

11 Concrete formwork

11.1 Overview of concrete formwork panels

- BetonForce is an MUF bonded chipboard with a high density. The boards are covered on both sides with a shiny, smooth and dark UV concrete formwork paint.
- BetonSpan is an MUF bonded chipboard with a high density. The boards are covered on both sides with an impermeable, smooth protective coating.
- AcrySpan is an MUF bonded chipboard that is covered on one or both sides with a shiny, smooth UV acrylic concrete formwork paint.
- Hydrolysis WRB is an MUF bonded moisture-resistant board that is produced with a higher bulk density, specifically for concrete formwork.

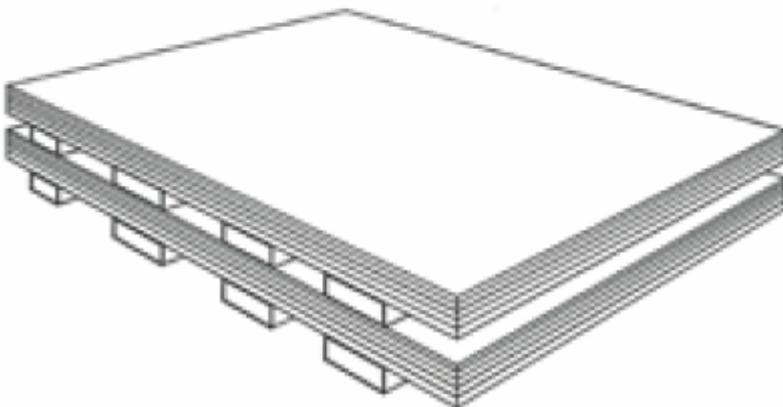
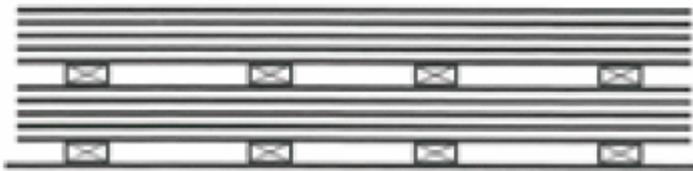
11.2 Guidelines for use

Applications

Concrete formwork is typically used in simple applications/formwork modules. The customer chooses a formwork board on the basis of chipboard because of the price, the smooth result and the available sizes. The choice between the various panels depends on the application and personal preference. The cladding which the customer obtains the desired result in his application is installed.

Storage

- Store the panels in a dry environment, protected against the weather and fluctuations in humidity. The location does not need to be heated.
- Ensure good ventilation to prevent condensation on the inside of the covering. Wood is a living material. Large fluctuations in temperature and humidity can cause stresses in the board, it usually recovers when the board has been acclimatised.
- Avoid storage in the open air. If this nevertheless has to be done for a short time, cover the boards with a tarpaulin or a tight-fitting plastic cover to protect the boards from the weather. Choose a permeable cover to avoid any condensation on the inside of the cover.
- Place the boards horizontally on laths at a sufficient distance from the ground and walls.



Cutting

The panels can be cut to the desired size. Use a saw with hard metal blade.

Installing the formwork

- Move the boards at the site by hand in order to avoid damage to the board surfaces.
- Incorporate the boards into formwork modules. They are nailed or screwed from the inside out. Try not to drill through the surface.
- Provide a good support/battening at the rear of the panels to prevent bending. By placing additional supports or decreasing the spacing of the joists, take account of a possible increased buckling compared to some plywood variants. The strengthening of the formwork boards at the rear end also increases the quality of the concrete and, depending on the application, the re-use.



- Fill all the holes, seams (horizontal and vertical) and attachment points (screws, nails, ...) by filling the panels with silicone or a polyester filling in order to avoid the ingress of moisture and to reduce the swelling of the panels in all directions.



- If the panels are to be reused, use small-headed nails or panel pins so that the panels can be removed with a minimum of damage.
- If necessary, use angled slats to hide the jagged edges from sawing the boards and thus obtain a better result for the concrete surface.

Protecting the ends

All rough or sawn edges are sealed after processing with water-repellent sealant, often acrylic paint, applied by brush, roller or spray gun to prevent the ingress of water/moisture. Very important are the edges which are sealed on the ground to prevent moisture from entering at the edge of the board and thus avoid runouts in the concrete after stripping. Direct contact with water at the sides must always be avoided.



Bonding

The bonding of the concrete to the formwork will depend on the quality and the surface of the concrete, keeping to the maximum formwork time and the number of times that the formwork panel has already been used.

The cladding is sprayed thoroughly and evenly with formwork release oil and then wiped with a cloth, in accordance with the instructions.

A water-based release agent is often used for this (for example: Marginel or Demua). The product data sheet specifically states that it can be used on, painted or unpainted, wood formwork and should be applied to a clean, dust- and concrete-free surface. The product is sprayed and the drying time is respected.

The use of release agent facilitates the removal of the formwork and reduces the risk of damage to the concrete surface.

Disassembly

Provided that the correct release agent is used and attention is paid to finishing the saw cuts, the boards can be reused.

At the site, few concrete formwork panels are reused due to the manhours needed to avoid damaging, opening and treating the boards ... If the formwork panels are reused this happens in precast concrete plants.

Damaged panels are never reused. These can cause problems on re-use, such as leaving marks on the concrete or create problems when stripping.

When the board is dismantled for re-use, the nails are removed with the claw of a hammer, without pulling part of the board loose or creating a porous point. The opening forms a weak spot for the ingress of moisture, hence a risk of a mark in the concrete, and should be treated.

No heavy equipment is used for stripping the panels.

Clean and dry the boards after every use before stacking them.

The panels must not be damaged and the form or construction must still permit reuse. Here melamine board material is given preference.