

Formwork sheets

User Information

Instructions for assembly and use (Method statement)



Contents

3 Introduction

- 3 Elementary safety warnings
- 6 Services
- 7 Intended use

8 3-ply sheets

- 8 Doka formwork sheet 3-SO
- 9 Formwork sheet 3S basic
- 10 Formwork sheet 3S top
- 11 Formwork sheet 3S cut
- 12 Doka formwork sheet FF20
- 13 Three-ply sheet without coating

14 Multi-ply formwork sheets

- 14 Xlife sheet Framax
- 15 Xlife sheet Alu-Framax
- 16 Xlife sheet Frami
- 17 Xlife sheet Dokadek
- 18 Xlife sheet DokaXlight
- 19 Xface sheet
- 20 Framax sheet
- 21 Frami sheet
- 22 Dokaplex formwork sheet
- 23 DokaPly cBoard

25 General

- 26 Deflection diagrams
- 30 Influences on the formwork sheets and concrete surfaces
- 36 Transporting, stacking and storing

38 Article list

Introduction

Elementary safety warnings

User target groups

- This booklet is aimed at all persons who will be working with the Doka product or system that it describes. It contains information on the standard design for setting up this system, and on correct, compliant utilisation of the system.
- All persons working with the product described herein must be familiar with the contents of this booklet and with all the safety instructions it contains.
- Persons who are incapable of reading and understanding this booklet, or who can do so only with difficulty, must be instructed and trained by the customer.
- The customer is to ensure that the information materials provided by Doka (e.g. User Information booklets, Instructions for Assembly and Use, Operating Instruction manuals, plans etc.) are up to date and available to all users, and that they have been made aware of them and have easy access to them at the usage location.
- In the relevant technical documentation and formwork utilisation plans, Doka shows the workplace safety precautions that are necessary in order to use the Doka products safely in the usage situations shown.
In all cases, users are obliged to ensure compliance with national laws, standards and regulations throughout the entire project and to take appropriate additional or alternative workplace safety precautions where necessary.

Hazard assessment

- The customer is responsible for drawing up, documenting, implementing and continually updating a hazard assessment at every job-site. This booklet serves as the basis for the site-specific hazard assessment, and for the instructions given to users on how to prepare and utilise the system. It does not substitute for these, however.

Remarks on this booklet

- This document can be used as general Instructions for Assembly and Use (Method Statement) or be incorporated into site-specific Instructions for Assembly and Use (Method Statement).
- **The graphics, animations and videos in this document or app sometimes depict partially assembled assemblies and may require additional safety equipment and/or measures to comply with safety regulations.**
The customer must ensure all applicable regulations are complied with, even if they are not shown or implied in the graphics, animations and videos provided.
- **Individual sections contain further safety instructions and/or special warnings as applicable.**

Planning

- Provide safe workplaces for those using the formwork (e.g. for when it is being erected/dismantled, modified or repositioned etc). It must be possible to get to and from these workplaces via safe access routes!
- **If you are considering any deviation from the details and instructions given in this booklet, or any application which goes beyond those described in the booklet, then revised static calculations must be produced for checking, as well as supplementary assembly instructions.**

Regulations; industrial safety

- All laws, Standards, industrial safety regulations and other safety rules applying to the utilisation of our products in the country and/or region in which you are operating must be observed at all times.
- If a person or object falls against, or into, the side-guard component and/or any of its accessories, the component affected may only continue in use after it has been inspected and passed by an expert.

Rules applying during all phases of the assignment

- The customer must ensure that this product is erected and dismantled, reset and generally used for its intended purpose in accordance with the applicable laws, standards and rules, under the direction and supervision of suitably skilled persons. These persons' mental and physical capacity must not in any way be impaired by alcohol, medicines or drugs.
- Doka products are technical working appliances which are intended for industrial / commercial use only, always in accordance with the respective Doka User Information booklets or other technical documentation authored by Doka.
- The stability and load-bearing capacity of all components and units must be ensured during all phases of the construction work!
- Do not step on or apply strain to cantilevers, closures, etc. until suitable measures to ensure their stability have been correctly implemented (e.g. by tie-backs).
- Strict attention to and compliance with the functional instructions, safety instructions and load specifications are required. Non-compliance can cause accidents and severe injury (risk of fatality) and considerable damage to property.
- Sources of fire in the vicinity of the formwork are prohibited. Heaters are permissible only when used correctly and situated a correspondingly safe distance from the formwork.
- Customer must give due consideration to any and all effects of the weather on the equipment and regards both its use and storage (e.g. slippery surfaces, risk of slipping, effects of the wind, etc.) and implement appropriate precautionary measures to secure the equipment and surrounding areas and to protect workers.
- All connections must be checked at regular intervals to ensure that they are secure and in full working order.
In particular threaded connections and wedged connections have to be checked and retightened as necessary in accordance with activity on the jobsite and especially after out-of-the-ordinary occurrences (e.g. after a storm).
- It is strictly forbidden to weld Doka products – in particular anchoring/tying components, suspension components, connector components and castings etc. – or otherwise subject them to heating.
Welding causes serious change in the microstructure of the materials from which these components are made. This leads to a dramatic drop in the failure load, representing a very great risk to safety.
It is permissible to cut individual tie rods to length with metal cutting discs (introduction of heat at the end of the rod only), but it is important to ensure that flying sparks do not heat and thus damage other tie rods.
The only articles which are allowed to be welded are those for which the Doka literature expressly points out that welding is permitted.

Assembly

- The equipment/system must be inspected by the customer before use, to ensure that it is in an acceptable condition. Steps must be taken to exclude components that are damaged, deformed, or weakened due to wear, corrosion or rot (e.g. fungal decay).
- Using our safety and formwork systems together with those of other manufacturers can create risks that may lead to injury and damage to property. This requires separate verification by the user.
- The equipment/system must be assembled and erected in accordance with the applicable laws, standards and rules by trained customer personnel whilst maintaining any applicable safety inspections that may be required.
- It is not permitted to modify Doka products; such modifications constitute a safety risk.

Closing the formwork

- Doka products and systems must be set up so that all loads acting upon them are safely transferred!

Pouring

- Do not exceed the permitted fresh-concrete pressures. Over-high pouring rates overload the formwork, cause greater deflection and risk breakage.

Stripping the formwork

- Do not strip out the formwork until the concrete has reached sufficient strength and the person in charge has given the order for the formwork to be stripped out!
- When stripping out the formwork, never use the crane to break concrete cohesion. Use suitable tools such as timber wedges, special pry-bars or system features such as Framax stripping corners.
- When stripping out the formwork, do not endanger the stability of any part of the structure, or of any scaffolding, platforms or formwork that is still in place!

Transporting, stacking and storing

- Observe all country-specific regulations applying to the handling of formwork and scaffolding. For system formwork the Doka slinging means stated in this booklet must be used – this is a mandatory requirement.

If the type of sling is not specified in this document, the customer must use slinging means that are suitable for the application envisaged and that comply with the regulations.

- When lifting, always make sure that the unit to be lifted and its individual parts can absorb the forces that occur.
- Remove loose parts or secure them so that they cannot slip out of position and drop.
- When lifting formwork or formwork accessories with a crane, no persons must be carried along, e.g. on working platforms or in multi-trip packaging.
- All components must be stored safely, following all the special Doka instructions given in the relevant sections of this document!

Maintenance

- Only original Doka components may be used as spare parts. Repairs may only be carried out by the manufacturer or authorised facilities.

Miscellaneous

The weights as stated are averages for new material; actual weights can differ, depending on material tolerances. Dirt accretions, moisture saturation, etc. can also affect weight.

We reserve the right to make alterations in the interests of technical progress.

Eurocodes at Doka

The permissible values stated in Doka documents (e.g. $F_{perm} = 70$ kN) are not design values (e.g. $F_{Rd} = 105$ kN), unless specified!

- It is essential to avoid confusing permissible values with design values!
- Doka documents will continue to state the permissible values.

Allowance has been made for the following partial factors:

- $\gamma_F = 1.5$
- $\gamma_{M, timber} = 1.3$
- $\gamma_{M, steel} = 1.1$
- $k_{mod} = 0.9$

Consequently, all the design values for an EC design calculation can be determined from the permissible values.

Symbols used

The following symbols are used in this document:



DANGER

This is a notifier drawing attention to an extremely dangerous situation in which non-compliance with this notifier will lead to death or severe, irreversible injury.



WARNING

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to death or severe, irreversible injury.



CAUTION

This is a notifier drawing attention to a dangerous situation in which non-compliance with this notifier can lead to slight, reversible injury.



NOTICE

This is a notifier drawing attention to a situation in which non-compliance with this notifier can lead to malfunctions or damage to property.



Instruction

Indicates that actions have to be performed by the user.



Sight-check

Indicates that you need to do a sight-check to make sure that necessary actions have been carried out.



Tip

Points out useful practical tips.



Reference

Cross-references other documents.

Services

Support in every stage of the project

- Project success assured by products and services from a single source.
- Competent support from planning through to assembly directly on site.

Project assistance from start to finish

Every single project is unique and calls for individualised solutions. When it comes to the forming operations, the Doka team can help you with its consulting, planning and ancillary services in the field, enabling you to carry out your project effectively, safely and reliably. Doka assists you with individual consulting services and customised training courses.

Efficient planning for a safe project sequence

Efficient formwork solutions can only be developed economically if there is an understanding of project requirements and construction processes. This understanding is the basis of Doka engineering services.

Optimise construction workflows with Doka

Doka offers special tools that help you in designing transparent processes. This is the way to speed up pouring processes, optimise inventories and create more efficient formwork planning processes.

Custom formwork and on-site assembly

To complement its system formwork range, Doka offers customised formwork units. And specially trained personnel assemble load-bearing towers and formwork on site.

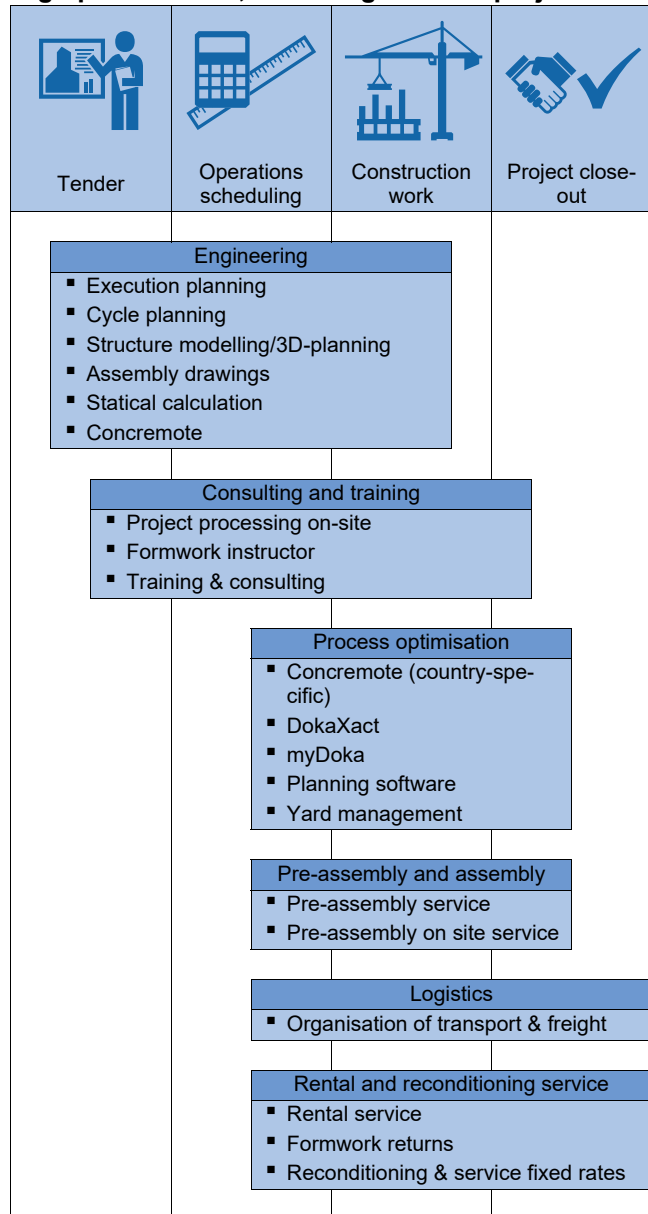
Just-in-time availability

Formwork availability is a crucial factor in realising your project on time and on budget. The worldwide logistics network puts the necessary formwork quantities on site at the agreed time.

Rental and reconditioning service

The formwork material needed for any particular project can be rented from Doka's high-performing rental park. Doka Reconditioning cleans and overhauls both client-owned equipment and Doka rental equipment.

High performance, in all stages of the project



Digital Services

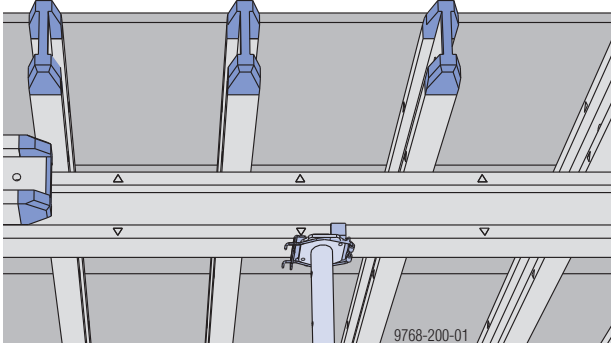
for higher productivity in construction

From planning to completion of construction - with our digital services we want to set the pace for boosting productivity in construction. Our digital portfolio includes solutions for planning, procuring and managing to performing on site. Learn more about our digital offer at doka.com/digital.

Intended use

Doka formwork sheets as concrete-wetted elements are used with wooden or metal supporting structures for forming fresh concrete and for the related necessary activities.

Practical example

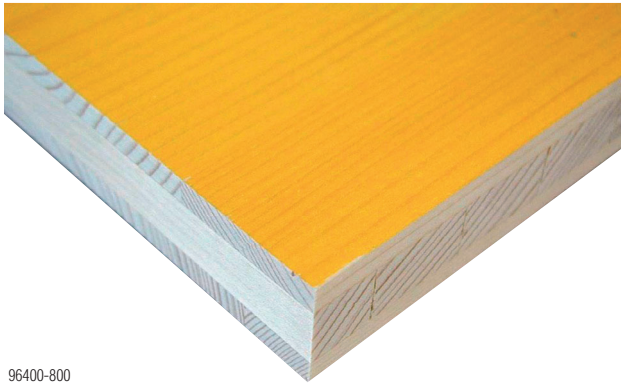


You will also find information on correct usage in the respective User Information booklet.

- Large-area formwork Top 50
- Dokaflex

3-ply sheets

Doka formwork sheet 3-SO



96400-800

The Doka formwork sheet 3-SO is a high-grade three-ply solid-wood sheet with urea-melamine resin coating on both sides to Austrian standard ÖNORM B 3023, for horizontal and vertical formwork applications.

Sheet structure

- Three-ply solid-wood sheet, spruce.
- The layers are crosswise glue-bonded.
- With/without all-round edge strip.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant.
- The glue-bonding is compliant with the requirements of Austrian standard ÖNORM B 3023.

Surfaces

- Both sides urea-melamine resin coating with approx. 130 g per m² and side.
- Edge sealing: Emulsion coating.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 12 ± 3% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	3	9.7
27		12.1

Formats:

Length [cm]	Width [cm]
100 - 600	50 - 150

Format tolerances:

	Tolerance
Width	±1.0 mm
Length up to 3.0 m	±1.0 mm
Length 3.0 - 6.0 m	±1.5 mm
Perpendicularity	±1.0 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties (to ÖNORM B 3023):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	10000	-	22	-	7.82	-
27	10000	-	22	-	15.40	-

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural strength

EI ... flexural stiffness

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.13 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **25 use cycles** (guide value) can be achieved.

Type of application and concreting results

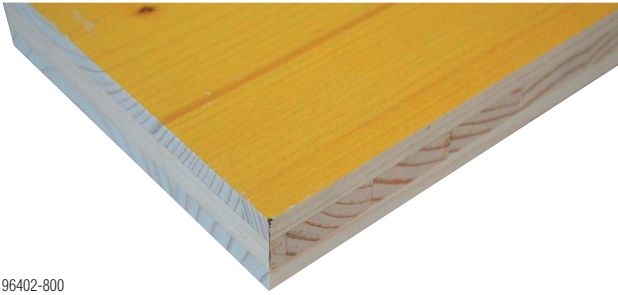
The sheet has a 'low-absorbency' surface. Depending on the moisture penetration of the formwork sheet, its surface texture, i.e. the irregularities in the face layer (annual rings, knots etc.), imprints itself on the concrete, delivering uniform concrete faces with a slight wood texture.

The Doka formwork sheet 3-SO is a quality formwork sheet with selected wood quality that is used both in formwork systems and as loose sheets.

Note:

The sheets can be labelled with the client's name if desired.

Formwork sheet 3S basic



96402-800

The Formwork sheet 3S basic is a three-ply solid-wood sheet with urea-melamine resin coating on both sides to Austrian standard ÖNORM B 3023 in the mid-level quality sector for many different uses on construction sites.

Sheet structure

- Three-ply solid-wood sheet, spruce.
- The layers are crosswise glue-bonded.
- With/without all-round edge strip.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant.
- The glue-bonding is compliant with the requirements of Austrian standard ÖNORM B 3023.

Surfaces

- Both sides urea-melamine resin coating with approx. 130 g per m² and side.
- Edge sealing: Emulsion coating.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 12 ± 3% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	3	9.7
27		12.1

Formats:

Length [cm]	Width [cm]
150	50
200	
250	
300	100

Format tolerances:

	Tolerance
Length/Width	±1.0 mm
Perpendicularity	±1.0 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties (to ÖNORM B 3023):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	10000	-	22	-	7.82	-
27	10000	-	22	-	15.40	-

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.13 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **10 use cycles** (guide value) can be achieved.

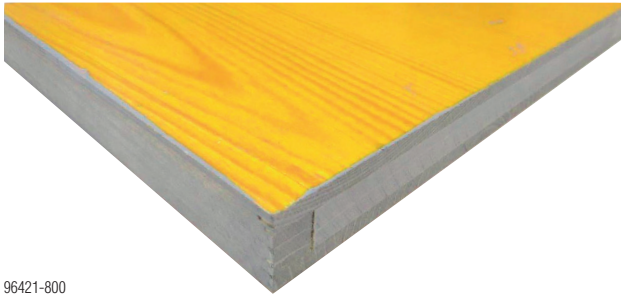
Type of application and concreting results

The sheet has a 'low-absorbency' surface. Depending on the moisture penetration of the formwork sheet, its surface texture, i.e. the irregularities in the face layer (annual rings, knots, resin pockets, etc.), imprints itself on the concrete, delivering uniform concrete faces with a slight wood texture. The sheets have a tight surface.

Note:

The sheets can be labelled with the client's name if desired.

Formwork sheet 3S top



96421-800

The Formwork sheet 3S top is a high-grade three-ply solid-wood sheet with urea-melamine resin coating on both sides to Austrian standard ÖNORM B 3023 and an extra varnish sealant for increased abrasion resistance and reduced texturing and cracking.

Sheet structure

- Three-ply solid-wood sheet, spruce.
- The layers are crosswise glue-bonded.
- With all-round edge strip.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant.
- The glue-bonding is compliant with the requirements of Austrian standard ÖNORM B 3023.

Surfaces

- Both sides urea melamine-resin coating with approx. 130 g pro per m² and side and extra varnish sealant coating sanded with corundum particles.
- Edge sealing: Emulsion coating.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 12 ± 3% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	3	9.7
27		12.1

Formats:

Nominal thickness 21 mm		Nominal thickness 27 mm	
Length [cm]	Width [cm]	Length [cm]	Width [cm]
200	40	200	40
250		250	
200	50	150	50
250		200	
		250	
		300	
		300	100

Format tolerances:

	Tolerance
Length/Width	±1.0 mm
Perpendicularity	±1.0 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties (to ÖNORM B 3023):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	10000	-	22	-	7.82	-
27	10000	-	22	-	15.40	-

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.13 W/mK
- **Formaldehyde class:** E1

Number of cycles

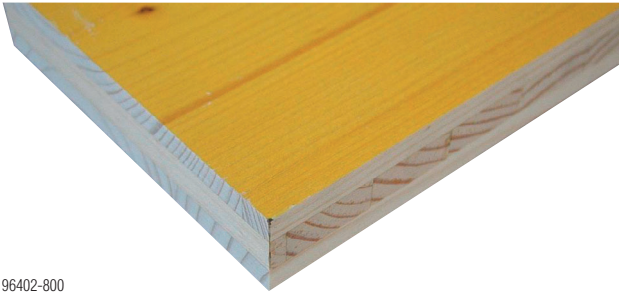
Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **40 use cycles** (guide value) can be achieved.

Type of application and concreting results

The sheet has a 'low-absorbency' surface. The varnish sealant applied onto the urea melamine resin adhesive provides an additional protective layer. This greatly reduces both moisture pick-up and texturing/cracking, and increases abrasion resistance. The slightly rough surface caused by the projecting corundum particles results in a 'velvety' frosting effect on the concrete.

This high-grade formwork sheet fulfils the requirements for fair-faced concrete and can be used in wall and floor-slab formwork, and slab-formwork systems.

Formwork sheet 3S cut



96402-800

The Formwork sheet 3S cut is a cost-effective 3-ply sheet for infill zones that does not fully comply with ÖNORM B 3023 and may have defects on one side.

Sheet structure

- Three-ply solid-wood sheet, spruce.
- The layers are crosswise glue-bonded.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant.
- The glue-bonding is compliant with the requirements of Austrian standard ÖNORM B 3023.

Surfaces

- Both sides urea-melamine resin coating with approx. 90 g per m² and side.
- No edge sealing.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $12 \pm 3\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
27	3	12.1

Formats:

Length [cm]	Width [cm]
200	50
250	

Format tolerances:

	Tolerance
Length/Width	± 1.0 mm
Perpendicularity	± 1.0 mm/m
Straightness of sheet edge	± 0.2 mm/m

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.13 W/mK
- **Formaldehyde class:** E1

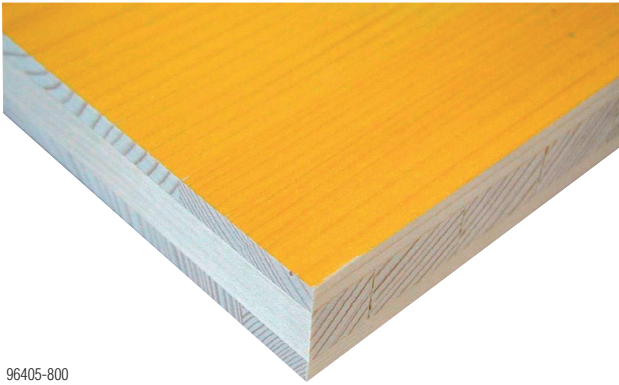
Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **5 use cycles** (guide value) can be achieved.

Type of application and concreting results

The Formwork sheet 3S cut allows for economical production of box-outs. For once-only uses, therefore, this sheet is ideal for use along with the high-grade Doka formwork sheets. The sheet has a 'low-absorbency' surface.

Doka formwork sheet FF20



96405-800

The Doka formwork sheet FF20 is a three-ply solid-wood sheet with urea-melamine resin coating on both sides to Austrian standard ÖNORM B 3023, for use in wall formwork systems.

Sheet structure

- Three-ply solid-wood sheet, spruce.
- The layers are crosswise glue-bonded.
- Without all-round edge strip.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant.
- The glue-bonding is compliant with the requirements of Austrian standard ÖNORM B 3023.

Surfaces

- Both sides urea-melamine resin coating with approx. 130 g per m² and side.
- Edge sealing: Emulsion coating.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 12 ± 3% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	3	9.7
27		12.1

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	±0.5 mm
Perpendicularity	±1.0 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties (to ÖNORM B 3023):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	10000	-	22	-	7.82	-
27	10000	-	22	-	15.40	-

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.13 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **25 use cycles** (guide value) can be achieved.

Type of application and concreting results

The sheet has a 'low-absorbency' surface. Depending on the moisture penetration of the formwork sheet, its surface texture, i.e. the irregularities in the face layer (annual rings, knots etc.), imprints itself on the concrete, delivering uniform concrete faces with a slight wood texture.

This sheet is used in wall formwork systems.

Three-ply sheet without coating



96411-800

The three-ply sheet without coating can be used for secondary purposes on construction sites.

Sheet structure

- Three-ply solid-wood sheet, spruce.
- The layers are crosswise glue-bonded.
- Without all-round edge strip.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant.
- The glue-bonding is compliant with the requirements of Austrian standard ÖNORM B 3023.

Surfaces

- No coating.
- No edge sealing.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $12 \pm 3\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	3	9.7
27		12.1

Formats:

Length [cm]	Width [cm]
500	100
600	

Format tolerances:

	Tolerance
Width	± 1.0 mm
Length	± 1.5 mm
Perpendicularity	± 1.0 mm/m
Straightness of sheet edge	± 0.2 mm/m

Mechanical properties (to ÖNORM B 3023):

Nominal thickness [mm]	E_m [N/mm ²]		f_m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	10000	-	22	-	7.82	-
27	10000	-	22	-	15.40	-

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

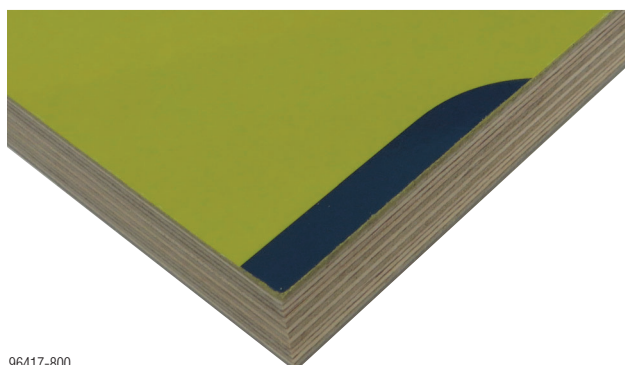
- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.13 W/mK
- **Formaldehyde class:** E1

Type of application and concreting results

Usable for secondary purposes on construction sites. Use of the sheet for concrete surfaces without any requirements regarding surface finish is possible.

Multi-ply formwork sheets

Xlife sheet Framax



96417-800

The Xlife sheet Framax is a high-grade plastic/wood composite sheet with hard-wearing plastic coating for a significantly longer lifespan and uniform concrete faces over a long time of service.

Sheet structure

- High-grade plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is force-oriented.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides polypropylene coating.
- Glass-fibre reinforcing on the side facing the concrete.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $10 \pm 2\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	13	16.5

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	± 0.5 mm
Perpendicularity	± 0.3 mm/m
Straightness of sheet edge	± 0.2 mm/m

Mechanical properties:

Nominal thickness [mm]	E_m [N/mm ²]		f_m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	4986	8259	38.5	74.4	3.42	5.67

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** E
- **Thermal conductivity:** 0.18 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **350 use cycles** (guide value) in frame formwork can be achieved.

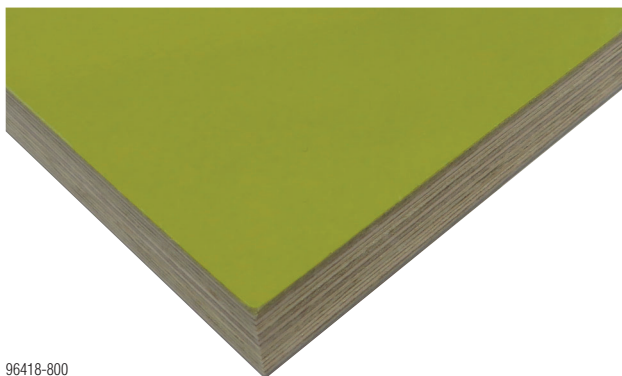
Type of application and concreting results

The sheet has a 'non-absorbent' surface. The special plastic coating gives the sheet a significantly longer lifespan.

Advantages: optimum nailability, easy cleaning, no rippling, less prone to mechanical damage. As a result, it delivers a smooth, premium concrete finish even after many repeat uses. To meet stringent specifications regarding the concrete finish, the sheets can also be screwed on from the rear.

The sheet is used in wall formwork systems and as a loose sheet in wall and floor-slab formwork.

Xlife sheet Alu-Framax



96418-800

The Xlife sheet Alu-Framax is a high-grade plastic/wood composite sheet with hard-wearing plastic coating for a significantly longer lifespan and uniform concrete faces over a long time of service.

Sheet structure

- High-grade plywood sheet made of Scandinavian birchwood and spruce.
- The arrangement of the veneers is force-oriented.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides polypropylene coating.
- Glass-fibre reinforcing on the side facing the concrete.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $10 \pm 2\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	13	14.0

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	± 0.5 mm
Perpendicularity	± 0.3 mm/m
Straightness of sheet edge	± 0.2 mm/m

Mechanical properties:

Nominal thickness [mm]	E_m [N/mm ²]		f_m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	3847	7072	33.2	67.1	2.64	4.86

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** E
- **Thermal conductivity:** 0.15 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **350 use cycles** (guide value) in frame formwork can be achieved.

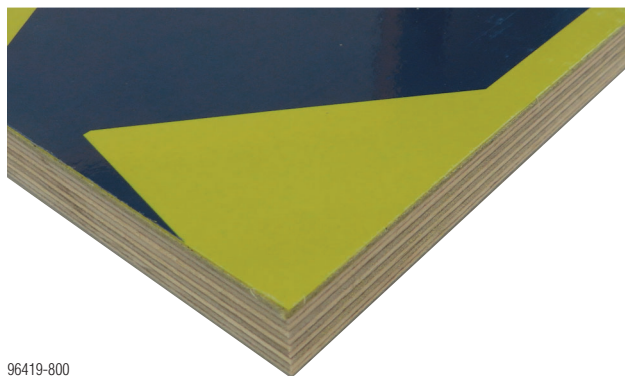
Type of application and concreting results

The sheet has a 'non-absorbent' surface. The special plastic coating gives the sheet a significantly longer lifespan.

Advantages: optimum nailability, easy cleaning, no rippling, less prone to mechanical damage. As a result, it delivers a smooth, premium concrete finish even after many repeat uses.

This sheet is used in wall formwork systems.

Xlife sheet Frami



96419-800

The Xlife sheet Frami is a high-grade plastic/wood composite sheet with hard-wearing plastic coating for a significantly longer lifespan and uniform concrete faces over a long time of service.

Sheet structure

- High-grade plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is force-oriented.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides polypropylene coating.
- Glass-fibre reinforcing on the side facing the concrete.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $10 \pm 2\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs parallel to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
15	9	11.2

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	± 0.5 mm
Perpendicularity	± 0.3 mm/m
Straightness of sheet edge	± 0.2 mm/m

Mechanical properties:

Nominal thickness [mm]	E_m [N/mm ²]		f_m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
15	8748	3056	84.5	38.1	2.27	0.79

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- Fire behaviour:** E
- Thermal conductivity:** 0.18 W/mK
- Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **350 use cycles** (guide value) in frame formwork can be achieved.

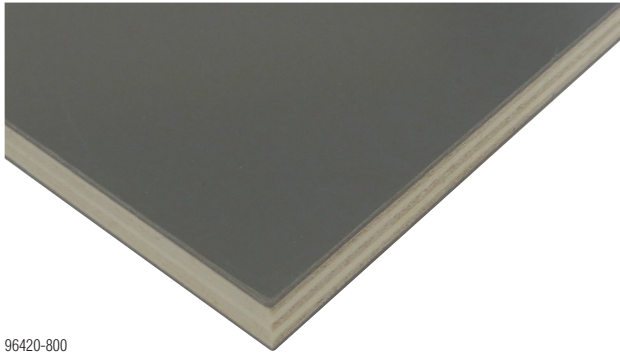
Type of application and concreting results

The sheet has a 'non-absorbent' surface. The special plastic coating gives the sheet a significantly longer lifespan.

Advantages: optimum nailability, easy cleaning, no rippling, less prone to mechanical damage. As a result, it delivers a smooth, premium concrete finish even after many repeat uses.

This sheet is used in wall formwork systems.

Xlife sheet Dokadek



96420-800

The Xlife sheet Dokadek is a high-grade plastic/wood composite sheet with hard-wearing plastic coating for a significantly longer lifespan and uniform concrete faces over a long time of service.

Sheet structure

- High-grade plywood sheet made of Scandinavian birchwood and spruce.
- The arrangement of the veneers is crosswise.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides glass-fibre-reinforced polypropylene coating.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $10 \pm 2\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
12	5	8.2

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	± 0.5 mm
Perpendicularity	± 0.3 mm/m
Straightness of sheet edge	± 0.2 mm/m

Mechanical properties:

Nominal thickness [mm]	E_m [N/mm ²]		f_m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
12	5139	6210	56.0	45.0	0.76	0.92

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** E
- **Thermal conductivity:** 0.12 W/mK
- **Formaldehyde class:** E1

Number of cycles

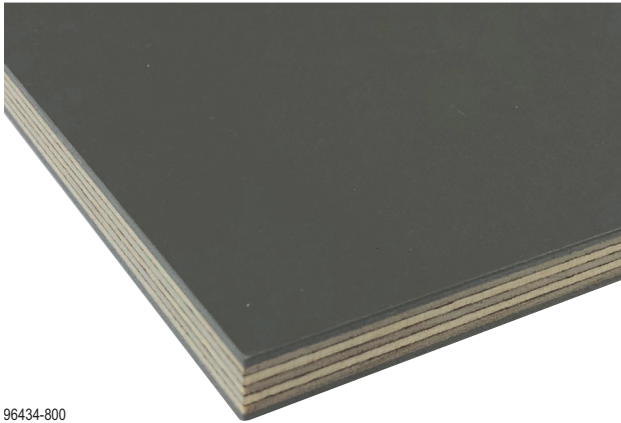
Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **150 use cycles** (guide value) in frame formwork can be achieved.

Type of application and concreting results

The sheet has a 'non-absorbent' surface. The special plastic coating gives the sheet a significantly longer lifespan. Advantages: optimum nailability, easy cleaning, no rippling, less prone to mechanical damage. As a result, it delivers a smooth, premium concrete finish even after many repeat uses.

This sheet is used in slab formwork systems.

Xlife sheet DokaXlight



96434-800

The Xlife sheet DokaXlight is a high-grade plastic/wood composite sheet with hard-wearing plastic coating for a significantly longer lifespan and uniform concrete faces over a long time of service.

Sheet structure

- High-grade plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is crosswise.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides glass-fibre-reinforced polypropylene coating.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $10 \pm 2\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
9	5	7.8

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	± 0.5 mm
Perpendicularity	± 0.3 mm/m
Straightness of sheet edge	± 0.3 mm/m

Mechanical properties:

Nominal thickness [mm]	E_m [N/mm ²]		f_m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
9	6548	6955	95.0	106.0	0.40	0.42

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- Fire behaviour:** E
- Thermal conductivity:** 0.16 W/mK
- Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **200 use cycles** (guide value) in frame formwork can be achieved.

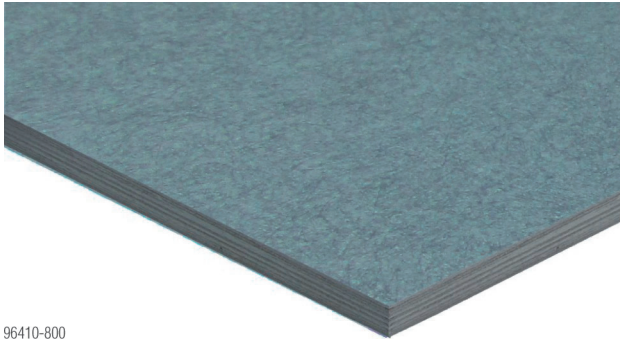
Type of application and concreting results

The sheet has a 'non-absorbent' surface. The special plastic coating gives the sheet a significantly longer lifespan.

Advantages: optimum nailability, easy cleaning, no rippling, less prone to mechanical damage. As a result, it delivers a smooth, premium concrete finish even after many repeat uses.

This sheet is used in wall formwork systems.

Xface sheet



96410-800

The Xface sheet is a large-format birchwood plywood sheet with extremely hard-wearing coating for high fair-faced concrete requirements in wall and slab construction or high requirements in terms of durability for high number of use cycles.

Sheet structure

- High-grade plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is crosswise.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Side facing the concrete: fibre-reinforced synthetic-resin coating
- Back: Phenolic-resin film coating with 120 g/m².
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 10 ± 2% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	15	15.0

Formats:

Length [cm]	Width [cm]
202	302
	402
	502

Format tolerances:

	Tolerance
Length/Width	±1.5 mm
Perpendicularity	±0.5 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties

(as per Handbook of Finnish Plywood):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	9858	7642	39.4	34.3	6.97	5.40

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.17 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **100 use cycles** (up to 40 use cycles for fair-faced concrete) (guide value) can be achieved.

It is also possible to carry out the first few cycles **without application of a release agent**.

Type of application and concreting results

The sheet has a 'non-absorbent' surface. The extra-hard-wearing coating of the Xface sheets, and the large sheet formats, make it possible to achieve a smooth, uniform concrete surface with only a small number of joints.

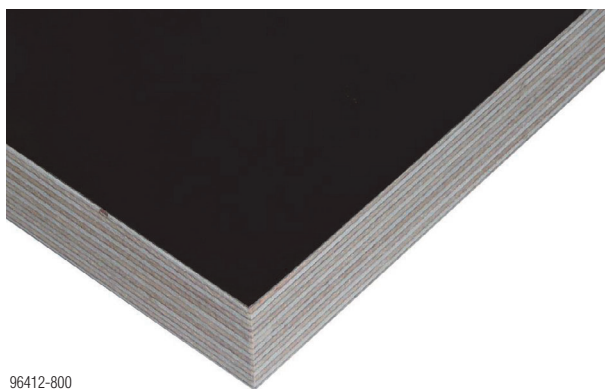
The sheets permit easy nailing, screwing and drilling, and have a 2 cm oversize which optimises them for further trimming.

The excellent release properties of the sheet surface mean that for the first few re-use cycles, no concrete release agent is needed.

The synthetic-resin coating is free of phenolic resin. Consequently, there is no staining of the concrete.

The sheet for high fair-face concrete specifications is used in wall and floor-slab formwork.

Framax sheet



96412-800

The Framax sheet is a high-grade birchwood-veneer plywood sheet with film coating on both sides, for use in wall formwork systems.

Sheet structure

- Film-coated plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is crosswise.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides phenolic-resin film coating with 220 g per m² and side.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 10 ± 2% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
21	15	14.3

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	+ 0 / - 1,0 mm
Perpendicularity	±0.3 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties

(as per Handbook of Finnish Plywood):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	9858	7642	39.4	34.3	6.97	5.40

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Thermal conductivity:** 0.17 W/mK
- **Formaldehyde class:** E1

Number of cycles

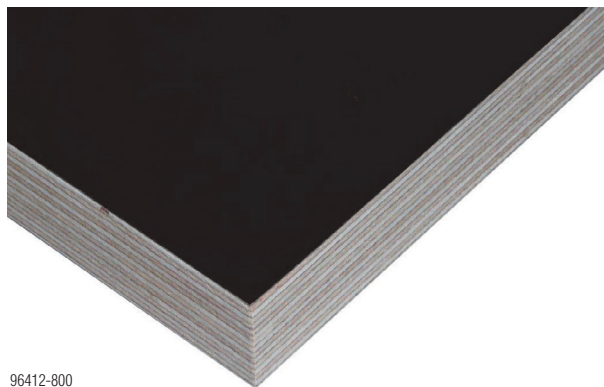
Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **80 use cycles** (guide value) in frame formwork can be achieved.

Type of application and concreting results

The sheet has a 'low-absorbency' surface. The surface consists of a selected face veneer and a high-grade, wear-resistant film coating. As a result, it delivers a smooth concrete finish even after many repeat uses. To meet stringent specifications regarding the concrete finish, the sheets are screwed on from the rear. Sealing any nailing-points, holes, damage etc. can prolong the lifespan of the formwork sheet.

This sheet is used in wall formwork systems.

Frami sheet



96412-800

The Frami sheet is a high-grade birchwood-veneer plywood sheet with film coating on both sides, for use in wall formwork systems.

Sheet structure

- Film-coated plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is crosswise (as of a panel height of 2.70 m the arrangement is force-oriented).

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides phenolic-resin film coating with 220 g per m² and side.
- Edge sealing: high-grade 2-component edge protection varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 10 ± 2% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thickness and weight:

Nominal thickness [mm]	Layers	Weight [kg/m ²]
15	11	10.2

Formats:

Length	Width
System-dependent	

Format tolerances:

	Tolerance
Length/Width	+ 0 / - 1,0 mm
Perpendicularity	±0.3 mm/m
Straightness of sheet edge	±0.2 mm/m

Mechanical properties

(as per Handbook of Finnish Plywood):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
15	10316	7184	41.3	33.8	2.78	1.94
15 (force-oriented)	6500	9490	-	-	1.90	2.80

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural strength

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** E
- **Thermal conductivity:** 0.17 W/mK
- **Formaldehyde class:** E1

Number of cycles

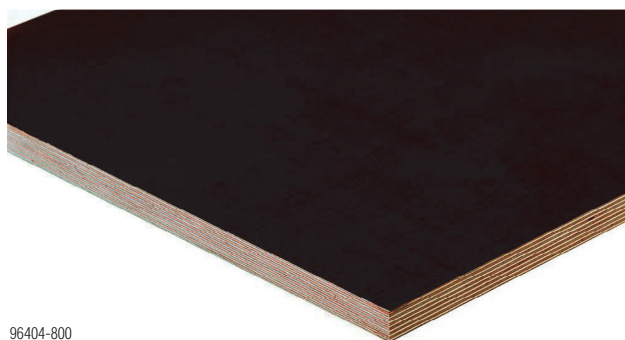
Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **80 use cycles** (guide value) in frame formwork can be achieved.

Type of application and concreting results

The sheet has a 'low-absorbency' surface. The surface consists of a selected face veneer and a high-grade, wear-resistant film coating. As a result, it delivers a smooth concrete finish even after many repeat uses. To meet stringent specifications regarding the concrete finish, the sheets are screwed on from the rear. Sealing any nailing-points, holes, damage etc. can prolong the lifespan of the formwork sheet.

This sheet is used in wall formwork systems.

Dokaplex formwork sheet



96404-800

The Dokaplex formwork sheet is a high-grade birchwood-veneer plywood sheet with film coating on both sides, for horizontal and vertical formwork applications.

Sheet structure

- Film-coated plywood sheet made of Scandinavian birchwood.
- The arrangement of the veneers is crosswise.

Glue-bonding

- Boil-resistant, alkali-resistant, water-resistant and weather-resistant phenolic-resin glue-bonding.
- The glue-bonding meets the requirements of EN 314-2 Service Class 3, DIN 68705 BFU 100 or BS 6566 WBP.

Surfaces

- Both sides phenolic-resin film coating with 120 g (4 and 9 mm) or 220 g (18 and 21 mm) per m² and side.
- Edge sealing: Emulsion coating.

Technical data

Note:

All values in the tables are based on a sheet moisture content of 10 ± 2% on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

The grain of the outside layers of this formwork sheet runs transverse to the longitudinal direction of the sheet.

Thicknesses, weights and formats:

Nominal thickness [mm]	Layers	Weight [kg/m ²]	Format [cm]
4	3	2.7	150 x 300
9	7	6.1	150 x 250 150 x 300
18	13	12.2	150 x 250 150 x 300
21	15	14.3	125 x 250 127 x 252 152 x 252 150 x 250 150 x 300

Format tolerances:

	Tolerance
Length/Width	±1.5 mm
Perpendicularity	±0.5 mm/m
Straightness of sheet edge	±0.3 mm

Mechanical properties

(as per Handbook of Finnish Plywood):

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
4	16471	1029	65.9	10.6	0.06	0.004
9	11395	6105	45.6	32.1	0.73	0.39
18	10048	7452	40.2	34.1	4.56	3.38
21	9858	7642	39.4	34.3	6.97	5.40

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour** (18 mm thick or thicker): D-s2, d0
- **Thermal conductivity:** 0.17 W/mK
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, with sheets 18 mm thick up to **50 use cycles** (guide value) can be achieved.

Type of application and concreting results

The sheet has a 'low-absorbency' surface. The surface consists of a selected face veneer and a high-grade, wear-resistant film coating. As a result, it delivers a smooth concrete finish even after many repeat uses. To meet stringent specifications regarding the concrete finish, the sheets are screwed on from the rear. Sealing any nailing-points, holes, damage etc. can prolong the lifespan of the formwork sheet.

The sheet is used in wall and floor-slab formwork.

DokaPly cBoard



DokaPly cBoard is a chipboard sheet with film coating on both sides for smooth concrete surfaces.

Sheet structure

Film-coated P5 chipboard sheet.

Glue-bonding

The glue-bonding meets the requirements of EN 312 Type P5.

Surfaces

- Both sides melamine-resin film coating with 160 g per m² and side.
- Edge sealing: Acrylic-resin varnish.

Technical data

Note:

All values in the tables are based on a sheet moisture content of $9 \pm 3\%$ on delivery.

Changes in the wood's moisture content can have effects on the weight, dimensions and mechanical properties of the sheet.

Thickness and weight:

Nominal thickness [mm]	Weight [kg/m ²]
20.5	13.5

Formats:

Length [cm]	Width [cm]
250	62.5
250	125

Format tolerances:

	Tolerance
Length/Width	+ 5.0 mm
Perpendicularity	± 2.0 mm/m
Straightness of sheet edge	± 1.5 mm/m

Mechanical properties:

Nominal thickness [mm]	E _m [N/mm ²]		f _m [N/mm ²]		EI [kNm ² /m]	
		⊥		⊥		⊥
21	2150	2150	-	-	1.54	1.54

E_m ... mean flexural modulus of elasticity

f_m ... characteristic flexural stiffness

EI ... Flexural strength

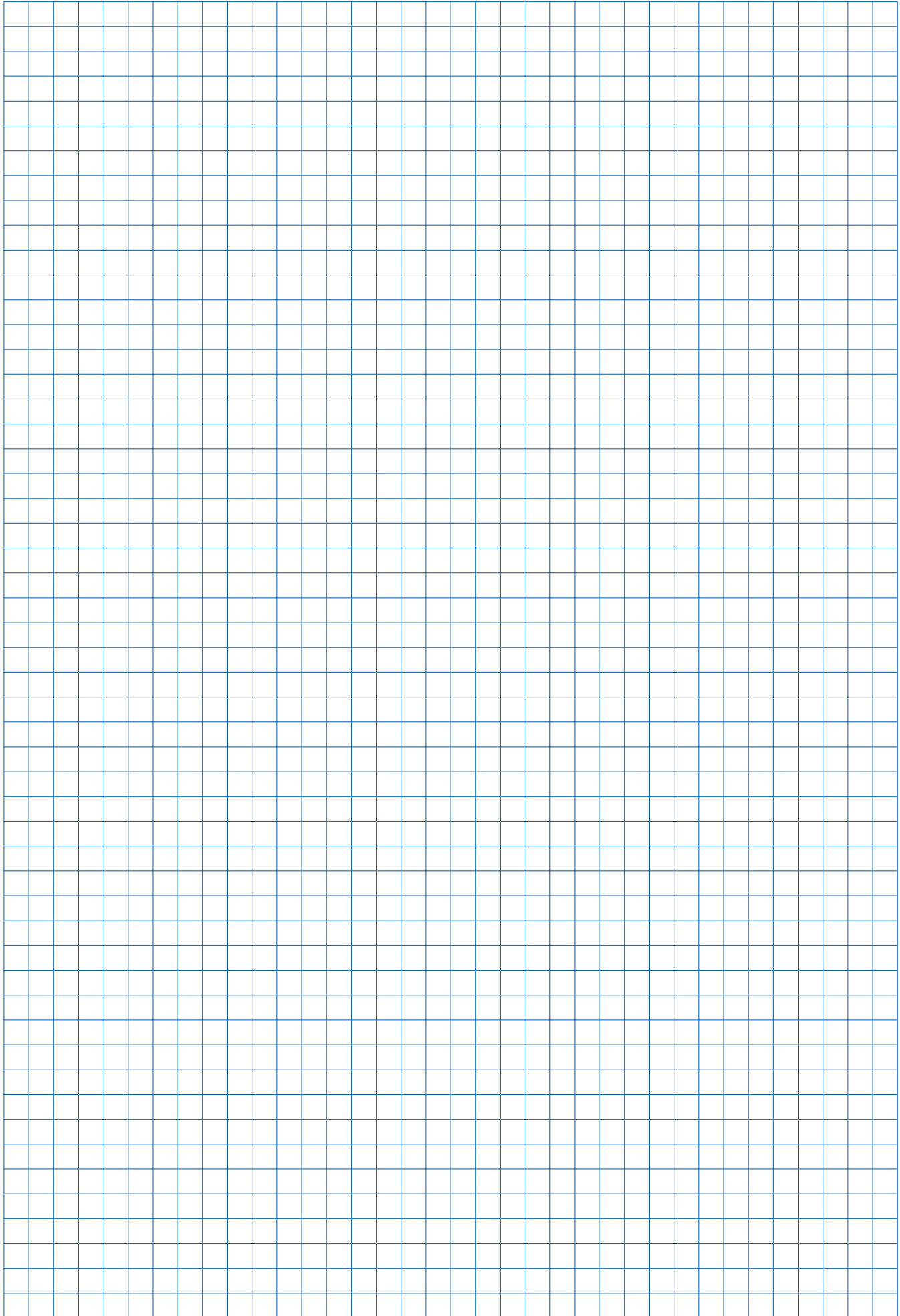
|| ... parallel to the grain

⊥ ... at right angles to the grain

- **Fire behaviour:** D - s2, d0
- **Formaldehyde class:** E1

Number of cycles

Possible frequency of use depends on many factors acting on the formwork sheet. Given optimum conditions of use and correct handling, up to **2 use cycles** (guide value) can be achieved.



General

Basic instructions

Ensure that the formwork sheets are treated correctly whenever they are used.

Formwork sheets are subject to the natural swelling and shrinkage of wood associated with moisture absorption and loss in the corresponding climatic conditions.

- ▶ Prior to use, always make sure that the wood moisture content of the formwork sheets is matched to that of the surroundings.
- ▶ Cover sheets to protect them from extreme climatic influences such as exposure to sunlight or moisture. This reduces cracking.
- ▶ Seal cut edges, and around holes, with edge varnish.
- ▶ Use a high-quality release agent (e.g. Doka-Trenn or Doka-OptiX).
- ▶ Immediately after stripping the formwork, remove concrete residues from the surfaces that were in contact with the concrete.



NOTICE

Do not use pointed or sharp objects, wire brushes, abrasive disks or cup brushes.
Do not use high-pressure spray cleaners.

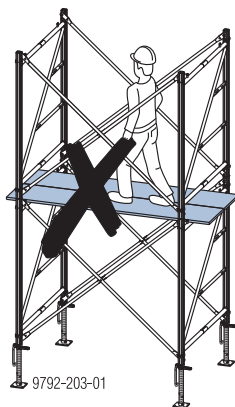
Possible incorrect usages



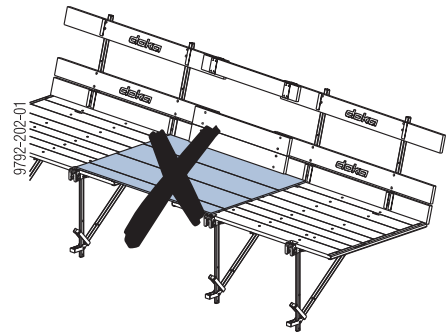
WARNING

- ▶ The uses illustrated below are prohibited, as are other, similar uses!

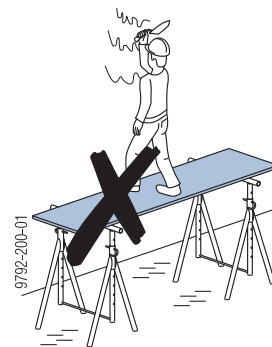
Do not use as assembly planking for erecting load-bearing towers.



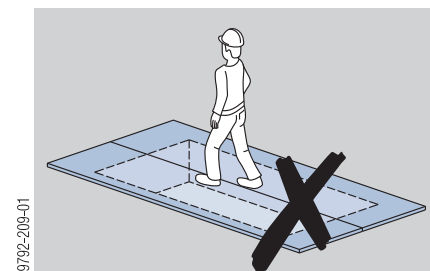
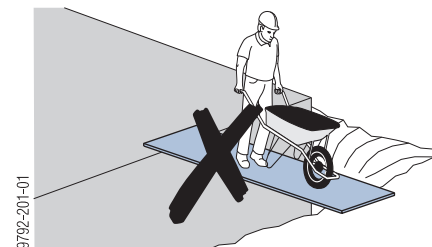
Do not use to bridge closures at platforms.



Do not use as scaffold planking.



Do not use in the construction of traffic routes or to cover break-throughs, etc.



Reprocessing scrap material

The Doka formwork sheets contain no wood preservatives, so they can be recycled.

Incineration in suitable incineration plants is recommended, in accordance with national regulations. Do not burn in open fires or in household solid-fuel stoves or furnaces.

Deflection diagrams

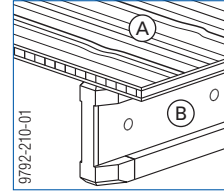
All values in the diagrams are based on a wood moisture content of 20%. If the moisture levels are higher than this, two effects will occur: The modulus of elasticity will greatly decrease (i.e. deformation will increase), and the strength values will be lower. This leads to a reduction in the load-bearing capacity.

Doka formwork sheets 3-SO, 3S basic, 3S top, FF20

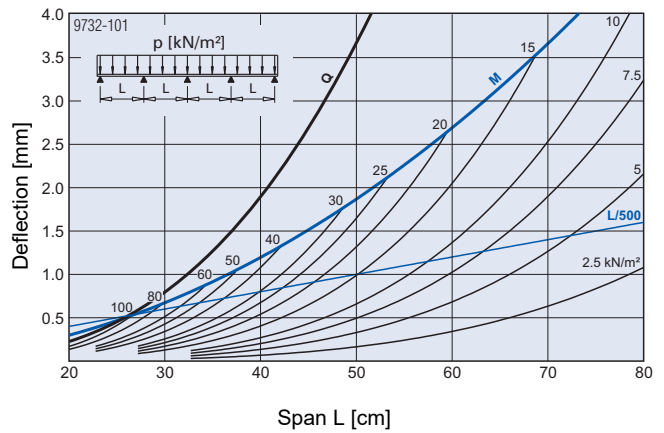


NOTICE

The grain of the face layer (A) must run at right angles to the supports (B).

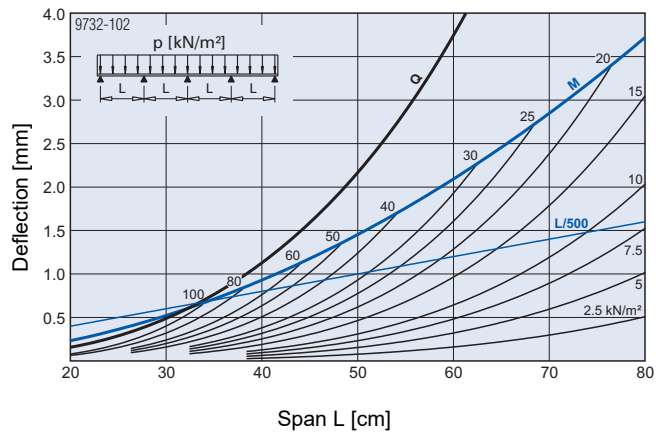


21 mm



M ... permitted bending moment
Q ... permitted shear force

27 mm



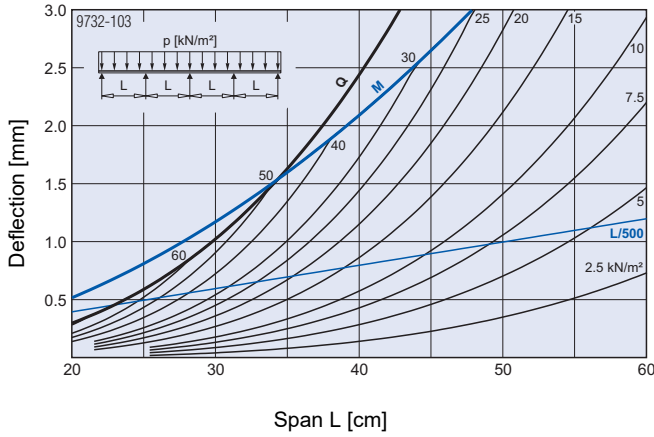
M ... permitted bending moment
Q ... permitted shear force

Dokaplex formwork sheets

Note:

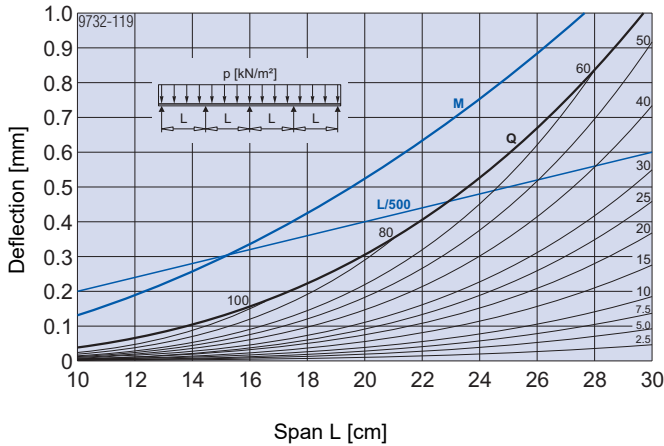
The grain of the face layer can be arranged in any direction relative to the supports.

18 mm



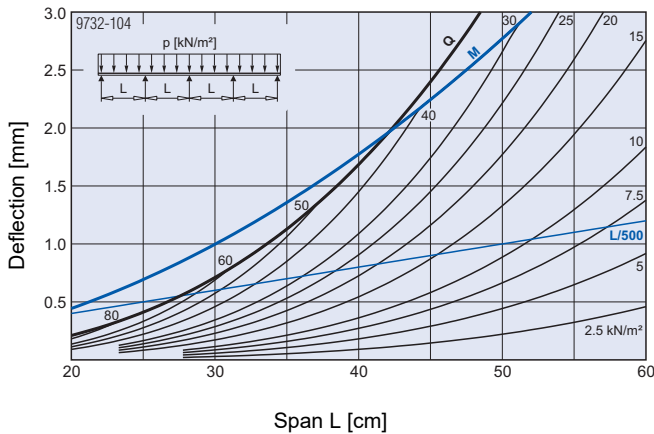
M ... permitted bending moment
Q ... permitted shear force

18 mm - detailed view



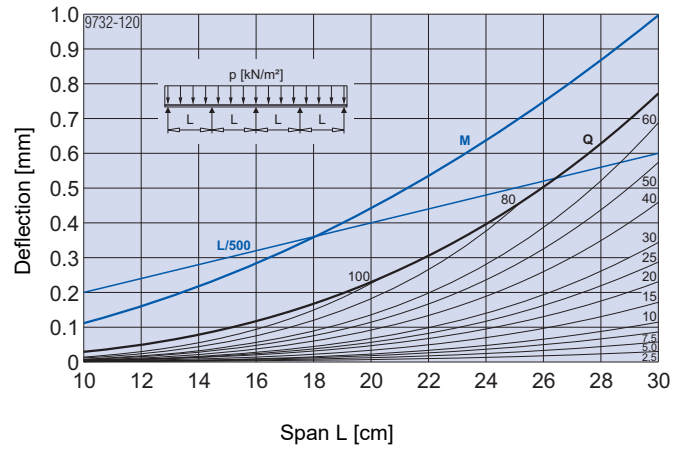
M ... permitted bending moment
Q ... permitted shear force

21 mm



M ... permitted bending moment
Q ... permitted shear force

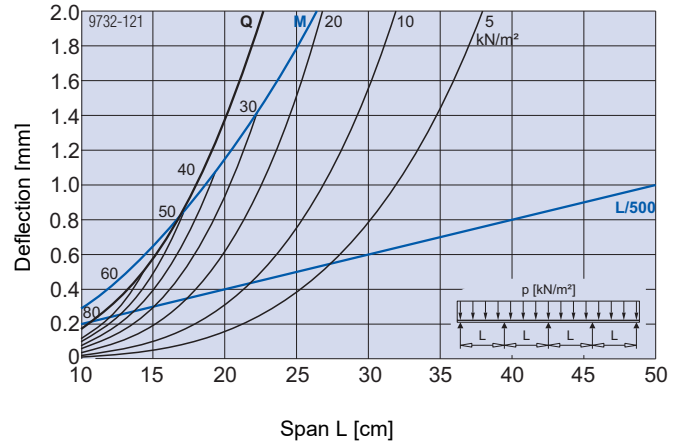
21 mm - detailed view



M ... permitted bending moment
Q ... permitted shear force

9 mm

The Dokaplex formwork sheet 9mm is mainly used for forming curved surfaces, as inliners on profiled timber formers or on solid-timber formwork. In cases where only low loading occurs, the form-facing can be dimensioned with reference to the diagram below.



M ... permitted bending moment
Q ... permitted shear force

Xlife sheets 21mm

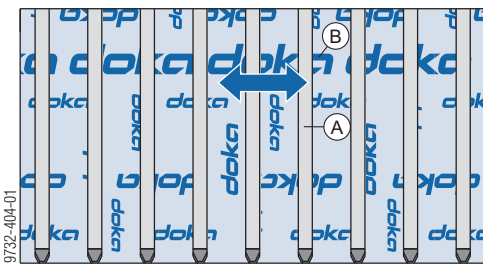


NOTICE

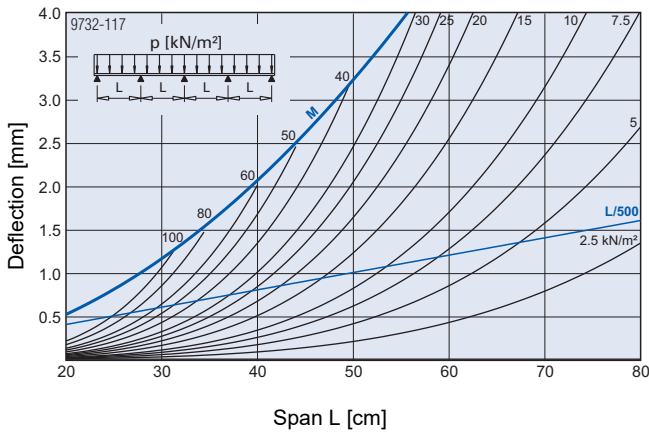
The deflection characteristics of the Xlife sheet in the longitudinal are different from those in the transverse direction. The only way to tell which is the longitudinal and which is the transverse direction is by the direction of the lettering on the formwork sheets.

For the purpose of the following diagrams, then, be sure to know which way round the Xlife sheets are placed in relation to the supports (e.g. Doka beams).

Large Doka logos of the sheet lettering at right angles to the beam axis (Xlife sheet longside horizontal)

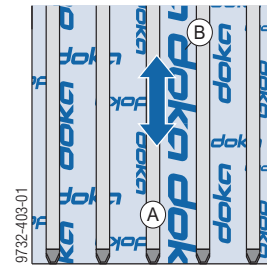


- A Support
- B Sheet lettering (large Doka logos)

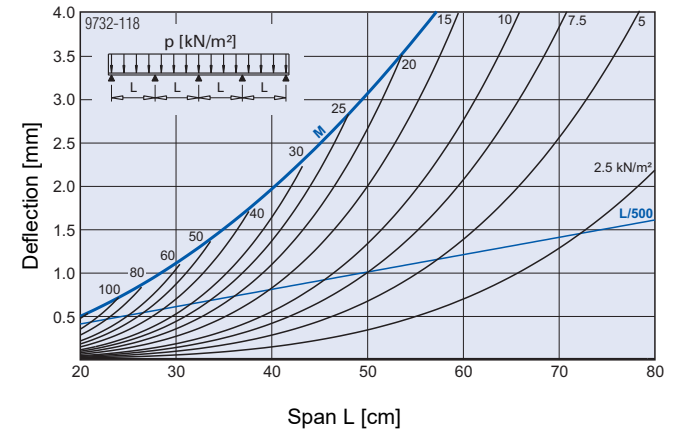


M ... permitted bending moment

Large Doka logos of the sheet lettering parallel to the beam axis (Xlife sheet longside vertical)



- A Support
- B Sheet lettering (large Doka logos)



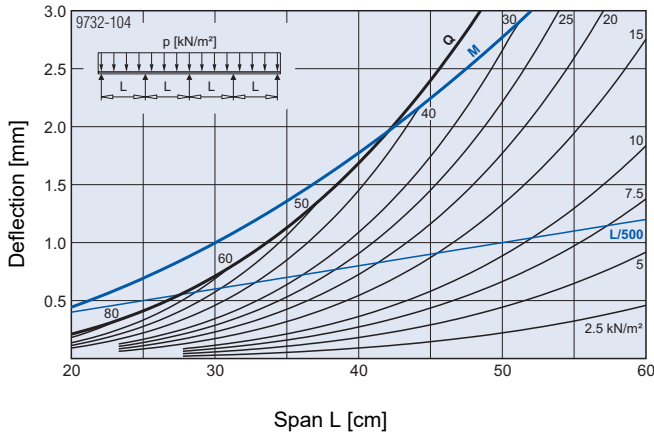
M ... permitted bending moment

Xface sheets 21mm

Note:

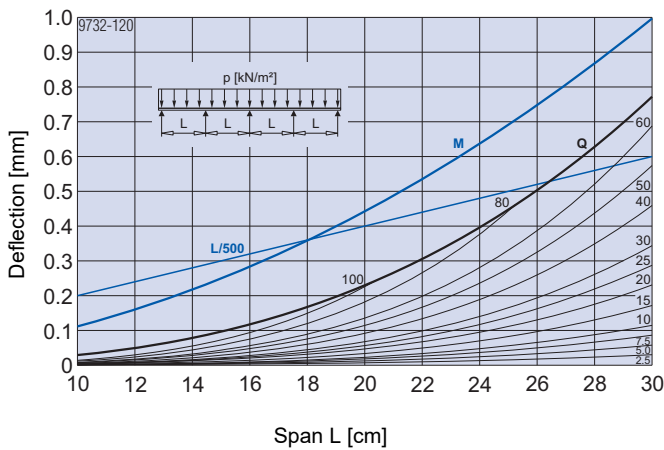
The grain of the face layer can be arranged in any direction relative to the supports.

21 mm



M ... permitted bending moment
Q ... permitted shear force

21 mm - detailed view



M ... permitted bending moment
Q ... permitted shear force

Influences on the formwork sheets and concrete surfaces

Concrete surfaces are the mirror-image of the form-facing. The overall appearance of the formwork sheeting used is a critical factor when it comes to achieving visually attractive concrete surfaces.

Depending on the desired appearance of the finished concrete, therefore, the condition of the formwork sheeting has to be taken into consideration, particularly when the number of re-use cycles is high.

Note:

For information on producing fair-faced concrete surfaces see the Doka brochure entitled 'Fair-faced concrete' or go to www.doka.com/sichtbeton.



NOTICE

The load-bearing strength of the formwork sheet must not be impaired. Damage, cracks, and cuts running at right-angles to the load-bearing direction may greatly reduce a sheet's load-bearing strength, and so need to be examined very carefully. Any suspect sheets must be withdrawn from use.

Dimensional changes in formwork sheets

Appearance

Differences in thickness between formwork sheets, height mismatches at joints between sheets, indentations near nails and screws.

Cause

- Wood is hygroscopic, meaning that it either absorbs moisture from its surroundings (air, soil, precipitation), or releases it back again.
- The increase/decrease in timber moisture content leads to an increase/decrease in the length, width and thickness (with different swelling and shrinkage in each of the three main wood-anatomical directions).
- Immediately after production, the formwork sheets have a timber moisture content of approx. 9 - 12 %; once in service on the site, their timber moisture content usually rises to approx. 18 - 25 %. The table contains guideline values for the dimensional changes:

	Thickness*	Width/length*
3-ply formwork sheets, 3-S	approx. 6 %	approx. 0.1 %
Plywood sheets	approx. 9 %	approx. 0.2 %

*) swelling stated as percentage

Remedies

- ▶ Do not mix new and used formwork sheets.
- ▶ Use formwork sheets that have all been used approximately the same number of times.
- ▶ When assembling formwork, leave nails or screws sticking out slightly – never recess them into the sheet.
- ▶ To meet stringent specifications regarding the concrete finish, screw on the formwork sheets from the rear.
- ▶ Seal all cut edges with edge-protection varnish

Damage to the formwork sheets from vibrators

Appearance

Curved or oblong roughened depressions on the surface of the formwork sheet. In the damaged places, the surface coating may have been partly or even completely worn away. The wood has been roughened down to a depth of several millimetres.

Cause

- Direct and prolonged contact between the vibrator spud and the formwork sheet.

Remedies

- ▶ Avoid any contact between the vibrator and the sheet.
- ▶ Rubber-capped vibrator spuds can lessen or prevent damage.

Surface sanding on the concrete

Appearance

Extensive or localised sanding on or near the surface of the concrete. Unlike on dusty concrete surfaces, what may happen here is that fine fractions of the aggregates are 'abraded'.

Cause

- Impaired hydration.
- The formwork sheets used were very dry, causing moisture removal during hydration.
- The concrete surface dried out too strongly/rapidly.
- Insufficient curing.

Remedies

- ▶ Pre-treat the formwork sheets with cement slurry, and pre-wet them. Pre-treating with cement slurry neutralises any wood sugar that may be present, and pre-wetting prevents the formwork from absorbing too strongly.
- ▶ Use a suitable release-agent.
- ▶ Use suitable curing methods. Protect the concrete from extreme temperatures and from being dried out by the wind.

Different gradations of grey in the concrete

Appearance

The concrete exhibits various different shades of grey. This may occur within individual formwork sheets and/or between adjacent formwork sheets.

As a basic rule:

Non-absorbent or low-absorbency sheets tend to produce light-coloured concrete surfaces, while more absorbent formwork sheets tend to cause a darker concrete surface. This is why e.g. a light grey concrete surface is the result of using low-absorbency sheet surfaces such as Dokaplex.

Factors such as release-agents, forming-waxes, changes in the absorption behaviour of the sheet caused by the degree of saturation etc., can all affect these results.

Causes

- The absorbency of formwork sheets is influenced by the following factors:
 - the type of formwork sheet and the quality of its coating
 - the age of the formwork sheets (how often used, wear-and-tear during use, etc.)
 - the weather
- Heavily weathered formwork sheets (e.g. with very dried-out, cracked surfaces) often have very different absorbencies. This can lead to speckled concrete and in extreme cases to surface sanding on the concrete.
- When formwork sheets are stored in stacks, the top sheet may have been so dried out by the sun that it has a different absorbency from all the other sheets further down the stack.

Remedies

- ▶ To meet fair-faced concrete specifications, use only formwork sheets of the same type and the same level of wear-and-tear (storage history, how used, and for how long).
- ▶ Before sheets are used for the first time, avoid storing them for a long time under adverse climatic conditions.
- ▶ To meet tougher specifications regarding the concrete finish, protect the formwork sheets from climatic influences between the pouring cycles as well, as far as possible.
- ▶ Covering the stacked sheets prevents exposed sheets from drying-out.
- ▶ Spray the formwork sheets with the release-agent recommended by the manufacturers.

**NOTICE**

Especially on cool or cold days and when relative atmospheric humidity is high, pronounced light/dark colouration of the concrete surface may occur. The formwork sheets have only a limited effect on these light/dark differences, which also result from the slower hydration of the concrete at low temperatures.

Lime efflorescence on slabs

Appearance

Concentrated or extensive speckled white discolouration, or white deposits, on the surface of the concrete.

Causes

- Excess water increasingly causes calcium hydroxide to migrate from inside the concrete to the surface. The calcium hydroxide reacts with the CO₂ in the atmosphere to form calcium carbonate (lime).
- Efflorescence may be caused by e.g. the freshly poured slab being sprayed with water in hot weather.
- Seepage of water through the concrete, especially in slabs and in box-outs and apertures in the slab, may lead to lime efflorescence on the soffit
- The w/b (water-binder) ratio varies depending on the absorbency of the formwork sheet, causing the efflorescence to take various different forms.
- On young concrete, climatic influences (e.g. mist or rain) can lead to localised or extensive lightening, caused by a chalky haze which in some cases is barely soluble.

Remedies

- Where fair-faced concrete specifications have to be met, choose suitable curing methods. We strongly advise against moistening the concrete surface!
- Commercially available countermeasures such as plastic sheets and covering tarpaulins will keep the concrete from drying too quickly. Where tough specifications have been made regarding the concrete finish, make sure that the plastic sheet does not touch the surface of the concrete.
- Hydrophobising the concrete surface can prevent lime efflorescence caused by e.g. rain.
- Absorbent formwork sheets reduce the w/b ratio in the edge zone, meaning that the edge zone contains fewer capillary pores. This can have a positive effect in terms of reducing lime efflorescence.

Inhomogeneities in the concrete surface

Appearance

Excess application of concrete release agent onto non-absorbent formwork sheets may lead to increased inclusion of dirt and dust particles. These may leave an imprint on the concrete surface after the formwork has been struck. Also, excess application of concrete release agent, and climatic influences such as rainfall etc., may cause the following inhomogeneities:

- Staining, cloudiness, lack of homogeneity
- Increased dust formation
- Seepage marks

Causes

- Wet sheet surfaces.
- Dirty formwork sheets.
- The sheets have different absorbencies.
- The ventilation time specified for the concrete release agent has not been observed.
- Excess application of concrete release agent.
- Wrong sprayer or nozzle for the concrete release agent.

Remedies

- Use the correct concrete release agent.
- Observe the information and recommendations given by the manufacturer.
- Comply with / check the application dosage specified for the concrete release agent. A thin application of release-agent generally results in a better concrete surface. Avoid excess application of release-agent. Wipe off any excess release-agent carefully and evenly, with e.g. a clean cloth. If you use a rubber squeegee, make sure that you do not remove all of the release-agent from the formwork sheet.
- To meet high and extra-high specifications regarding the quality of the concrete finish, do some trial pours first.

Formation of pores and voids at the surface

Appearance

Increased number of pores at the concrete surface.

Causes

This section only deals with causes of porosity that have to do with formwork sheets and concrete release agent. Remember that there are many other factors which may also lead to an increased number of pores on concrete surfaces.

- Excess application of concrete release agent.
- Low temperatures and the increased viscosity of the release-agent that these cause (esp. petroleum-based release-agents with or without additives).
- Non-absorbent formwork sheets.
- Composition of the concrete.

Remedies

- ▶ Use suitable concrete release agents. On non-absorbent formwork sheets, concrete release agents that have a hydrophilic effect (such as aqueous release-agent emulsions) can help to decrease the number of pores at the concrete surface or even to prevent porosity altogether. These concrete release agents also have a positive effect on concrete surface porosity at low temperatures.
- ▶ Use absorbent formwork sheets.
- ▶ Avoid excess application of concrete release agent.
- ▶ Apply the concrete release agent thinly and evenly.
- ▶ Observe the specified ventilation times for emulsions.

Texturing or cracking on the three-ply sheet

Appearance

With softwood 3-ply sheets, the pattern of the timber is immediately apparent on the concrete surface.

Causes

- When formwork sheets are stored outdoors in unfavourable conditions, or while they are being used, climatic influences and concrete-water may cause the timber to swell or shrink.
- This leads firstly to an intensification of the annual-ring structure, and secondly to a certain amount of cracking and grooving in the face layer.
- Although the changes occurring in the surface are quite pronounced at the beginning, they then only continue in a much reduced form.

Remedies

- ▶ On extremely hot days, keep the formwork sheets moist by e.g. spraying them with water – this guards against cracking and grooving.
- ▶ Store formwork elements and panels in such a way that they will not be exposed to prolonged sunshine. e.g.: store pre-assembled elements form-face to form-face; use covers etc.
- ▶ In extreme climatic conditions, e.g. desert climates (meaning climates where the relative atmospheric humidity has a monthly average of less than 45 %), plywood formwork sheets should be used instead of 3-S formwork sheets.

Brown discolouration of the three-ply sheet

Appearance

Right from the first times of use, a brown discoloration starts to take place in the surface of the formwork sheet. The more severe the conditions to which the sheet is exposed, the more pronounced this discoloration will be.

Causes

- This is primarily a reaction of the timber to the concrete-water.
- UV radiation also causes discolouration of the timber.

Remedy

- ▶ None. The brown discolouration has no effect on the three-ply sheets or on concrete quality; it is a matter solely of the appearance of the sheets.

Rippling on plywood sheets

Appearance

Slight rippling in the surface veneer (max. several tenths of a millimetre high, non-uniformly long).

Either at the edge of the formwork sheet and/or anywhere on the sheet at screw- or nail-points or where there is other damage to the surface.

The undulations are longitudinally aligned in the grain direction of the face veneer.

The undulations only occur for the first few times of use, until the surface veneer has swollen uniformly.

Causes

- Hairline cracks or minor damage to the phenolic resin-film coating.
- Moisture absorption on unsealed edges of formwork sheets.

This leads to the face veneer absorbing moisture and thus swelling in thickness. However, the adjacent surface of the sheet remains dry. The differing timber moisture contents cause slight rippling.

Remedies

- ▶ Store formwork sheets in a dry place before they are first used.
- ▶ Seal all cut edges with edge-protection varnish
- ▶ If possible, do not nail the formwork sheets but screw them on from the rear.
- ▶ If you do have to screw the sheets on from the front, countersink the screws and grout the screw-holes.
- ▶ Avoid damage from e.g. vibrators, hammer-blows etc.
- ▶ Pre-treat formwork sheets with cement slurry if necessary.

The rippling will disappear once there is uniform moisture penetration throughout the sheet after its first few times of use.

Brown discolouration on the surface of the concrete with plywood sheets

Appearance

Concentrated, intensive brown discoloration on the concrete between the form-tie points and/or on the wall plinth.

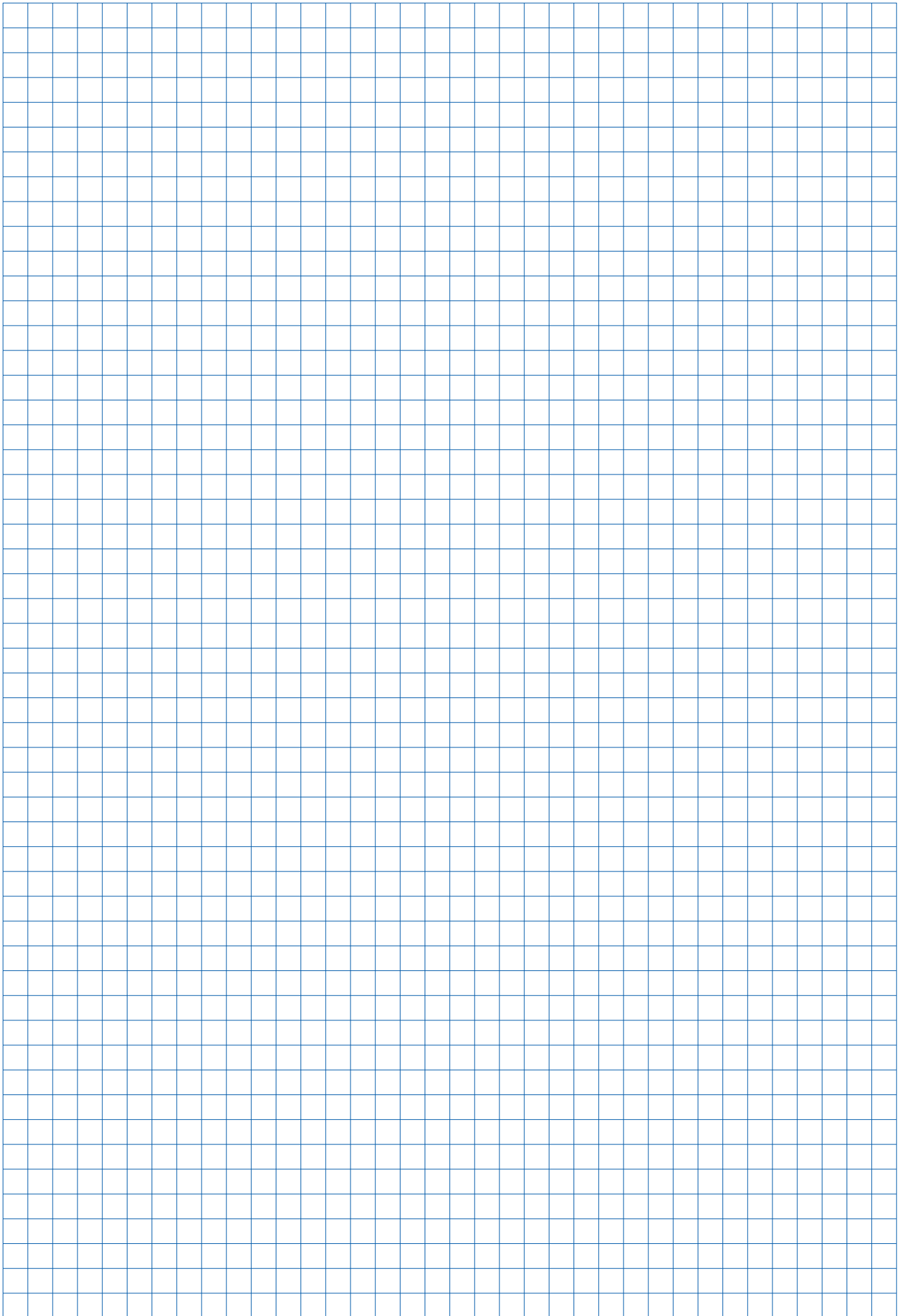
Ring- or horseshoe-shaped; often with upsqueezed brown or yellow seepage marks.

Causes

- Intense exposure to sunshine, i.e. UV stressing, causes precursor damage to the hardened phenolic resin film on phenolic-resin coated plywood sheets. In the summer months, this precursor damage may occur in the space of only a few days. Please note: this precursor damage on its own does not lead to any staining on the concrete surface.
- The chain of factors described below leads to concentrated stains on the surface of the concrete:
 - When the formwork is struck, the form-ties are unscrewed. However, the formwork sheets remain in direct contact with the concrete surface for some time.
 - The heat of hydration causes condensation to form between the formwork sheets and the concrete surface.
 - When it comes into contact with the pre-damaged phenolic resin film, this condensation leads to coloured degradation products being washed out.
 - After the condensation has dried, the degradation products are deposited on the surface of the concrete.
- Low-quality release-agents that are less UV-resistant may intensify the brown discoloration on the concrete.

Remedies

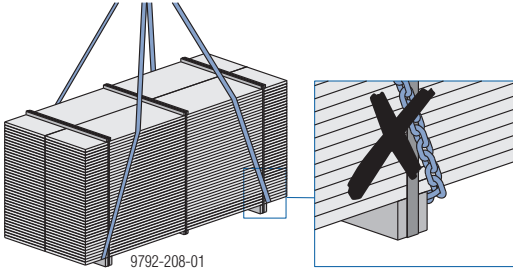
- ▶ Protect the surface of the formwork sheets from intense exposure to sunshine.
- ▶ Use high-quality release-agents.
- ▶ Separate the formwork from the concrete as soon as the form-ties have been unscrewed.



Transporting, stacking and storing

Transport

- Always use slings for lifting stacked sheets - do not use chains.
- Always use edge protectors when strapping sheets together. Edge protectors can be padding made of plastic, wood or cardboard.



NOTICE
When transporting loose sheets without strapping, make sure that the sheets cannot slip!

Sheet stack

NOTICE

- Cover the sheet stack to protect the sheets against extremes of weather, for example direct sunlight or moisture. This reduces the tendency of cracks to form in the face ply.
- Do not attempt to place stacks of sheets one on top of another on the construction site.

Always use edge protectors when strapping sheets together. Edge protectors can be padding made of plastic, cardboard or wood.

Stack units ex works

Dimensions	Sheets per stack	
	21 mm	27 mm
100/50 cm - 300/50 cm	100	80
350/50 cm - 600/50 cm	60	50
100/100 cm - 300/100 cm	50	40
350/100 cm - 600/100 cm	30	25

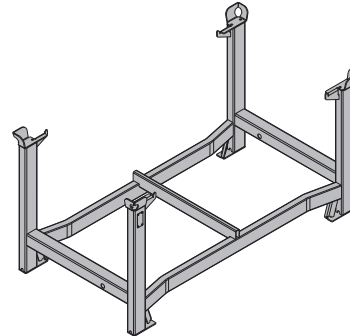
Stack strapped complete with wooden battens 8 x 8 cm

Ground conditions for stacking

- Maximum angle of inclination of ground 3%.
- The ground on which the stack is to be placed must be adequately firm and level. Best-case conditions are concreted or paved storage areas.
- Storage on asphalt:
Depending on the parts stored, place wooden battens, strips of formwork sheeting or metal sheet between the parts and the asphalt surface to ensure that the weight is adequately spread.
- Storage on other surfaces (sand, gravel...):
Adopt suitable measures for storage (e.g. place thick plywood sheets underneath the loads).

Doka stacking pallet 1.55x0.85m and 1.20x0.80m

Storage and transport device for long items.



Permitted load-bearing capacity: 1100 kg (2420 lbs)
Permitted imposed stacking load: 5900 kg (13000 lbs)

Using Doka stacking pallets as storage units

Max. n° of units on top of one another

Outdoors (on the site) Floor gradients up to 3%	Indoors Floor gradients up to 1%
2	6
It is not allowed to stack empty pallets on top of one another!	

NOTICE

- Stacked multi-trip boxes or pallets must have the heaviest boxes at the bottom and the lightest at the top.
- How to use with Bolt-on castor set B:**
 - Always apply the fixing brake when the container is 'parked'.
 - When Doka stacking pallets are stacked, the bottom pallet must NOT be one with a bolt-on castor set mounted to it.

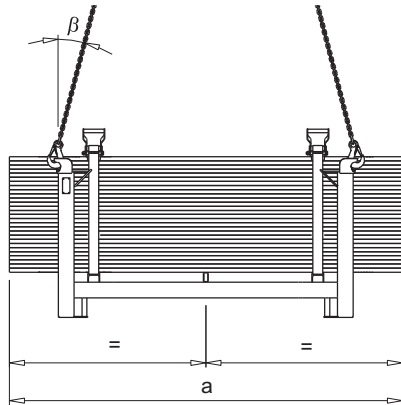
Using Doka stacking pallets as transport devices

Lifting by crane



NOTICE

- Multi-trip packaging items may only be lifted one at a time.
- Use a suitable lifting chain (e.g. Doka 4-part chain 3.20m). Do not exceed the permitted load-bearing capacity.
- Load the items centrally.
- Fasten the load to the stacking pallet so that it cannot slide or tip out.
- When lifting stacking pallets to which Bolt-on castor sets B have been attached, you must also follow the directions in the User Information "Bolt-on castor set B"!
- Spread-angle β max. 30°!



9792-211-01

	a
Doka stacking pallet 1.55x0.85m	max. 4.5 m
Doka stacking pallet 1.20x0.80m	max. 3.0 m

Repositioning by forklift truck or pallet stacking truck

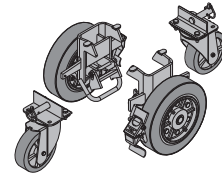


NOTICE

- Load the items centrally.
- Fasten the load to the stacking pallet (e.g. with strapping tape or lashing strap) so that it cannot slide or tip out.

Bolt-on castor set B

The Bolt-on castor set B turns multi-trip packaging items into fast and manoeuvrable transport devices. Suitable for drive-through access openings > 90 cm.



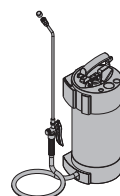
The Bolt-on castor set B can be mounted to the following multi-trip packaging items:

- Doka accessory box
- Doka stacking pallets
- Protective barrier Z pallets

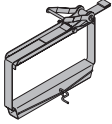
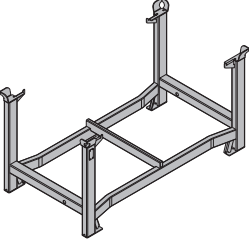
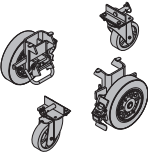


Follow the directions in the 'Bolt-on castor set B' User Information booklet!

	[kg]	Article N°		[kg]	Article N°
Doka formwork sheet 3-SO 21mm 100/50cm	4.9	186007000	Formwork sheet 3S top 21 200/40cm	7.8	186185000
Doka formwork sheet 3-SO 21mm 150/50cm	7.3	186008000	Formwork sheet 3S top 21 250/40cm	9.7	186186000
Doka formwork sheet 3-SO 21mm 200/50cm	9.7	186009000	Formwork sheet 3S top 21 200/50cm	9.7	186181000
Doka formwork sheet 3-SO 21mm 250/50cm	12.1	186011000	Formwork sheet 3S top 21 250/50cm	12.1	186182000
Doka formwork sheet 3-SO 21mm 300/50cm	14.6	186012000	Schalungsplatte 3S top 21		
Doka formwork sheet 3-SO 21mm 350/50cm	17.0	186028000			
Doka formwork sheet 3-SO 21mm 400/50cm	19.4	186013000	Formwork sheet 3S top 27 200/40cm	9.7	187185000
Doka formwork sheet 3-SO 21mm 450/50cm	21.8	186029000	Formwork sheet 3S top 27 250/40cm	12.1	187186000
Doka formwork sheet 3-SO 21mm 550/50cm	26.7	186023000	Formwork sheet 3S top 27 150/50cm	9.1	187180000
Doka formwork sheet 3-SO 21mm 600/50cm	29.1	186027000	Formwork sheet 3S top 27 200/50cm	12.1	187181000
Doka formwork sheet 3-SO 21mm 100/100cm	9.7	186015000	Formwork sheet 3S top 27 250/50cm	15.1	187182000
Doka formwork sheet 3-SO 21mm 150/100cm	14.6	186016000	Formwork sheet 3S top 27 300/50cm	18.2	187183000
Doka formwork sheet 3-SO 21mm 200/100cm	19.4	186017000	Schalungsplatte 3S top 27		
Doka formwork sheet 3-SO 21mm 250/100cm	24.3	186018000			
Doka formwork sheet 3-SO 21mm 300/100cm	29.1	186019000	Formwork sheet 3S cut 27 200/50cm	12.1	177044000
Doka formwork sheet 3-SO 21mm 350/100cm	34.0	186030000	Formwork sheet 3S cut 27 250/50cm	15.1	177045000
Doka formwork sheet 3-SO 21mm 400/100cm	38.8	186020000	Verschnittplatte 3S cut 27		
Doka formwork sheet 3-SO 21mm 450/100cm	43.7	186031000			
Doka formwork sheet 3-SO 21mm 500/100cm	48.5	186021000	Xlife sheet 21mm 265/145cm	63.4	185071000
Doka formwork sheet 3-SO 21mm 550/100cm	53.4	186022000	Xlife sheet 21mm 325/145cm	77.8	185070000
Doka formwork sheet 3-SO 21mm 600/100cm	58.2	186024000	Xlife-Platte 21mm		
Doka formwork sheet 3-SO 21mm 250/125cm	30.3	186097000			
Doka formwork sheet 3-SO 21mm 300/150cm	43.7	186098000	Edge varnish SW-910 RAL 7004 2.5l	2.9	185019000
Doka formwork sheet 3-SO 21mm 600/150cm	87.3	186099000	Kantenlack SW-910 RAL 7004 2,5l		
Doka formwork sheet 3-SO 21mm 150/50cm BS	7.3	186008100			
Doka formwork sheet 3-SO 21mm 200/50cm BS	9.7	186009100			
Doka formwork sheet 3-SO 21mm 250/50cm BS	12.1	186011100			
Doka formwork sheet 3-SO 21mm 300/50cm BS	14.6	186012100			
Doka formwork sheet 3-SO 21mm					
Doka formwork sheet 3-SO 27mm 100/50cm	6.1	187007000			
Doka formwork sheet 3-SO 27mm 150/50cm	9.1	187008000			
Doka formwork sheet 3-SO 27mm 200/50cm	12.1	187009000			
Doka formwork sheet 3-SO 27mm 250/50cm	15.1	187011000			
Doka formwork sheet 3-SO 27mm 300/50cm	18.2	187012000			
Doka formwork sheet 3-SO 27mm 350/50cm	21.2	187028000			
Doka formwork sheet 3-SO 27mm 400/50cm	24.2	187013000			
Doka formwork sheet 3-SO 27mm 450/50cm	27.2	187029000			
Doka formwork sheet 3-SO 27mm 500/50cm	30.3	187014000	Xface sheet 21mm 202/302cm	91.5	185050000
Doka formwork sheet 3-SO 27mm 300/100cm	33.3	187023000	Xface sheet 21mm 202/402cm	121.8	185076000
Doka formwork sheet 3-SO 27mm 550/50cm	36.3	187027000	Xface sheet 21mm 202/502cm	152.1	185077000
Doka formwork sheet 3-SO 27mm 600/50cm	36.3	187027000	Xface-Platte 21mm		
Doka formwork sheet 3-SO 27mm 100/100cm	12.1	187015000			
Doka formwork sheet 3-SO 27mm 150/100cm	18.2	187016000			
Doka formwork sheet 3-SO 27mm 200/100cm	24.2	187017000			
Doka formwork sheet 3-SO 27mm 250/100cm	30.3	187018000	Dokaplex formwork sheet 21mm 250/125cm	45.9	185007000
Doka formwork sheet 3-SO 27mm 300/100cm	36.3	187019000	Dokaplex formwork sheet 21mm 250/150cm	55.1	185002000
Doka formwork sheet 3-SO 27mm 350/100cm	42.4	187030000	Dokaplex formwork sheet 21mm 300/150cm	66.2	185003000
Doka formwork sheet 3-SO 27mm 400/100cm	48.4	187020000	Dokaplex-Schalungsplatte 21mm		
Doka formwork sheet 3-SO 27mm 450/100cm	54.5	187031000			
Doka formwork sheet 3-SO 27mm 500/100cm	60.5	187021000			
Doka formwork sheet 3-SO 27mm 550/100cm	66.6	187022000	Dokaplex formwork sheet 18mm 250/150cm	47.3	185011000
Doka formwork sheet 3-SO 27mm 600/100cm	72.6	187024000	Dokaplex formwork sheet 18mm 300/150cm	56.7	185012000
Doka formwork sheet 3-SO 27mm 250/125cm	37.8	187106000	Dokaplex-Schalungsplatte 18mm		
Doka formwork sheet 3-SO 27mm 300/150cm	54.5	187107000			
Doka formwork sheet 3-SO 27mm 600/150cm	108.9	187108000			
Doka formwork sheet 3-SO 27mm 150/50cm BS	9.1	187008100	Dokaplex formwork sheet 9mm 250/150cm	24.4	185001000
Doka formwork sheet 3-SO 27mm 200/50cm BS	12.1	187009100	Dokaplex formwork sheet 9mm 300/150cm	29.3	185006000
Doka formwork sheet 3-SO 27mm 250/50cm BS	15.1	187011100	Dokaplex-Schalungsplatte 9mm		
Doka formwork sheet 3-SO 27mm 300/50cm BS	18.2	187012100			
Doka-Schalungsplatte 3-SO 27mm					
Formwork sheet 3S basic 21 150/50cm	7.3	186211000	DokaPly cBoard 21mm 250/62,5cm	21.7	185169000
Formwork sheet 3S basic 21 200/50cm	9.7	186212000	DokaPly cBoard 21mm 250/125cm	43.3	185168000
Formwork sheet 3S basic 21 250/50cm	12.1	186213000	DokaPly cBoard		
Formwork sheet 3S basic 21 300/50cm	14.6	186214000			
Formwork sheet 3S basic 21 200/100cm	19.4	186215000	Doka-Trenn in container of 1000l	899.0	580911000
Formwork sheet 3S basic 21 250/100cm	24.3	186216000	Doka-Trenn in drum of 200l	185.0	580912000
Formwork sheet 3S basic 21 300/100cm	29.1	186217000	Doka-Trenn in canisters of 25l	22.0	580913000
Formwork sheet 3S basic 21 150/50cm BS	7.3	186211100	Doka-Trenn in canisters of 5l	4.5	580915000
Formwork sheet 3S basic 21 200/50cm BS	9.7	186212100	Doka-Trenn		
Formwork sheet 3S basic 21 250/50cm BS	12.1	186213100			
Formwork sheet 3S basic 21 300/50cm BS	14.6	186214100	Doka-OptiX 1000l	1011.0	580918000
Schalungsplatte 3S basic 21			Doka-OptiX 210l	215.5	580916000
			Doka-OptiX 20l	20.0	580917000
			Doka-OptiX		
Formwork sheet 3S basic 27 150/50cm	9.1	187211000			
Formwork sheet 3S basic 27 197/50cm	11.9	187218000	Doka sprayer for release agent	5.3	580914000
Formwork sheet 3S basic 27 200/50cm	12.1	187212000	Doka-Trennmittel-Spritze		
Formwork sheet 3S basic 27 250/50cm	15.1	187213000			
Formwork sheet 3S basic 27 300/50cm	18.2	187214000			
Formwork sheet 3S basic 27 200/100cm	24.2	187215000			
Formwork sheet 3S basic 27 250/100cm	30.3	187216000			
Formwork sheet 3S basic 27 300/100cm	36.3	187217000			
Formwork sheet 3S basic 27 150/50cm BS	9.1	187211100			
Formwork sheet 3S basic 27 200/50cm BS	12.1	187212100			
Formwork sheet 3S basic 27 250/50cm BS	15.1	187213100			
Formwork sheet 3S basic 27 300/50cm BS	18.2	187214100			
Schalungsplatte 3S basic 27					



Follow the directions in the "Operating Instructions"!

	[kg]	Article N°	[kg]	Article N°
<p>Stacking strap 50 Stapelgurt 50</p>  <p>Powder-coated blue Packaging unit: 2 pcs.</p>	3.1	586156000		
<p>Doka stacking pallet 1.55x0.85m Doka-Stapelpalette 1,55x0,85m</p>  <p>Galvanised Height: 77 cm</p>	41.0	586151000		
<p>Bolt-on castor set B Anklemm-Radsatz B</p>  <p>Painted blue</p>	33.6	586168000		



Formwork & Scaffolding.
We make it work.
