care range of products

Very Important!

All detergents used must be completely free of waxes, grease or soaps and should not leave any residue or surface film on the tile.

MAINTENANCE INSTRUCTIONS

Type of stain	Type of Detergent
Vegetable and animal fat	Alkaline based
Cement deposits	Acid based
Ink	Acid based
Rust or oxides	Acid based
Mineral oils	Solvent based
Beer/wine	Alkaline or acid based
Rubber	Solvent based
Coffee	Alkaline based
Paints	Solvent based
Ice Cream	Alkaline based
Felt tip pen	Alkaline or solvent based
Candle wax	Solvent based
Linseed oil	Alkaline or solvent based
Daily cleaning	Neutral detergent
Alkaline	Caustic Soda
	Sodium hydroxide
Solvent	Turpentine
	Oil of turpentine
	Thinners
	Trichlorethylen
Acid	Hydrochloric
	Sulphuric
	Oxalic



Axia Architectural Limited

Tel.+ 44 (0) 1698 792156 Fax. + 44 (0) 1698 792135 E-mail: sales@axia-architectural.co.uk