



# Technistone – Environmentally friendly Production

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## 1) Technistone product

Technistone product is high-quality, solid, composite material, built-up from hard, inorganic, polishable granulates, compactly bound together with a binder and a filler, colored with various pigments, having a smooth, resistant surface, in a variety of sizes and with a wide range of applications.

The natural or non-chemical portion in the product is approximately 90%. Technistone<sup>®</sup> is produced from:

- inert materials (granulates – crushed granites, crushed quartz, crushed mirrors, siliceous sand, etc.)
- fillers (micronized siliceous raw material)
- binder (polyester resin)
- mostly inorganic color pigments
- other minor additives.

Technistone<sup>®</sup> is categorized into four basic production groups according to the predominant inert material:

- Sand siliceous sand
- Granite crushed granite + siliceous sand
- Mirrors crushed mirrors + glass + siliceous sand
- Crystal siliceous sand + quartz





## 2) Technistone production– usage of recycled raw materials

Especially in production group Mirrors (commercial names of products Starlight, Venetian, Translucent and Fresh) there is a high percentage (20 - 50%) of recycled mirror and glass chips as raw materials and thus Technistone<sup>®</sup> contributes to consumption of waste materials from other producers and its transformation into a high-end consumer product with high additional value.

The special resin (binder), produced from collected and recycled PET bottles, was specially developed for Technistone. It is used in significant portion in Technistone dark colors products. Recycled PET resin Technistone consumption measured in range of hundred tons yearly contributes to the Czech and European system of used PET bottles collection.

Off-cut products waste from Technistone tiles production is recycled again within Venetian colors production, where a considerable portion of crushed pieces of Starlight subgroup colors is used as raw material. In this way Technistone decreases the residual material that is difficult to process further on or even depot in waste depots. Venetian colors were specially designed as products based on recycled raw materials. This increases re-usage of materials in Technistone production process.

Remainders from recycled mirrors and glass crushing and sieving process are collected and then reused in Technistone own pigment blends preparation as carriers.

Undersizes from recycled glass crushing and sieving process are collected and reused in several products as a replacement of part of silica sand raw material.

All packing materials used on Technistone slabs or tiles are from 100% recycled PE or cardboard paper.

## 3) Technistone production – contribution to air purity

Polyester resin used as a binder in Technistone<sup>®</sup> is dissolved in styrene. The styrene is inevitably partially released during the process of production. Technistone has got the strict system of controlled **burning of all released styrene**. The system is regularly inspected by state authorities under European standards.

During crushing of the granites, mirror chips and other raw materials some dust might be released in the air. Therefore in every production hall there effective dust collectors are installed. These collectors secure that remaining emissions meet strict emissions limits.

The whole production settings meet requirements of Directions of European Council on environment and air purity Nos. 91/962/EU, 96/62/EU and 2000/76/EC.

Technistone<sup>®</sup> is produced on Bretonstone<sup>®</sup> machinery securing zero VOC evaporations of the product.





#### 4) Technistone production – contribution to decrease of water consumption by purification

##### Recycling of water used in production:

- 95% of waste water from the whole factory is carefully recycled and comes back into the production process.
- Technistone has installed its own Water Sewerage Plant with yearly output of 165 Th. m<sup>3</sup> monthly. The equipment works according to strict European standards.

The sewage mud is handed over to another local manufacturer who uses the mud as a raw material for production of construction bricks.

#### 5) Technistone production – contribution to waste recycling and re-use

##### Production waste polymerization unit

All not fully polymerized production wastes are polymerized in specially designed, own waste polymerization unit. Prepared cured mass is completely inert and therefore chemically harmless. It is used successfully as a foundation component in road construction works.

##### Avoidance of harmful liquids

As in every production also during production of Technistone engineered stone some separation solutions for pressing rubber moulds and some solvents for machinery cleaning are used.

100% of separation solutions are recycled in Technistone resulting in zero waste.

70% of solvents are recycled in Technistone. The rest is carefully sorted, followed, categorized and handed over to professional waste companies.

50% of oils used as a heating medium are recycled in Technistone. The rest is carefully sorted, followed, categorized and handed over to professional waste companies.

#### 6) Technistone production evaluation and approval according environmental impacts

All production buildings, installed technology and whole production process were carefully evaluated and approved according to European regulation EIA (Environmental Impact Assessment) before production settings.

#### 7) Environmental inspection

The whole production and processes in Technistone factory are inspected by Ministry of Environment.





## 8) Construction waste management

Technistone products are completely not hazardous for environment. It could be disposed in case of reconstruction or demolition by re-use (repolishing, cutting for smaller formats..) or by recycling (crushing and using in concrete production as a grit or in road construction works as a roadfil).

## 9) Regional raw materials usage

Technistone uses as much as possible raw materials from domestic, regional sources in Czech Republic to decrease influence of excessive transportation to the environment.

## 10) Certification

Technistone<sup>®</sup> is certified by NSF International that it conforms to NSF/ANSI 51 Food Equipment Materials standard either for food or splash zone.

Technistone is certified by ISO 9001 standard.

Technistone plans to acquire ISO 14001 standard, to acquire Certified Green certification and Environment certification program according to Recycled Material content "SCS" in the near future.

