



■ QUANTUM QUARTZ

Additives

Quartz-based engineered products contain numerous additives. In addition to pigments, they include UV absorbers, cross-linking agents and stabilizers. An important additive contained in all engineered stone is a catalyst – a chemical that causes the mixture to harden, or cure.

Casting

The way a solid surface is 'cast' is generally a simple one. The resin is mixed with the additives and fillers, then poured into a mould. It is important to avoid trapping air bubbles in the mix, as these cause voids in the material. This is usually prevented by adjusting the viscosity of the mix or by using vibrating casting tables.

Curing

Curing means allowing the chemical reactions that form the engineered stone product to be as close to 100% complete as possible, leaving a stable, inert material with all its performance properties intact. Some engineered stones cure by themselves in the open air. Others cure by being bathed in steam or heated in ovens. Many polyester resins require post-curing operations, usually through a heating-cooling cycle to increase the degree of cure.

Scratch-Resistance

Quantum Quartz® is highly resistant to abrasion. With a score of 6 to 7 on the Mohs hardness scale, and the abrasion index of 60+, Quantum Quartz® Solid surfaces is ideal for flooring and countertops including those subject to high traffic or heavy use.

Water absorption

Natural and synthetic materials with lower water absorption rates are easier to maintain and more resistant to stains. Quantum Quartz® has an absorption coefficient of 0.03%, or more than 15 times better than the minimum required to be considered 'impervious'. The best rating qualifies the material as 'impervious' and it is reached when the coefficient obtained is 0.5% or less.

Frost-Free

Quantum Quartz® is practically immune to freezing and thawing cycles because of its low level of water absorption. As tested per ASTM C-97, Quantum Quartz® has maximum water absorption of 0.03%.

Abrasion resistance

ASTM C-241 tests the wearing resistance capacity of natural stones, ceramic and porcelain materials to the abrasion of foot traffic. Results of 10 qualify the material for normal traffic areas; 12 are required to pass for commercial floors, stair steps and platforms subject to heavy traffic. Quantum Quartz® has an abrasive hardness of 60.

Abrasion wearing index

The capacity of commonly used tiles to resist the abrasion made by dragging heavy objects of different materials is evaluated using Abrasive Wearing Index Tests. Natural clay ceramic tiles have an index of 35 or more, and porcelain tiles 100 or more. Quantum Quartz® has an abrasion-wearing index of more than 175, or about double than porcelain tiles.

Stain-Proof

Quantum Quartz® is a non-porous material. Common spills stay on the surface and are easy to clean with regular cleaners leaving no trace of stain on the surface as tested per ASTM C-650. However, Quantum Quartz® is susceptible to nitric and hydrofluoric acids and hydroxides in high concentrations when exposure exceeds 24 hours.

Stain resistance

The inert properties of its natural components (quartz, silica and or granite) together with its fabrication process make polished and semi-gloss finished Quantum Quartz® more resistant to stains than any other competitive material.

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Chemical Resistance

Quantum Quartz® is an ideal product for applications where chemicals and/or strong cleaning agents are used. Quantum Quartz® is virtually non-porous; hence it is impervious to most concentrated solutions of industrial chemicals.

Listed below are industrial chemicals for which Quantum Quartz® has been tested.

Acids

Quantum Quartz® is not affected by even the strongest solutions of common acids including: hydrochloric acid, muriatic acid, nitric acid, and sulphuric acid. In concentrated solutions, after exposures of 24 hours, some acids such as nitric acid will slightly discolour the resin used in Quantum Quartz®, though they will not compromise the strength of the material. Hydrofluoric acid spills should be cleaned up immediately because the acid will react with the quartz in Quantum Quartz®.

Bases

The only two known substances to affect a Quantum Quartz® surface are sodium hydroxide and potassium hydroxide in industrial concentrations. Although these substances will not degrade the structure of the material, over time they will etch the surface. Concentrations of the above bases in 10% or higher concentrations should be cleaned from a Quantum Quartz® surface immediately. In household concentrations, such as those found in home drain cleaners, sodium and potassium hydroxide have no effect on Quantum Quartz®.

Solvents

Quantum Quartz® resists a wide range of commercial and industrial solvents. Household cleaners and industrial-strength concentrations of solvents (such as Methyl Ethyl Ketone) have shown no effect on Quantum Quartz®. Other solvents that can be safely used in pure concentrations on Quantum Quartz® include: acetone, lacquer thinner, mineral spirits isopropyl alcohol, methylene chloride, and trichlorethane.

Staining Agents

Quantum Quartz® resists staining agents found in laboratories. Quantum Quartz® is not permanently stained by pure concentrations of betadine, potassium permanganate or iodine. (These agents permanently stain most solid surfaces and plastics.) Any residual stain of betadine or iodine on light-coloured Quantum Quartz® cleans off with household chlorine bleach. Black and dark colours of Quantum Quartz® show no stain from these agents.

UV resistance

The Quantum Quartz® is for indoor use only. When used outside, light colours turn yellow and dark colours will fade. Continued exposure to direct sunlight could alter the colour of the stones.

Flame-spread and smoke-density tests

Quantum Quartz® tested for flame spread and smoke density gave a safe flame-spread coefficient of 17 by ASTM E-84 and smoke-density coefficients of 196 under 'flaming' test and 69 in a 'non-flaming' test. These tests confirm that Quantum Quartz® is safe in diverse residential and commercial construction environment.

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