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In Depth Presentation of Pedestal Systems

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The Industry's most advanced pedestal system

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Pedestals for outdoor raised floors

Exterior tile installations utilizing the many high quality porcelains available today are heavily sought after because of their ease of maintenance, low absorption and durability. However, traditional "bonded" installations (set with mortar-based adhesives either by mortar bed, thin-set or a combination of both) represent the highest failure rate in our industry. Because of this common problem, in conjunction with the development of 2 cm (3/4") porcelain paver tile, a new method of installation for exterior applications was created: Pedestal systems.

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What are Pedestals for outdoor raised floors?

As opposed to adhering tile directly to a substrate, tiles are simply loosely placed on top of a series of pedestals generally situated at each corner of the tile. This is possible with the advent of 20 cm (3/4") porcelain paver tile, which can accept this type of weight and overall load.

Problems with exterior ‘’bonded’’ tile

Exterior “bonded” tile, meaning tile that has been adhered directly to a substrate using thin-set adhesive or a traditional mortar bed, has a very high rate of failure. In spite of very good quality and low-absorption tile, very high-performing adhesives and advanced systems such as uncoupling membranes, the extreme conditions present on exterior applications creates a variety of stress forces on to the tile layer. As an example, an exterior tile surface that is subjected to direct sunlight can reach temperatures of over 150 degrees and expand to the point that it shears off the surface.

Problems with exterior ‘’bonded’’ tile

In colder climates, exposure to moisture can lead to problems associated to freeze/thaw issues. In warm climates, over time, moisture eventually “eats away” at the binding agents of mortars turning the setting beds to sand.

Problems with exterior ‘’bonded’’ tile

Other issues associated to “bonded” exterior tile assemblies? Efflorescence, which is the gradual leeching out of soluble salts (calcium) from setting beds on to the tile surface (picture on left) or adjacent building elements (picture on right).

Is exterior raised flooring a new method?

No. Applying pavers made of concrete (figure on left) on to pedestals has been around for a while. These applications are very common on the roofs of hotels, apartment complexes, around pool decks and so forth. What is new is that the ceramic tile industry has developed porcelain pavers as an alternative to concrete pavers which have many more benefits such as being thinner, lighter and non-absorptive.

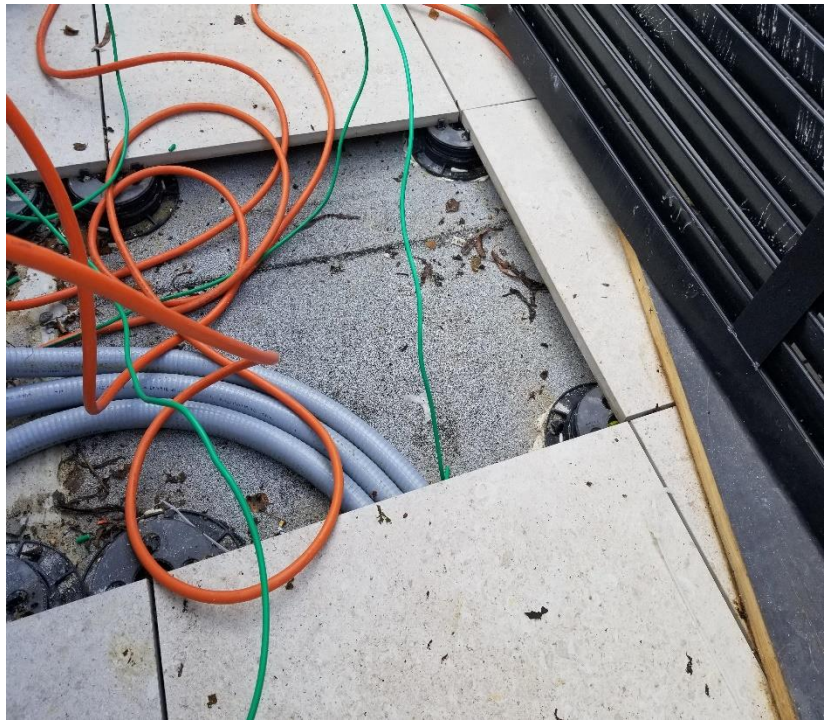
Comparative Analysis
Concrete Paver vs Porcelain Paver (2' x 2')

	Concrete	Porcelain
Thickness	2 inches +	¾ inch
Weight	80 Lbs +	40 lbs
Absorption %	5% +	>0.5%

Benefits of exterior raised flooring: Cracking

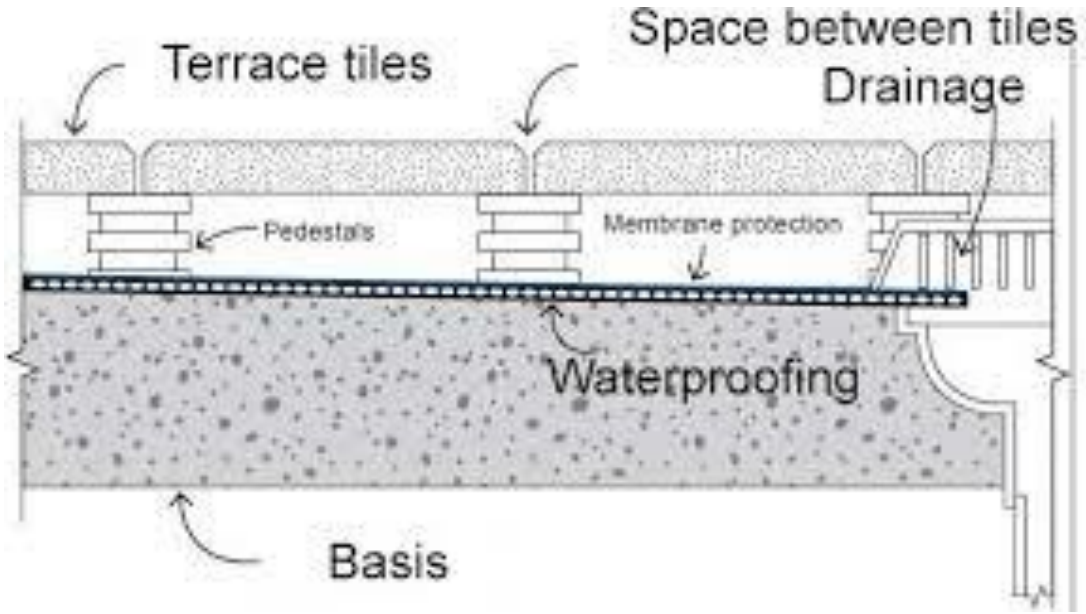
There are a multitude of benefits associated to exterior raised floors. First, tiles placed on pedestals are not bonded, they are loose laid. As such, as opposed to "bonded" tile, there is no rigid attachment between tile and structure, therefore, structural forces cannot "crack" the tile.

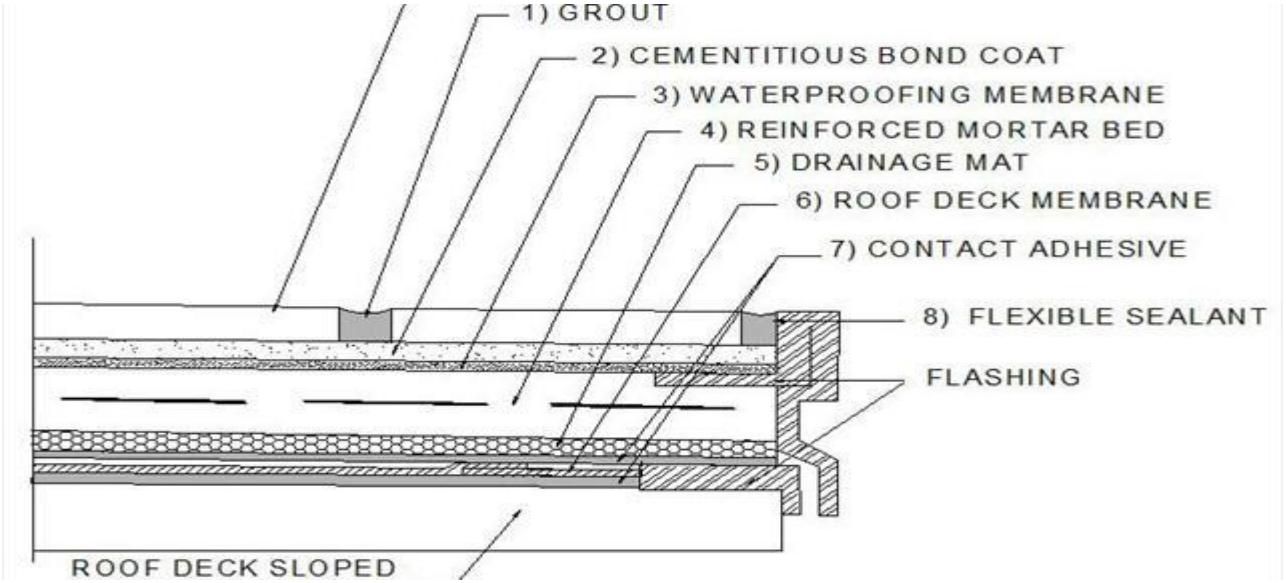
Benefits of exterior raised flooring: Access



Tiles on raised pedestals allow easy placement and access to piping, wiring, and drains.

Benefits of exterior raised flooring: Flatness





Joints between tiles on raised pedestals are open allowing for unimpeded and efficient drainage. Conversely, traditional "bonded" exterior tile assemblies must be sloped at the surface to allow for water evacuation.
Further, as the diagram on the right outlines, installing tiles for exteriors in the traditional bonded method is a complex and multiple-step process that requires experience and specific skill sets. Briefly, when installing over roof decks that incorporate the building code-required roofing membrane, traditional bonding requirements are as follows: a 2" reinforced mortar bed, movement joints, sloping to drains or perimeters, proper treatment of wall/floor connections and perimeters, etc..

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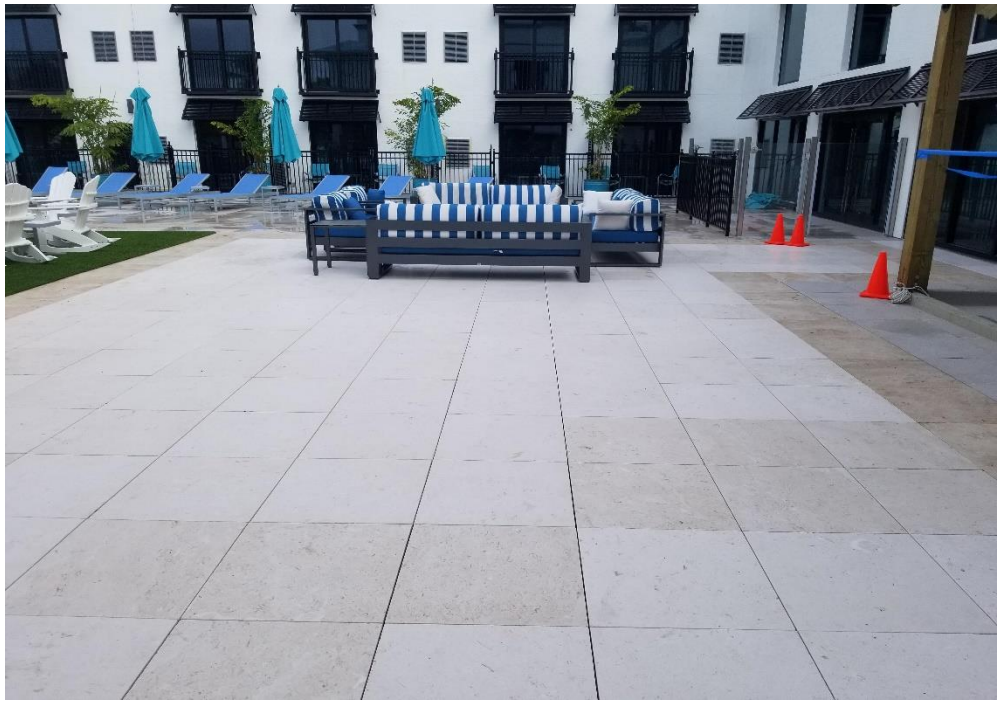
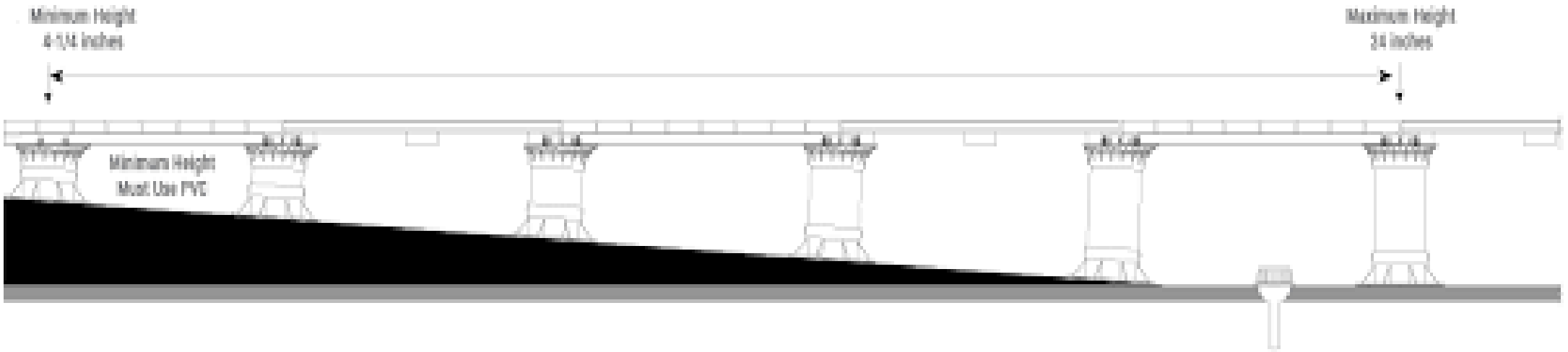
Benefits of exterior raised flooring: Appearance



Since water drainage occurs under the tile layer, raised tile on pedestal installations are flat and continuous without grout joints, movement joints or visible drains. Traditional exterior "bonded" tile assemblies require a sloped surface, drains, grout joints and movement joints.

Exterior Raised Pedestal Flooring – Assembly basics



Generally, raised pedestal assemblies are installed over rooftops or other types of exterior decks. In order to conform to standard building codes for water drainage, these decks are pre-sloped (1/4" per foot is standard) towards central drains or perimeter water management systems and certified roofing membranes are applied. One of the primary benefits of a raised pedestal system is the open joints at the paver tile surface to allow water management to occur invisibly and unimpeded under the tile. This permits a perfectly flat tile surface. As a result, various height pedestals are used to address multiple elevations.

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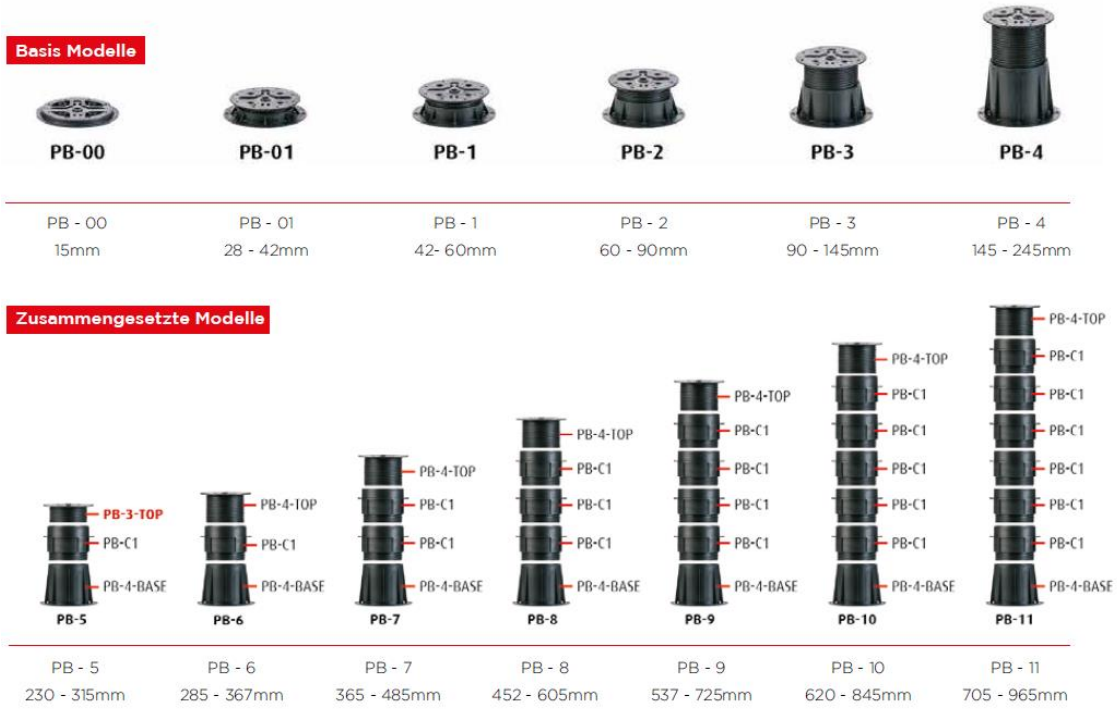
Tradional Pedestal Systems – Typical Features



For almost all applications, a multitude of pedestals are required to address the continuous slope of a typical exterior substrate. Each individual pedestal within a typical pedestal manufacturer's offering can be height-adjustable up to ½" to ¾". Therefore, it is very common that height requirements for typical exterior structures vary by several inches and sometime feet (depending on the size of the surface) requiring anywhere from 15 to 25 different pedestals to address that particular project's requirements. For example; one pedestal may be capable of heights of 1 ½" to 2", another from 2" to 2 ½", and so forth.

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Tradional Pedestal Systems – Multiple SKUs

	Top adjustment	Fixed and self levelling with the same Model	Heads	Bases	Spacers	Screws	Number of pieces	Resistance certifications	Two-component sound dampening head
Eternoivica	YES	YES	2	8	1	10	**21**	YES	YES
Impertek	NO	NO	5	7	9	11	**32**	n.d.	NO
Buzon	NO	NO	10	10	7	0	**27**	n.d.	NO

In summary, pedestals for raised floors have many benefits, however, as the chart above indicates, traditional pedestal offerings require a multitude of individual parts and pieces to satisfy the needs of most common applications. The chart above outlines the 3 most common pedestal suppliers in North America and the requirements for a typical application ranges from 21 to 32 different SKUs. This becomes a time-consuming and complex calculation for the installer.

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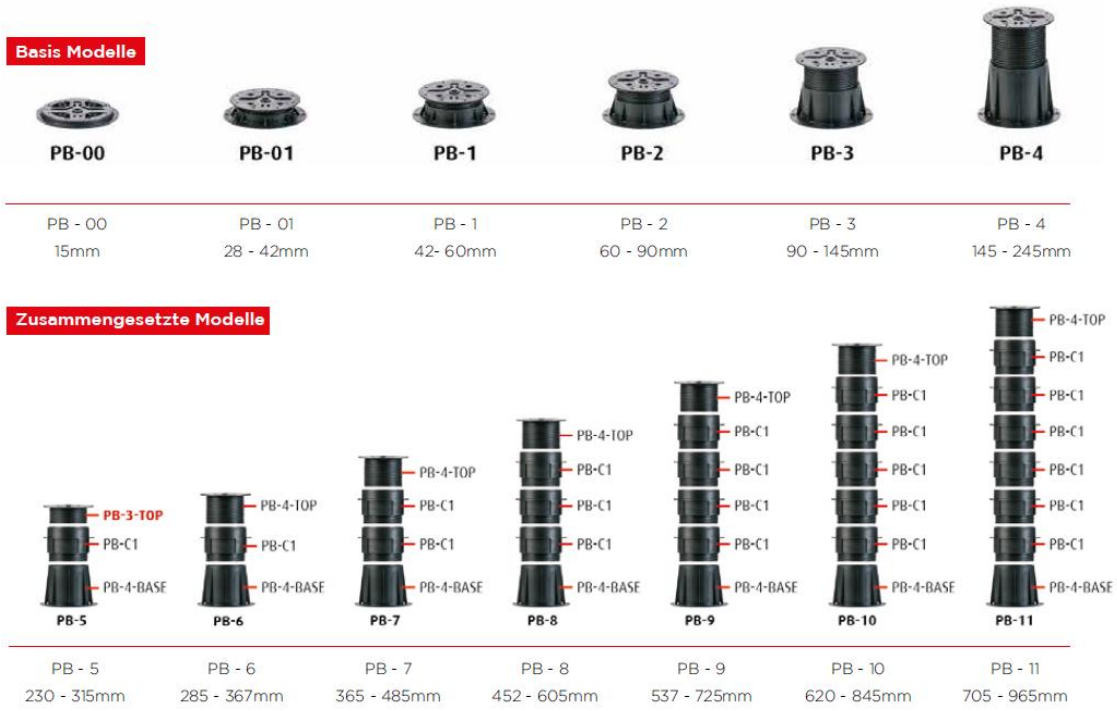
Why is Profilitec–Uptec more advanced?



Profilitec spent over 3 years in product development to create the world's simplest, most practical and best performing pedestal system. Profilitec-Uptec is the world's first "modular" pedestal system for raised floors. Instead of multiple SKUs (21 to 32 as seen in a previous slide) to achieve the required elevations for any particular application, Uptec requires only 3. With three SKUs, all possible combinations of elevations can be achieved.

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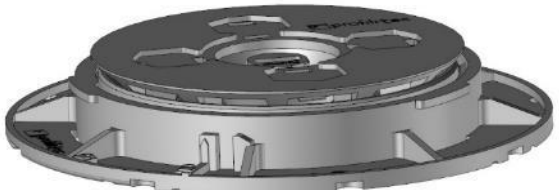
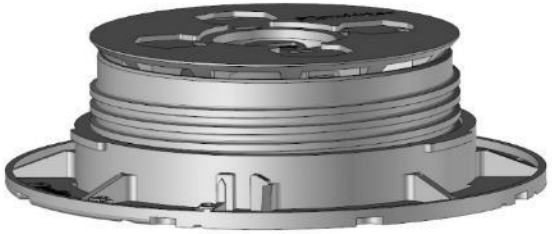
Why is Profilitec–Uptec more advanced?



SUPAL – Low pedestal = 1 1/8'' to 1 ¾''



SUPAS – Standard pedestal = 1 ¾'' to 2 ¼''

SUPAR – Modular Ring = 1 ¼'' increments

The SUPAL "**L**ow Pedestal" is used for low height requirements, typically at doorframes or entrances where clearance is the least.
The SUPAS "**S**tandard Pedestal" is the base pedestal. This pedestal, as is, is used for height requirements of 1 ¾" up to 2 ¼". For height requirements above this, the top portion of the SUPAS pedestal is removed and the SUPAR "Modular **R**ing" is added and the top portion of the SUPAS is reattached.

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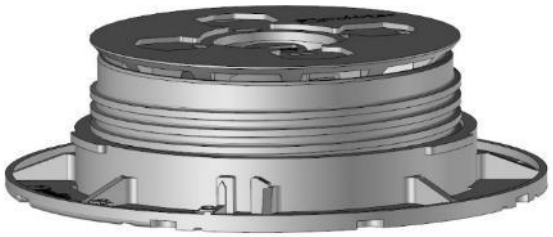
Profilitec–Uptec: Replaceable Heads



SUPA2 – 3/32 in Tabs

SUPA4 – 3/16 in Tabs (also for aluminum joists)

SUPAW – Wood Tab

A very important (and patented) additional benefit to the Profilitec-Uptec system is the ability to use whatever head is appropriate for the project. This is another first in the industry. The most commonly used head is the SUPA2, which provides a 2 mm (3/32'') joint between the tiles. Should the user desire a wider joint, the SUPA4 is available, which procvides a 4 mm (3/16'') joint. An additional option is the SUPAW head, which is used to attach wood joists. Each pedestal is available with or without the heads which are easily clipped on.

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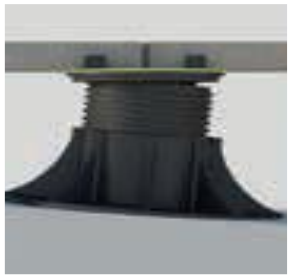
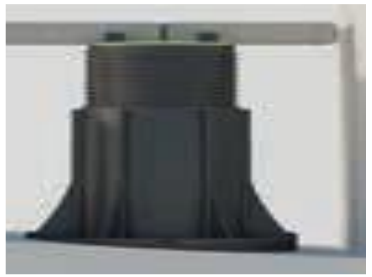
Pedestal Systems – Additional Requirements

Self-Leveling Pedestal



Fixed Pedestal



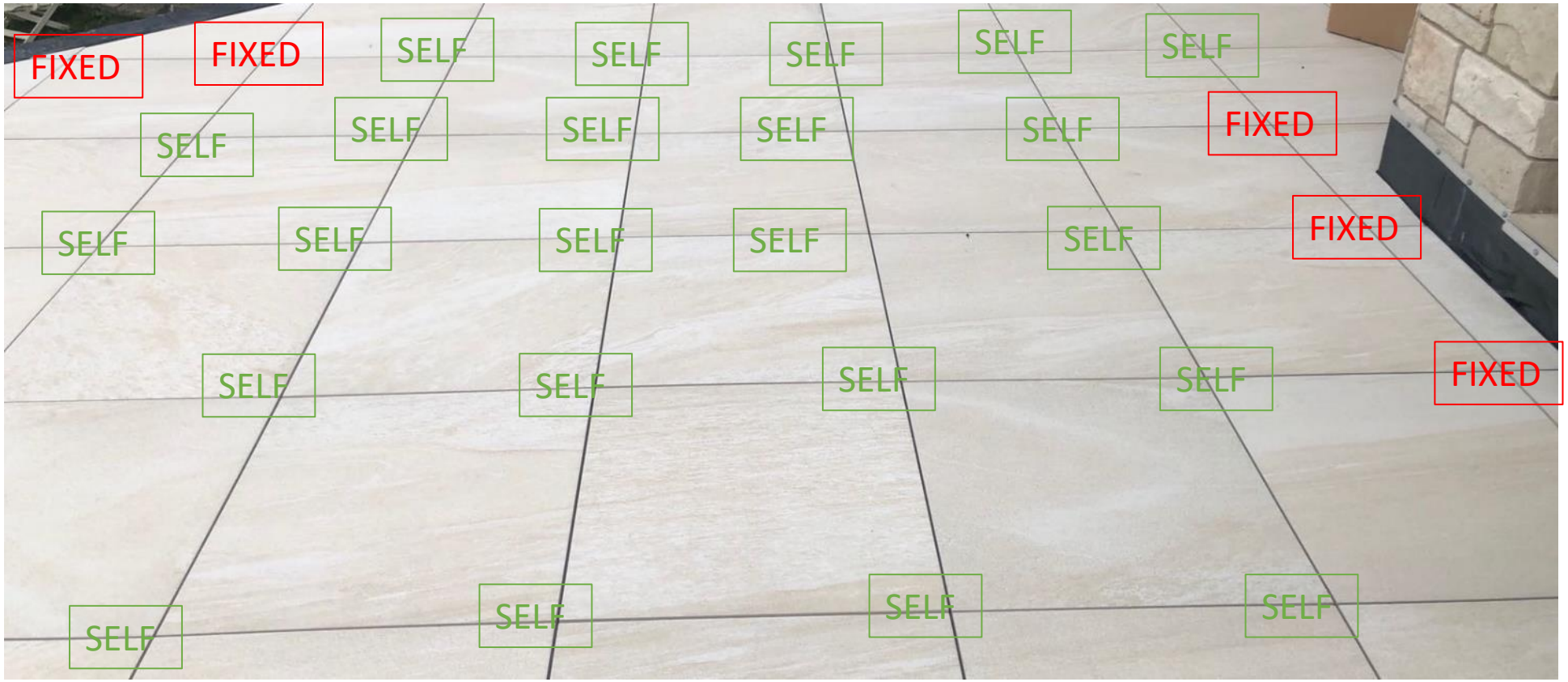
An additional requirement for any application are both "Self-Leveling" and "Fixed-Head" pedestals. Self-leveling pedestals have a loosely attached head so that the weight of the pavers or gravity will automatically "self-level" the tiles on to the pedestal. This is a very convenient and time-saving feature of modern pedestals. Less advanced pedestal offerings require wedges to be placed under each individual pedestal to maintain a level surface. However, self-leveling pedestals can only function when 4 equal weight tiles are placed on each corner. Therefore, cut tiles (as shown on the next slide) at perimeters must utilize wedges and thus, for typical pedestal offerings, in addition to the many individual pedestals required to conform to the required elevations, both fixed-head and self-leveling heads are needed for each application, thereby adding even more parts and pieces.

Fixed/Self leveled – Typical Application

SELF

FIXED

Compensator



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Profilitec–Uptec: Fixed to Self-Leveling Head with a simple ''turn of a switch''!

Another very important (and also patented) additional benefit to the Profilitec-Uptec system is the fact that all pedestals can be either fixed or self-leveling by the simple turn of a switch. As all (or almost all) pedestal projects will have cut tiles at perimeters, they will require a combination of both fixed and self-leveling heads, adding another set of SKUs to the project. Profilitec-Uptec pedestals can be adjusted on-site to be either fixed or self-leveling by simply turing the green knob located in the middle of each pedestal. This is one of the most innovative and time-saving aspects of the Profiltiec-Uptec pedestal system.

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Profilitec-Uptec – Minimal SKUs requirement

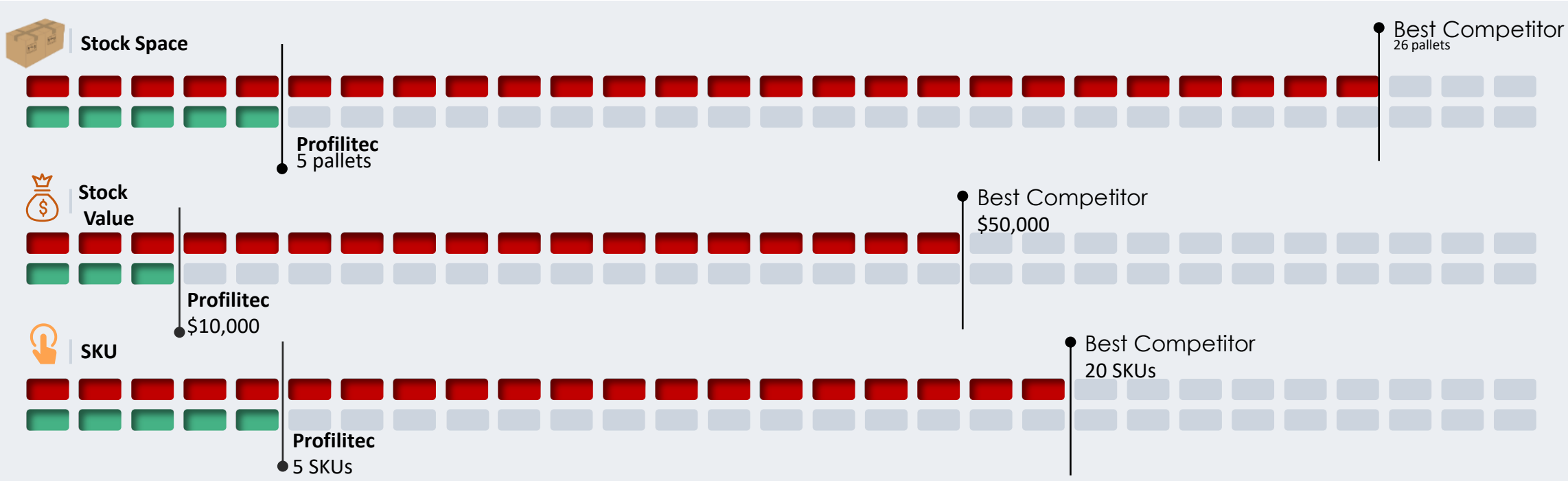
	Top adjustment	Fixed and self levelling combined	Heads	Bases	Spacers	Screws	Number of pieces	Resistance certifications	Two-component sound dampening head
Eternoivica	YES	YES	2	8	4	10	**24**	YES	YES
Impertek	NO	NO	5	7	9	11	**32**	NO	NO
Buzon	NO	NO	10	10	7	0	**27**	NO	NO
Profilitec	SI	SI	2/1	2/1	3	1	**6**	SI	SI

The modularity of the Profilitec-Uptec pedestal system allowing on-site adjustibility to the many varying conditions present on typical jobsites vastly simplifies the work of the contractor and saves a tremendous amount of time. As opposed to calculating the requirements of each individual SKU in terms of height, fixed or self-leveling, jojnt width, etc., all that's needed for Profilitec-Uptec are base pedestals (SUPAS), modular rings (SUPAR), and the appropriate head (SUPA2) and you can adapt to any on-site condition. As the chart above outlines, SKU requirements for Profiltiec-Uptec for typical applications are fractional compared to tradtional pedestal providers (6 vs 24, 27 or 32!).

Profilitec-Uptec vs. Best Competitor

Space/value/SKU # requirements for typical applications:

1. Height requirement
2. Fixed and self-leveling heads
3. Spacer requirement



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The World's First Modular Pedestal System

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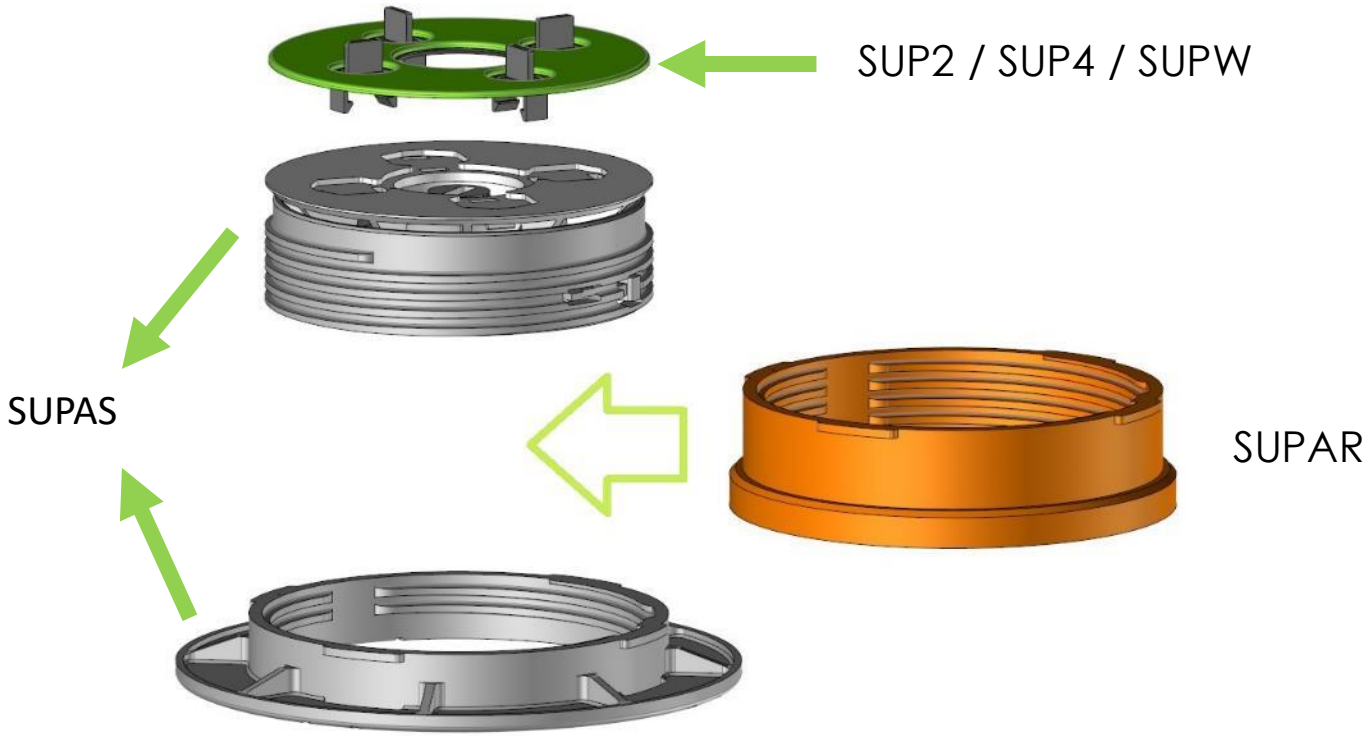
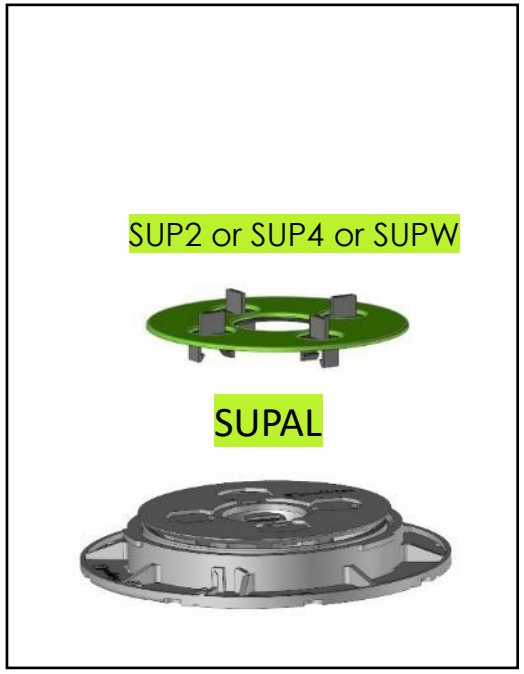
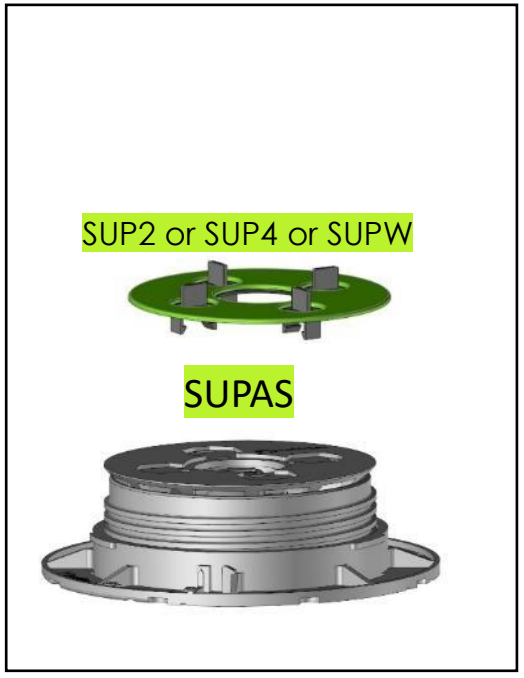
Simplicity - Modularity



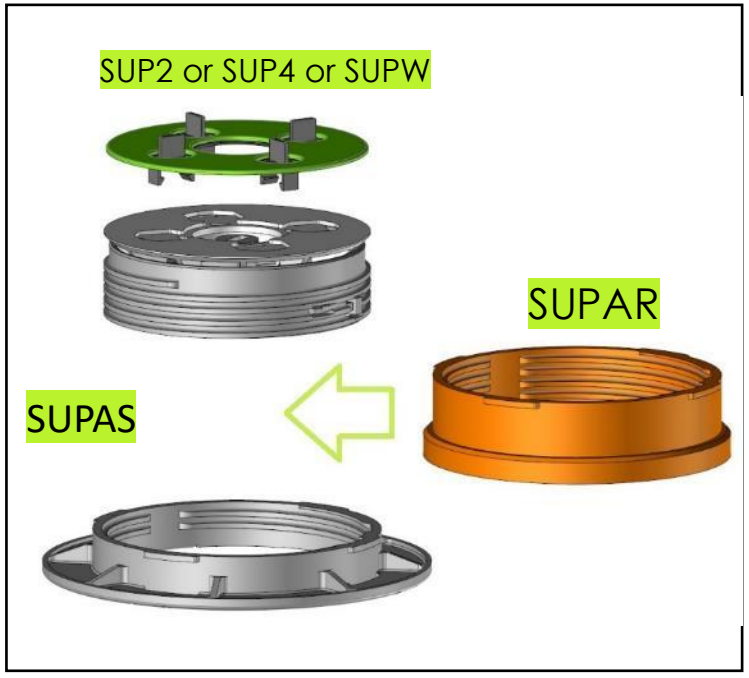
Simplicity – Build on-site



1-7/64 in to 1-11/16



1-11/16 in to 2-9/32 in

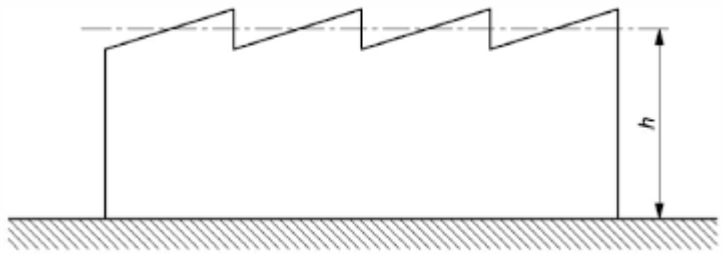


2-9/32 in to 3-15/32 in

Over 3-15/32 in

Simplicity - Modularity

If elevations have been determined incorrectly…



Simply add or remove rings

A very common problem with traditional pedestal offerings is the discrepancy between blueprints and actual jobsites. As traditional pedestals are designed to address specific heights with very little adjustibility (between ½'' to ¾''), discrepancies in planning compared to actual jobsite measurements can result in significant delays. The ''modularity'' of the Profilitec-Uptec system allows simple on-site adaptibility to almost all conditions.

Profilitec-Uptec – Additonal benefits

- Sound Dampening Rubber (up to 25db re

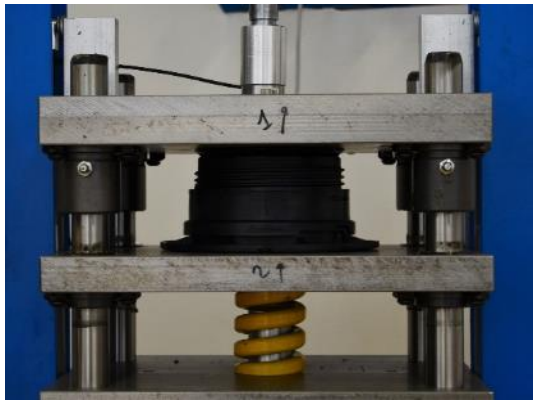
- Easy Lock-in Mechanism

- 3 Function Key (Height Adjustment – Tab Removal – Self/Fixed Switch)

There are many additonal benefits and components available with the Uptec system. All heads are made of a specific rubber compound that contributes up to 25 db of sound reduction. Each individual pedestal has a lock-in mechanism to assure stability. A 3-function key is available for height adjustment, tab removal and as a means to engage or disengage the fixed/self-leveling head switch.

Testing and Certifications

Testing performed by University of Trento
Temperature (-40° F / +176° F)
Load Test – Static & Dynamic

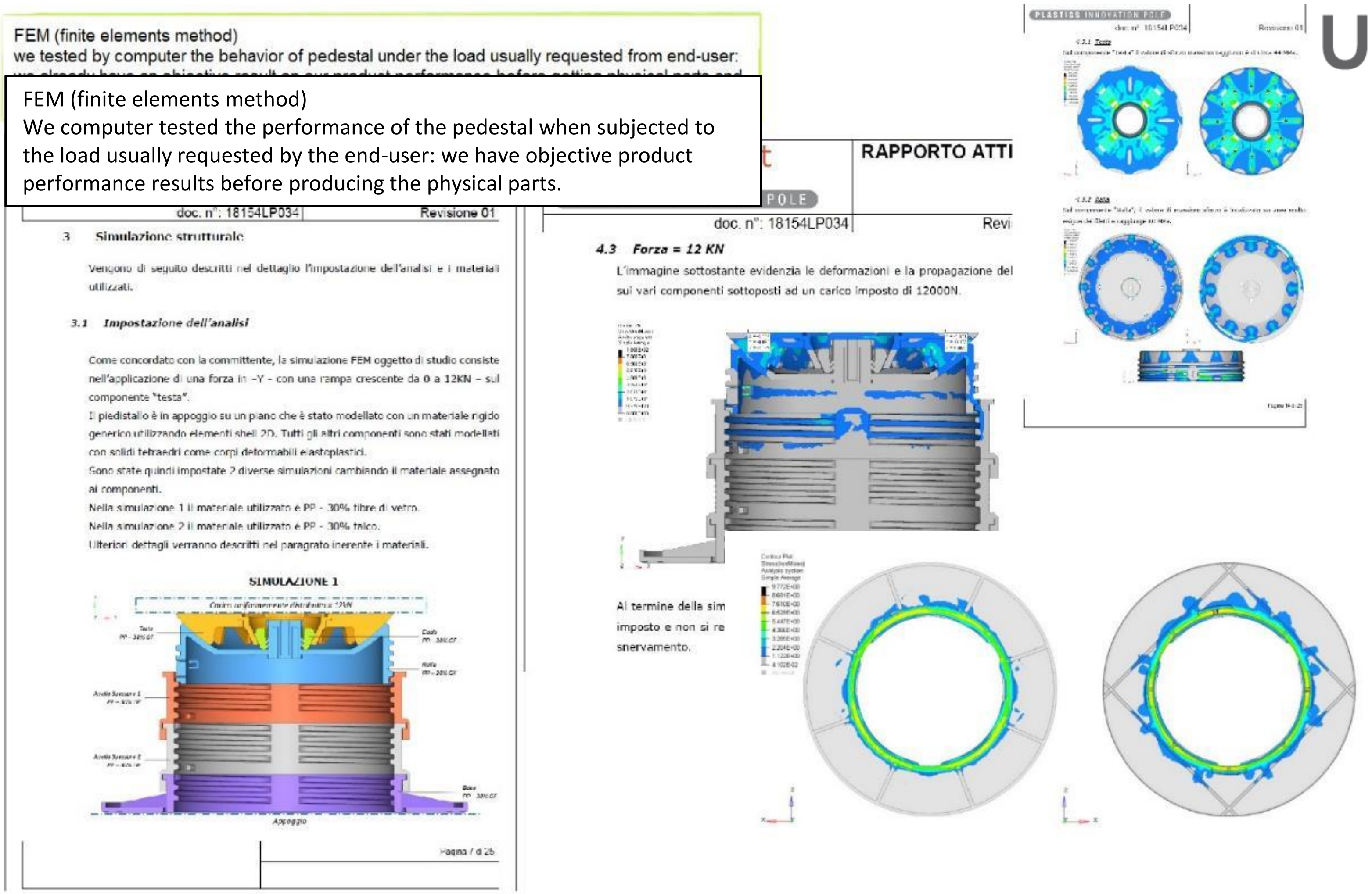


Over and above the modularity, practicality and overall ease of installation, Profilitec-Uptec is also the highest performing pedestal system in the industry. Through vigourous internal and external testing, Uptec has highest point load capability of any pedestal system accepting over 3000 lbs per foot.

FEM (Finite elements method) test and certification

FEM (finite elements method)
We computer tested the performance of the pedestal when subjected to the load usually requested by the end-user: we have objective product performance results before producing the physical parts.

How did we design a better product?


FEM (finite elements method)
we tested by computer the behavior of pedestal under the load usually requested from end-user:

doc. n°: 18154LP034 Revisione 01

3 Simulazione strutturale

Vengono di seguito descritti nel dettaglio l'impostazione dell'analisi e i materiali utilizzati.

3.1 *Impostazione dell'analisi*

Come concordato con la committente, la simulazione FEM oggetto di studio consiste nell'applicazione di una forza in -Y - con una rampa crescente da 0 a 12KN - sul componente "testa".
Il piedistallo è in appoggio su un piano che è stato modellato con un materiale rigido generico utilizzando elementi shell 2D. Tutti gli altri componenti sono stati modellati con solidi tetraedri come corpi deformabili elastoplastici.
Sono state quindi impostate 2 diverse simulazioni cambiando il materiale assegnato ai componenti.
Nella simulazione 1 il materiale utilizzato è PP - 30% fibre di vetro.
Nella simulazione 2 il materiale utilizzato è PP - 30% talco.
Ulteriori dettagli verranno descritti nel paragrafo inerente i materiali.

SIMULAZIONE 1

Appoggio

Pagina / di 25

RAPPORTO ATTI

POLE

doc. n°: 18154LP034 Revi

4.3 *Forza = 12 KN*

L'immagine sottostante evidenzia le deformazioni e la propagazione del sui vari componenti sottoposti ad un carico imposto di 12000N.

Al termine della sim imposto e non si re snervamento.

PLASTICS INNOVATION POLE

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- Rendering Video

Videos on UPTEC

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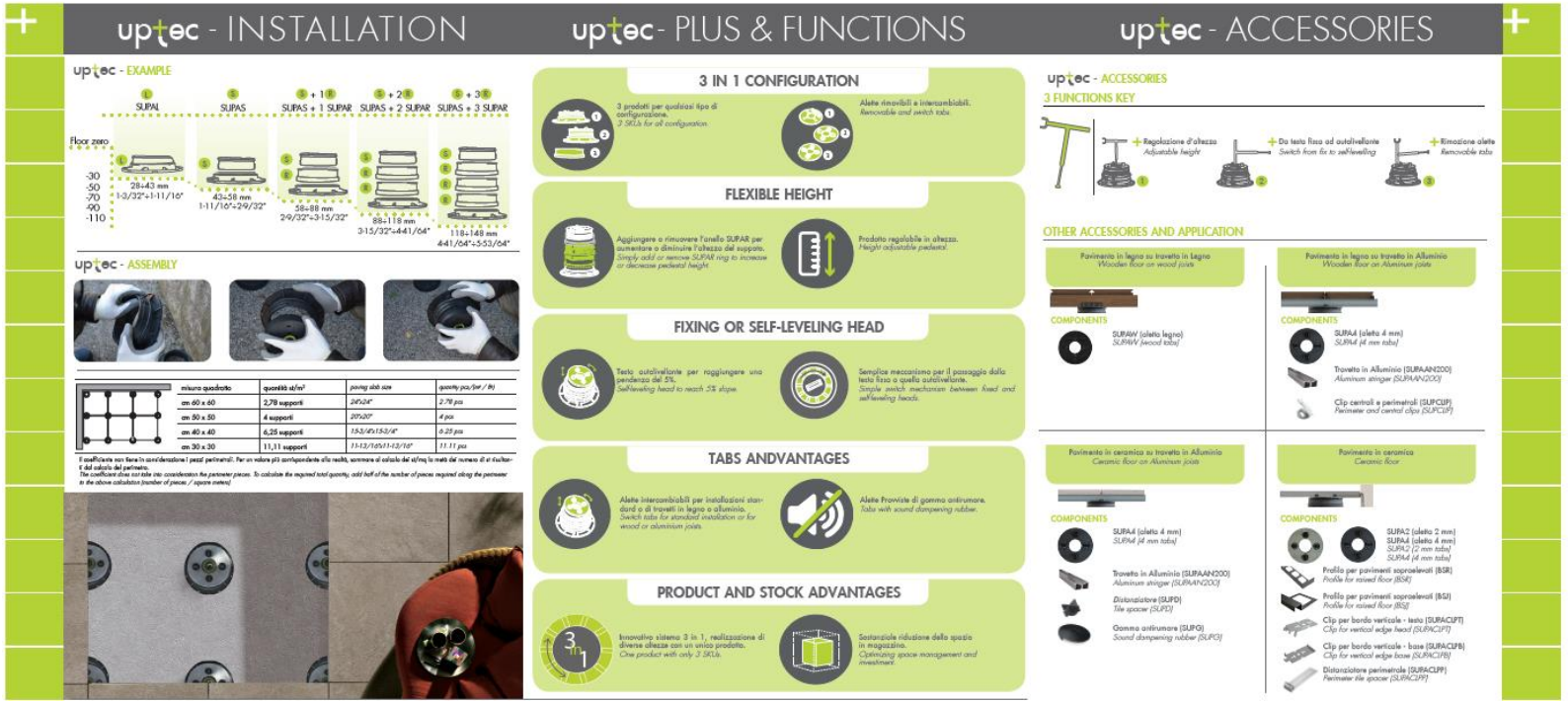
Available Productct Speceifications

- Brochure
- Technical Manual



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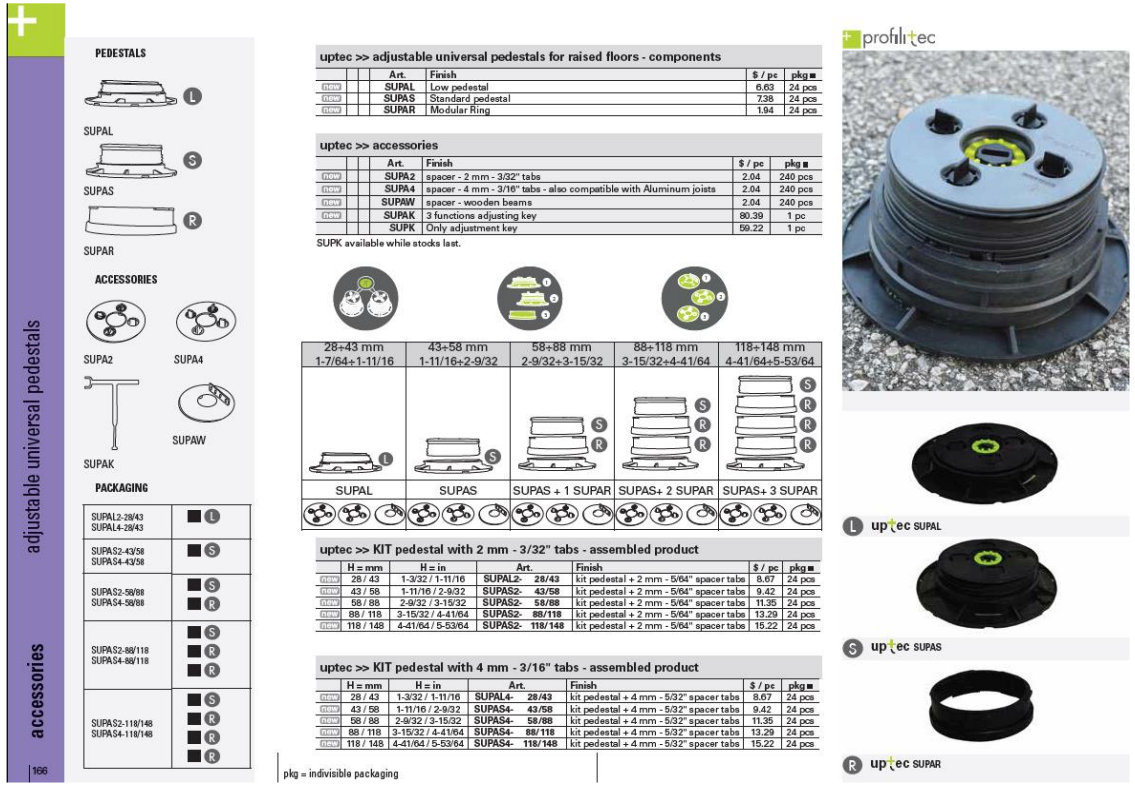
- Price List

Detailed Price Lists



adjustable universal pedestals

accessories

PEDESTALS

SUPAL

SUPAS

SUPAR

ACCESSORIES

SUPA2

SUPA4

SUPAW

SUPAK

PACKAGING

SUPAL2-28/43 SUPAL4-28/43	L
SUPAS2-43/58 SUPAS4-43/58	S
SUPAS2-58/88 SUPAS4-58/88	S R
SUPAS2-88/118 SUPAS4-88/118	S R R
SUPAS2-118/148 SUPAS4-118/148	S R R R

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uptec >> adjustable universal pedestals for raised floors - components

		Art.	Finish	$ / pc	pkg ■
NEW		SUPAL	Low pedestal	6.63	24 pcs
NEW		SUPAS	Standard pedestal	7.38	24 pcs
NEW		SUPAR	Modular Ring	1.94	24 pcs

uptec >> accessories

		Art.	Finish	$ / pc	pkg ■
NEW		SUPA2	spacer - 2 mm - 3/32" tabs	2.04	240 pcs
NEW		SUPA4	spacer - 4 mm - 3/16" tabs - also compatible with Aluminum joists	2.04	240 pcs
NEW		SUPAW	spacer - wooden beams	2.04	240 pcs
NEW		SUPAK	3 functions adjusting key	80.39	1 pc
		SUPK	Only adjustment key	59.22	1 pc

SUPK available while stocks last.

28÷43 mm 1-7/64÷1-11/16	43÷58 mm 1-11/16÷2-9/32	58÷88 mm 2-9/32÷3-15/32	88÷118 mm 3-15/32÷4-41/64	118÷148 mm 4-41/64÷5-53/64
SUPAL	SUPAS	SUPAS + 1 SUPAR	SUPAS+ 2 SUPAR	SUPAS+ 3 SUPAR

uptec >> KIT pedestal with 2 mm - 3/32" tabs - assembled product

	H = mm	H = in	Art.	Finish	$ / pc	pkg ■
NEW	28 / 43	1-3/32 / 1-11/16	SUPAL2- 28/43	kit pedestal + 2 mm - 5/64" spacer tabs	8.67	24 pcs
NEW	43 / 58	1-11/16 / 2-9/32	SUPAS2- 43/58	kit pedestal + 2 mm - 5/64" spacer tabs	9.42	24 pcs
NEW	58 / 88	2-9/32 / 3-15/32	SUPAS2- 58/88	kit pedestal + 2 mm - 5/64" spacer tabs	11.35	24 pcs
NEW	88 / 118	3-15/32 / 4-41/64	SUPAS2- 88/118	kit pedestal + 2 mm - 5/64" spacer tabs	13.29	24 pcs
NEW	118 / 148	4-41/64 / 5-53/64	SUPAS2- 118/148	kit pedestal + 2 mm - 5/64" spacer tabs	15.22	24 pcs

uptec >> KIT pedestal with 4 mm - 3/16" tabs - assembled product

	H = mm	H = in	Art.	Finish	$ / pc	pkg ■
NEW	28 / 43	1-3/32 / 1-11/16	SUPAL4- 28/43	kit pedestal + 4 mm - 5/32" spacer tabs	8.67	24 pcs
NEW	43 / 58	1-11/16 / 2-9/32	SUPAS4- 43/58	kit pedestal + 4 mm - 5/32" spacer tabs	9.42	24 pcs
NEW	58 / 88	2-9/32 / 3-15/32	SUPAS4- 58/88	kit pedestal + 4 mm - 5/32" spacer tabs	11.35	24 pcs
NEW	88 / 118	3-15/32 / 4-41/64	SUPAS4- 88/118	kit pedestal + 4 mm - 5/32" spacer tabs	13.29	24 pcs
NEW	118 / 148	4-41/64 / 5-53/64	SUPAS4- 118/148	kit pedestal + 4 mm - 5/32" spacer tabs	15.22	24 pcs

pkg = indivisible packaging

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L uptec SUPAL

S uptec SUPAS

R uptec SUPAR

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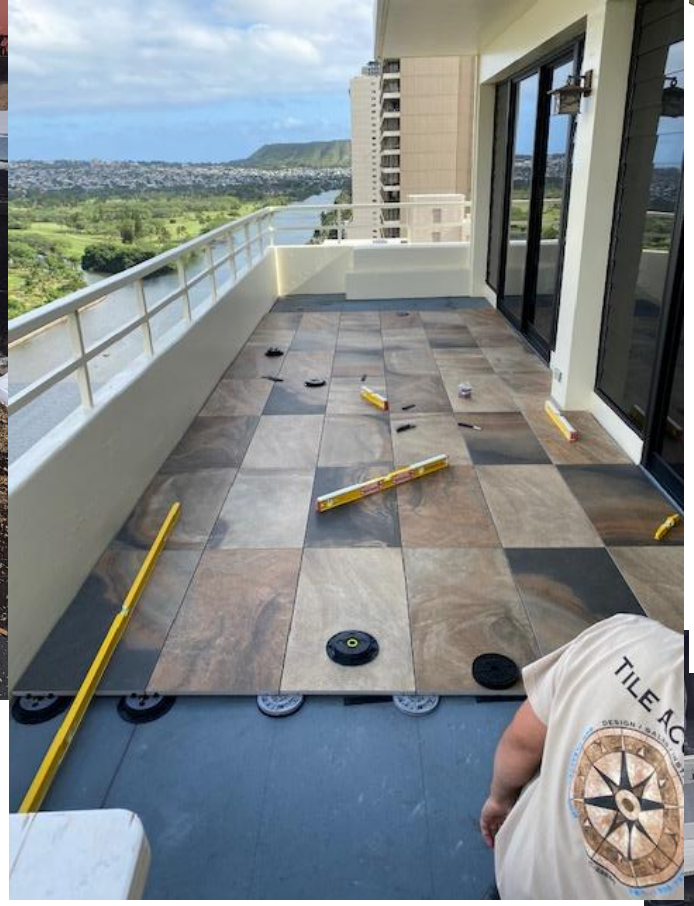
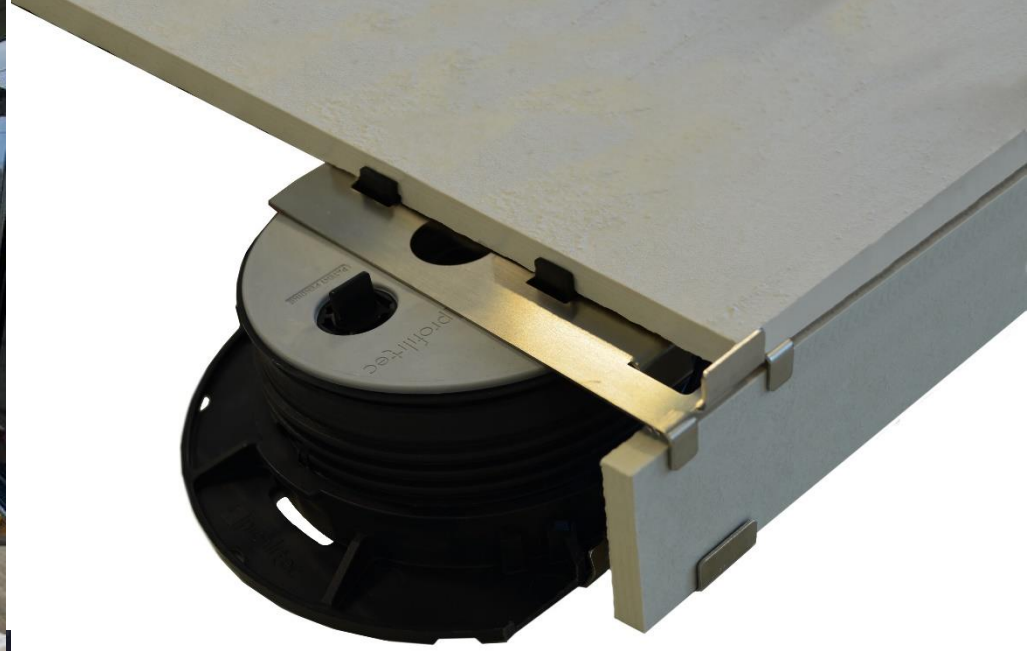
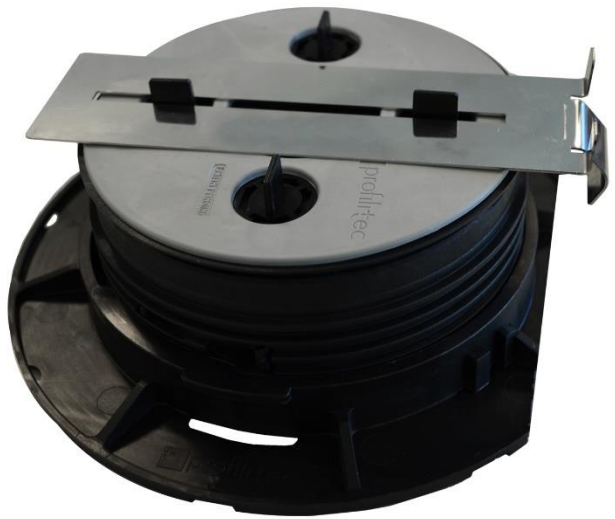
Sample Demo Kits

- Display Dox







Project above is from Hawaii

Finished Project below is from Hawaii

Profilitec-Uptec: Take-home Points

1- The market for exterior porcelain pavers on raised pedestals is the fastest growing trend in the tile industry
2- These projects are generally significant in square footage and monetary value providing great sales opportunities
3- Profilitec-Uptec is the simplest, least time-consuming, best performing and most-cost-effective system available
4- Profilitec offers a full line of support and educational tools for Uptec as well as all the Profilitec product offerings

We hope you found this presentation on Profilitec-Uptec to be helpful
For further information please call Bob Stark at (808)349-3384 or email
bob@sunsettileandstone.net

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