Stone Resin Surfacing

Sustainable Paving & Decking

www.StoneResinSurfacing.com

hanit® BOARDWALK CONSTRUCTION

BOARDWALKS · COASTAL PATHS · BRIDGES · PLATFORMS

WHAT ARE YOUR **SPECIFICATIONS?**

WHY OUR RECYCLING IS UPCYCLING

When preparing a meal, as every cook knows, it is crucial that the amounts of each ingredient are in the right proportion to each other. The same applies to products made from recycled materials. That is why our process engineers work hard to find the right combination of materials for a variety of products. In this way they produce all kinds of plastic mixes, each with their own properties and advantages to suit different purposes. It makes a big difference whether it is needed for a sandbox or a paddock enclosure.

It is very important for us to create these combinations as well as our products from start to finish – in this way we can guarantee accurate processing. This philosophy of using the right ingredients, finding the right combinations, and processing them meticulously has been the foundation of everything we've done since 1993.

THE DIFFERENCE BETWEEN hanit® AND hanit® Ultra

hanit® Ultra is the logical step up from hanit®. The combination of high quality recycled polyolefins ensures great quality and tensile strength as well as more stability.

Is it more expensive? Not necessarily. It is often possible to compensate for the higher expense of materials. A board made from hanit® Ultra has a greater span, therefore fewer posts are needed to secure the structure. The higher quality of hanit® Ultra is also visually stunning.

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WHAT'S THE CATCH? **THERE ISN'T ONE.**

WHY hanit® IS UNIQUE

Every building material has certain advantages.
Unfortunately, they also have certain disadvantages.

Wood for example, is beautiful but it cannot withstand the elements for long without needing time-intensive and labour-intensive maintenance. Concrete is much more durable but due to its weight is more difficult to transport and is just too heavy for many purposes. Over the years concrete will show water damage and begin to deteriorate. Steel, on the other hand, is much more flexible and can be used for all kinds of things – but it is prone to rust and stainless steel is very expensive.
The same applies to new plastics, which are also much more expensive.

And then there is hanit®. Contrary to wood or steel it is extremely weather resistant. It saves money, time and effort because it is lighter than concrete and cheaper than stainless steel. Best of all, this material can be used for almost any product or purpose.

DURABILITY

- Weather-resistant
- Resistant to rot and corrosion
- Splinter-free, low risk of injury
- Usable all year round
- Moisture-resistant, impervious to water
- Quick drying

LOW WEIGHT

- Installation doesn't require heavy equipment
- Greater loading capacity
- Savings in transport costs
- Quick installation
- Less labour-intensive

ECONOMICAL

- Longer service life
- Resistant against oils, acids, lyes and salt water
- Low maintenance costs
- Made from high-quality recycled plastics (polyolefins)
- Great value for money
- Ideal construction material, especially for robust profiles and pre-assembled pieces

ECOLOGICAL

- Produced without the need for waterproofing
- Less use of landfills, good for the environment
- Easy to recycle as a building material
- Certified with the eco-label "THE BLUE ANGEL"
- Non-polluting, does not leach
- Non-toxic (in accordance with DIN 71, Part 3 Playground Ordinance)

EASY TO WORK WITH

- Easy to manipulate (drill, saw, screw and nail)
- Easily adaptable at installation site

FOOTPATH PLANKS

Well on the Way

Our time tested footpath planks withstand the elements, even in marine environments. The outstanding qualities of this material, are a perfect match for wet or damp. areas. Our Hanit material is water-resistant and made without any harmful or toxic substances or the need for waterproofing. It resists salt water, has a slip-resistant surface and is very easy to use and process.

Footpath Planks are available with reinforcement and tongue and groove and come in 3 different colors

We have many sizes in stock: 2.7 x 15.0 cm (1"x 6"); 3.8 x 15.0 cm (1.5"x6"); 4.0 x 17.0 cm (1.6" x 6.7"); 4.0 x 19.7 cm (1.6"x7.75"); 4.8 x 16.5 cm (1.9"x 6.5") and 6.0 x 19.7 cm (2.4" x 7.75".

Key Figures

MATERIAL CHARACTERISTICS hanit®			MATERIAL CHARACTERISTICS hanit ULTRA®	
Test	Result		Result	
Three-point bend test (DIN EN ISO 178)	Flexural stress -5° C Flexural-E-Modulus -5° C Flexural stress 23° C Flexural-E-Modulus 23° C Flexural stress 65° C Flexural-E-Modulus 65° C	21.2 MPa 1,289 MPa 11.6 MPa 581 MPa 4.6 MPa 162 MPa	Flexural stress -5° C Flexural-E-Modulus -5° C Flexural stress 23° C Flexural-E-Modulus 23° C Flexural stress 65° C Flexural-E-Modulus 65° C	35.1 MPa 2,261 MPa 24.0 MPa 1,424 MPa 16.5 MPa 856 MPa
Tensile test (DIN EN ISO 527-2)	Tensile strength Tensile elongation Tensile-E-Modulus	9.65 MPa 13.8 % 659 MPa	Tensile strength Tensile elongation Tensile-E-Modulus	15.6 MPa 1.7 % 1,490 MPa
Compression properties (DIN EN ISO 604)	Compressive stress 1 % Expansion Compressive stress 2 % Expansion Compressive stress 10 % Expansion Compressive stress Pressure flow stress Compression-E-Modulus	1.8 MPa 3.3 MPa 13.3 MPa 18.2 MPa 271 MPa	Compressive stress 1 % Expansion Compressive stress 2 % Expansion Compressive stress 10 % Expansion Compressive stress Pressure flow stress Compression-E-Modulus	2.5 MPa 5.3 MPa 27.9 MPa 29.0 MPa 815 MPa
Water absorption (DIN EN ISO 62)	23° C, 50 % r.L. 23° C in Water 100° C in Water	<1 % <1 % <1 %	23° C, 50 % r.L. 23° C in Water 100° C in Water	<1 % <1 % <1 %
Surface / contact resistance (DIN IEC 60093)	Contact resistance Spec. Contact resistance Contact resistance Spec. Contact resistance	$3.2x10^{13}$ Ω $3.2x10^{14}$ Ω $9x10^{13}$ Ω $4.5x10^{14}$ Ω	Contact resistance Spec. Contact resistance Contact resistance Spec. Contact resistance	$1.5x10^{14}$ Ω $1.5x10^{15}$ Ω $>2.0x10^{14}$ Ω $>8.4x10^{14}$ Ω
Thermal expansion	Factor Thermal expansion	0.00018993 1/°C	Factor Thermal expansion	0.00011510648 1/°C

Applicable to all hanit® Footpath Planks:

Surfaces:
Groove profile Slip Category R10, V4 BG Test
according to ZH1/571 and DIN 51130

Optional:
Subsequent reinforcement (Flat steel 6 x 25 mm)
Reinforcement ends approx. 7 cm from the edge
Double strength reinforcement on request

Please note:
As the used material is made from recycled plastic, some variation in its surface may occur.

Please also consider slight length variations (up to +/- 1.5%) depending on temperature.

Depending on circumstances an electrostatic charge of the footpath planks may occur, which may require the structure to be earthed.

DEFLECTION TEST RESULTS – CENTRALLY TESTED (150 KG (330 lb) POINT LOAD)

Support span	Deflection footpath plank with tongue and groove*		Deflection standard footpath plank						Deflection hanit® Ultra footpath plank	
Axis measurement	**4.0 x 17.0 cm**		**4.0 x 19.7 cm**		**4.8 x 16.5 cm**		**6.0 x 19.7 cm**		**2.7 x 15.0 cm**	**3.8 x 15.0 cm**
(cm)	without reinforcement	with reinforcement	without reinforcement	with reinforcement	without reinforcement	with reinforcement	without reinforcement	with reinforcement	without reinforcement	without reinforcement
40.0	0.9 mm	0.6 mm	1.1 mm	1.0 mm	1.0 mm	0.9 mm	0.6 mm	0.5 mm	1.6 mm	1.1 mm
60.0	1.0 mm	0.9 mm	2.7 mm	1.7 mm	1.5 mm	1.2 mm	0.8 mm	0.7 mm	5.3 mm	1.8 mm
80.0	2.3 mm	1.8 mm	4.7 mm	3.2 mm	4.0 mm	2.8 mm	2.5 mm	1.7 mm	11.7 mm	4.6 mm
100.0	5.3 mm	4.1 mm	9.9 mm	5.7 mm	8.0 mm	5.1 mm	6.1 mm	4.4 mm	25.0 mm	10.4 mm
120.0	10.5 mm	7.9 mm	18.4 mm	13.9 mm	12.0 mm	10.2 mm	9.1 mm	7.9 mm	-	-

Test Construction: profiles screwed together with crossbeam
*Two profiles tested together

The properties of hanit® Ultra, thanks to the combination of high-quality polyolefins are an even higher material and tensile strength. It also has increased stability.

That is shown by the good results of the deflection test – despite the thinness of hanit® Ultra planks of only 2.7cm or 3.8 cm!

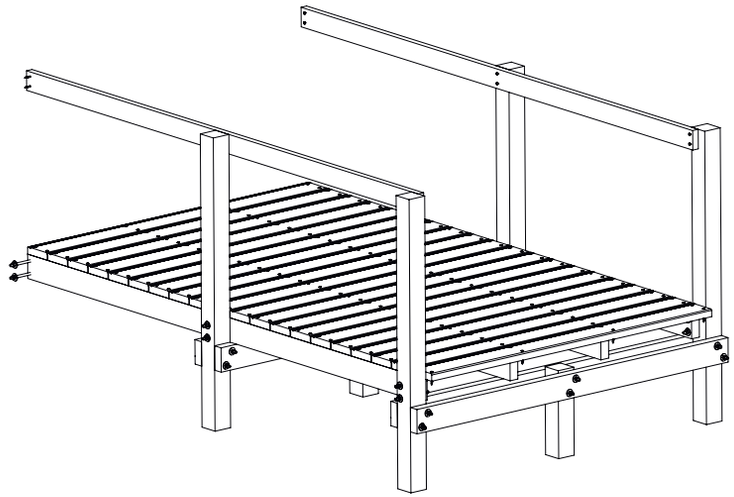
BOARDWALK MODEL 1

Almost too beautiful to step on

This model was developed for the construction of marsh, beach, coastal and forest paths, as well as swimming and fishing plat-forms. hanit® Ultra literally carries all the weight through cross sections with small dimensions, which nevertheless achieve a very wide span. The raised rib pattern is slip resistant and visually stunning.

Brown *Black*

- **Material: hanit® Ultra**
- **Available with or without railings**
- **Widths: 1.20 m (3.9ft), 1.50 m (4.9ft) and 1.80 m (5.9ft)**
- **Length per unit: 3.00 m (9.8ft)**
- **Permissible point load: 1.5 kN (337lbs)**
- **Permissible surface load: 3 kN/m² (.435psi)**
- **Length foundation post: max. 3.00 m (9.8ft)**



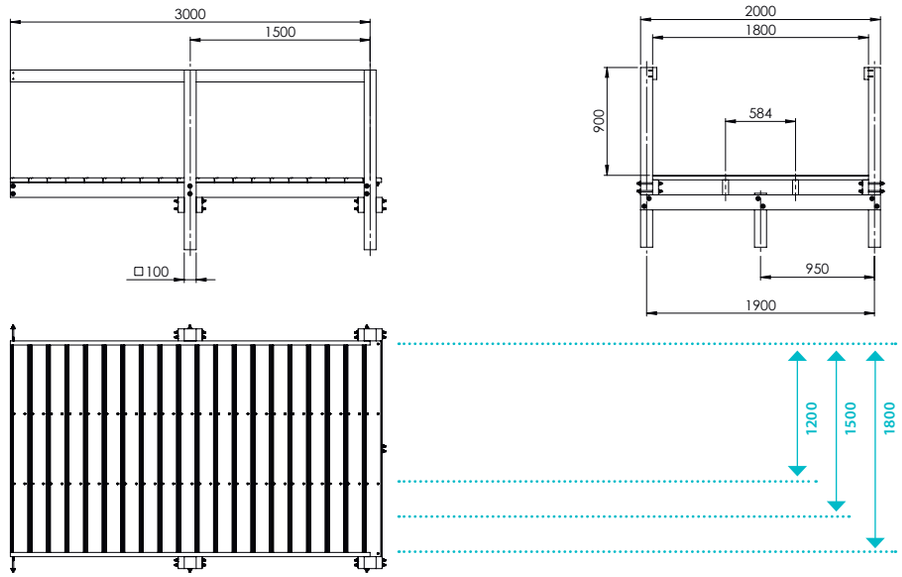
STOCK LIST BY MODEL WIDTH

DESCRIPTION	QUANTITIES 1200 mm	1500 mm	1800 mm
Board 50 x 125 x 3000 mm	3	4	4
Footpath plank 38 x 150 mm x footpath width	20	20	20
Board 35 x 100 x 3000 mm*	2	2	2
Square post 100 x 100 x 1500 mm*	4	4	4
Board 50 x 125 x 1500 mm**	-	4	-
Board 50 x 125 x 1700 mm*	-	4	-
Board 50 x 125 x 2000 mm*	-	-	4
Board 50 x 125 x 1400 mm*	4	-	-
Square post 100 x 100 x 600 mm	4	4	4
Square post 100 x 100 x 600 mm**	-	2	2
Board 50 x 125 x 1200 mm**	4	-	-

* Not applicable for version without railings
** Not applicable for version with railings

DESIGNATION	WEIGHT IN KG 1200 mm	1500 mm	1800 mm
Without railing	235	300	335
With railing	291	360	396

TECHNICAL DETAILS (IN MM)



hanit® Ultra

THE BOARDWALK IS OUR GOAL

Practical Simplicity

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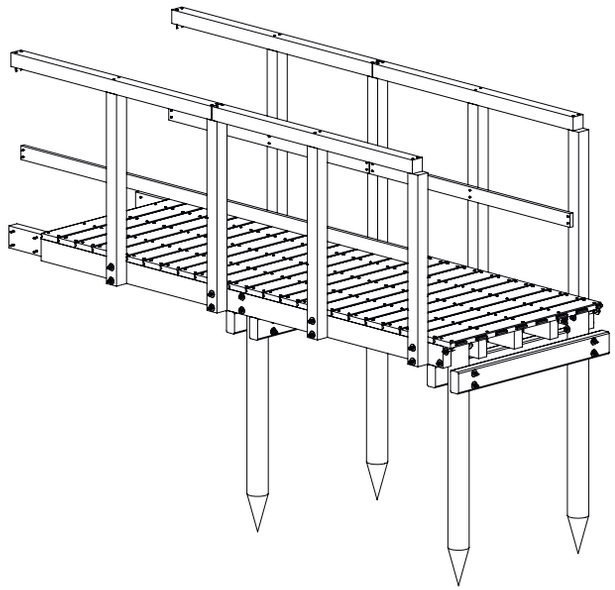


BOARDWALK MODEL 2

Clean construction, clear calculation

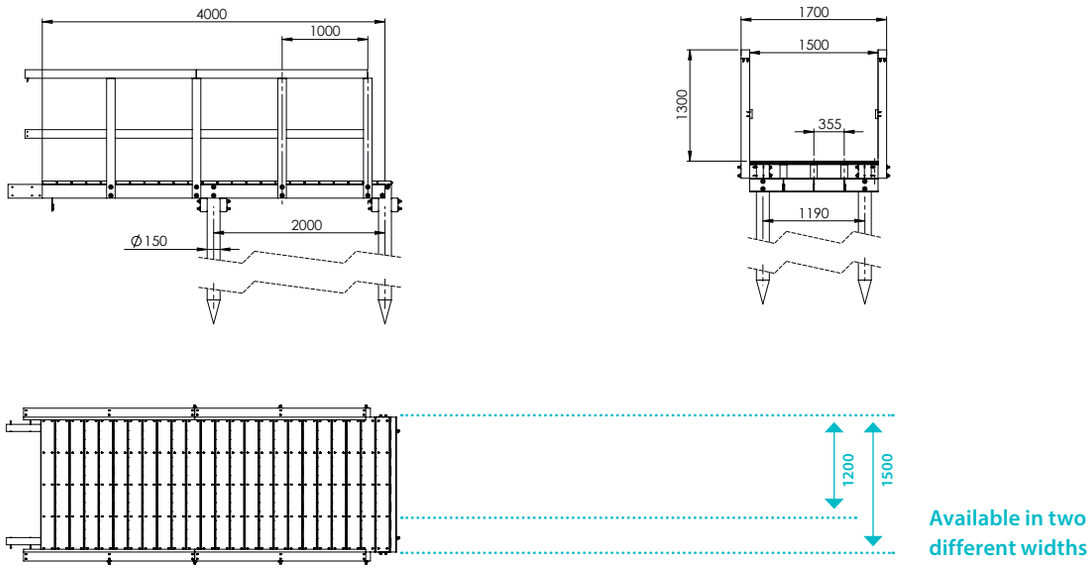
- » **Material: hanit®**
- » **Available with or without railings**
- » **Widths: 1.20 m (3.9ft), 1.50 m (4.9ft)**
- » **Length per unit: 4.00 m (13.1ft)**
- » **Permissible point load: 2 kN (450lbs)**
- » **Permissible surface load: 5 kN/m² (.73psi)**
- » **Length pile: max. 3.00 m (9.8ft)**

The Boardwalk Model 2 is a comparatively cost effective and solid product with simple but robust railings.

With this construction we focussed on quality and functionality from the beginning. It is especially suitable for the simple installation of landing stages, small piers and floating docks.

Brown *Grey*

TECHNICAL DETAILS (IN MM)

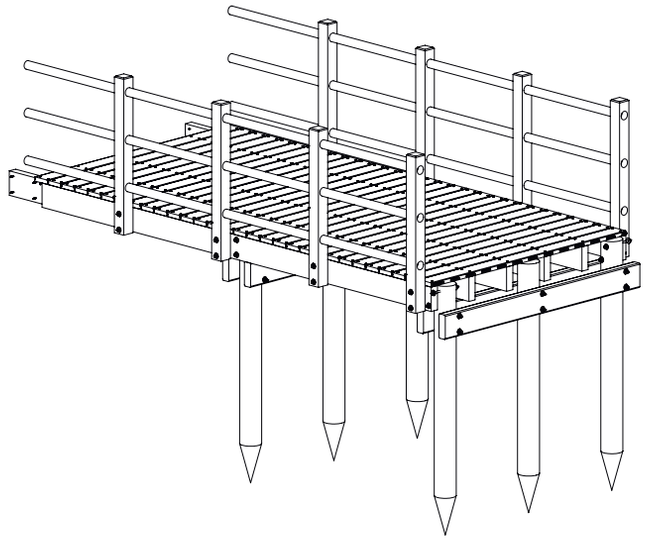


STOCK LIST BY MODEL WIDTH

	QUANTITIES	
DESCRIPTION	1200 mm	1500 mm
Pile Ø 150 mm	4	4
Joist 80 x 160 mm x boardwalk width	4	4
Joist 80 x 160 x 4000 mm	4	5
Footpath plank 40 x 170 mm x boardwalk width	24	24
Beam 80 x 160 x 1000 mm	2	2
Square post 100 x 100 x 1400 mm*	8	8
Square post 100 x 100 x 2000 mm*	4	4
Footpath plank 30 x 100 x 2000 mm*	4	4

* Not applicable for version without railings

	WEIGHT IN KG	
DESIGNATION	1200 mm	1500 mm
Without railing	560	666
With railing	770	875



- » **Material: hanit®**
- » **Available with and without railings**
- » **Widths: 1.20 m (3.9ft), 1.50 m (4.9ft), 2.00 m (6.5ft) and 2.50 m (8.2ft)**
- » **Length per unit: 5.00 m (16.4ft)**
- » **Permissible point load: 2 kN (450lbs)**
- » **Permissible surface load: 5 kN/m² (.73psi)**
- » **Length pile: max. 6.00 m (19.7")**

Brown *Grey*

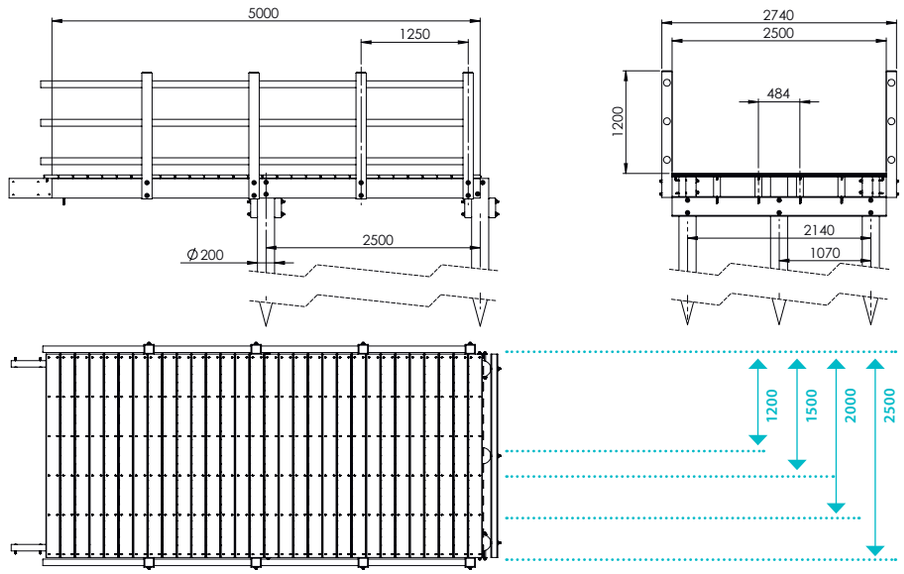
STOCK LIST BY MODEL WIDTH

DESCRIPTION	QUANTITIES 1200 mm	1500 mm	2000 mm	2500 mm
Pile Ø 200mm	4	4	4	6
Joist 80 x 230 x 1000 mm	2	2	2	2
Footpath plank 40 x 170 mm x footpath width	30	30	30	30
Joist 80 x 230 x 5000 mm	4	4	5	6
Joist 80 x 230 mm x footpath width	4	4	4	4
Post Ø 80 x 2480 mm*	12	12	12	12
Railing post 120 x 120 x 1500 mm*	8	8	8	8

DESCRIPTION	WEIGHT IN KG 1200 mm	1500 mm	2000 mm	2500 mm
Without railing	944	1020	1231	1573
With railing	1240	1315	1527	1869

* Not applicable for version without railings

TECHNICAL DETAILS (IN MM)




Quality all
the Way

PRE-ASSEMBLED BOARDWALK ELEMENT

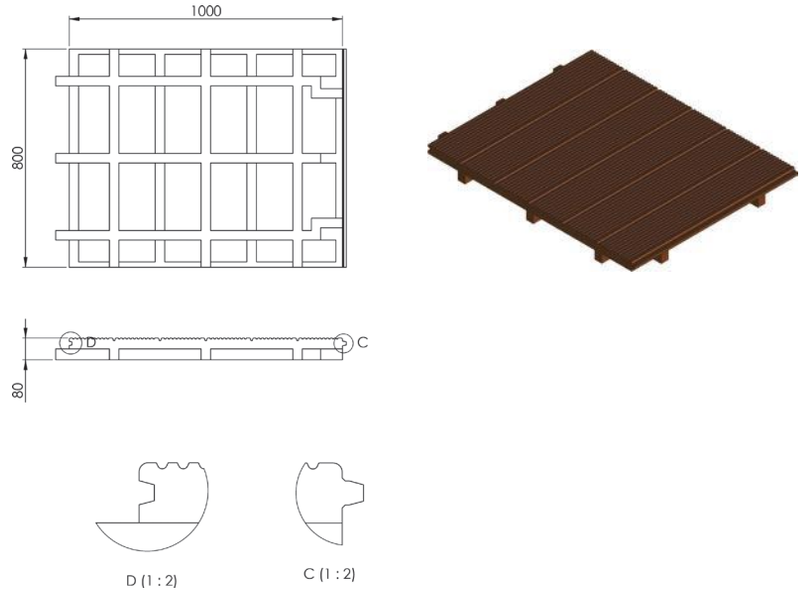
Click, click – done!

Instead of having many small elements to screw together, you will receive a pre-assembled product that can be installed easily and quickly. It's the ideal solution for beach and garden paths. Simply put it together piece by piece – and if required, take it apart again. Our modular system is suitable for temporary or seasonal use.

» **Material: hanit®**
» **Widths: 80 cm, 100 cm and 120 cm (31 in, 39 in and 48 in)**
» **Weights: 29.02 kg, 34.90 kg and 40.79 kg (64lbs, 75lbs and 90lbs)**
» **Length per unit: 1.00 m (3.25 ft)**

Brown *Grey*

TECHNICAL DETAILS (IN MM)



ROLL OUT ELEMENT

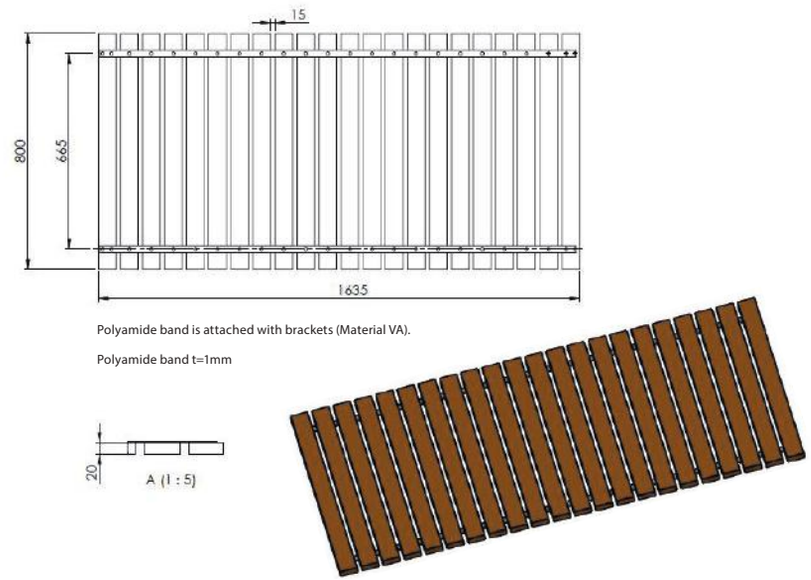
Fast Forward

Simple solutions are often better. This product can be rolled out and back together like a carpet. This way it isn't just easy to install but easier and less bulky to transport. No screws, no mounting. Because of its flexibility it is ideal for soft ground, such as beaches and meadows, so it's especially suitable for temporary use. Let it roll!

» **Material: hanit®**
» **Width: 31 in, 39 in**
» **Weight: 19.78 kg, 35 kg (44lbs, 77lbs)**
» **Length per unit: 1.63 m, 2 m (5.35 ft, 6.6 ft)**

Brown *Grey*

TECHNICAL DETAILS (IN MM)



PRE-ASSEMBLED UNITS

Prefabrication to your exact specification

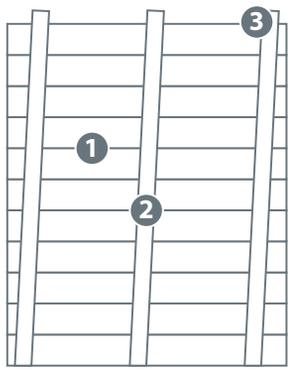
We can provide pre-assembled square profiles to simplify the installation process. These sections can easily be removed during the winter months.

» **Material: hanit®**

» **Width and length per unit variable**

Brown *Grey*

TECHNICAL DETAILS



1. Footpath Planks
2. Substructure made of square profiles, diagonally arranged, overhang at one end
3. Fixing method: stainless steel countersunk screws

Complete, no matter what

Not even sea water is able to damage hanit®, as this material is completely resistant to salt. That is why our boardwalks are complete structures. Even the substructure is made from hanit® – built for an eternity.

Every boardwalk is a bespoke and unique piece. Whether made for walking or driving on, with or without railings, whether it has stairs or a bridge – every single installation is conceived and created in accordance to your vision and requirements

Together, we'll develop a plan that is both flexible and practical. Here's looking forward to many glorious summers…

Beyond the Horizon

This boardwalk project encircles a peninsula on the Baltic Sea in Poland. Our technical team has the experience to accommodate boardwalk projects from 5 yards to 5 miles long – as big or small as you can imagine!

- **Location: Hel, Poland**
- **Length: 2400 linear ft - width: 10 Ft**
- **Time of build: September 2012 until June 2013**
- **Installation: approx. 241 tons of hanit®**
- **Total area: approx. 24K/ SF, approx. 4,353 footpath planks**

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HAHN PLASTICS 20 YEAR WARRANTY

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