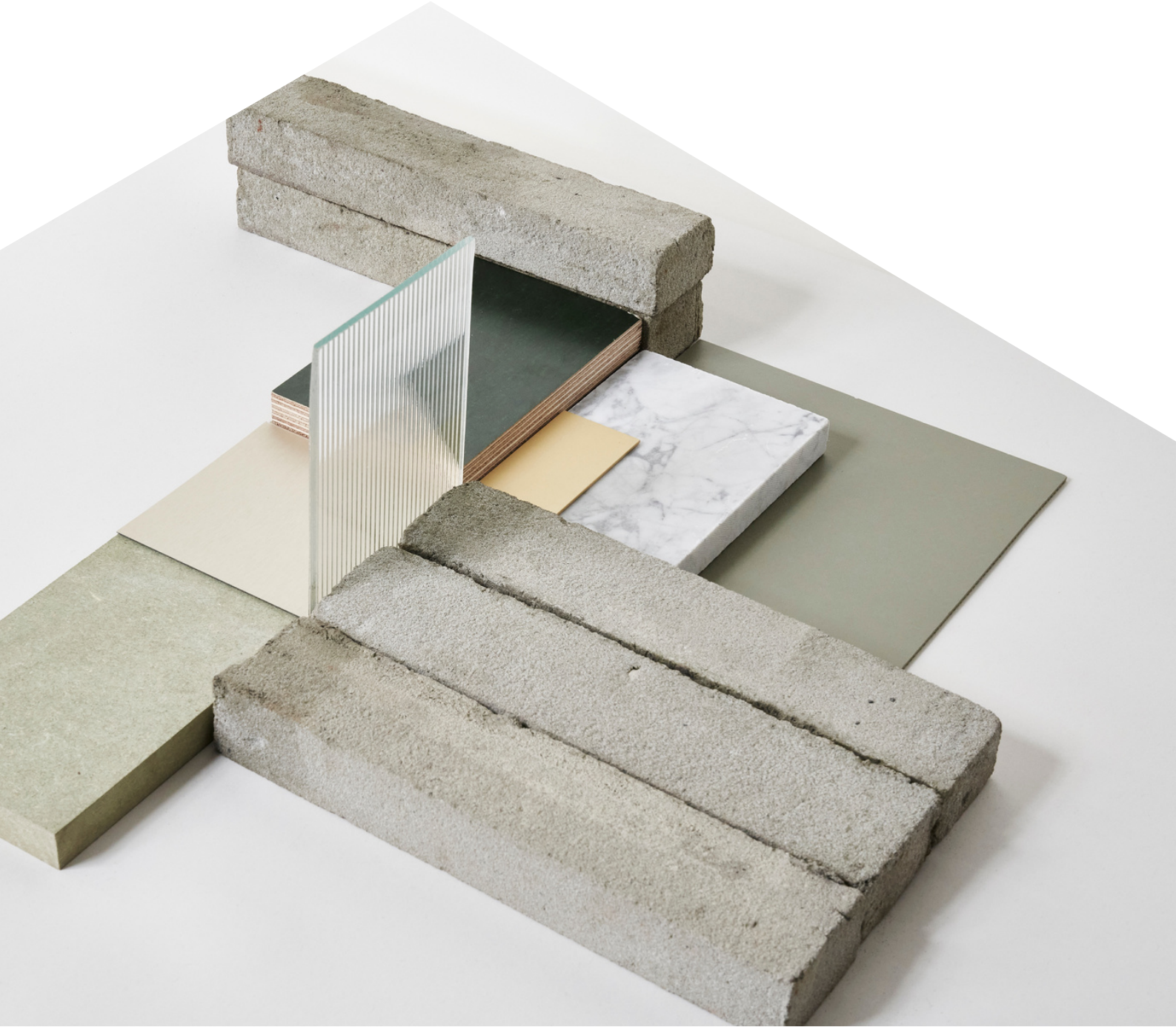
STONE®
CYCLING

WasteBasedSlips®

PRODUCT INFORMATION & PROCESSING GUIDELINE



General Product Information

QUALIY

WasteBasedSlips® are cut from WasteBasedBricks® that are subject to the following: WasteBasedBricks® meet the requirements set by the harmonized European product standard NEN-EN 771-1 for clay bricks. WasteBasedBricks® are produced on a project basis. Each production is accompanied by a Declaration of Performance (DoP) with the CE mark. The Declaration of Performance specifies only the dimensional and frost resistance class, which are project-specific tests and declarations.

WARRANTY

StoneCycling provides a 10-year warranty on the frost resistance of the WasteBasedBricks® (full bricks) from which the WasteBasedSlips® are cut. The warranty for WasteBasedSlips® depends on the application and the structural support and is usually provided by the system supplier.

INSTALLATION

All WasteBasedSlips® come with an installation guideline. These guidelines are provided for support purposes only, and StoneCycling does not assume responsibility for the quality of the installation.

EXPANSION JOINTS

Dilating WasteBasedSlips® involves creating interruptions in the work to limit stresses resulting from imposed deformation due to temperature differences, shrinkage, creeping, and settlement, thereby preventing crack formation. StoneCycling offers its customers expansion joint advice. This advice is carried out by TCKI on behalf of the customer, following the calculation rules established by KNB. StoneCycling covers the invoice for this advice.

MAINTENANCE

StoneCycling's WasteBasedSlips® do not require maintenance and will only become more beautiful and nuanced over time. Since WasteBasedSlips® naturally have an absorptive effect, an impregnating agent can be applied to prevent moisture absorption and repel dirt. StoneCycling recommends collaborating with the installation contractor and client to create a project-specific maintenance plan. In general, the following maintenance is recommended:

CLEANING

Weekly dusting, sweeping, or vacuuming to remove dust and small dirt particles. For floors: light scrubbing with a scrubbing machine and a soft brush (no cleaning agent).

SUSTAINABILITY

Have you considered choosing sustainable options such as a detachable circular system, ecological adhesive, and lime mortar for your project? StoneCycling can assist you in finding suitable suppliers and provide project-specific advice on applying these products. Please feel free to get in touch for more information.

TOLERANCES

The WasteBasedSlip® is a 'coarse ceramic product' subject to dimensional tolerances and variation in size. Dimensional tolerance refers to the deviation of the average size of the batch from the specified size and is indicated by factors T1, T2, or Tm. Variation in size refers to the difference between the smallest and largest brick in the batch and is indicated by factors R1, R2, or Rm.

COLOUR VARIATION

The WasteBasedSlip® is a building product made from industrial, construction, and demolition waste, as well as the natural raw material clay. Due to the nature of the raw materials and the production process, it is an intrinsic property of the WasteBasedSlip® to be a nuanced product. This means that the product has a particular variation in colour.

A pre-issued colour sample is always a representative sample and provides an indication. No rights can be derived from it. The actual characteristics are provided with a production sample.

Technical Specifications

STONE® CYCLING

	Unit	Nougat, Mushroom, Almond	Orange, Radish, Blackpepper
Dimensional tolerance	*Mm*	*T1*	*T1*
Size variation	*Mm*	*Rm*	*Rm*
Anti-slip	*PTV/R*	*67 / 12*	*67 / 12*
Voluntary water absorption	*Mass %*	*5%*	*7%*
Frost-thaw resistance	*Class*	*F2C*	*F2C*
Breaking strength	*N*	*5300*	*5300*
Flexural tensile strength	*N/mm^2*	*16*	*16*
Bond strength	*G/mm^2*	*1,6*	*1,6*
Fire reaction	*Class*	*A1*	*A1*
Hazardous substances	*NL-BBK*	*Complies*	*Complies*

Installation Guideline

SYSTEM CHOICE

Ceramic stone slips are never used individually but always as part of a ceramic stone slip system. This includes the combination of ceramic slip, bonding material, support, and, where necessary, fasteners for the support. The quality of a system determines factors such as lifespan, weather resistance, fire safety, mechanical properties, and aesthetics.

The optimal choice of a system depends on the project and the situation. StoneCycling can assist in finding suitable partners who can help make the right decisions for the project.

For the exterior facade, StoneCycling recommends researching the durability of the facade system. This research can be carried out according to BRL1330 and facilitated by StoneCycling in consultation with the client. This research tests:

- Thermal shock resistance of the facade system
- Moisture and frost-thaw resistance of the facade system
- Bond strength of the facade system

RECOMMENDED WALL-FAÇADE APPLICATION SYSTEMS

- Detachable system for stone slips (sustainable option)
- Weather-resistant magnesium oxide board (sustainable option)
- Weather-resistant cementitious board
- Embedded in concrete (prefabricated)
- Gypsum board (for interior use only)
- Weather-resistant insulation panels

RECOMMENDED FLOOR APPLICATION SYSTEMS

- Reinforced concrete substrate

ADHESIVE CHOICE

We recommend using a cementitious or elastic adhesive. The best adhesive choice depends on the applied system. Based on the technical specifications of the WasteBasedSlips®, the system supplier can make the appropriate adhesive choice. For the exterior facade, a frost-resistant adhesive must be used.

GROUT

We recommend using a grout suitable for ceramic stone slips. The grout manufacturer can determine the most suitable grout for the application of our product based on technical data and any tests conducted. This ensures optimal adhesion of the stone slips and extends the product's lifespan. Using a grout specifically intended for ceramic stone slips also guarantees good bonding and a professional result.

IMPREGNATION

For application in high-traffic areas and on floors, StoneCycling advises impregnating the surfaces after installation to minimize dirt accumulation. Based on the technical specifications of the WasteBasedSlips® and any adhesion tests conducted, the supplier can recommend an impregnating agent. StoneCycling can connect you with suppliers of impregnating agents.

EXPANSION JOINTS

There are no indications that surfaces with ceramic stone cladding have different building physics material properties compared to those with traditional masonry. This means that surfaces with ceramic stone cladding cannot be executed infinitely uninterrupted either. There is an influence of shrinkage and expansion due to temperature differences and deformation in the main load-bearing structure. This means that tensions can arise that need to be accommodated by the installed ceramic stone cladding.

StoneCycling advises incorporating expansion joints in the substrate, such as plate joints and building expansion joints, to allow for possible settlements and movements to be monitored. The position and width of expansion joints should be coordinated with the manufacturer of the facade system and must be approved by the structural engineer. StoneCycling offers its customers expansion joint advice. This advice is carried out by TCKI on behalf of the customer, according to the calculation rules established by the KNB. The invoice for this advice is paid by StoneCycling.

DELIVERY & STORAGE

Place the packages on a clean, dry, and flat surface (such as scaffold boards) so that the stone cladding remains stable and does not absorb water and dirt. Protect the packages from water ingress and contamination by covering them; ventilation should still be possible. Keep the packaging film of the brick packages open on the non-rain side during storage.

EVEN DISTRIBUTION BRICKWORK

Use and process brick slips from multiple packaging units simultaneously to prevent unwanted colour differences in the facade and achieve an even distribution of colour variation in the masonry.

CUTTING LOSS AND BREAKAGE

It is recommended to account for a minimum of 5% cutting loss and breakage during the installation process.

MOISTURE DURING INSTALLATION

The moisture content of stone cladding should not be higher or lower than the adhesive specified for the stone cladding during installation. Guidelines for this can be agreed upon in consultation with the adhesive supplier.

ADHESIVES

Before installation, verify that the ceramic stone cladding meets the specified requirements regarding colour and texture. Also, check for dimensional accuracy and damages. For good adhesion, the strips should be dry-brushed before bonding to remove sawdust, sand, and any present dirt.

Always bond to a clean, dust-free substrate, follow the manufacturer's requirements, and check if a primer is required beforehand. Also, monitor the maximum working time of the adhesive. Exceeding the 'open time' significantly reduces the final quality. This 'open time' or 'hardening time/hydration time' depends on the installation temperature, the temperature of the parts to be bonded, and the humidity.

Also, consider the water-absorbing behaviour of the load-bearing structure. A porous substrate can cause water to be drawn out from the (cement-based) adhesive, leading to its 'drying out/burning' and a significant decrease in bonding strength.

Cement-based adhesives should be applied using the 'full-surface' method, also known as the 'buttering floating' method. This involves applying the adhesive to both the WasteBasedSlips® and the substrate. The WasteBasedSlips® are then applied with a sliding motion into the adhesive bed to prevent air entrapment.

The continuous closed adhesive layer on the insulation material is important for both water resistance and good bonding strength of the WasteBasedSlips®. No moisture or condensation should be present on the substrate between the ceramic stone cladding and the substrate.

For elastic adhesives, it is essential to apply the adhesive in a way that prevents water entrapment (to avoid potential frost damage). This can be achieved by using vertical strips of adhesive, pointwise adhesion (dots), or applying the adhesive in a sloping manner for drainage. Always follow the manufacturer's guidelines. The adhesive surface should cover a minimum of 80% of the bonding surface.

The advantage of elastic adhesives is their ability to absorb vibrations better than cement-based adhesive types.

POINTING

When pointing, the WasteBasedSlips® should neither be too dry nor too wet. Ideally, the system should be cured for at least 28 days or more before being generously moistened (one day before pointing). Especially with low-water-absorbing WasteBasedSlips®, it is advisable to wait as long as possible before pointing. This reduces the likelihood of later efflorescence. A minimum period of two weeks is recommended between bonding and pointing.

Before starting pointing, remove dust and adhesive residues. The square section of the joint should be completely filled, and the mortar should be firmly pressed. For standard pointing, this means that the joint should be set to a depth of approximately 10 to 12 mm. Avoid filling the expansion joints and open head joints during pointing, and after pointing, ensure that all open expansion joints and open head joints are completely free of mortar.

Take into account the occurrence of colour variation in the mortar joints due to changing weather conditions. To prevent this, it is advisable to take protective measures.

When pointing, take care to prevent mortar smears on the WasteBasedSlips®. Special attention should be given when working with glazed WasteBasedSlips® due to the etching effect of lime hydrate, which can cause dull spots on the glazed surface. Mortar smears on glazed WasteBasedSlips® should be promptly removed.

Avoid soiling the work area. Protect the bottom of the masonry from splashing water when there is a chance of it occurring. To protect the masonry from splashing water from the scaffold, it is recommended to fold the first scaffold board next to the facade. If possible, avoid working with the single scaffold system.

It is advised not to do pointing at daytime temperatures below 5°C. If pointing is still done, protective measures are recommended. In such cases, follow the instructions provided by the mortar manufacturer when using pre-mixed mortar.

PROCESSING

During the processing of stone-like materials, fine dust may be released, including when working with WasteBasedSlips®. This includes mechanical actions such as drilling, milling, chiselling, sanding, grinding, or sawing.

Therefore, when mechanically working with bricks, including WasteBasedSlips®, it is recommended to always take personal protective measures (P3/FFP3 type dust masks) to prevent inhalation of potentially harmful dust particles.

Furthermore, it is always advisable to carry out the operations with a water supply to prevent the spread of dust. If this is not possible, the dust should be extracted close to the source.

In general, good ventilation limits the concentration of dust in indoor spaces. Tools are used when mechanically working with stone-like materials.

PROTECTION

Always use the necessary personal protective equipment and follow the safety instructions provided by the tool suppliers. Wear safety gloves, safety goggles, safety shoes, and ensure proper hearing protection.

WORKING CONDITIONS

Work in the construction industry is often physically demanding. Follow a method that minimizes physical strain as much as possible.

We invite everyone to discover the possibilities of WasteBasedSlips® and to make sustainable building the standard together.

StoneCycling

Sustainable Building Materials
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