

NETFLOR®

ST-3000 Series

Access Floor of
Life-Time Collection



Innovative access floor
top finish by

agglomerate marble / granite
engineered bamboo / oak / coconut
porcelain
natural stoneware tile



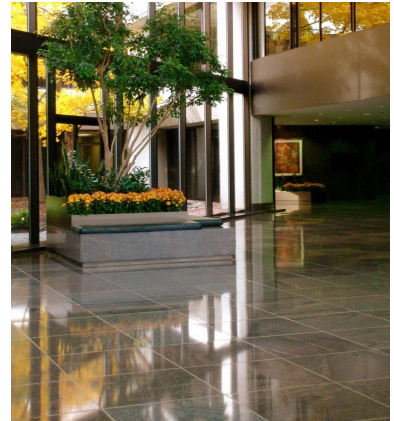
LEED Compliance



ST3000 series – access floor of life-time collection

Broaden scope of access floor applications.

We are pleased to launch the ST3000 system -- access floor of life-time collection. ST3000 system is an innovative progress in the access floor industry. Most of the access floor systems in the market now are limited by narrow scope of top finish selection. For example, welded-form steel/cementitious is only suitable top finished by resilient floor covering such as carpet, vinyl, or HPL, etc. As to wood tile, the wood-core access floor is good to bond as top finish. However, when dealing with natural stone or porcelain, many of the access floor manufacturers are trying to bond as top finish but not successful. This is, in fact, a high hurdle to them because stoneware tiles are physically not bonded onto powder coating steel/cementitious panels, nor wood-core access panels.



Environment-Friendly

LEED compliance --- maximize your LEED credit point**

The system is environment-friendly both in top-finish floor covering selection and base panel structure/manufacturing process.

I. top-finish floor covering

1. environment-friendly floor tiles: agglomerate marble and granite, engineered bamboo, engineered oak, engineered coconut.
2. natural granite tiles, polished porcelain tiles

II. base panel structure/manufacturing

base panel structure

no welding in forming process: The base panel is forming by rivet method, much less electricity consumption than welding method using by traditional steel/cementitious panel.

panel core: base panel is in-filled by slag-blended concrete, supplying by **ecomark** slag-blended cement manufacturer, which has **avg. 40~50% replacement of cement.**

water recycle

1. fresh water for concrete mixing and in-fill
2. waste water due to manufacturing or machine washing/cleaning, during or after each manufacturing shift, flows to recycle pools, sediments, and pumped onto recycled water tank (tank 2) for re-using, and as supplementary to fresh water (tank 1).
3. waste or washing water due to manufacturing are 100% recycled. No waste, no water pollution.

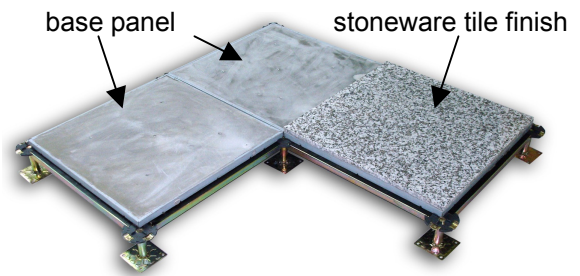


waste and washing water due to manufacturing are 100% recycle and re-use

Access panel

consists of base panel and surface tile

- 1. base panel** - special re-enforcement structure -- a state-of-the-art invention by Netfloor R&D team. The base panel is a special design galvanized steel basin with built-in locking understructure, which re-enforce and lock the panel body when in-filled by, and encapsulated the concrete core interactively. The special structure contributes extra ordinary high loading property as a whole.



There are two types of base panels

- 1-a: **ST3000 base panel**: thickness 25 mm, for heavy loading
- 1-b: **ST3200 base panel**: thickness 20 mm for medium loading

- 2. top-finish** -- selected surfaced tiles by special factory-bonding technology, which ensures permanent bond effect.

full range of environment-friendly surfaced tiles

- ST3000AM / ST3200AM**: agglomerate marble/granite access floor system
- ST3000BB / ST3200BB**: engineered bamboo access floor system
- ST3000AK / ST3200AK**: engineered oak access floor system
- ST3000CC / ST3200CC**: engineered coconut access floor system
- ST3000PP / ST3200PP**: porcelain access floor system

site bonding by base panels and understructure systems

- ST3000BP / ST3200BP**: for wet areas or special site requirements, supply for site bonding by granite, marble, ceramic, resilient floor tiles, etc.

comparison - access floor systems energy saving / safety / application

systems	Netfloor ST3000	calcium sulphate	steel cementitious	woodcore
loading property	medium to heavy	light to medium	medium to heavy	light to medium
flammability	non-combustible	class 0	non-combustible	class 1
heat transmission from under-floor plenum	very low	very low	high	fair
panel core	slag-blended concrete	calcium sulphate	cement or slag cement	wood particle
encapsulated steel	hot-dip galvanize	hot-dip galvanize	cold-roll steel	hot-dip galvanize
forming method	rivet	-----	welding	----
access panel forming electricity consumption	low	low	high	low
coating on panel	no need	no need	powder coating	no need
carpet, resilient floor covering top finish	good	good	good	good
HPL top finish	good	good	good	good
granite/marble top finish	good	good	no	no
porcelain tile top finish	good	good	no	fair
wood top finish	good	good	fair	good

** for LEED Credit Point of Netfloor systems -- please download from www.net-floor.biz.

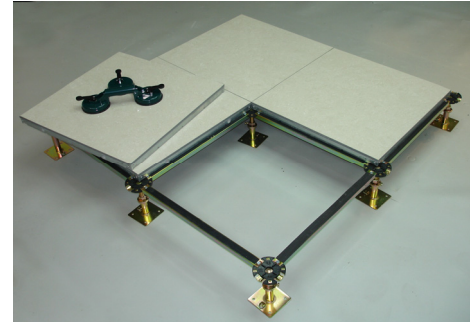
I. ST3000AM systems --- agglomerate stone access floor

ST3000AM series presents aesthetic coordination of access floor and stoneware tiles. The systems are top-finished by agglomerate marbles or granite tiles, which are made of avg. 95% recycled marble or granite. And the base panels are in-filled by slag-cement (page 1).

feature and benefits ---

Access floor by marble and granite finishing

Since human civilization, granite and marble floorings are widely using in the open public areas because their un-substitutable role. As mentioned earlier, the concurrent access floor panels are made of steel/cementitious or wood core. Structurally the conventional types of access floors are not proper bonded by stone tiles. Now ST3000 systems overcome the limitation, to extend using access floor in the public areas top-finished by stone tiles.

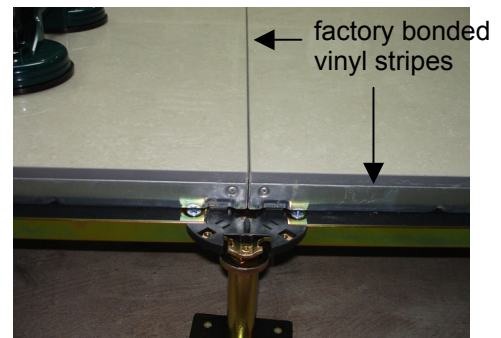


high loading property

The unique bonding technology by base panels and stone tiles contribute permanent bonding effectiveness and high loading property. Total thickness required for ST3000AM panels are much thinner than using the full stone tiles, when using as suspended access flooring.

changeability

The stone tiles are installed on sub-floor. Pipes and cables, if required, all pipes or cables passing through shall be pre-embedded, and which is "zero changeability". When removing or replacing stone tiles are required, there is no other way but damaging and/or digging the stone tiles. By using ST3000Am, all stone tiles are fully accessible, and ready for quick maintenance, or renovation.



cost-effective

When comparing to traditional way stone flooring installation, the systems have substantially shortened construction time. More important is they are time and cost-saving in future maintenance and renovation.

The system ---

Access panel: made of stone tiles and base panel.

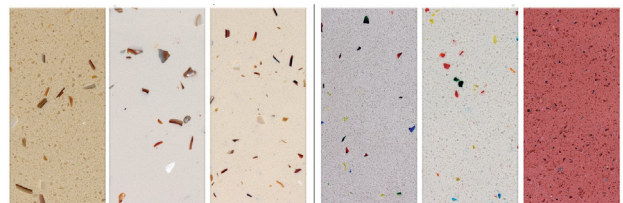
1. **top finish: agglomerate marble, or agglomerate granite tiles**, four sides of the tile are sealed by vinyl stripes as protection to edges and changeability. Natural granite tiles are supplied by special run.
2. **base panel:** special structure galvanized steel base panel, in-filled by slag blended cement concrete, to bond onto agglomerate marble and granite as one identity.

Understructure:

Pedestal and bolted stringer understructure system.. Additional locking-bolt is available for finish floor height higher than 300 mm.

Low-profile is available:

Low FFH (100 mm) is available: When installed at FFH 100 mm, the system is good of running by utility pipes less than 2-1/2" diameter underneath.



full standard colors for agglomerate marble/granite

Application:

The system modernizes application of stone tiles in buildings public areas. It enlarges application of access floors extending to all interior public areas.

I-1 commercial and institutional public interiors,
 lobby, corridor, museum, shopping mall, department stores, showroom, ...

I-2 general office -- shine, easy clean access floor is now available for using in office.
 ST3000AM is good option using in general office areas in sub-tropic and tropic nations such as Middle East, South East Asia, South America, Northern Africa, ... where carpet tile used to be a comprised choice on top of conventional access floors.

I-3 extra-heavy traffic areas
 The agglomerate granite access floors have higher hardness, which is suitable to be using in extra-heavy traffic areas such airport, bank, transportation stations.

I-4 wet areas: such as in restaurant, lavatory, tea room



main specifications --- LEED compliance

systems	ST3200AM	ST3000AM
top finish	agglomerate marble, agglomerate granite** granite**	agglomerate marble, agglomerate granite** granite**
access panel total thickness	32 mm	37 mm
stone tile thickness	12 mm	12 mm
base panel thickness	20 mm	25 mm
access panel size	602 mm X 602 mm	602 mm X 602 mm
system height	100 mm ~ 800 mm	100 mm ~ 800 mm
system weight	avg. 81 kg / per M2	avg. 97 kg per M2
loading property < 2.0 mm depression	medium 568 kg (1250 lb)	heavy 680 kg (1500 lb)
flammability	non-combustible	non-combustible
LEED compliance -- top finish stone tiles	agglomerate marble and granite tiles, made of avg. 95% recycled.	agglomerate marble and granite tiles, made of avg. 95% recycled.
LEED compliance – base panel	In-filled by slag cement concrete	In-filled by slag cement concrete

** agglomerate granite(quartz) tile top-finish – available by special run.

** natural granite tile top-finish – available by special run.

II. ST3000BB series engineered oak, bamboo, coconut tile access floor

ST3000BB series consists of engineered wood top-finish access panels and understructure pedestals and stringers.

The systems are supplied in the form of engineered bamboo, oak, and coconut top-finish.

Full range product series are environment-friendly and LEED compliance.

The systems: There are 3 standard types of top-finish.

Among them, ST3000BB is highly LEED compliance

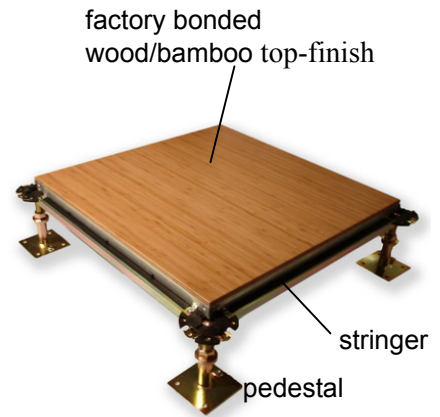
ST3000BB series: engineered bamboo top-finish.

ST3000AK series: engineered oak top-finish

ST3000CC series: engineered coconut top-finish

features: Besides features and benefits stated as AT3000AM in page 3, ST3000BB has benefits which are not met by the ordinary wood and/or bamboo floorings.

1. ST3000BB is **fully accessible, T&G wood or bamboo plank not:** wood or bamboo plank of T&G design is good for loose-lay installation on sub-floor. However, the T&G wood floorings are not really accessible because it has to be taken off piece by piece from the first piece of each row, not any piece at any location.
2. **warm and natural feeling:**
This is not provided by traditional access floor systems which are only good for top finished by HPL, carpet or vinyl tile.
3. **high LEED compliance top-finish --- bamboo tile top-finish:** Bamboo is “made from plants that are typically harvested within a ten-year cycle or shorter”. The engineered bamboo tile is proven environment-friendly and has now more and more acceptance by end-users and architects.



coconut tiles are impressive in texture



oak tile access floor

Applications:

ST3000BB systems offer sense of quality access flooring at lower budgetary for using in the private and institutional public interiors --

museum, exhibition hall, executive office, banquet room, showroom, and etc.

main specifications --**I. ST3200AK / 3200BB / 3200CC series**

system	ST3200AK	ST3200BB	ST3200CC
Top finish	engineered oak tile	engineered bamboo tile	engineered coconut tile
Access panel total thickness	30 mm	30 mm	30 mm
Top-finish thickness	10 mm	10 mm	10 mm
base panel thickness	20 mm	20 mm	20 mm
modular size	600 mm X 600 mm	600 mm X 600 mm	600 mm X 600 mm
system height	100 mm ~ 800 mm	100 mm ~ 800 mm	100 mm ~ 800 mm
system weight	avg. 59 kg/M2	avg. 59 kg/M2	avg. 59 kg/M2
loading property < 2.5 mm depression	Light ~ medium 460 kg (1000 lb)	Light ~ medium 460 kg (1000 lb)	Light ~ medium 460 kg (1000 lb)
flammability (base panel)	non-combustible	non-combustible	non-combustible
LEED compliance top-finish	Engineered oak	bamboo - harvested in 6 years life-cycle	engineered recycled coconut fiber
LEED compliance base panel	In-filled by slag cement concrete	In-filled by slag cement concrete	In-filled by slag cement concrete

II. ST3000AK / 3000BB / 3000CC series

system	ST3000AK	ST3000BB	ST3000CC
top finish	engineered oak tile	engineered bamboo tile	engineered coconut tile
access panel total thickness	35 mm	35 mm	35 mm
top-finish thickness	10 mm	10 mm	10 mm
base panel thickness	25 mm	25 mm	25 mm
modular size	600 mm X 600 mm	600 mm X 600 mm	600 mm X 600 mm
system height	100 mm ~ 800 mm	100 mm ~ 800 mm	100 mm ~ 800 mm
system weight	avg. 71 kg/M2	avg. 71 kg/M2	avg. 71 kg/M2
loading property < 2.5 mm depression	Medium ~ heavy 568 kg (1250 lb)	Medium ~ heavy 568 kg (1250 lb)	Medium ~ heavy 568 kg (1250 lb)
Flammability (base panel)	non-combustible	non-combustible	non-combustible
LEED compliance top-finish	engineered oak	bamboo - harvested in 6 years life-cycle	engineered recycled coconut fiber
LEED compliance base panel	In-filled by slag cement concrete	In-filled by slag cement concrete	In-filled by slag cement concrete

III. ST3000PP series Porcelain access floor systems

The system --

ST3000PP systems consists of porcelain or polished porcelain tiles top-finished access panels and understructure pedestals and stringers. The systems have resolved the difficult to bond permanently by access floor base panels and porcelain tiles. ST3000PP is a budgetary lower than ST3000AM. Surface durability of ST3000PP is relatively lower than the ST3000AM series.

Applications --

Same as ST3000AM, ST3000PP systems are high loading property and suitable for using in heavy traffic public buildings' interior or commercial buildings.

1. commercial and institutional public interiors, general office: lobby corridor / stores / showrooms
2. residential building: lobby / corridors
3. hygienic institutions: hospital, dental clinic,
4. wet area: tea room, restaurant, toilet,....



system description:

1. access floor modular size: 600 mm X 600 mm (by 598 X 598 mm porcelain tiles) or 602 mm X 602 mm (by using 600 X 600 mm porcelain tiles)
porcelain tiles are sealed by vinyl stripes at four sides to protect tiles' border edges and angles, and for full accessibility during and after installation.
2. top finish: polished porcelain tiles or porcelain tiles.
3. The porcelain tiles are factory-bonded by special technology to ensure permanent bonding effectiveness.

main specifications

Systems	ST3200PP	ST3000PP
access panel total thickness	30 mm	35 mm
porcelain tile thickness	10 mm	10 mm
base panel thickness	20 mm	25 mm
modular size	600 mm X 600 mm or 602 mm X 602 mm	600 mm X 600 mm or 602 mm X 602 mm
system height	100 mm ~ 800 mm	100 mm ~ 800 mm
system weight	avg. 75 kg/m ²	avg. 87 kg/m ²
loading property < 2.0 mm depression	medium 568 kg (1250 lb)	heavy 680 kg (1500 lb)
flammability	non-combustible	non-combustible
LEED compliance base panel	In-filled by slag cement concrete	In-filled by slag cement concrete

Installation -- ST3000AM / ST3000BB / ST3000PP

Installation procedure and methods of ST3000 systems with factory-bonded finished tiles are basically same as for conventional access floor. Due to access panels are heavy, lifting and removing panels shall be using 70 kg grade, 3-sucker lifter.

Field installation

A. understructure:

install ST3000 series understructure pedestal and stringer are same procedure as traditional access floor system.

A-1: install pedestal and bolted stringer

A-2: apply adhesive under pedestal base plate

A-3: level pedestal / stringer by laser alignment



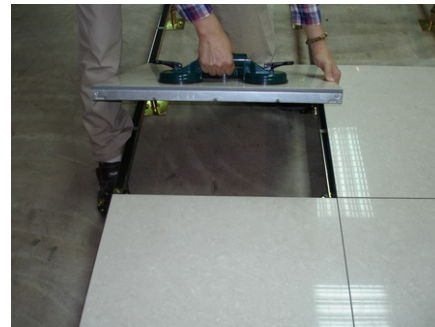
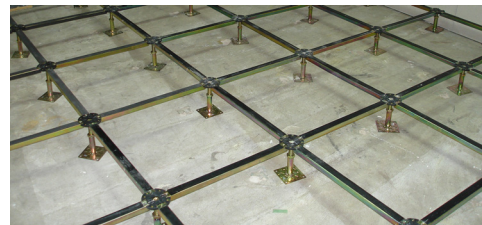
3-sucker, 70kg lifter

B. lay in access panels (top-finished with stone or wood tiles)

B-1: lift access panel by using 70kg, 3-sucker lifter (recommend by 2 persons at 2 sides)

B-2: lay access panels in sequence. Check leveling piece by piece.

B-3: insert absorption pad, in need, to absorb panel deviation.



CC. perimeter:

Cutting tiles to size for perimeters --

Access panel: to be cut by using stone tile cutter.

Stringer and metal accessories: cut by band saw which cutting the steel/cementitious access floor.



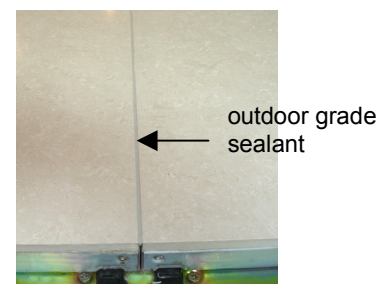
hygienic and wet area where required fully sealed:

1. out-door grade sealant: Is recommended for accessibility.

Tear off vinyl stripes at four sides of access panel, tap paper stripes (same for paint) along borders of access panels.

Inject sealant into the 2 mm gap in-between panels. During occupancy, in case of removing access panels, cut sealant by cutting knife. Remove access panel for under-floor maintenance. Inject sealant after completed.

2. grout: (please refer to page 10)



IV. ST3000BP bare finish access floor

ST3000BP series is the only, or among a few of, access floor systems in the world market, which is capable for site bonding by stoneware tiles such as natural granite, marble, porcelain, or metal floorings.

The system consists of base panels, pedestals and stringers.

In order to retain accessibility, base panels are installed on the grid-form stringers loose-laid. 5 It is recommended to install stone tile one-to-one alignment bonded onto the base panel.

After curing time, stoneware tile and the base panel underneath are combined as one identity.

base panel: concrete surfaced access panel.

actual size: 599 X 599 mm

thickness: 25 mm (ST3011BP) / 20 mm (ST3211BP)

pedestal and stringer:

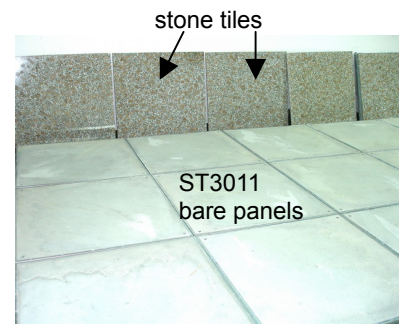
For low height FFH 100 mm installation, non-load bearing stringers are designed to regulate distance of pedestals. And it enables distribution utility pipes or cables of diameter up to 2-1/2".(63 mm)

module size for stone floor tiles:

600 X 600 mm (stone tile size 598 X 598 mm)

602 X 602 mm (stone tile size 600 X 600 mm)

grouting: 2 mm width



applications:

heavy traffic areas – airport, transportation station, school, shopping mall, ...



wet area: restaurant, tearoom, lavatory, . . .

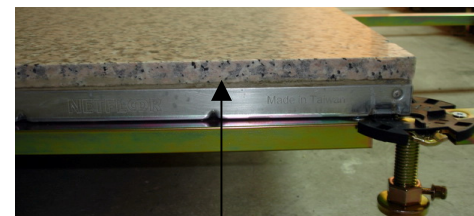


How to be accessible, and restore?

In order to retain accessibility, the stone tiles shall be installed one-to-one alignment bonding onto base panels.

When removing panels are required, grind off the grout seam in-between stone tiles. After that, the full piece panel can be removed by lifter. Then the neighborhood panels are easier for removing.

After complete the job, clear residual grout on side of access panels, replace access panels in order, grout the gaps.



thin-set adhesive used in site-bonding

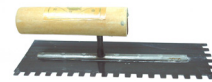
Installation - ST3000BP series

1. understructure - same procedure as ordinary access floor system
2. lay in base panels
 - A. lift base panels by using 3-sucker lifters.
 - B. lay panels on grid in order, check leveling in sequence.



Install access panel and check level in sequence

3. **top finished - stoneware tiles:** granite, marble, porcelain tiles,..
 - A. clean and rinse panels' surface and stone tiles' back.
 - B. apply thin-set adhesive by 10 mm square notched trowel, coverage about 5~6 piece access panels each time.
 - C. apply avg. 1 mm thick thin-set adhesive at stone tiles' back
 - D. install stone tile, **one-to-one alignment** on top of the access panel. Insert tile spacer at angles, 2 mm gap in-between tiles forms automatically, check leveling one by one in sequence.
 - E. clear thin-set adhesives residual inside the 2 mm gap in-between tiles.
 - F. grout the gaps: allow 24 hours thin-set adhesives setting time before grouting. (follow instruction by the adhesives and grout manufacturer)



Notched trowel



thin-set adhesive



tile spacer



rinse panels and tiles



apply adhesive on par



apply adhesives on tiles



insert tile spacers, form 2 mm gap for grouting, check leveling

main specifications

system	ST3200BP	ST3000BP
base panel thickness	20 mm	25 mm
stone tile recommend. thickness	12 ~ 20 mm	12~ 20 mm
other top-finish floors thickness	4.5 ~ 10 mm	4.5 ~ 10 mm
Access floor total thickness (plus 5 mm thin-set adhesives)	37 ~ 45 mm	42 ~ 50 mm
modular size	600 mm X 600 mm or 602 mm X 602 mm	600 mm X 600 mm or 602 mm X 602 mm
system height	120 mm ~ 800 mm	120 mm ~ 800 mm
system weight (without top finish)	avg. 54 kg per M2	avg. 66 kg per M2
loading property (+ stone tile finish)	568 kg (1250 lb)	680 kg (1500 lb)
loading property (base panel)	460 kg (1000 lb)	568 kg (1250 lb)
flammability	non-combustible	non-combustible
LEED compliance base panel	In-filled by slag cement concrete	In-filled by slag cement concrete

ST3000 series access floor systems of life-time collection



patent granted -- Taiwan: M365962 / China: 200920006855.X
world patent pending: USA application numbers P095465US,

NETFLOOR is a registered trademark in more than 40 nations
NETFLOOR product lines are distributing through world-wide Distributors.

warranty: 5 years warranty on all Netfloor products .

In pursuing quality improvement, the manufacturer reserves the right to vary specifications without prior notice.

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