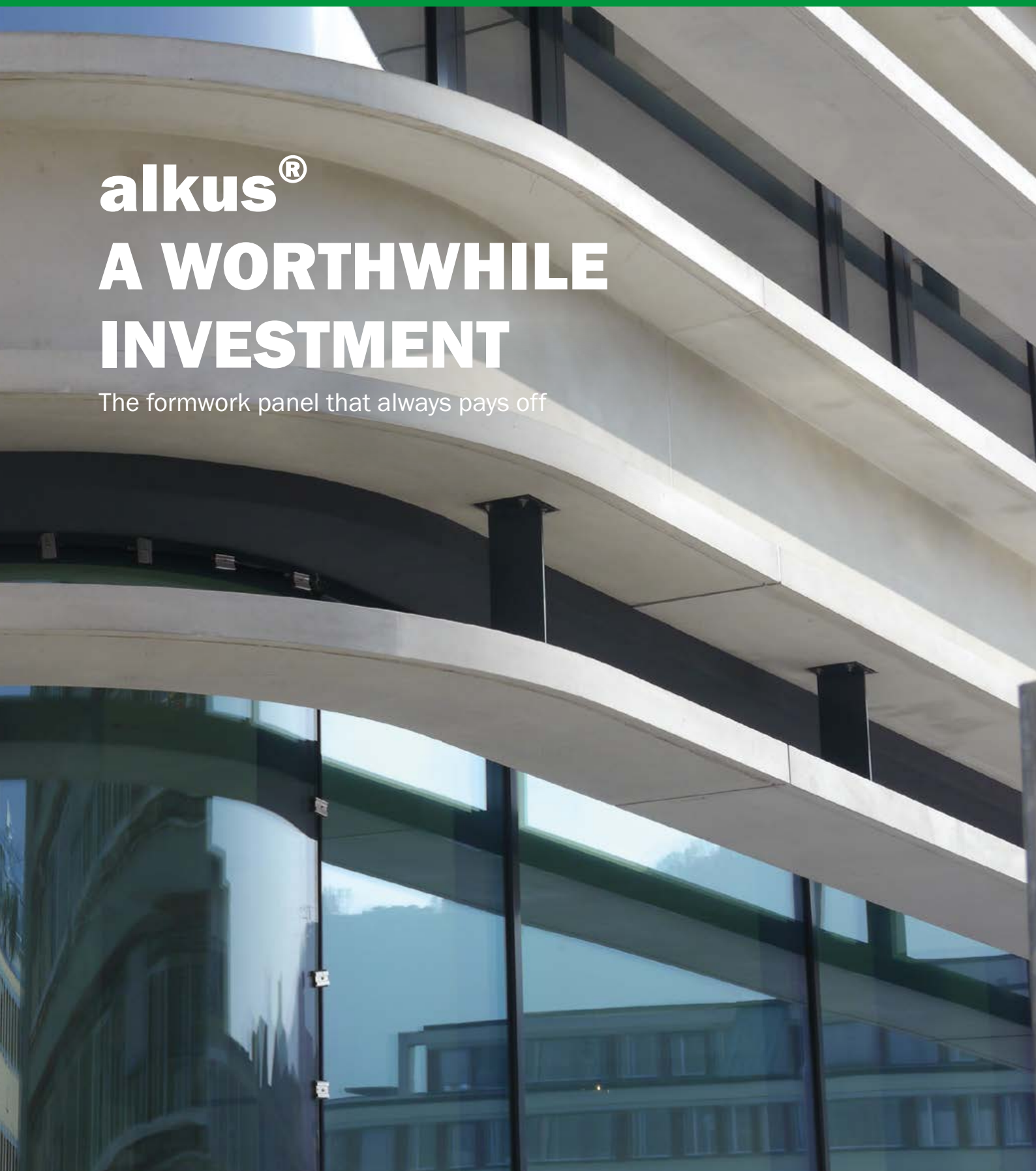
alkus®
INNOVATIVE SYSTEMS



alkus®
A WORTHWHILE INVESTMENT

The formwork panel that always pays off

CONTENT

THE alkus AG

THE alkus AG

YouTube

ABOUT THE COMPANY

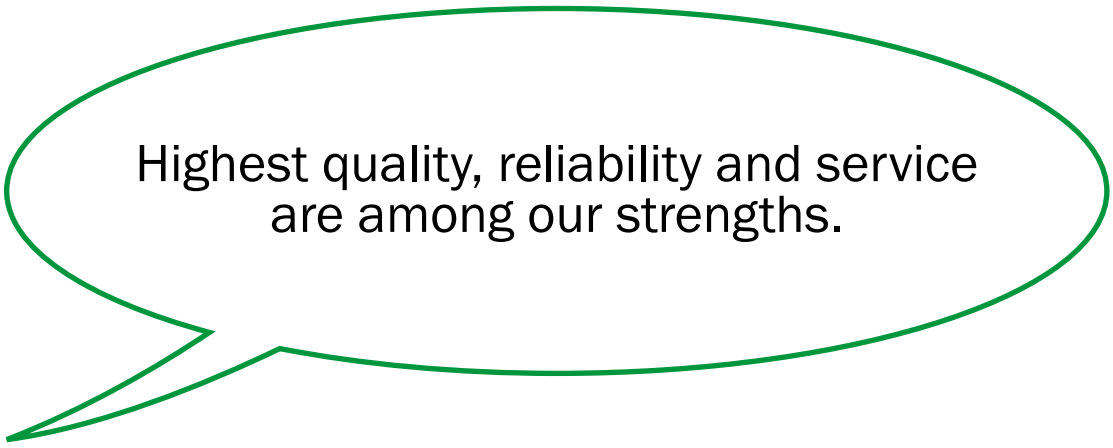
alkus AG IN LIECHTENSTEIN

Founded in 2000, alkus AG is an internationally active trading and service company with its registered office in Vaduz (Liechtenstein). The company sells innovative solutions revolving around the alkus® solid plastic panel that has become known worldwide primarily through its use as a formwork panel for concrete work.

alkus AG sells alkus® solid plastic panels as well as various accessories and offers customers technical support and numerous services.

In addition to alkus AG, the alkus group of companies includes alkus GmbH & Co. KG, which is headquartered in Germany and responsible for technical development, and alkus North America Inc. (Sales and Marketing USA) based in Islandia.

alkus collaborates with several European companies as contractual partners in the production of solid plastic panels, including a world market leader in plastic composite materials. alkus AG has been a manufacturer since 2016 and operates its own production facility in the Czech Republic.



ABOUT THE COMPANY

THE PIONEER IN THE FIELD OF PLASTIC FORM-WORK PANELS

bauma trade fair

ABOUT THE COMPANY

As early as the 1980s, alkus started to deal with the disadvantages and problems of plywood products used in the construction industry. This was due to the fact that the service life of plywood formwork panels is severely limited by mechanical stress, the effects of water and chemicals as well as weather influences.

From the very beginning, alkus has therefore sought an alternative that not only avoids the disadvantages of a plywood formwork panel, but also offers practical added value.

Many years of research and development work

What followed was years of research and development with an uncompromising focus on quality. In the mid-1980s, we took the first steps towards testing alternatives to plywood formwork panels. The years 1990 to 1995 were devoted to research, development and testing of plastic sheets with various filler materials. From 1995 to 1997, a consortium of several research institutes and industrial companies developed an all-plastic panel as a composite construction made of polypropylene and aluminium or glass fibre.

In 1998, the alkus® solid plastic panel was presented to a wider specialist audience for the first time at the bauma trade fair and in the same year alkus GmbH & Co. KG acquired the worldwide patents. alkus AG was founded in 2000, the alkus® solid plastic panel reached market maturity and went into series production.

Superior material properties of alkus® solid plastic panels

The alkus® solid plastic panel is a plastic sandwich panel with a foamed plastic core and plastic cover sheets applied on both sides as well as intermediate reinforcement material made either of aluminium or glass fibre. The alkus® polypropylene panel is much more robust than a plywood formwork panel — with the added advantage of being easy to form and repair without loss of quality.

However, the alkus® board is not just convincing when directly compared with plywood panels, it also has significantly better product features than plastic panels from other manufacturers. For example, each individual alkus® board can be reused up to 1,500 times or more.

Thousandfold tried-and-proven technology

Since its market launch, the alkus® solid plastic panel has proven itself in thousands of applications. In the year 2000, the formwork system manufacturer MEVA was the first industrial user to start incorporating alkus® solid plastic panels in its formwork systems. Ever since then, MEVA has been using our panels as their standard worldwide. Because the alkus® panel fits into any frame system, more and more construction companies are opting for this economical and practical solution.

Today, alkus® solid plastic panels are not only used for standard applications such as wall and slab formwork, but also for special formwork of all kinds, ranging from tunnel construction and civil engineering to the manufacture of precast concrete elements. In addition, since 2007 alkus has been issuing a 7-year long-term warranty on its formwork panels — it is the first manufacturer in the world to do so.

TÜVRheinland® ZERTIFIZIERT

Management System
ISO 9001:2015

www.tuv.com
ID 9108613837

Certified quality

Our quality management and production processes are certified according to DIN-ISO 9001-2008. For our customers, this means controlled, consistent quality.

PRODUCTION

HOW alkus® SOLID PLASTIC PANELS ARE MANUFACTURED

alkus AG

alkus AG is the sales and marketing company of the alkus Group. alkus AG supplies customers worldwide with the high-quality alkus® solid plastic panel, including all application, cleaning and repair accessories. These customers are mainly formwork system manufacturers and rental companies, precast companies and construction companies. alkus® solid plastic panels are manufactured at two production sites.

alkus development company

alkus has its own development company, which was originally responsible for developing and patenting the alkus® solid plastic panel. alkus develops processes for the application of alkus® panels in special projects as well as for cleaning and repair activities. The alkus® solid plastic panel can be repaired using identical material.

Production for any formwork system

The alkus® solid plastic panel with its unique sandwich design (for design details: see page 19) is produced in an extrusion process and then further processed using CNC techniques (Computerised Numerical Control). The panels can be adapted to any formwork system – while detail and processing drawings are available for almost every system. Special sizes, including panel welding, milling and drilling, are available upon request. The standard delivery period for the alkus® formwork is four to six weeks.

Investments in in-house production

At the alkus production sites, the panels are manufactured and assembled using state-of-the-art equipment, double belt presses, CNC machining centres and a fully automatic panel welding system. The overall concept is based on sustainable principles.

Regional procurement of accessories and tools

alkus AG procures the tools and accessories for manufacturing the alkus® solid plastic panel from local suppliers. The tools are then adapted to the individual needs and requirements of the user. Short transport routes ensure not only fast delivery times but also help reduce emissions, thereby protecting the environment.


19.872
Mitutoyo
0-25mm 0.001mm

MASTERING THE PRESENT – SHAPING THE FUTURE

alkus AG MISSION STATEMENT

VISION

We want to be THE partner of choice for all formwork manufacturers and formwork systems worldwide.

MISSION

Our mission is to make formwork more economical and sustainable while ensuring the best possible concrete results.

VALUES

QUALITY

We are driven by our passion for quality.

Uncompromising quality is the basic principle upon which all our products are based.

We are convinced that our core product – the alkus® solid plastic panel – is the best product to be used in panelized formwork systems available today. This allows us to make our customers more successful.

In addition to our products, we also provide our customers with expert advice, sales and service.

SUSTAINABILITY

We live and breathe sustainability.

At alkus AG, we believe sustainability is more than just about being green today, tomorrow and in the future.

The alkus® solid plastic panel lasts for many years. This helps to save natural resources and is also economically more sustainable – a guaranteed benefit for our customers.

The same can be said about the relationships with our employees, partners and customers, where we do not seek short-term profit but are committed to the lasting success of everyone involved.

CUSTOMER ORIENTATION

Satisfied customers are our priority.

Honesty and reliability are the principles upon which we build our customer relationships.

Commitment and lots of passion ensure we are the ideal partner for our global customers. Furthermore, we have the right solutions for demanding formwork projects.

Our qualified team always listens and responds to individual needs and new ideas.

RESPECT

Respect defines our relationships.

We treat colleagues, partners and customers with the same respect that we want for ourselves.

As an international brand, we value other nationalities and cultures and the added value that different perspectives bring to our company and our customers.

The fair treatment of individuals, mutual support and an open exchange of views are central to our corporate culture.

FACTS & FIGURES

YOUR PARTNER FOR ALL PANEL SYSTEMS – THE ORIGINAL FOR MORE THAN 20 YEARS.

The alkus® panel enables more than

1,500 uses

For **ALL INDUSTRIES**
within construction business

- Construction industry
- Formwork manufacturers
- Architects
- Tunnel and special formwork
- Formwork retailers and suppliers
- Precast concrete unit industry

For **ALL FORMWORK** systems

7 YEAR
long-term warranty on key technical properties

alkus PANEL SYSTEM 7 Year Long-Term Warranty ON THE ALL-PLASTIC FACING

TÜVRheinland® ZERTIFIZIERT
Management System ISO 9001:2015
www.tuv.com ID 9108613837

CERTIFIED
quality management

More than **1,100 CUSTOMERS** worldwide

From **3 LOCATIONS** for customers in **70 COUNTRIES**

More than **20 YEARS**
professional experience in formwork solutions

★ ★ ★

More than **1,000,000 m²** of our wood-free solution delivered in the last **10 YEARS** – saving millions of m² plywood

THE alkus PARTNER PROGRAMME

alkus AG actively promotes partnerships with well-known formwork manufacturers who want to offer their customers the best possible quality and price for form lining. These partners therefore agree to include the alkus® solid plastic panel in their rental portfolio. This is possible since the alkus® panel is supplied ready for installation in the respective system and fits into any formwork – regardless of the manufacturer.

Customers of our alkus partners benefit not only from the many advantages provided by alkus® formwork compared to plywood but also from first-class support and expert advice. To ensure the changeover is always successful, alkus partners offer first-time users appropriate training, e.g. how to apply, clean and repair alkus® solid plastic panels correctly. They provide professional advice on proper usage and support their customers throughout the entire application period.

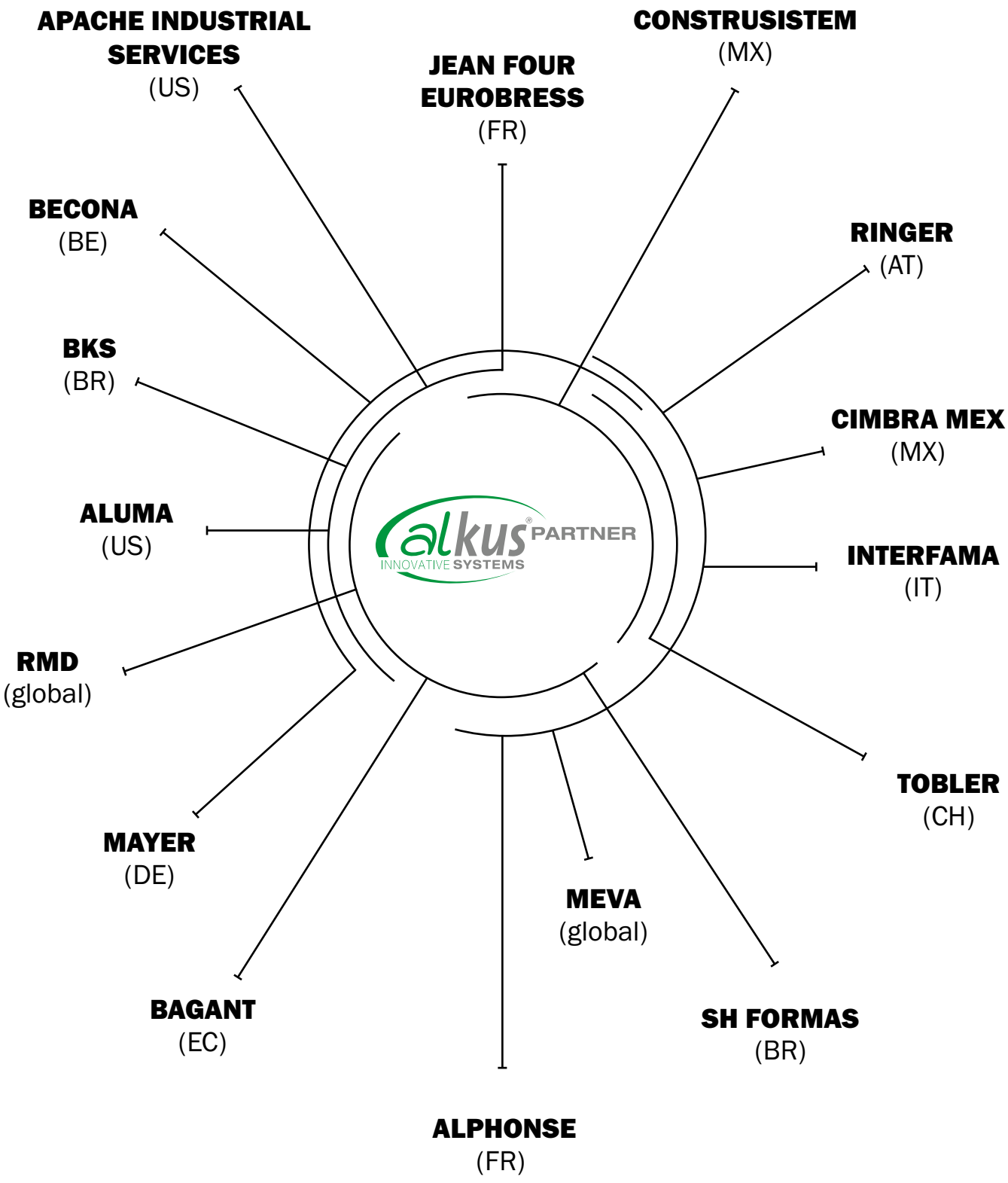
Since the beginning of 2019, alkus AG has officially recognized this special commitment with the alkus Partner Certificate. Partners also receive alkus® solid plastic panels at a partner price and benefit from special promotions.

Meva Schalungssysteme GmbH

Ringer GmbH

RMD Kwickform Ltd. UK

Overview of our alkus partners



Become an alkus partner – working together for the best possible quality of formwork panels
Are you a formwork manufacturer and thinking about converting your rental portfolio to alkus®?
Become a partner and benefit from exclusive special conditions. Phone: +423 236 0030

alkus® PERFORMANCES AND SERVICES

SERVICE THAT PAYS OFF

With our alkus® service van we come directly to you on site!

alkus® service van

alkus® PERFORMANCES AND SERVICES

alkus® range of services

+ Panel change or regeneration service
+ Rental equipment
+ Support for exposed concrete construction sites
+ Service provision in the field of formwork construction
+ Extensive warehousing capacity for accessories and equipment
+ Training and employee education on site
+ We have our own training centre
+ alkus® service van – a fully equipped service vehicle

alkus® Training Centre

We train your employees so that usage of alkus® solid plastic panels pays off for you as quickly as possible! Whether at your site or at our training centre: We offer you a detailed product demonstration and free training regarding installation, cleaning and repair.

In the alkus® training centre you have a fully equipped workplace, samples and, of course, the option of a live presentation by our experts at your disposal.


alkus –
the panel for
all systems
alkus
HONNEBECK
alkus
BECONA
alkus


alkus
RINGER


alkus
PERI

THE alkus® SOLID PLASTIC PANEL

THE alkus® SOLID PLASTIC PANEL

alkus® SOLID PLASTIC PANELS

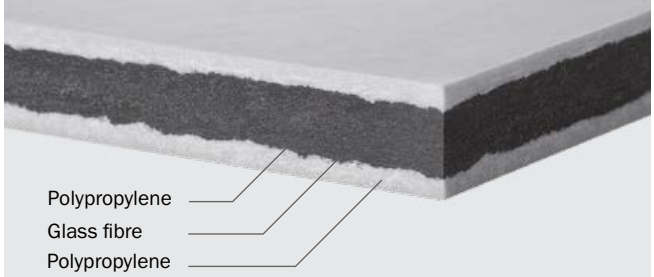
THE CLEVER CHOICE

alkus® solid plastic panels are constructed of extremely durable plastic composite – and are therefore a cost-effective choice for concrete formwork. The patented sandwich panel is extremely robust and resistant to all weather conditions, thus guaranteeing outstanding concrete quality.

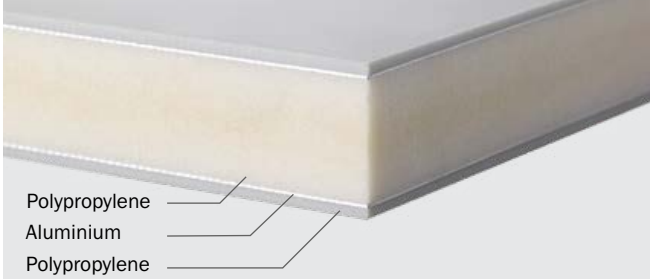
alkus® solid plastic panels are available in two styles

Knowing which one is right for your demands depend on the actual requirements of the formwork. Let us help you with our experience and knowledge.

alkus® GM, made from fibre reinforced polypropylene, is typically used as form lining for circular formwork and special structural elements.



Thanks to its excellent flexural strength, **alkus® AL**, made from aluminium reinforced polypropylene, is typically used for wall formwork, slab formwork and special structural elements.



alkus® in use:
Video: www.youtube.com/alkusAG

DURABLE, PRACTICAL, SUSTAINABLE

YOUR ADVAN-TAGES AT A GLANCE

Profitable for years to come

The alkus® solid plastic panel enables more than 1,500 uses – that is 30 times more than many plywood panels and 3 to 4 times more than many other plastic panels. This results in far less need for re-facing.

More resistant than plywood

The alkus® solid plastic panel is resistant to UV rays and moisture. It neither swells nor shrinks, meaning there are no irregularities (ripples) on the panel surface. Delamination, which can occur in plywood panels due to surface damage, is also not possible.

Easy to repair without any loss of quality

Scratches, holes or perforations: The alkus® solid plastic panel can be repaired quickly and easily using identical material. This means: The unique repair solution helps to retain the technical properties of the panel. Easy removal and replacement of damaged panel sections as opposed to the costly acquisition of whole new ones.

Panel sizes and thicknesses for every application

alkus® solid plastic panels are manufactured in a continuous production process and are available in various widths and thicknesses. Furthermore, several panels can be skilfully welded together in the workshop or even directly on-site to produce panels of every shape and size.

Easy to handle and process

The alkus® solid plastic panel can be nailed, screwed and cut just like plywood.

Quick and easy panel cleaning

The alkus® solid plastic panel can be cleaned quickly and easily after application – even using a high-pressure washer with up to 1,000 bar/14,500 psi and a rotary nozzle.

Top quality exposed concrete

The alkus® solid plastic panel enables perfect element joints and excellent concrete surfaces corresponding to exposed concrete class SB4. In contrast to plywood panels, there is no formwork-related discolouration of the concrete surface due to a phenolic resin coating.

Versatile: rigid yet flexible

The alkus® solid plastic panel is rigid but can be bent, shaped and formed quite easily. This ensures the simple production of special concrete forms – curves and corners. The elasticity modulus remains unchanged throughout the entire life cycle.

Greener than plywood

The alkus® solid plastic panel can be recycled 100 %. Furthermore, its use demands far less formwork oil.

BETTER THAN PLYWOOD

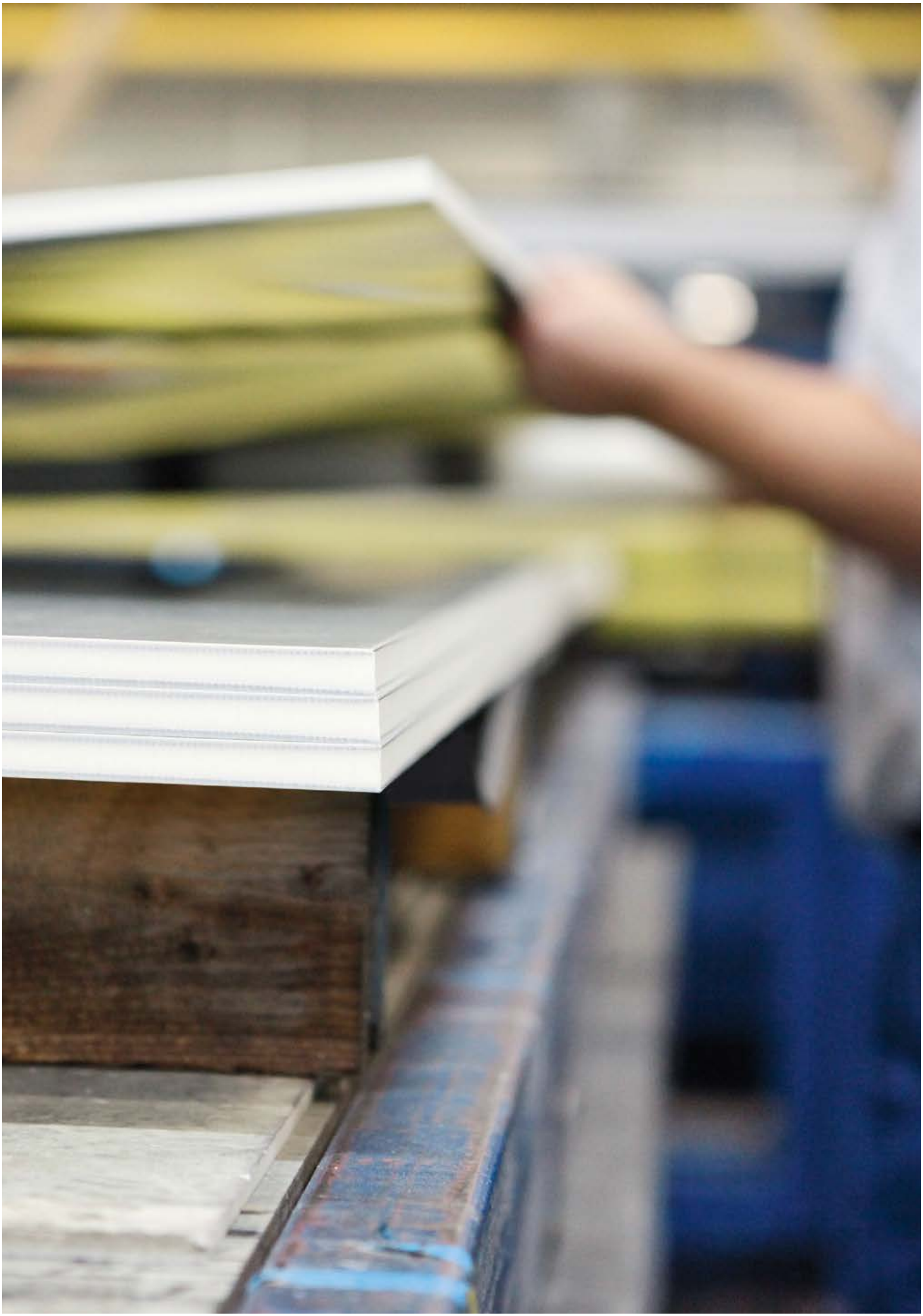
UP TO 1,500 USES

Moisture penetration not only affects the longevity of plywood panels – it also spoils the concrete finish.

alkus® solid plastic panels are immune to the common causes of plywood damage: they last up to thirty times longer than many plywood panels – over 1,500 uses of the same alkus® solid plastic panel have been documented.

+ No shrinking, swelling or rotting
+ No moisture absorption
+ No irregularities (ripples)
+ No discolouration of the concrete
+ No delamination
+ High resistance to UV rays
+ High abrasion resistance
+ High resistance to acids, alkalis and chemicals

alkus® solid plastic panels can be nailed, screwed and cut just like plywood – as well as bent, shaped, formed and repaired (with identical material) without any loss of quality. It's a worthwhile investment!



COST CALCULATION

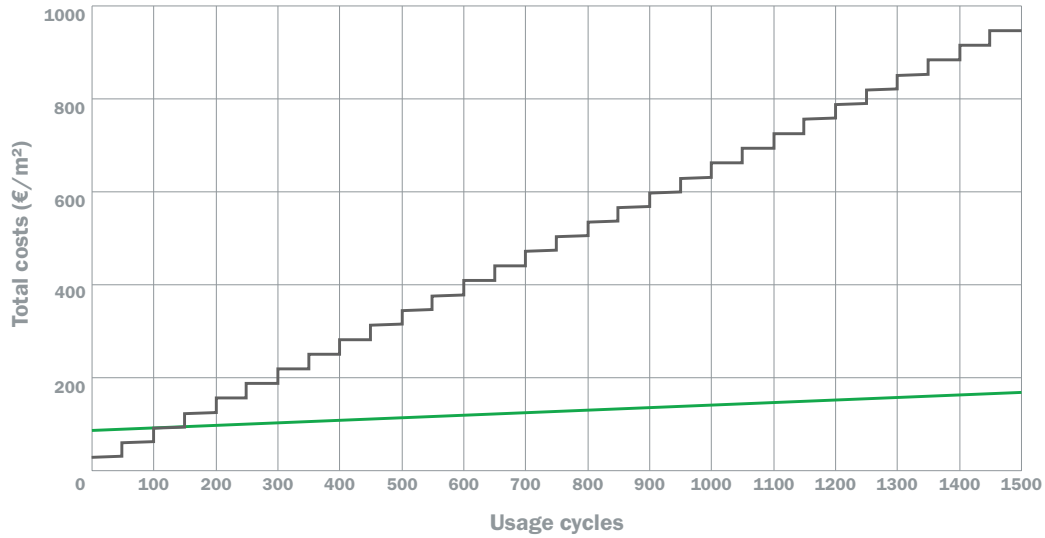
alkus®–QUALITY PAYS OFF!

The alkus® solid plastic panel is an investment – but much more economic over its entire service life when compared to plywood or other plastic boards.

EXAMPLE CALCULATION:	Plywood	alkus®
PRICE (€/m²)	€ 30.00	€ 88.69
USAGE CYCLES (number of concreting applications)	50	1,500
COST PER USAGE CYCLE	60 ct	5.91 ct

Plywood is 10 times more expensive per use!

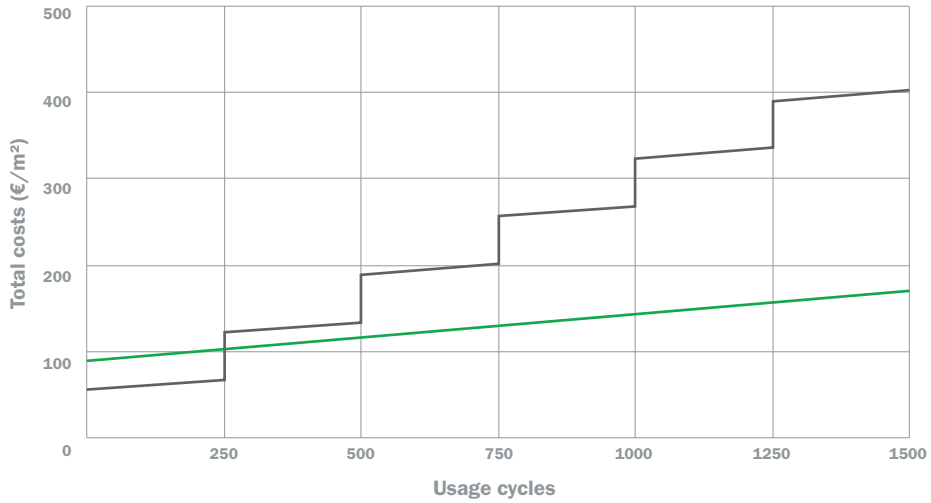
Although the purchase price in the example is more than three times as high, the alkus® panel already pays for itself after 150 uses – from then on the savings increase with each use. And the labour costs for panel changing are not even taken into account in this example!



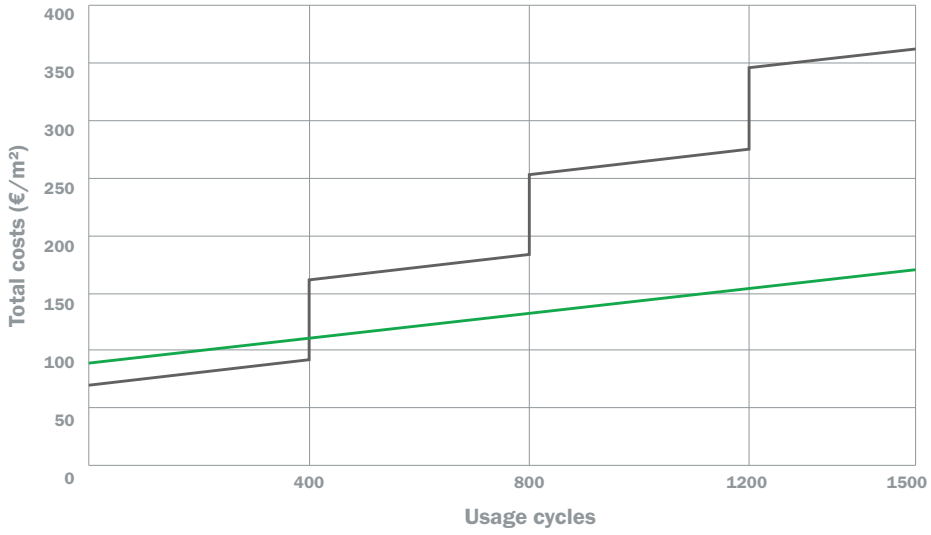
Explanation: Presentation of the total costs per square metre after x usage cycles. Assumption: Purchase prices: alkus® 88.69 €, plywood 30 €. Usage cycles: alkus® without panel changes: 1,500; plywood: 50. For running costs (such as maintenance and cleaning) per use: 5.4 ct (alkus®) and 3.25 ct (wood) were assumed.

alkus® also pays off in comparison to other plastic panels.

The overall calculation for a wood-plastic panel with costs of 55 €/m² and a lifetime of 250 usage cycles shows: Already after the very first panel replacement of the wood-plastic panel, alkus® is the more economic choice! The aforementioned is calculated with running costs per usage cycle of 5.4 ct (alkus®) and 4.8 ct (wood-plastic).



Even compared to a 20 % cheaper solid plastic panel with a service life of 400 usage cycles, the savings are obvious (price per square metre of competitor's product is 70 €/m², running costs of both brands of panels is 5.4 ct/usage cycle):



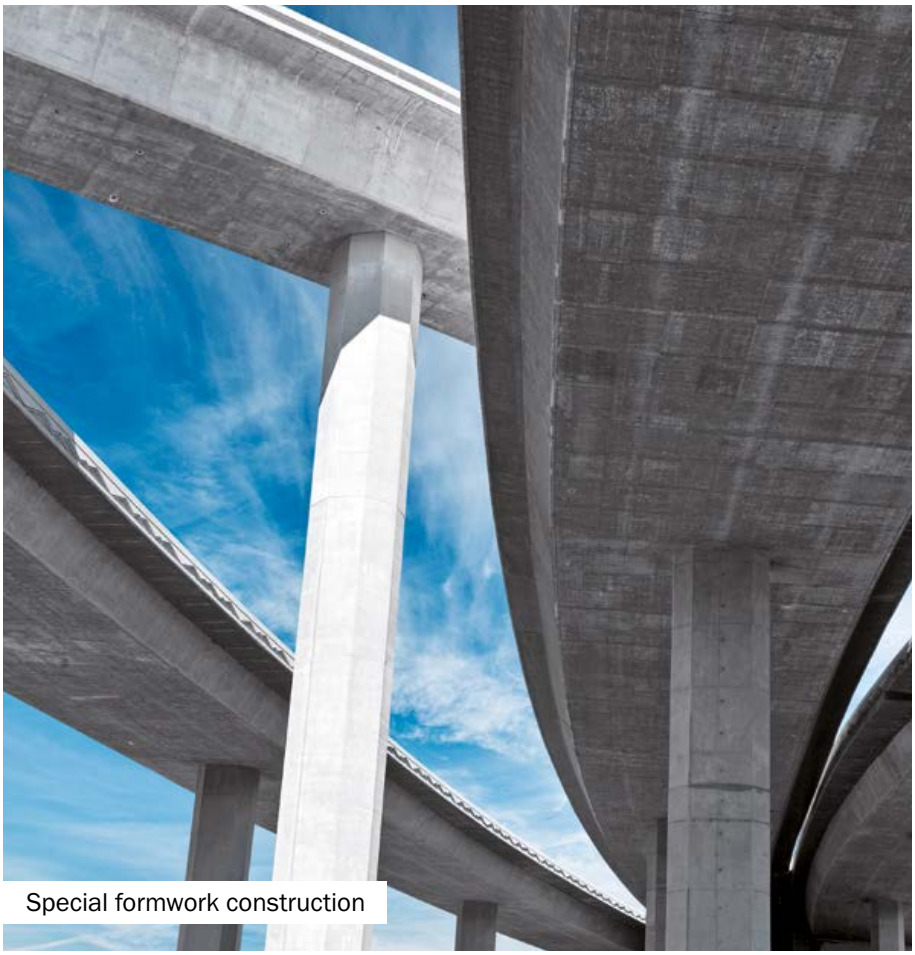
Its long service life makes alkus® simply unbeatable in the long run!
You can easily calculate this for your formwork system and formwork facing at www.alkus.com/calc

Unstruttal bridge (Karsdorf, Germany)

BOUNDLESS POSSIBILITIES

alkus® IS A WORTHWHILE INVESTMENT

FOR YOUR INDUSTRY



Special formwork construction

Architects

Construction industry

Save time, money and energy:
alkus® solid plastic panels offer real advantages in industrial applications.

Formwork manufacturers and rental companies
alkus® solid plastic panels last up to thirty times longer than plywood panels, are more or less wear resistant and can be repaired with identical material. This means the same panel can be hired out over and over again!

Formwork retailers
alkus® solid plastic panels can be tailored to every formwork system. Allow your customers to work with great efficiency and achieve a higher level of customer satisfaction with a whole new range of services!

Tunnel and special formwork construction
alkus® solid plastic panels can be formed to almost any shape and are extremely robust and resistant. Special designed for the task at hand and used for longer without having to be replaced.

Precast concrete industry
alkus® solid plastic panels are ideal for efficient large production runs. They can be supplied in almost any size and shape to meet requirements, are much lighter and easier to handle than steel panels – and correspond to exposed concrete class SB 4.

Construction industry
alkus® solid plastic panels are more durable than plywood panels, but just as easy to use. They are suitable for every formwork system and actually outlast the frame, making them much more efficient and economical than other solutions on the market today.

Architects
alkus® solid plastic panels are very rigid yet second to none in terms of flexibility and adaptability – they ensure high quality surfaces of exposed concrete without visible joints. alkus® solid plastic panels help you to achieve ambitious concrete projects!

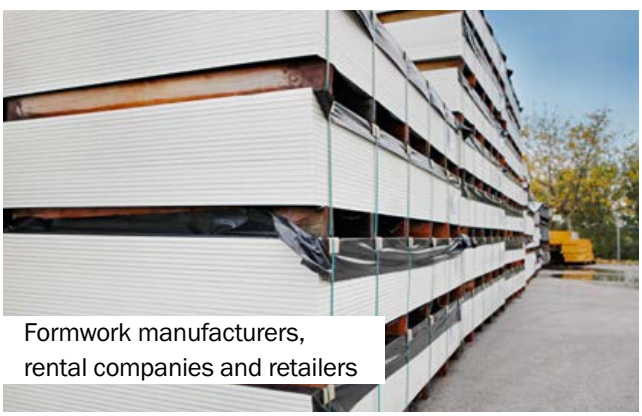
alkus® solid plastic panels were originally developed as concrete formwork panels. However, many other sectors can profit from their positive characteristics:

+ House construction
+ Dike construction
+ Furniture construction
+ Trailer construction
+ Stage construction

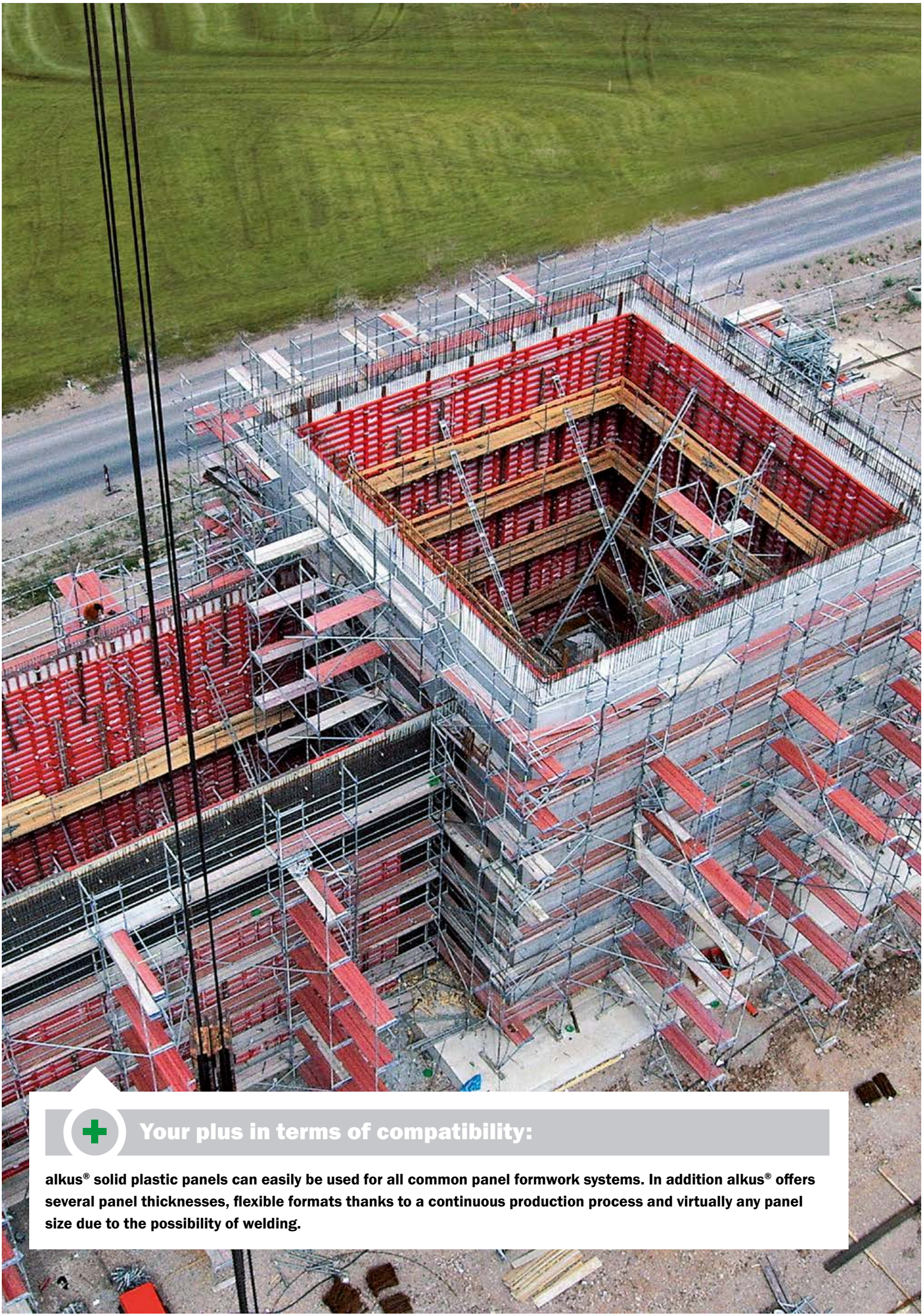
Simply the clever choice wherever durability and flexibility are required!

Tunnel formwork construction

Precast concrete industry



Formwork manufacturers, rental companies and retailers



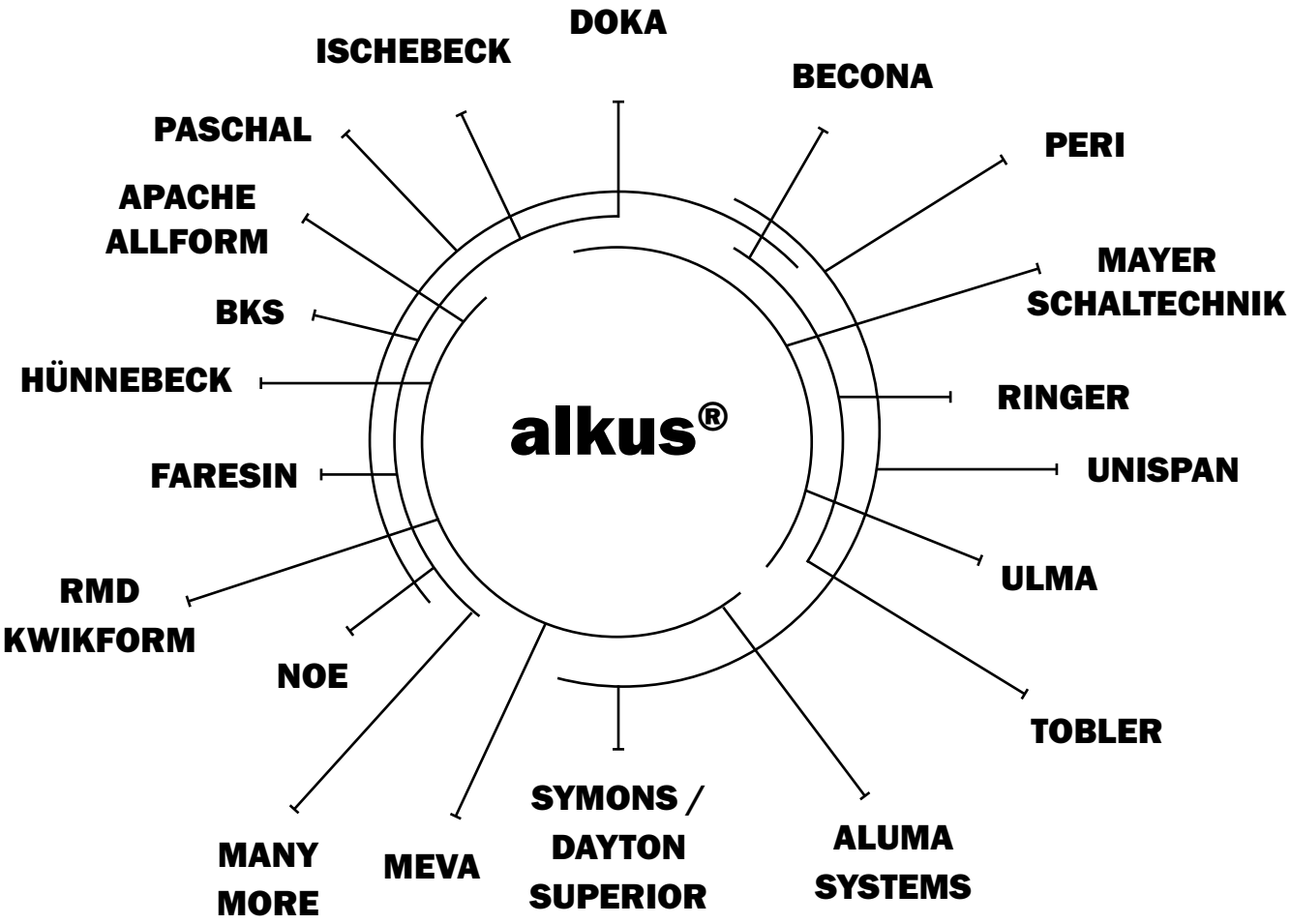
Your plus in terms of compatibility:

alkus® solid plastic panels can easily be used for all common panel formwork systems. In addition alkus® offers several panel thicknesses, flexible formats thanks to a continuous production process and virtually any panel size due to the possibility of welding.

UNIVERSAL APPLICATION

INSTALLATION IN ANY FORMWORK SYSTEM

alkus® solid plastic panels are suitable for every available panel formwork system – irrespective of the manufacturer. They can be riveted or screwed into place from the front or the rear. The alkus® solid plastic panel is delivered ready-to-use for your formwork system (customised for installation dimensions including tie holes and possible welding for large-scale elements).



Installation in common formwork systems
Video: www.youtube.com/alkusAG

REFERENCES

FORMWORK MANUFACTURERS

“alkus® panels allow thousands of uses along with a higher quality of the concrete surface compared to that of the competing products. Highly praised by BKS customers who use alkus®. For Brazil, the high resistance to UV rays is also very important.”

Paulo Braatz,
BKS INDÚSTRIA E COMÉRCIO DE MÁQUINAS,
Brazil

“We have been using alkus® solid plastic panels since the year 2000 as the standard formwork material in all our systems. They last as long as the frames and can be repaired using the same material. In comparison to other formwork panels, the need for expensive panel changes is eliminated.”

Florian F. Dingler,
Managing Director,
MEVA Schalungs-Systeme GmbH, Germany

“We value the good quality of the alkus® solid plastic panel: An improved lifespan compared to plywood, flawless concrete finish and, in addition, the reliable delivery from alkus AG. The product has a solid reputation in our industry.”

Bambos Peyiotis, BESc., P.Eng. ,
Director of Operations,
North Americas Forming & Shoring,
Aluma Systems, USA

“We have been an alkus® distributor for the Benelux and customer since 2006. We are still very happy with the service and support. We chose alkus® for its long life span (the plastic plates that can withstand more than 1,000 pouring cycles) and the 7 year guarantee. A guarantee which neither we, nor any of our customers, have ever had to make use of.”

Marc Kelchtermans,
Managing Director, BECONA NV,
Belgium

CONSTRUCTION COMPANIES

“The longevity of alkus® solid plastic panels is no marketing gag. We have been using alkus® panels for 15 years and are still using the original boards. This is also due to the fact that the areas on the panels that have been repaired are just as durable as the original panel.”

Christian Ill,
Head of Materials and Logistics, i+R Bau,
Austria

“Investing in alkus® panels definitely pays off in longevity of formwork without replacing the face and a better finished product. 10-year old alkus® produces a better concrete finish than brand new formply.”

Ben Roberts,
Vice President of Business Development,
Allen Concrete & Masonry, USA

“The economic aspect is unbeatable. We have been using alkus® panels for more than 11 years without ever having replaced them. With these panels, we can create SB2 quality at any time!”

Herbert Fezer,
Head of Formwork Operations,
LEONHARD WEISS Construction Company,
Germany

“We opted to use alkus® on our jumpform systems; as a means of ensuring a quality product (in terms of surface finish) & the reduction in downtime due to not having to reface formwork panels.”

Jon Croxford,
Head of Delivery,
Careys Civil Engineering,
UK

"You get so many more uses out of an alkus® solid plastic panel compared with plywood panels – and with superior results. There is no need for frequent re-panelling, something that obviously helps to save time and money. We therefore decided to convert our entire formwork portfolio to alkus® some time ago."

Patrick Maly,
Formwork Manager,
STUTZ AG, Switzerland

"The alkus® sealing cone more than met our expectations when put to the test on site. Both the quality of the concrete and the way the alkus® sealing cone works with the proven alkus® solid plastic panel fit the particular requirements of our company."

Dipl.-Ing. (FH) Konstantin Schamne,
Head of Process Engineering, Bold GmbH & Co. KG,
Germany

REFERENCES

PRECAST CONCRETE INDUSTRY / SPECIAL FORMWORK CONSTRUCTION

“We attach great importance to a high surface quality of the exposed concrete. alkus® offers many usage cycles with high-quality exposed concrete and dimensional accuracy.”

Johannes Nitsche,
Head of Production Planning,
Rekers Betonwerk, Germany

“We use alkus® in projects where a special quality of the exposed concrete is required. The main argument for us is that the formwork panels and thus the surface in contact with the concrete can be welded without joints. This is how a jointless concrete face can be realised.”

Mag. Herbert Heigl,
Managing Director,
Heigl BAU GmbH, Austria

“As a precast concrete company, we pour concrete almost every day and have very high usage figures. With the alkus® solid plastic panel, we are much more economical and have virtually no downtime.”

Dr.-Ing. Dipl. Wirtsch.-Ing. Frank Röser,
Managing Director,
RAB Röser Ingenieurbeton, Germany

“We were convinced by the cost-effectiveness of the alkus® solid plastic panel – which is why we carried out our first project with it in 2017. Production of large numbers of precast parts has demonstrated the high load-bearing capacity of the panel. At the same time, the concrete surface quality over the entire series was excellent.”

Günther Grünzinger,
Operations Manager,
Frickbau, Liechtenstein

FORMWORK RENTAL COMPANIES AND PREPARATION SERVICE PROVIDERS

"The alkus® panel might be slightly more expensive to buy but is much more durable and easier to repair. That is more economical for us. Further, it delivers excellent concrete surface quality that our customers really appreciate."

Michael Block,
Head of Construction Equipment,
Friedrich Niemann Gruppe, Germany

"From what we hear from others and what we have seen throughout the world, the alkus® panel really lasts 'forever'. In terms of concrete finish we can already tell that it is far superior to other products in the market."

Daniel Biundo,
General Manager,
GCS Integrated Services,
Australia

"We have been carrying the alkus® panels since 2014 and they have been used from Iceland to Croatia. Many customers see the alkus® panels as an investment that pays for itself in a short time. The work involved in installing and removing the panels as well as for procuring replacement panels is also eliminated."

Jochen Hein,
Managing Director,
JH-ITC, Germany

"We are using the alkus® plastic panel mainly for core wall shutters on our Multiplex jumpform. The better quality of the panel saves us time for replacing plywood, especially in large scale projects."

Ranjeet Sah,
Project Manager,
Multiplex, Dubai,
United Arab Emirates

7 YEARS LONG-TERM WARRANTY

ON THE 100 % WOOD-FREE alkus® SOLID PLASTIC PANEL

Guaranteed unrestricted use with:

> Warranty against rotting
alkus® solid plastic panels do not absorb water, do not swell and do not rot.

> Warranty against surface shape irregularities
alkus® solid plastic panels are resistant to rippling and warping.

> Warranty against discolourations
alkus® solid plastic panels do not cause any formwork skin-related discolouration on the concrete surface.

> Warranty against delamination
alkus® solid plastic panels enable perfect formworking without panel delamination.

> Warranty on bending stiffness
alkus® solid plastic panels remain rigid and permanently resilient, maintaining a consistently high elastic modulus.

> Warranty on UV resistance
alkus® solid plastic panels are resistant to weather-related UV radiation and rain.

alkus® solid plastic panels are 100 % wood-free, environmentally friendly during their production and processing and they are recyclable. All production-related residual materials flow into the respective recyclable waste material cycle.

Warranty terms:

Period of validity
The alkus® long-term warranty on the alkus® solid plastic panel is valid for a maximum period of seven (7) years starting from delivery or receipt confirmation by the original user of the alkus® panel. The warranty is not extended by any warranty claims invoked.

Scope of warranty
The alkus® long-term warranty on the alkus® solid plastic panels guarantees the original user the right to functional formwork panels for normal use in construction. The warranty applies exclusively to the performance characteristics of the alkus® solid plastic panel as defined in the warranty terms. The statutory warranty rights (subsequent performance, withdrawal, damages, reduction) shall not be affected by this warranty. For the duration of the warranty, any defects in the product that can be proven to be due to a material or manufacturing defect shall be remedied. alkus AG undertakes to repair the defective goods at its own discretion, to replace them with defect-free goods or to refund the loss in value. The warranty claim exists only for damage to the object of the contract itself.

Warranty prerequisites
The prerequisite for a warranty claim is that an invoice from an authorized alkus® supplier is presented when the warranty claim is made. If a defect should occur, it must be reported to the supplier in writing within one month of the defect becoming apparent. The invoice and delivery note of the authorized alkus® supplier are proof of your warranty claim.

Warranty exclusion
The alkus® long-term warranty applies exclusively to the use of the solid plastic panels as formwork facing. Excluded in any and all cases are the following:
> Claims for damages or consequential costs derived therefrom
> Expenses for removal and installation
> Improper, non-intended usage and atypical operation
> External violent influences, abnormal environmental conditions, mechanical damage and negligent or wilful destruction
> Non-observance of the instructions for use or unauthorized actions by the customer to the product

Housing complex in Helsinki

Office and commercial building Tic Tric Trac in Zurich

INSTRUCTIONS

INSTALLATION

Installation
Video: www.youtube.com/alkusAG

PANEL INSTALLATION

1

The alkus® solid plastic panels can be installed in any common formwork system in a few steps.

2

Although unnecessary for panel integrity, silicone may be gunned into the corner of the contact surface of the panel formwork to prevent concrete slurry entering the area between the formwork and the panel after installation.

3

The alkus® solid plastic panel is positioned in the panel formwork.

4

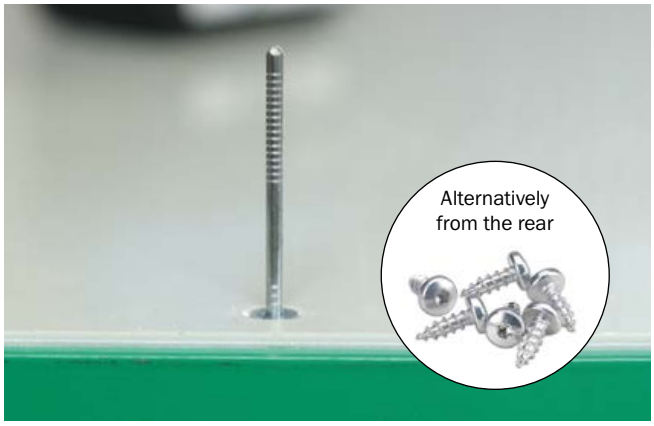
Guides are placed in the tie holes in order to align the panel in the panel formwork.

PANEL INSTALLATION

5

Once the panel has been aligned correctly, the rivet holes are drilled through the panel into the panel formwork. The panel is simultaneously countersunk using a 120° countersink (see page 46).

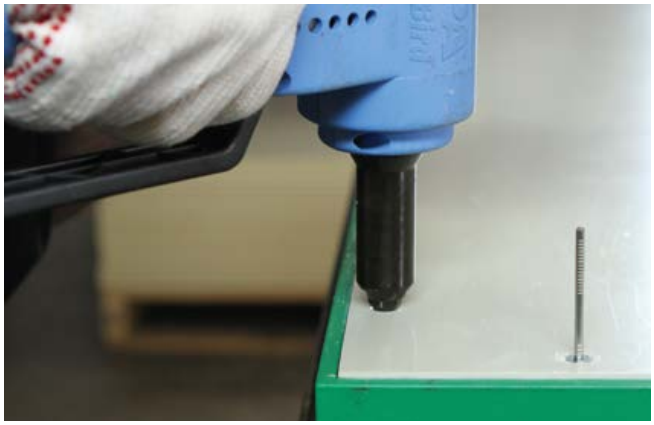
> Drill bit diameter: 5.1 mm
> Rivet diameter – 0.1 mm



6

Steel rivets are used to fix the panel due to its extensive service life. The panel can also be screwed into position from the rear.

> Steel rivet 5 x 20 for alkus® panels 6 – 10 mm thickness
> Steel rivet 5 x 25 for alkus® panels 11.5 – 17 mm thickness
> Steel rivet 5 x 33 for alkus® panels 18 – 22 mm thickness



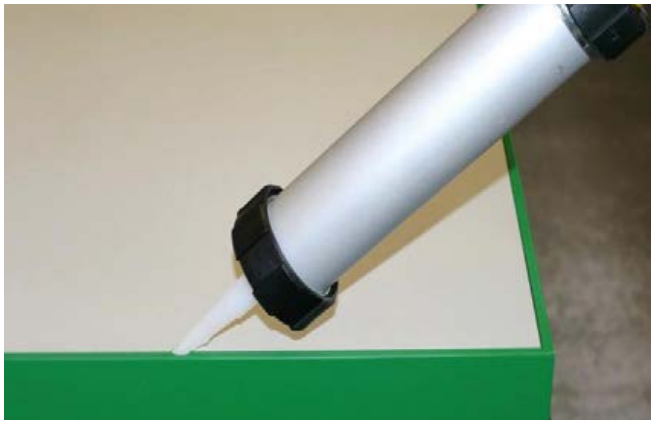
7

Use a pneumatic rivet gun to fix the rivets.

8

Since the alkus® panel neither swells nor shrinks, it is installed ‘flush’ into the panel formwork. This guarantees a perfect joint pattern from the very first use.

PANEL INSTALLATION



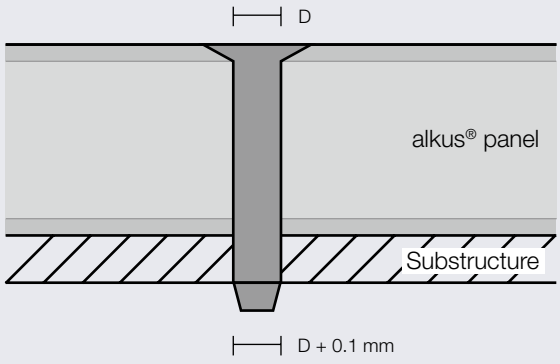
9

The gap between the lip of the panel formwork and the panel can be filled with silicone, but this is not absolutely necessary, as the panel does not absorb water and is resistant to moisture.

For aesthetic reasons, this can be done with gaps >= 2 mm

Installation
Video: www.youtube.com/alkusAG

FIXING

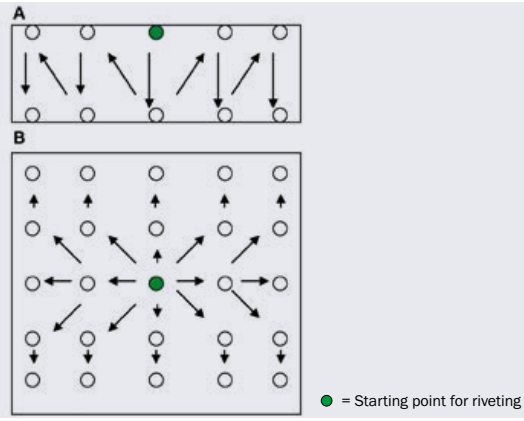


Rivets

Rivets are always inserted on the facing side. The substructure and the alkus® sheet have to be pre-drilled and countersunk. The diameter of the drill hole should equal the rivet diameter plus 0.1 mm.

Important – observe rivet length:

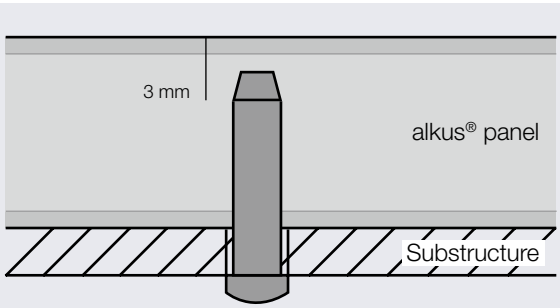
> Steel rivet 5 x 20 for alkus® panels 6 – 10 mm thickness
> Steel rivet 5 x 25 for alkus® panels 11.5 – 17 mm thickness
> Steel rivet 5 x 33 for alkus® panels 18 – 22 mm thickness



Order of riveting steps

In order to prevent the facing from forming waves when riveting it, make sure to always rivet from the inside to the outside. See the examples in drawings A and B.

Please note:
The rivet positions shown in the drawings are only examples and do not show the real rivet positions.

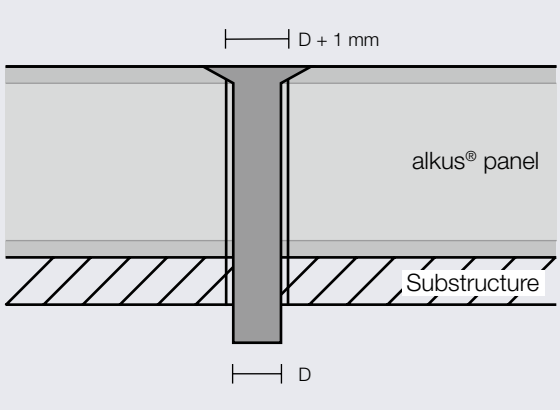


Reverse fixing

If the alkus® sheet is to be reverse fixed from the frame side, a self tapping screw can be fixed using the holes in the frame. The length of the screw should be selected to prevent breaking through the face of the sheet.

Rule of thumb:

> Thickness of substructure + thickness of alkus® sheet – 3 mm.



Screwing the panels from the front face

When the alkus® panel is fixed with screws, the facing needs to be pre-drilled and countersunk – the diameter of the drill hole has to be approx. 1 mm wider than the screw diameter. Screws that are appropriate for the frame should be selected.

SILICON APPLICATION

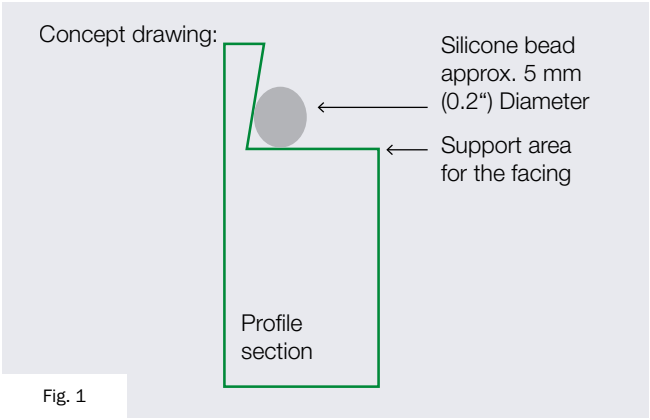
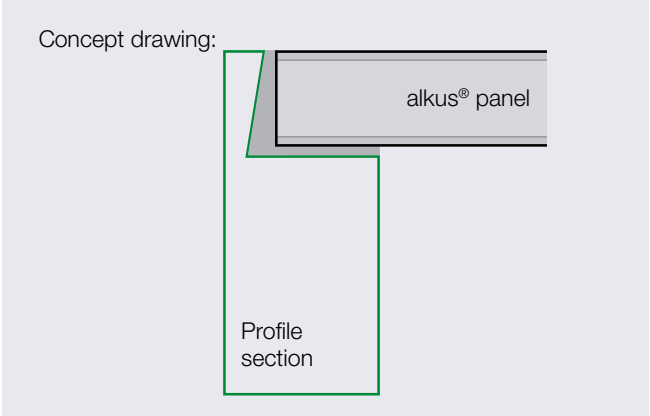


Fig. 1

Fig. 2

Please note that silicone is applied to the frame profile before installing the alkus® panel. A silicone strand with a diameter of approx. 5 mm should be applied uninterrupted around on all 4 sides. See Figs. 1 and 2.

If there is a gap between the panel and the frame lip ≥ 2 mm, alkus recommends filling it with silicone for optical reasons and for an optimal concrete surface.



Note:

The adhesion properties of silicone to alkus® (a polypropylene material) and any powder-coated frame are rather low. Therefore a "wet-on-wet silicone” application is recommended. The result is an "L" of silicone that is trapped under the alkus® panel which improves adhesion.

GENERAL INFORMATION FOR THE ASSEMBLY OF alkus® PANELS

5.1 mm drill bit with countersink

> Spiral drill bit Ø=5.1 mm

> Countersink for rivet holes

> Adjustable collar for countersink

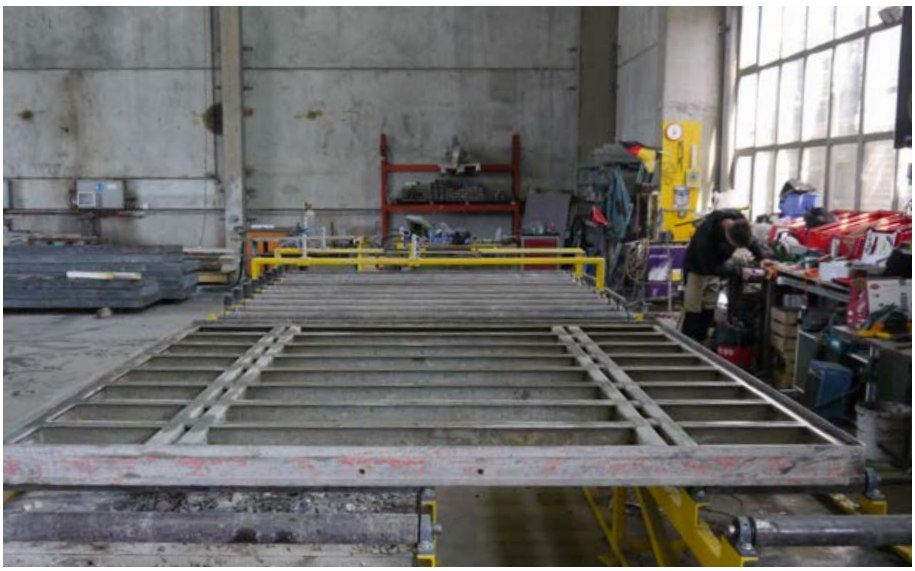
Alternatively, the rivet holes can be drilled in 2 steps using a standard 5.1 mm (0.2“) drill bit and a 120° countersink.

Rivet gun

For installation using rivets alkus recommends to use an electric or pneumatic rivet gun.

Pneumatic silicone gun

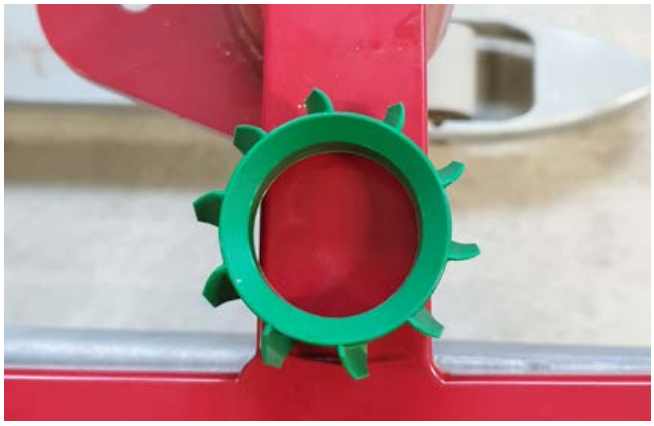
Alternatively, you can apply the silicone using a standard silicone gun.



INSTALLING alkus® SEALING CONE IN PERI MAXIMO FORMWORK

1

Start by punching out the rivets of the old panel and cleaning the formwork system.



2

The alkus® XT adapter serves as a guide for all standard elements*. It is essential to remove all PERI rubber inserts from the formwork system.

*For all MX elements – not for corners and multi-purpose elements!

3

The next step involves gluing the alkus® XT adapter flush to the surface with standard silicone.

It is important that the adapter does not protrude!

4

Now install the panel in the formwork system. When doing so, make sure the silicone is pressed into the corners of the formwork system.

INSTALLING alkus® SEALING CONE IN PERI MAXIMO FORMWORK

5

Then place the panel in the formwork system, drill the rivet holes and secure the panel with steel rivets.

6

Now insert the alkus® sealing cone. The sealing cone is simply inserted by hand with very little force.

Tools are not required!

Should the sealing cone ever need replacing, lever it out with a screwdriver.

7

The formwork system is now ready for use with the alkus® panel.

REPAIR

Repair
Video: www.youtube.com/alkusAG

CONTENTS OF THE REPAIR SET

Please Note:
This quick user guide contains the most important information and hints on the repair of alkus® panels. The original manufacturers‘ operating instructions for the welding device, the paint stripper and the drilling machine are enclosed in the repair kit. Please make sure to read these instructions before starting operation and to observe the specified instructions for safety and use. This will protect you and avoid damage of the equipment. Only genuine spare parts may be used. When using our products, the federal, state and local codes and regulations must be observed.

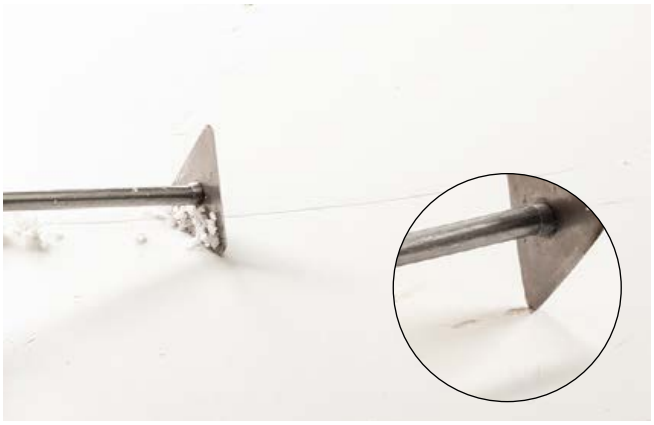
Nr.	Description
1	alkus® repair kit
2	alkus® explorer case
3	alkus® welding device and associated tools
4	Quick welding jet
5	alkus® paint stripper and associated tools
6	Spare blades for alkus® paint stripper
7	alkus® drilling machine
8	alkus® drill stand
9	Claw hammer
10	Plastic hammer
11	Protective gloves
12	Protective glasses
13	alkus® special step drill bit Ø 35/25
14	alkus® cylinder head drill bit Ø 35
15	alkus® scraper
16	Side cutting pliers
17	Depth gauge 6 mm
18	alkus® welding wire 20 m
19	alkus® repair plug 23
20	alkus® repair plug 20
21	alkus® repair plug 17
22	alkus® repair patch Ø 35
23	Tool to remove rivets and replacement head
24	alkus® AS-conical tube Ø 24/29 L=103 mm
25	alkus® alu-cone Ø 20/22 L=70 mm

Repair
Video: www.youtube.com/alkusAG

SCRATCH REPAIR

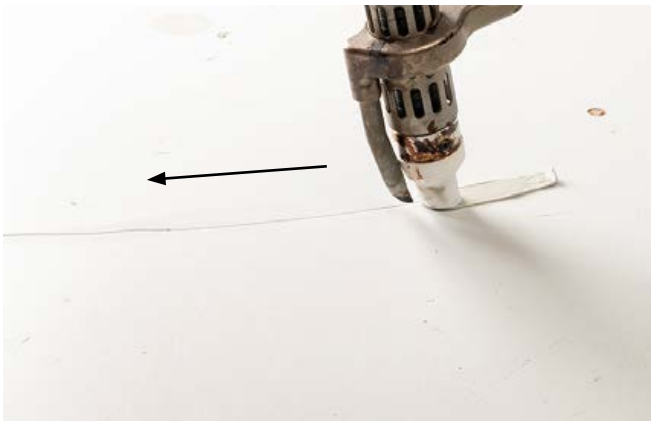
1

Frequent site use inevitably leads to damage to the facing. The alkus® "long-life repair" provides for a repair with identical material and without any loss of quality.



2

The damaged areas are prepaired for repair by removing soilings and formwork oil residues with an alkus® scraper.



3

By using the alkus® welding device (or alternatively hot air welder), the melted polypropylene is applied to the damaged area.

4

Protruding material is planed with an alkus® paint stripper ...

SCRATCH REPAIR

5

... and an alkus® scraper.

Repair
Video: www.youtube.com/alkusAG

REPAIR OF HOLES WITH PLUGS

1

Holes in the alkus® AL panel with a diameter of up to 41 mm can be repaired with an alkus® repair plug.

2

Therefore, the hole is drilled out with an alkus® step drill bit (see page 59).

Important:
Adjust drilling depth to 6 mm.

3

Insert alkus® repair plug and drive it into the hole with a plastic hammer.

4

The remaining protrusion is removed easily with an alkus® paint stripper and alkus® scraper. The plugs are made of polypropylene, just like the panel itself. Therefore, future damage in the area of the plug can also be repaired easily using the alkus® welding device.

REPAIR OF HOLES WITH REPAIR PATCHES

1

Alternatively, holes in the alkus® panel up to a diameter of 41 mm can be repaired with alkus® repair patches.

2

To do so, the hole is drilled out with an alkus® cylinder head drill bit (see page 59).

Important:
Set the drilling depth to 6 mm.

3

Insert the alkus® repair patch (see page 59) and knock it into the hole with a plastic hammer.

Important:
The alkus® repair patch is slightly higher than the upper surface edge of the alkus® panel.

4

Weld with the alkus® welding device.

Note:
Make sure that the hot air nozzle for preheating is guided along the contour of the patch.

REPAIR OF HOLES WITH REPAIR PATCHES

5

Use an alkus® paint stripper to mill down the protruding surface in the repair area.

6

Remove with an alkus® scraper.

TIE HOLE REPAIR

1

As the core and surface of the panel are the same material, tie hole damage can be repaired successfully using identical welding material.

2

The alkus® conical tube is inserted into the tie hole as a shaper ...

3

... and afterwards the damaged area is filled by using the alkus® welding device (alternatively hot air welder).

4

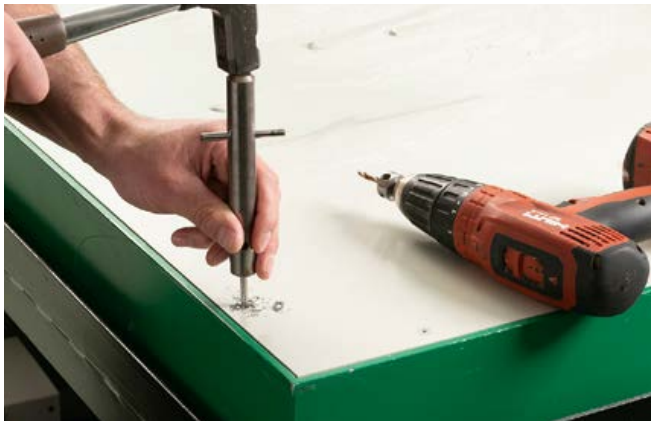
After the alkus® conical tube is removed, the repaired area is smoothened with an alkus® paint stripper and alkus® scraper.

The result: a fully operative tie hole!

REPLACEMENT OF RIVETS

1

Remove damaged rivet head (drill out).



2

Using the rivet-removing tool, drive the rivet out of the frame.

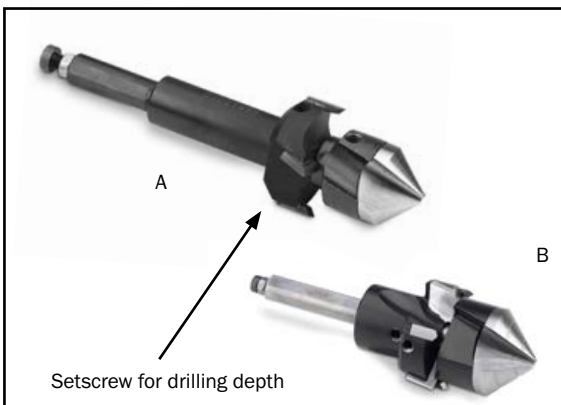
3

Insert new rivet and fix it in place by using a pneumatic or electric rivet gun.

Important – observe rivet length:

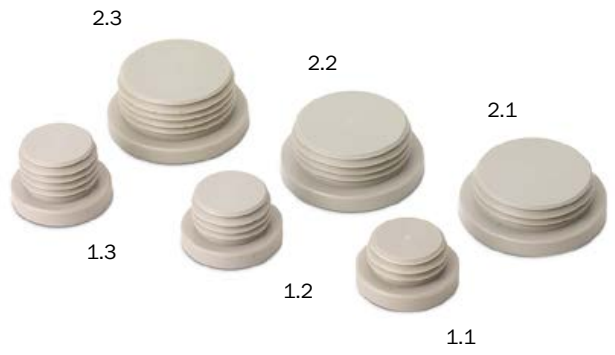
> Rivet 5 x 20 for alkus® solid plastic panels 6 – 10 mm thickness
> Rivet 5 x 25 for alkus® solid plastic panels 11.5 – 17 mm thickness
> Rivet 5 x 33 for alkus® solid plastic panels 18 – 22 mm thickness

GENERAL INFORMATION REPAIR



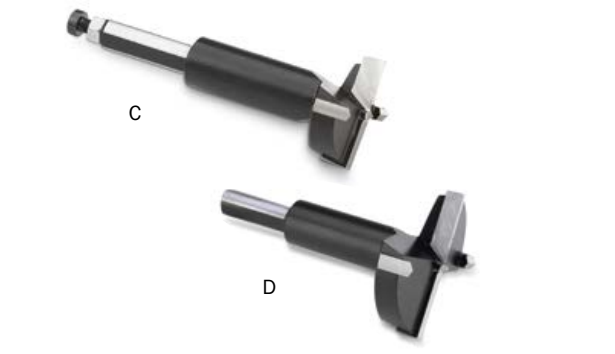
A
alkus® special step drill bit, diameter 35/25 mm for AL with setscrew for drilling depth

B
alkus® special step drill bit, diameter 51/41 mm for AL with setscrew for drilling depth



1
Diameter 35 mm/25 mm
1.1 Repair plug 17 mm, for alkus® AL 12,9 – AL 17
1.2 Repair plug 20 mm, for alkus® AL 18 – AL 20
1.3 Repair plug 23 mm, for alkus® AL 22 – AL 27

2
Diameter 51 mm/41 mm
2.1 Repair plug 17 mm, for alkus® AL 12,9 – AL 17
2.2 Repair plug 20 mm, for alkus® AL 18 – AL 20
2.3 Repair plug 23 mm, for alkus® AL 22 – AL 27



C
alkus® cylinder head drill bit, diameter 35 mm for AL and GM with setscrew for drilling depth

D
alkus® cylinder head drill bit, diameter 51 mm for AL and GM with setscrew for drilling depth

3
Diameter 35/25 mm
Repair patch, for alkus® solid plastic panel AL and GM

4
Diameter 51/41 mm
Repair patch, for alkus® solid plastic panel AL and GM

GENERAL INFORMATION REPAIR

Observe the following safety information regarding these listed items:

> Use protective glasses when working with these tools.

> A hex screwdriver 3 mm is needed to adjust the drilling depth.

> Ensure the drill bit is centralised in the chuck.

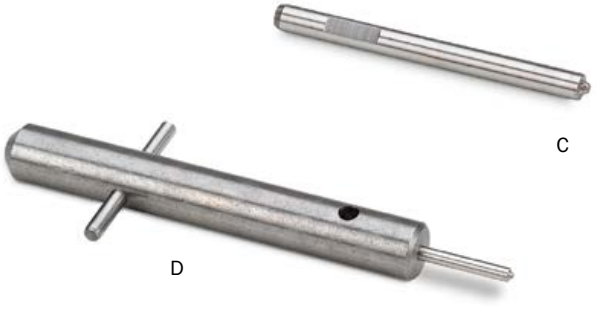
> When fixing the drill bit, ensure the chuck is fully tightened.

> The tool should be used with max. 2500 rotations per minute and with max. 1.2 m/min. feed motion.

Note:
The desired result can only be achieved with original welding wire from alkus; this is due to the fact that the material is 100% identical.

A
alkus® alu-cone, diameter 20/22 mm,
length 70 mm

B
alkus® AS-conical tube, diameter 29/24 mm,
length 103 mm



C
Replacement head

D
Tool to remove rivets


alkus
INNOVATIVE SYSTEMS
Band links
belt left
ruban à gauche
Band rechts
belt right
ruban à droite


VOLLKUNSTSTOFFPLATTE

CLEANING

Cleaning
Video: www.youtube.com/alkusAG

CLEANING SMALL SCRATCHES AND RUST

1

Scratches and excess material of between 0.5 mm and 1.0 mm can be removed using an alkus® scraper.

2

The alkus® scraper can also be used to remove residues of rust adhering to small areas of the panel.

3

In the case of large-area rust residues, the alkus® panel can alternatively also be cleaned with the rotation cleaner.

4

Note:
Correct storage of the frame elements, e.g. with stacking aids/spacers, can minimize rust buildup.

CLEANING CONCRETE RESIDUE

1

alkus® concrete scraper

Note:
If shavers are used, then care should be taken that the alkus® panel is not scratched. In case of adhesion of larger quantities of concrete, the panel can be cleaned with the alkus® concrete scraper.

CLEANING WITH THE HIGH PRESSURE WASHER

1

The alkus® solid plastic panel can be cleaned with a high pressure washer.

2

Up to 1000 bar / 14,500 psi

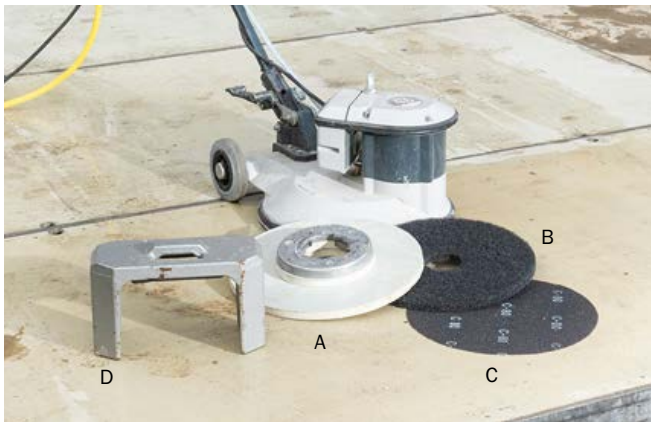
3

Minimum distance: > 30 cm (1‘) max. 1000 bar (14500 psi)

Additionally, a 'dirt blaster' or rotary nozzle is recommended.

Note:
If damage is caused to the alkus® panel by high-pressure cleaning, then the spraying pressure or the distance must be adjusted.

CLEANING WITH THE ROTATION CLEANER



1

Cleaning pads are used when cleaning with the rotation cleaner. For heavily soiled panels an abrasive cleaning grit should be used as well.

A alkus® drive disc incl. hook-and-loop fastener
B Cleaning pad for the rotation cleaner
C Abrasive cleaning grit
D Additional weight

2

The process is made more efficient by applying additional weight.

3

In order to flush off the abrasive material and dirt out of the cleaning area and to keep the cleaning pad and abrasive cleaning grit free of build-up, it is recommended to rinse with water. Cleaning not only removes dirt and concrete residues, it also smoothes nail and scratch protrusions.

4

A further positive effect is the polishing of the alkus® surface, which then results in reduced concrete adhesion when stripping the formwork. As a final step, the dirty water is drawn off with the water squeegee.

Cleaning
Video: www.youtube.com/alkusAG


alkus® VOLLKUNSTSTOFFPLATTE
DIE CLEVERE WAHL
www.alkus.it

RECOMMENDATION FOR PREPARATION OF alkus® FOR SB3 APPLICATION

To fulfil SB3 requirements, it is imperative that the surface of an alkus® formwork panel be pre-treated (matted) prior to the first concreting operation. This recommendation document is intended to serve as a guideline. All information is provided without warranty. The alkus® panel contributes just one part to the whole when producing a good-quality fair-faced concrete surface. Other factors, such as concrete formulation, release agent, release agent application, etc., also have a considerable influence. If you have any questions, we will be happy to advise you at any time so that you can successfully create the desired exposed concrete surface.

1

Align alkus® panel and clean from impurities such as chips, dirt or other impurities (with air supplying device if this is available).

2

Prepare rotation cleaner with additional weight and abrasive cleaning grit 320 incl. water supply.

3

Pretreat the surface several times with rotation cleaner (both lengthwise and crosswise). This step must be carried out "wet", i. e. with water being continuously applied.

RECOMMENDATION FOR PREPARATION OF alkus® FOR SB3 APPLICATION

4

Using a new, clean water squeegee, remove water residues until the surface is completely dry. Attention: Do not walk on the pretreated areas with your shoes on!

5

Using a high-pressure sprayer with stainless steel nozzle, apply form release agent as a light spray mist (Important: min. 6 bar operating pressure in the sprayer and spray mist). It should be noted that no long storage with form release agent is allowed due to the fact that dust and other dirt particles can collect on the surface and affect the concrete surface.

6

Since the form release agent was applied as a spray mist using a high-pressure sprayer , there are no further steps before concreting. In case of doubt and if the amount of form release agent is too high, remove the excess form release agent evenly and in one direction with the water squeegee (Caution: do not leave streaks on the surface). Attention: see Point 4.

7

Carry out the concreting work.

RECOMMENDATION FOR PREPARATION OF alkus® FOR SB3 APPLICATION

8

When stripping the formwork, make sure that the surface is not scratched or damaged (maintain a distance when lifting with the crane).

9

For SB3 requirements, it is not recommended to use a concrete scraper to remove concrete residues. Rather, use a high-pressure cleaner to remove concrete residues (up to max. 1,000 bar / 14,500 psi pressure). It is recommended to use a rotating nozzle. The pressure must be matched to the nozzle in order to avoid surface damage to the alkus® panel.

10

After each stripping of a building element, it is strongly recommended to clean the formwork facing again (repeat Points 3 – 6).

Important: Handling must be carried out meticulously and cautiously, otherwise scratch damage may be incurred on the surface. Such scratches will be visible in the finished concrete face (e. g. pencil marks or shoe prints). We will be happy to advise you regarding your fair-faced concrete project.


alkus® VOLLKUNSTSTOFFPLATTE
DIE CLEVERE WAHL

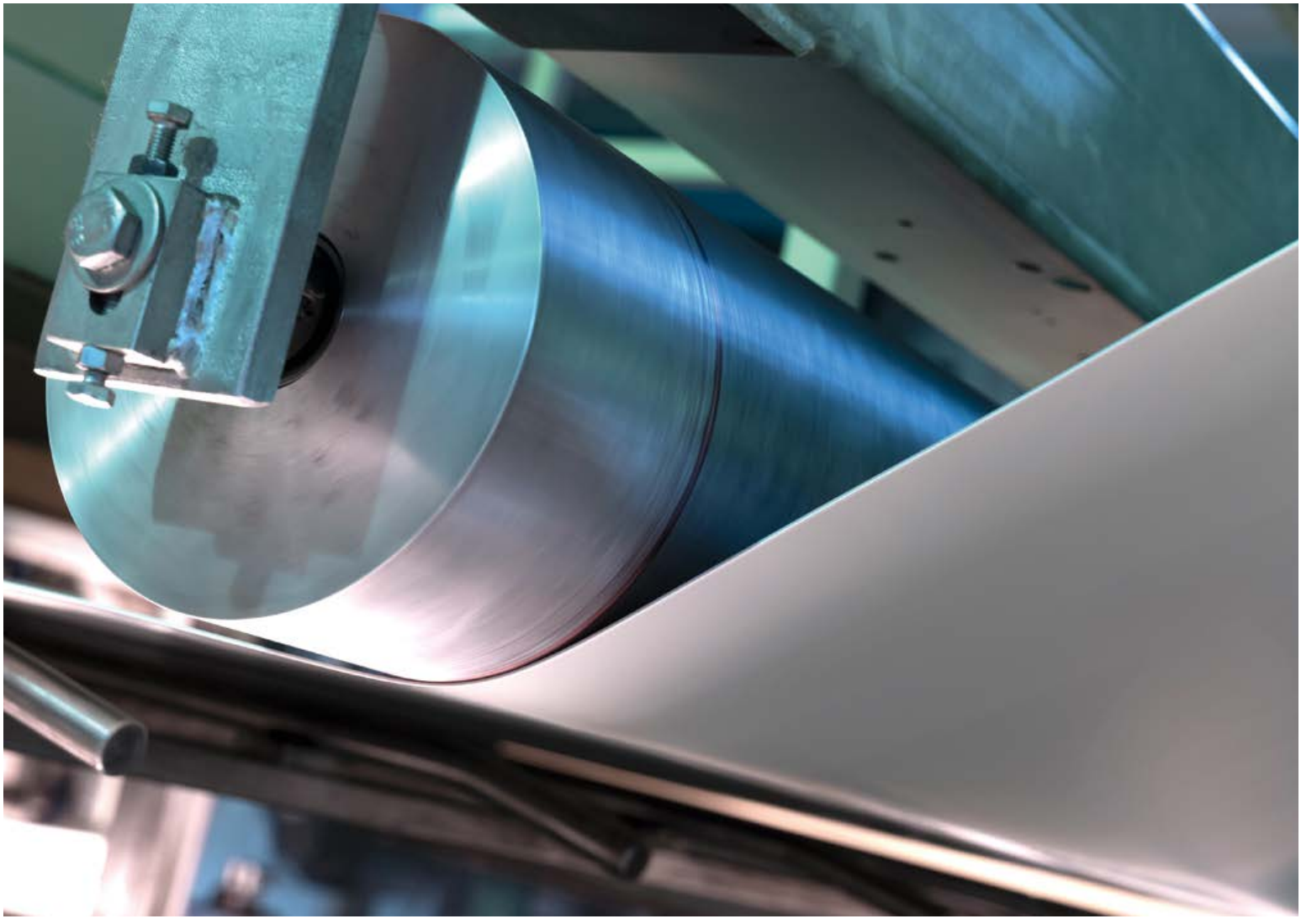

alkus® VOLLKUNSTSTOFFPLATTE
DIE CLEVERE WAHL
www.alkus.it


alkus

TECHNOLOGY

TECHNOLOGY

Production site in the Czech Republic



TECHNICAL CHARACTERISTICS

Main parameters		Glass fibre reinforcement		
Type of panel		**GM 6**	**GM 10**	**GM 12,5**
Reference thickness (mm)		5.7	10.0	12.5
Tolerance in thickness (mm)		+0 / -0.6		
Weight (kg/m²)		5.6	9	10.6
Maximum production width (mm)*1)		1200		
Maximum production length (mm)*1)		4000		
Module of elasticity (3-Points)	longitudinal	4430	3650	2900
21 °C (N/mm²)	diagonal	2800	2200	2000
Tensile strength	longitudinal	110	80	69
21 °C (N/mm²)	diagonal	68	54	41
Shear resistance (N/mm²)		> 6		

Thermal properties	Glass fibre reinforcement
Thermal conductivity (W/(mK))	0.12
Thermal expansion coefficient (23 °C - 50 °C), (10EXP-6 m/(mK))	70
Temperature range	-20 °C - +90 °C

Other properties	Glass fibre reinforcement
Water absorption	0 %
Nail holding ability	comparable with plywood sheets coated with phenolic resin
Scratch resistance (N)	0.7
Abrasion resistance (AT 1/Rot.)	> 28,000
Surface hardness	75
Inflammability	B2
Processing	On site: like plywood Industrial production: with optimized cutting and drilling geometries

The data presented in this section are to be seen as a guide and may vary depending on the process method and test specimen used. The suitability of a material for a specific area of application must be checked by the processor or end user. All technical specifications are provided only as a guide for planning purposes. They do not constitute a guarantee of specific properties or qualities.

*1) Special dimensions on request. Panels wider than 1370 mm / 53 15/16 inch (AL) and 1200 mm / 47 1/4 inch (GM) are welded together using two or more panels.

Aluminium reinforcement										Norm
AL 10	**AL 11**	**AL 12,9**	**AL 15**	**AL 17**	**AL 18**	**AL 19**	**AL 20**	**AL 22**	**AL 27**	
10.0	11.0	12.9	15.0	17.0	18.0	19.0	20.0	22.0	27.0	
+0/-0.6										
8	8.4	10.5	11.5	12.5	13	14	14.5	15.5	19.6	ISO 845
1370										
4000										
6650	6100	5650	5400	5850	5500	5300	5100	4600	3900	ISO 178
45	42	36	37	44	43	42.5	42	40	33	ISO 178
> 6										EN 789

Aluminium reinforcement	Norm
0.13	EN 12667
42	DIN 53752
-20 °C - +90 °C	ISO 75

Aluminium reinforcement	Norm
0 %	ISO 62
comparable with plywood sheets coated with phenolic resin	
0.5	DIN 53799
> 11,000	DIN 53799
68	ISO 868
B2	DIN 4102
On site: like plywood Industrial production: with optimized cutting and drilling geometries	

Olma Neuland project, St. Gallen, Switzerland


WOLFF

APPLICATION INSTRUCTIONS

Nailing

As easy as it may be to hammer nails into plywood, a major disadvantage is always visible on the rear: the veneer cracks and starts to flake off, allowing moisture and release agents to penetrate the panel. The biodegradable release agent becomes contaminated by airborne particles, resulting in mildew, which will rot and destroy the veneer layers.

alkus® solid plastic panels can be nailed into place just like plywood, but without the veneer cracking and flaking off, thus eliminating the risk of mildew. The tensile strength has, of course, been confirmed by comparative tests carried out with plywood.

Recommendations for nailing

As the alkus® solid plastic panels can be nailed in place just the same as plywood, there are some handy tips and tricks for the treatment of holes below. We recommend you to use a hammer to level out the raised rim around the edge of the hole after removing a nail. This ensures a smooth and flat surface, and neither water nor concrete slurry can escape from the hole. The penetration of water will not cause alkus® solid plastic panels to fail or rot.

Sawing

alkus® solid plastic panels can be sawn with common woodworking machines. If the work is carried out too slowly, there is a risk of lump formation. Therefore, always work swiftly. See cutting parameters page 83.

Applying concrete release agents

Effect of water-soluble release agents
Water-based release agent emulsions, in particular, have a tendency to allow the release agents to drain off (roll off), thus preventing the formation of a release film. When applying water-soluble release agents, the release film at the top edge of the formwork may be washed off if the formwork is filled with concrete via crane buckets. This results in concrete adhesion, as the release film no longer exists. To achieve optimum concrete surfaces, we recommend that you pre-treat the face of the formwork directly prior to setting.

This pre-treatment involves applying a very thin layer of a concrete release agent. Experience has shown that this should be carried out before each application.

Handling the release agent
Since alkus® solid plastic panels absorb neither water nor formwork oil, it is not wise to oil them after stripping the formwork. Experience has shown that the panel formwork and the face of the formwork should be pre-treated prior to each cast. alkus therefore recommends a solvent-based concrete release agent. The excessive application of solvent-based release agents will result in separating layers that are too thick and have the tendency to stick. The further application of release agents depends on the respective construction site conditions.

Application quantity
Only apply a very thin layer of the release agent to ensure the solvent evaporates immediately. A very thin film remains on the surface. We therefore recommend the use of a special stainless steel nozzle that produces a very fine spray mist for a longer period of time. Consumption: approx. 1 ltr for 80 m^2.

Formwork wax
Liquid formwork wax is recommended for any type of formwork. It is either sprayed evenly onto the parts of the formwork which are **NOT** in contact with the concrete or applied with a brush or sponge. When working with elements, i.e. for wall and slab formwork, we also recommend that you spray the element stack all the way around.

It must be ensured that the formwork skin in contact with the concrete does not come into contact with the formwork wax in any way.

The face of the formwork should be treated with the recommended concrete release agent as usual, as residual wax on the concrete can impair finishings.

Caution: the concrete release agent should not be stored in galvanised containers.

Cleaning alkus® solid plastic panels after stripping the formwork

Basically, carbide tools (e.g. scrapers with tungsten carbide blades, etc.) should not be used to clean the panels. Use a rotation cleaner or, if necessary, a concrete scraper to dislodge any stubborn concrete residue after cleaning the formwork.

a) Manual cleaning
Trowels, spatulas or hard pieces of wood are suitable – when held flat – to remove concrete residue the next day around the level marking the top edge of the concrete. Any remaining concrete can then be removed by hand using protective leather work gloves.

b) Cleaning with a rotation cleaner
Only use a rotation cleaner fitted with a plastic pad in order not to damage the face of the formwork.

c) Cleaning with a high-pressure washer
We recommend a high-pressure washer with up to 1000 bar operating pressure as the most modern and efficient way to clean the elements. Water consumption is extremely low when using this method of cleaning. After concreting, this device can also be used to wash down the formwork.

d) Industrial cleaning
When using a cleaning machine, ensure that appropriate plastic brushes are fitted for cleaning the face of the formwork.

Recommendations for installing the panels

Screw attachment
Due to temperature exposure, the screw heads may be sheared off by the aluminium layer in alkus® solid plastic panels. Therefore, the borehole should be drilled roughly 1 mm larger than the diameter of the actual screw.

Due to the long service life of alkus® solid plastic panels, we recommend that you rivet them (stainless steel blind rivets with countersunk head, D = 5 x 20 mm for panel thicknesses of 6 - 10 mm, D = 5 x 25 mm for panel thicknesses of 11.5 - 17 mm and D = 5 x 33 mm for panel thicknesses of 18 – 22 mm).

Furthermore, we recommend that you keep the gap between the edge and the alkus® solid plastic panel as small as possible. Any gaps greater than 2 mm between the leading edge of the elements and the alkus® solid plastic panel can be closed with transparent silicone.

MACHINING AND PROCESSING

Panel thickness

> alkus® GM
Panel thickness from 6 to 15 mm
> alkus® GM
Panel thickness from 10 to 27 mm

Manufacturing options for unprocessed panels

> Thickness tolerance: +0/-0.6 mm
> Width tolerance: +3/-0.0 mm
> Length tolerance: (< 3000 mm) +6/-0.0 mm
> alkus® GM
Width: 1200 mm
Length: endless
> alkus® GM
Width: 1260/1370 mm
Length: endless
> Longitudinal cut with milling cutter
> Cross-section with flying saw or milling cutter
> Slight deviations in the cross sectional appearance due to different tools

Manufacturing options for processed panels

> Thickness tolerance: +0/-0.6 mm
> Width tolerance: (max. 2800 mm) +/-1.0 mm
> Length tolerance: (< 3000 mm) +/-1.0 mm
> Length tolerance: (3001 – max. 5300 mm) +/-2.0 mm
Tailored to installation dimensions, including tie hole, drill holes and any welded areas. Panels having a width exceeding 1370 mm (AL) or 1200 mm (GM) are produced by welding several panels together.

Information to note at the machining centre:
> Welding unit 4000 x 5300 mm, max. weld seam length 4000 mm
> CNC 2800 x 5300 mm
> Saw stack batch processing possible, approx. 30 - 50 mm in the joint

Information to note during panel cutting (circumferential):
> CNC machining centre
> Tool: form cutting tool
> Diameter: 18 mm
> Rotational speed: 18,000 rpm
> Feed rate: 18 m/min

Prefabrication and holes
(tie holes, drill holes, special form cuts etc.)
> CNC machining centre
> Tool: drill milling cutter
> Diameter: 12 mm
> Rotational speed: 3000 rpm
> Feed rate: 6 m/min
> Tolerance: +0.5/-0.0 mm
> Depth tolerance of panel top side: +0.25/-0.25 mm
> Depth tolerance of panel bottom side: +0.6/0.0 mm

Special designs of tie holes (rabbet on the bottom side)
> CNC machining centre
> Tool: rabbet router
> Rotational speed: 6000 rpm
> Feed rate: 10 m/min
> Tolerance: +0.6/-0 mm

Open area for weld seam (tie rod sleeve on frame)
> CNC machining centre
> Tool: chamfer milling cutter – drilling and chamfering in a single operation
> Rotational speed: 18,000 rpm
> Feed rate: 6 m/min

Drill holes for riveting
> CNC machining centre
> Tool: rivet hole borer incl. countersinker
> Rotational speed: 4 – 6000 rpm
> Feed rate: 3 m/min
> Tolerance: +0.25/-0.25 mm

V-groove cutter for special applications (corners, etc.)
> CNC machining centre
> Tool: V-groove cutter
> Rotational speed: 18,000 rpm
> Feed rate: 9 m/min

Cutting parameters
> Saw
> Tool: saw blade
> Diameter: 450 mm
> Number of teeth: 21
> Rotational speed: 2900 rpm
> Speed: 68 m/sec
> Feed rate: 15 – 20 m/min

Welding of panels
> Automatic welding unit
> Maximum welding seam length: 4000 mm
> Technique: V-groove or blunt seam
> Tolerance of welding seam offset of V-groove: +0.35/-0.35 mm (concrete side)
> Tolerance of welding seam offset of blunt seam: +0.5/-0.5 mm (concrete side)

Suction system
> One suction system per machining centre
> Suction capacity: 5000 m^3/h
> Air speed in suction duct: approx. 25 - 30 m/sec

SAFETY INFORMATION

Concerning the handling of alkus® GM/AL panels

1. Identification of the substances and of the company:

> 1.1 Trade name: alkus® GM Panel or alkus® AL panel
> 1.2 Application: e.g. in concrete formwork systems as facing for slab forms or wall forms
> 1.3 Supplier: alkus AG

2. Physical description/Properties/ Information on ingredients

> GM panel
Multi-layer sandwich panel made of polypropylene foam and glass fibre enhanced-polypropylene-surface layers.

> AL panel
Multi-layer sandwich panel made of polypropylene foam, aluminium sheets, and polypropylene surface layers.

Appearance
flat sheet panel ranging in thickness from 6 – 15 mm (GM panel)
Flat sheet panel ranging in thickness from 10 – 27 mm (AL panel)
Colour
mainly grey or otherwise coloured
Odour
odourless
Boiling point
not applicable
Vapour pressure
not applicable
Melting point
> 155 °C
Solubility in water
insoluble
Specific gravity
depends on thickness of the panel
Flamability in air
fine airborne dust, generated when the product is machined, can ignite spontaneously
Auto-ignition temperature
> 300 °C
Fire class
B2

3. Health hazard information

This product is not classified as hazardous. During handling electrostatic discharge may occur. Aluminium dust and/or a mixture of molten metal and water may be explosive. The common limit values for dust release should be observed. These are written down in the TRGS 900 (MAK values). When sawing, any wood waste must be removed separately due to the fact that sparks can occur during sawing = fire hazard.

Exposure to dust produced from machining the panels may result in the following health effects:

Swallowed
Unlikely to occur, but may cause choking if swallowed
First Aid: drink a glass of water; if still uncomfortable, seek medical assistance

Eyes
Dust, shavings or fine particles may be irritating to the eyes, causing discomfort and redness
First aid: Flush extensively with flowing water to remove particles. If symptoms persist, seek medical assistance

Skin
Skin contact may result in itching and a red rash
First aid: Wash with mild soap and running water

Inhaled
Inhalation of dust, shavings or fine particles may cause irritation of nose, throat or lungs
First aid: Leave dusty area

Chronic effects not known. Advice to doctor: treat as per above information.

4. Flamability/ Fire fighting measures

4.1 The product is flammable but difficult to ignite.
Avoid sparks and sources of ignition in all electrical equipment, including dust extraction equipment.
People must not smoke in storage or work areas.

4.2 Fire fighting measures
Suitable extinguishing media: water in spread jet, dry chemical fire extinguishers (foam/carbon dioxide)
Special exposure hazards: principal toxicants in the smoke are carbon monoxide (CO) and/or carbon dioxide (CO_2).

5. Precautions for use

5.1 Engineering controls
All work with these panels should be carried out in such a way as to minimise the generation of dust, shavings and fine particles. Excessive levels of dust, shavings and fine particles may present a slippage hazard on hard surfaces. Under factory conditions, machining should be done with equipment fitted with exhaust devices. Hand power tools should be fitted with dust bags. Avoid a build-up of dust and keep all work areas well ventilated. They should be cleaned daily and dust/ shavings/fine particles removed by vacuum cleaning or sweeping. Take measures against electrostatic discharge. All equipment must be earthed.

5.2 Personal protection:
General use protective glasses should be used. If dust exposures are not controlled when machining (sawing, routing, drilling etc.) a replaceable filter or disposable half face respirator should be worn. Avoid inhalation of dust or decomposition fumes.
Wear loose, comfortable clothing. Long-sleeved shirts, trousers and comfortable work gloves should be worn if skin irritation occurs. After handling boards, wash with mild soap and water. Do not scratch or rub the skin if it becomes irritated.

6. Disposal considerations

To avoid pollution, off-cuts and general waste material should be placed in containers separate from other waste. The product can be burned according to the local regulations.

7. Other information

For more information about material safety please contact:

alkus AG
Gewerbeweg 15
9490 Vaduz, Principality of Liechtenstein, Europe
Phone: +423 236 0030
E-Mail: mail@alkus.com
www.alkus.com

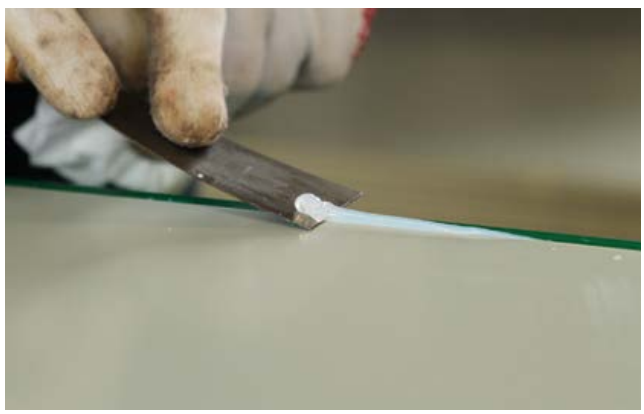
ACCESSORIES

ACCESSORIES

ACCESSORIES

SYSTEMATIC SOLUTIONS
FOR A LONG SERVICE LIFE

alkus® is a system solution for all aspects of formwork. In addition to alkus® solid plastic panels, we also offer a wide range of accessories. This includes all tools, machines and consumables to professionally install, maintain and repair alkus® solid plastic panels. By using original alkus® accessories, you ensure the best working conditions and the maximum service life for your alkus® formwork panels right from the very start. The following accessories are kept in stock by us and can be delivered in the shortest possible time to optimally support your workflow processes.



TOOLS

Item number	Description	Unit	Symbolic image
910 000 191	alkus® paint stripper 230V	1	
910 001 010	alkus® paint stripper 120V	1	
910 000 011	Spare blades for alkus® paint stripper	10	
910 000 192	alkus® drilling machine 230V	1	
910 001 011	alkus® drilling machine 120V	1	
910 001 013	alkus® drill stand	1	
910 000 193	alkus® special step drill bit, diameter 35/25 mm	1	
910 000 194	alkus® special step drill bit, diameter 51/40 mm	1	
910 000 195	alkus® cylinder head drill bit, diameter 35 mm	1	
910 000 196	alkus® cylinder head drill bit, diameter 51 mm	1	

Item number	Description	Unit	Symbolic image
910 000 017	Side cutting pliers	1	
910 000 018	Depth gauge 6 mm	1	
910 000 019	Tool to remove rivets	1	
910 000 023	Head for tool to remove rivets	1	
910 000 197	alkus® scraper	12	
910 000 020	alkus® alu-cone, diameter 20/22 mm, length 70 mm	1	
910 000 024	alkus® AS-conical tube, diameter 24/29 mm, length 103 mm	1	
910 000 029	Adjustable collar for countersink	1	
910 000 028	Countersink for rivethole	1	
910 000 198	Spiral drill bit, diameter 5.1 mm	10	
910 000 199	Claw-hammer	1	
910 000 213	Plastic-hammer	1	

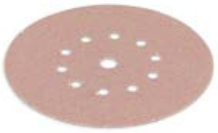
ACCESSORIES

Item number	Description	Unit	Symbolic image
910 002 240	alkus® repair plug 23 mm, diameter 35 mm, suitable for AL 22 to AL 27	25	
910 002 241	alkus® repair plug 20 mm, diameter 35 mm, suitable for AL 18 to AL 20	25	
910 002 242	alkus® repair plug 17 mm, diameter 35 mm, suitable for AL 12.9 to AL 17	25	
910 002 250	alkus® repair plug 23 mm, diameter 51 mm, suitable for AL 22 to AL 27	25	
910 002 251	alkus® repair plug 20 mm, diameter 51 mm, suitable for AL 18 to AL 20	25	
910 002 252	alkus® repair plug 17 mm, diameter 51 mm, suitable for AL 12.9 to AL 17	25	
910 006 002	alkus® repair patch, diameter 35 mm	25	
910 006 003	alkus® repair patch, diameter 51 mm	25	
910 003 041	alkus® welding wire PP, 4 mm, roll à 500 m	1	
910 003 067	alkus® holding welding wire roll	1	
910 000 214	Steel rivet 5 x 20 for alkus® panels, 6 – 10 mm thickness	1000	
910 000 215	Steel rivet 5 x 25 for alkus® panels, 11.5 – 17 mm thickness	1000	
910 000 216	Steel rivet 5 x 33 for alkus® panels, 18 – 22 mm thickness	1000	

Item number	Description	Unit	Symbolic image
910 000 219	Battery powered riveting tool with 2 batteries 230V	1	
910 001 012	Battery powered riveting tool with 2 batteries 120V	1	
910 000 220	Riveting tool, pneumatic-hydraulic	1	
910 000 253	Protective glasses	1	
910 000 092	Protective gloves	1	

CLEANING

Item number	Description	Unit	Symbolic image
910 000 031	Rotation cleaner 400V/50Hz 2000W	1	
910 000 072	Rotation cleaner 120V/60Hz USA	1	
910 000 071	Rotation cleaner 110-115V/50Hz	1	
910 000 078	Rotation cleaner 230V/50Hz	1	
910 000 032	Additional weight for rotation cleaner 22 kg	1	
910 000 021	alkus® drive disc incl. hook-and-loop fastener	1	
910 000 030	Hook-and-loop fastener for the alkus® drive disc	1	
910 000 022	alkus® hose holder, with tap	1	
910 000 003	Cleaning pad for rotation cleaner	5	
910 000 004	Abrasive cleaning grit 60, diameter 406 mm for rotation cleaner	20	
910 000 100	Abrasive cleaning grit 80, diameter 406 mm for rotation cleaner	20	
910 000 101	Abrasive cleaning grit 120, diameter 406 mm for rotation cleaner	20	
910 000 103	Abrasive cleaning grit 180, diameter 406 mm for rotation cleaner	20	
910 000 102	Abrasive cleaning grit 220, diameter 406 mm for rotation cleaner	20	
910 000 104	Abrasive cleaning grit 320, diameter 406 mm for rotation cleaner	20	

Item number	Description	Unit	Symbolic image
910 000 006	alkus® concrete scraper 110/1300 for cleaning panels	1	
910 000 065	alkus® parking facility for rotation cleaner	1	
910 000 221	Cylindrical grinding machine 230V	1	
910 000 113	Sandpaper K80, for cylindrical grinding machine	25	
910 000 114	Sandpaper K100, for cylindrical grinding machine	25	
910 000 115	Sandpaper K120, for cylindrical grinding machine	25	
910 000 121	Sandpaper K150, for cylindrical grinding machine	25	
910 000 120	Sandpaper K180, for cylindrical grinding machine	25	

WELDING DEVICE

Item number	Description	Unit	Symbolic image
910 000 222	alkus® welding device, 230V, 4 mm PP	1	
910 001 014	alkus® welding device, 120V, 4 mm PP	1	
910 000 223	alkus® welding device maxi, 230V, 4mm PP	1	
910 001 015	alkus® welding device maxi, 120V, 4 mm PP	1	
910 000 090	alkus® suspension arrangement, for alkus® welding device	1	
910 000 068	alkus® suspension arrangement, for alkus® welding device maxi	1	
910 000 089	Fein balancer 3.5 – 6.5 kg, for alkus® welding device	1	
910 000 063	Fein balancer 4.5 – 9.0 kg, for alkus® welding device maxi	1	

BELT SANDER

Item number	Description	Unit	Symbolic image
910 000 224	Belt sander universal 230V for scraper	1	
910 000 201	alkus® block ALU for belt sander universal	1	
910 000 202	alkus® holder for block ALU	1	
910 000 225	Tissue sandpaper for belt sander universal K120, 762 x75	1	

alkus® REPAIR KIT 230V

Item number	910 002 000
Description	**alkus® repair kit 230V**
Unit	1

Content

Item number	Description	Unit	Symbolic image
910 000 226	alkus® explorer case	1	
910 000 222	alkus® welding device, 230V, 4 mm PP	1	
910 000 191	alkus® paint stripper 230V	1	
910 000 011	Spare blades for alkus® paint stripper	10	
910 000 192	alkus® drilling machine 230V	1	
910 001 013	alkus® drill stand	1	
910 000 193	alkus® special step drill bit, diameter 35/25 mm	1	
910 000 195	alkus® cylinder head drill bit, diameter 35 mm	1	
910 000 017	Side cutting pliers	1	
910 000 018	Depth gauge 6 mm	1	

Item number	Description	Unit	Symbolic image
910 000 019	Tool to remove rivets	1	
910 000 023	Head for tool to remove rivets	1	
910 000 197	alkus® scraper	4	
910 000 020	alkus® alu-cone, diameter 20/22 mm, length 70 mm	1	
910 000 024	alkus® AS-conical tube, diameter 24/29 mm, length 103 mm	1	
910 000 199	Claw-hammer	1	
910 000 213	Plastic-hammer	1	
910 002 240	alkus® repair plug 23 mm, diameter 35 mm, suitable for AL 22 to AL 27	25	
910 002 241	alkus® repair plug 20 mm, diameter 35 mm, suitable for AL 18 to AL 20	25	
910 002 242	alkus® repair plug 17 mm, diameter 35 mm, suitable for AL 12.9 to AL 17	25	
910 006 002	alkus® repair patch, diameter 35 mm	25	
910 003 020	alkus® welding wire PP, 4 mm, roll à 20 m	2	
910 000 253	Protective glasses	1	
910 000 092	Protective gloves	1	

alkus® REPAIR KIT 120V

Item number	910 002 002
Description	**alkus® repair kit 120V**
Unit	1

Content

Item number	Description	Unit	Symbolic image
910 000 226	alkus® explorer case	1	
910 001 014	alkus® welding device, 120V, 4 mm PP	1	
910 001 010	alkus® paint stripper 120V	1	
910 000 011	Spare blades for alkus® paint stripper	10	
910 001 011	alkus® drilling machine	1	
910 000 013	alkus® drill stand	1	
910 000 193	alkus® special step drill bit, diameter 35/25 mm	1	
910 000 195	alkus® cylinder head drill bit, diameter 35 mm	1	
910 000 017	Side cutting pliers	1	
910 000 018	Depth gauge 6 mm	1	

Item number	Description	Unit	Symbolic image
910 000 019	Tool to remove rivets	1	
910 000 023	Head for tool to remove rivets	1	
910 000 197	alkus® scraper	4	
910 000 020	alkus® alu-cone, diameter 20/22 mm, length 70 mm	1	
910 000 024	alkus® AS-conical tube, diameter 24/29 mm, length 103 mm	1	
910 000 199	Claw-hammer	1	
910 000 213	Plastic-hammer	1	
910 002 240	alkus® repair plug 23 mm, diameter 35 mm, suitable for AL 22 to AL 27	25	
910 002 241	alkus® repair plug 20 mm, diameter 35 mm, suitable for AL 18 to AL 20	25	
910 002 242	alkus® repair plug 17 mm, diameter 35 mm, suitable for AL 12.9 to AL 17	25	
910 006 002	alkus® repair patch, diameter 35 mm	25	
910 003 020	alkus® welding wire PP, grey, 4 mm, roll à 20 m	2	
910 000 253	Protective glasses	1	
910 000 092	Protective gloves	1	


VOLLKUNSTSTOFFPLATTE

CONTACT

CONTACT

HEADQUARTER

alkus AG
Gewerbeweg 15
9490 Vaduz
Liechtenstein

Phone: +423 236 0030
E-Mail: mail@alkus.com

LOCATION USA

alkus North America Inc.
Sales & Marketing USA
62-64 Enter Lane
Islandia NY 11749
USA

Phone: +1 616 490 4174
E-Mail: mail@alkus.com

COOPERATION GERMANY

alkus GmbH & Co. KG
Research & Development
Im Auchtert 8
72186 Empfingen
Germany

Phone: +49 748 598 389910
E-Mail: mail@alkus.de

Feel free to contact us or visit our website for further information.
We look forward to your telephone call and your inquiry!

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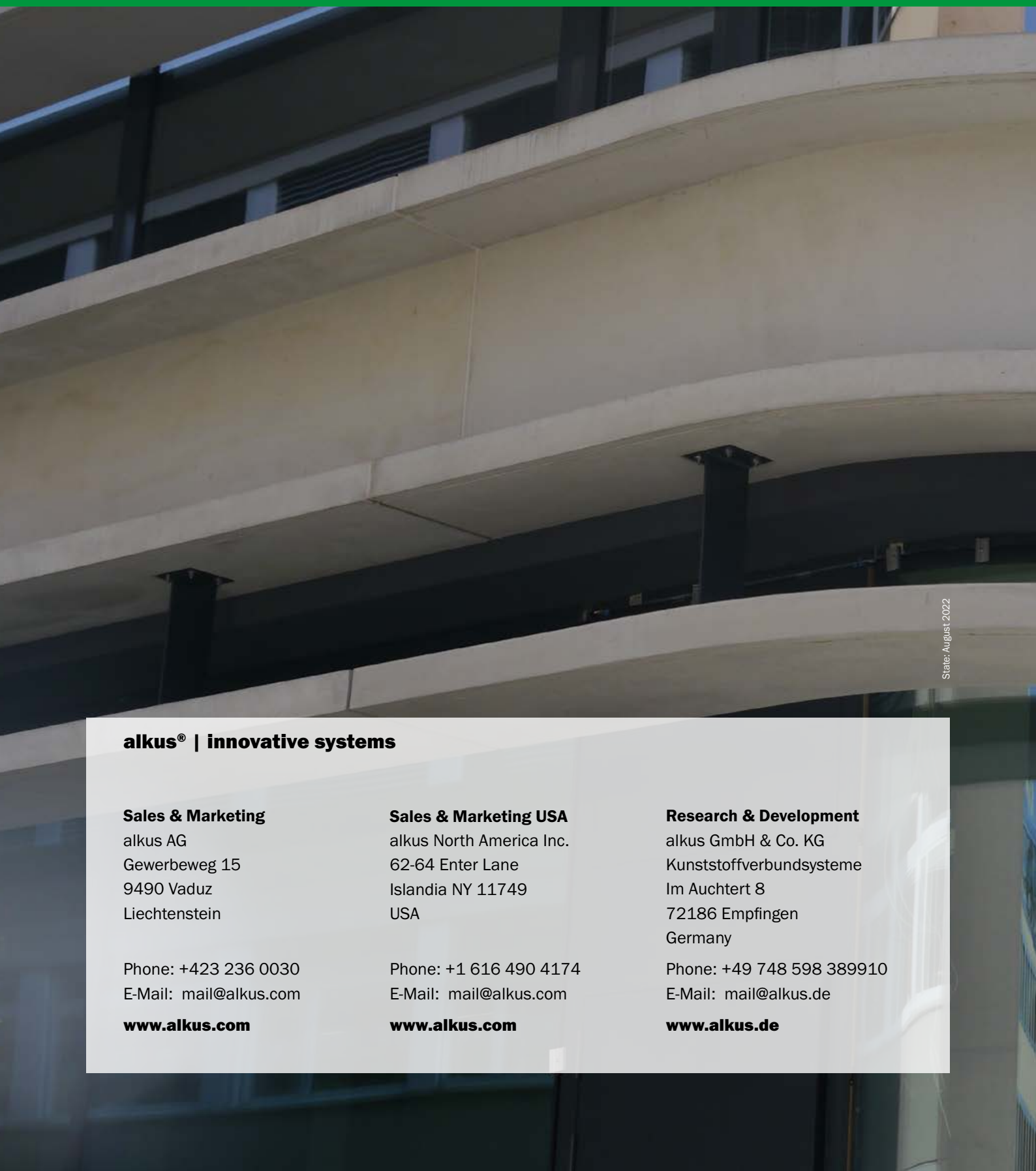
alkus®
INNOVATIVE SYSTEMS



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alkus® | innovative systems

Sales & Marketing
alkus AG
Gewerbeweg 15
9490 Vaduz
Liechtenstein

Phone: +423 236 0030
E-Mail: mail@alkus.com

www.alkus.com

Sales & Marketing USA
alkus North America Inc.
62-64 Enter Lane
Islandia NY 11749
USA

Phone: +1 616 490 4174
E-Mail: mail@alkus.com

www.alkus.com

Research & Development
alkus GmbH & Co. KG
Kunststoffverbundsysteme
Im Auchtert 8
72186 Empfingen
Germany

Phone: +49 748 598 389910
E-Mail: mail@alkus.de

www.alkus.de