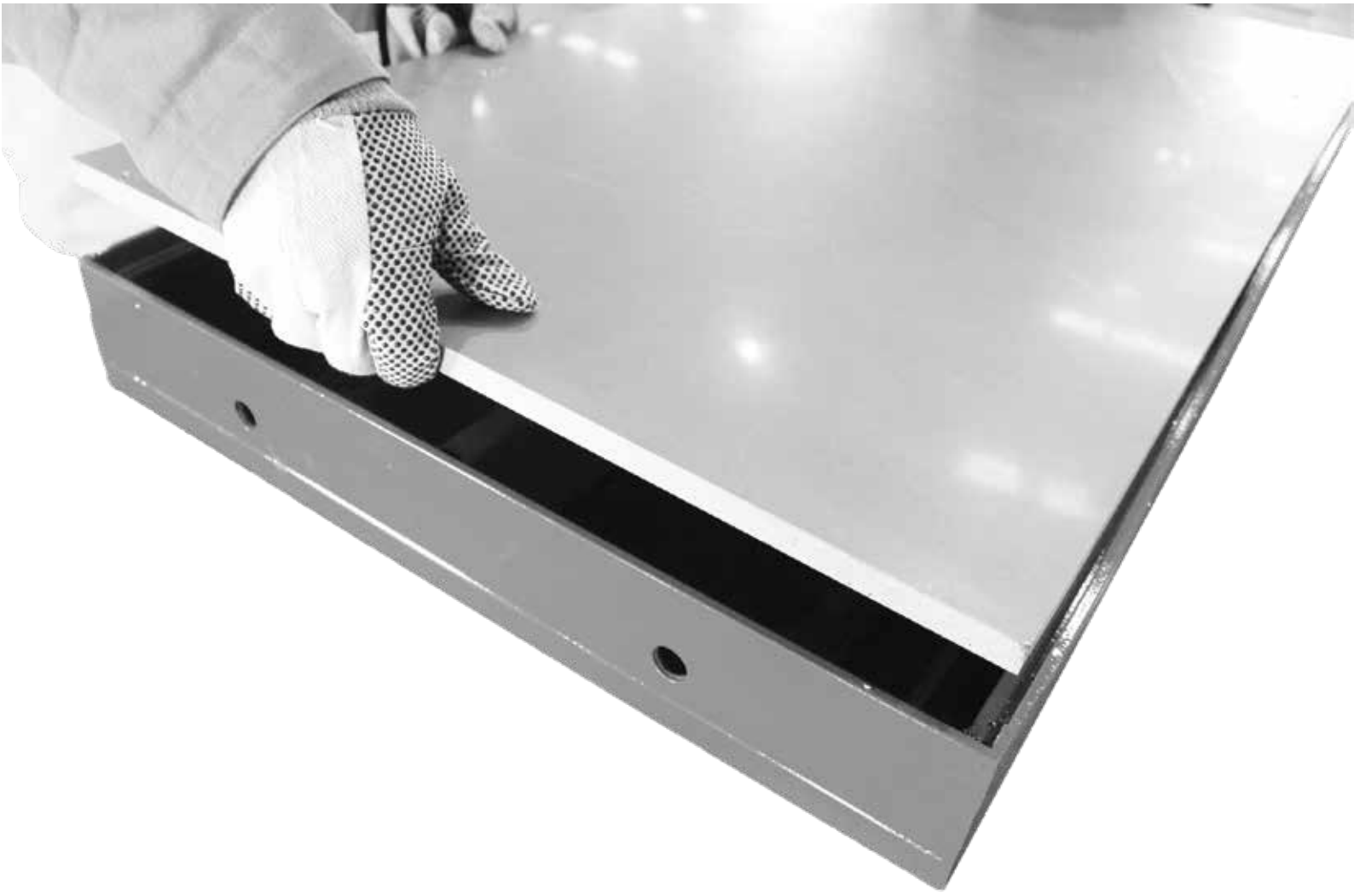
ACROW Building Products

ACROW BOARD User Manual



www.acrow.co

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Symbols used

The following symbols are used in this booklet:

Important note
Failure to observe this may lead to malfunction or damage.

CAUTION / WARNING / DANGER
Failure to observe this may lead to material damage, and to injury to health which may range up to the severe or even life-threatening.

Tip
Points out useful practical tips.

Do Not

Avoid the following to prolong the usage of Acrow Board

To achieve the manufacturers number of uses please avoid the following:

- Using a pry bar or craw bar on the edge of the board.
- Dropping the board on its edges, or from high places.
- Dropping heavy items on the board. (avoid collision)
- Drilling close to the edges. Please follow the steps explained in "Removal and fixation of Acrow Board in formwork metal frames"
- Using nails or drilling on the edge of the board.
- Over use of nails. It is recommended when using nails to use 5cm nails.
- Using chemical solvents to clean board surface.
- Dragging boards on rough surface. This will damage the surface of the board.
- Storing the board on uneven or irregular surfaces. This will cause deformation to the board.
- Prying rivets out. Use a rivet removal tool.
- Drilling diagonally in the board. As this might crack and break the board.
- Punching or hammering to make holes in the board.
- Lifting the Boards using wires or chains. Acrow Board should be lifted using cloth belt.

warning and safety precautions when using Acrow Board

- Acrow Board is 100% recyclable, we accept return of damage boards, or boards in any condition. Do not dispose of boards in fire. Acrow Board is grade B2 fire retardant, still when subjected to direct flame it releases toxic fumes. If accidently inhaled please immediately seek medical care.
- Always wear appropriate eye protection when cutting boards
- Wear protective gloves when handling Acrow boards. Acrow board edges are sharp.
- Wear appropriate limb safety gear, and avoid dropping the board on limbs as it may cause serious injury.
- When cutting, riveting, drilling… etc. or using any power tools, please refer to the tool instructions and safety procedure.

☛ This user guide contains the most important information and tips about using Acrowboard
Please make sure to read these instructions before starting use and observe the safety instructions to protect you and avoid damage to the boards.
When using our products, you must observe federal, state and local laws and regulations.

Nailing

Nailing has always been a problem with plywood. Nails can chip the veneer on the other side. Also, the nail holes become a weak point where moisture and release agent chemicals can penetrate the plywood layers and damage the sheets (as explained in the section on moisture damage, below)

Acrow Board has the same nail holding characteristics as traditional plywood, without the drawbacks. In order to prolong Acrow Board life and utilize it to the maximum, care has to be taken to avoid nailing too close to the edges (should place nails at least 5 cm away from the edges), or placing nails diagonally.

Moisture damage

Moisture from concrete, curing, and the weather brings out the worst in plywood. Moisture can penetrate through the edges, tie rod holes, nails, rivets. etc. the result is change in dimensions, bulging, detachment of plywood layers, pealing of veneer protective layer, and reduction of bearing capacity up to 50%.

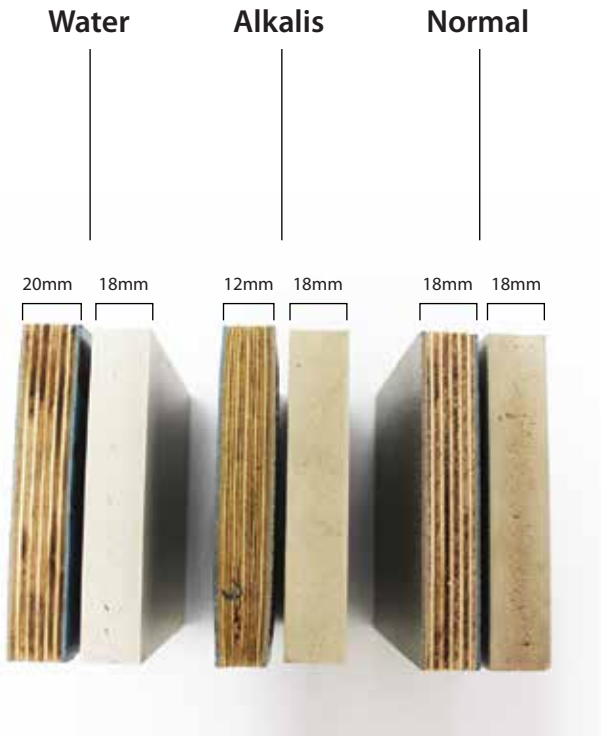
The is no need to worry about moisture during storage or use of Acrow Board. Acrow Board can be completely submerged indefinitely under water without changing dimensional, physical, mechanical, or chemical properties. As it is a foamed polymer composite it absorbs 3% water with no effect on the sheet.

Acrow Board's water-resistant characteristics mean more value and ease of storage, ease of cleaning using a pressure washer, and many other benefits.

Chemical resistance to alkalis and acidic solutions

Without the veneer protection on plywood, wood becomes vulnerable to concrete alkaline characteristics and rapidly disintegrates once the top layer is damaged or the edges of the plywood are exposed.

Being a polymer composite gives Acrow Board a very high resistance to concrete chemical aggressiveness.



Mold and insect resistance

Wood mold and insect damage are common in plywood. Acrow Board is resistant to both and provides customers with a safe solution to mold and insect threats.

Less or no release agent needed

Under no circumstance will Acrow Board veneer surface peel off. The board is not multilayered and thus there is no threat of peeling.

It is quite common for construction teams to apply inadequate release agents to plywood, which results is either damage to the concrete or the plywood veneer surface. With Acrow Board, and due to the Saluka surface treatment of the boards, there is no need to apply a release agent before casting. Concrete does not adhere to Acrow Board.

Only in the case of using a very slow setting concrete retarder is a very small amount of release agent recommended to be used. The use of the release agent is due to the probability of the concrete surface still being soft and thus chipping off, it is not likely that the board surface will peel of like plywood in this case.

Environmentally friendly

Acrow Board is 100% recyclable leaving future generations a cleaner healthier world.

Long life span

Acrow Board is estimated to last for 50 casts when used correctly according to the instructions. The provides a great value for our customers and provides them with a competitive edge.

Return and barter (Egypt region)

Acrow Boards are 100% recyclable, we accept exchange for damaged, or used boards. This benefit gives our clients a value return on the long run. Boards are accepted in any state or dimension. Exchange is based on weight, so returns have to be free from debris and nails. Make sure you ask Acrow representative for the return exchange rate.

Resistance to U.V

Acrow Boards can withstand direct sun for 5 years, which the only change that can happen is surface staining. Therefore, you do not have to worry about storing in rain, sun, or extreme weather conditions.

User Instructions & Maintenance of

ACROW BOARD in Panels

1 . After cast cleaning and care

To maximize utilization of Acrow Board, and get smooth surface concrete, it is essential that you clean the board after each cast.

1. Use a soft brush and wet cloth to remove any excess concrete milk or dirt right after dismantling the forms.

2. For any screed scratches use a paint scraper to smoothen surface.

3. For rough concrete remains use a concrete scraper, or a putty knife to scrape off any remains.

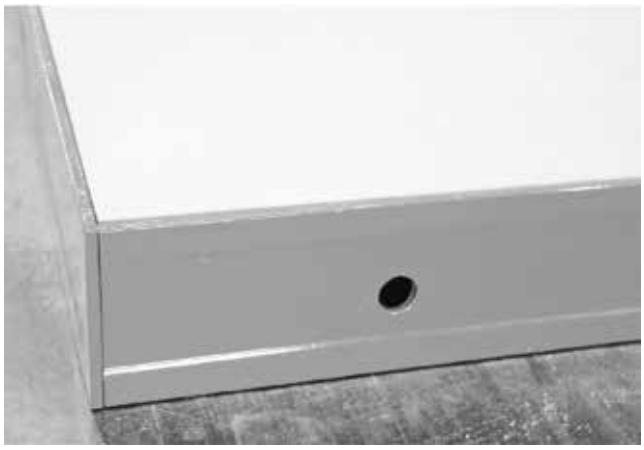
4. Rinse surface with water, it is recommended to use a presser washer to clean surface after steps 1 to 3.

Even though Acrow Board is alkali and acid resistant, it is not recommended to use chemicals in cleaning the board. Acrow Board surface is manufactured using saluka technology, so as not to adhere to concrete or dirt.

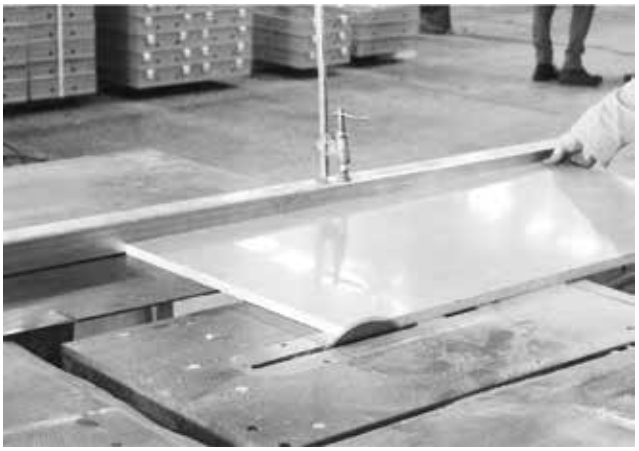
2. Cutting and resizing acrow board

Acrow Board is cut to the length required by the client. This minimizes waste, and saves on effort and time. However, it is still possible to resize Acrow Board for reuse, or to remove damaged parts, or for repair.

1. It is recommended allow for 1mm to 3mm space from the metal frame edge. This allowance is for ease of fit, and to avoid damaging the edges during installation.



2. Use standard wood cutting tools.



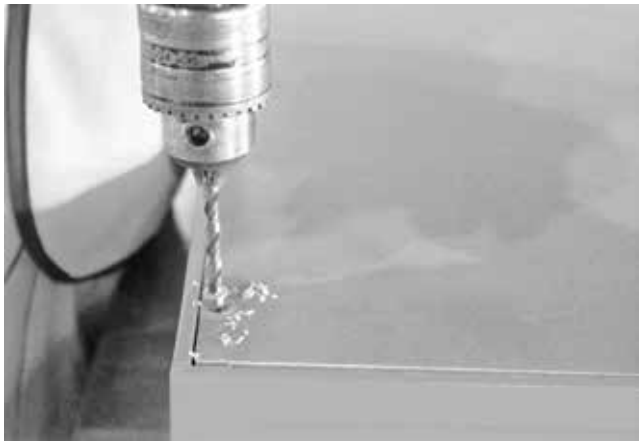
Due to Acrow Board's special water-resistant characteristics there is no need to seal the edges of the board with silicone after installation in the metal frame. With traditional plywood, it is a common practice to silicone seal all the plywood edges, to protect the plywood edges, from being subjected to moisture, which causes severe damage and commonly pealing of the plywood protective face

3. removal and fixation of acrow board in formwork metal frames

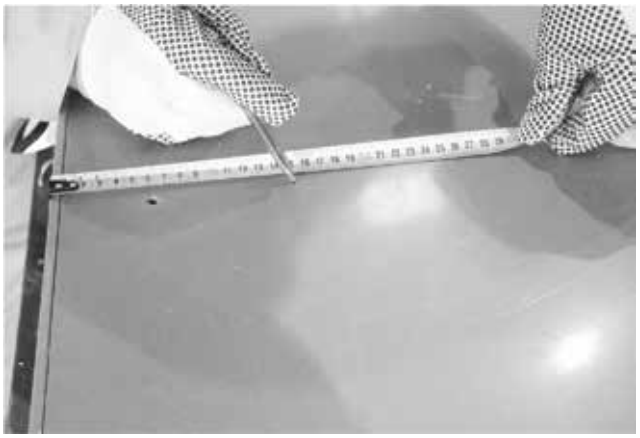
It is recommended to use rivets in attaching Acrow Board. Although Acrow Board has high nail holding characteristics, nail usage should be avoided to prolong Acrow Board life span, and obtain a smooth fair face concrete.

⚠ **Never drill or hammer closer than 10cm from one another, or 5 cm from the board edge, or adjacent tie rod openings.**

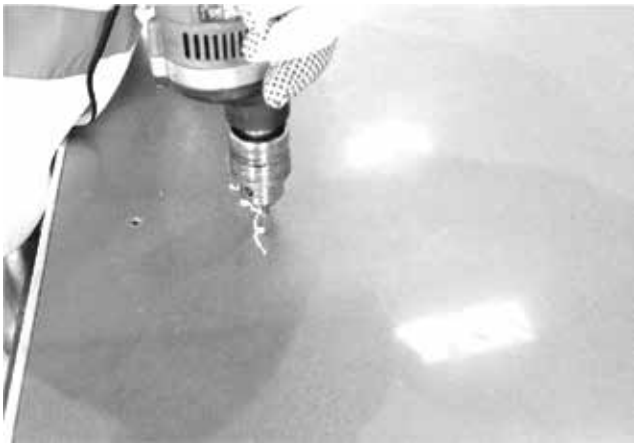
1. In case of removal of the board from a frame, use a rivet removal tool to remove old rivets.



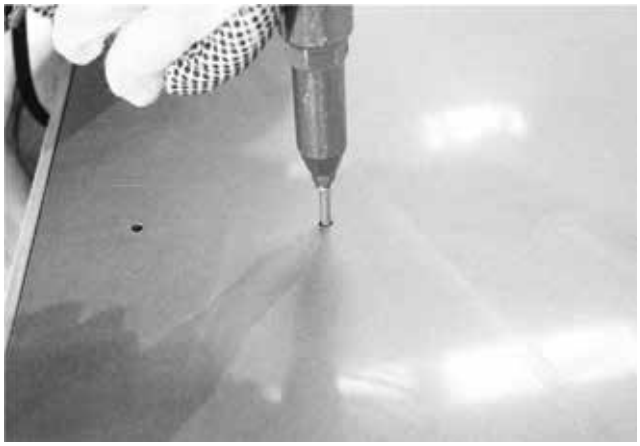
2. Mark the location of the new rivets carefully and make sure they are aligned with the rivet openings in the metal frame.



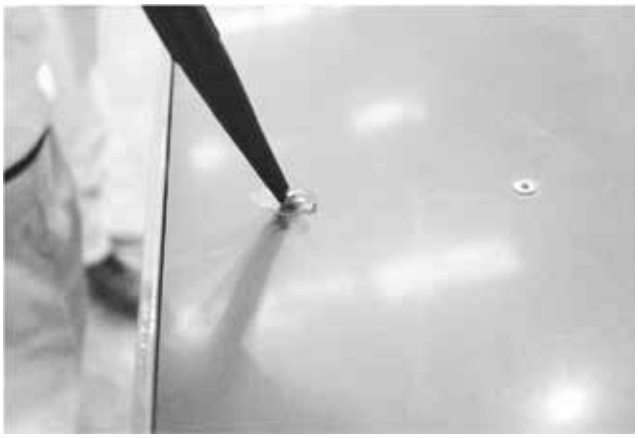
3. Drill using 5mm wood drill bit.



4. Use 5mm rivets and riveting machine to attach rivets to the board and metal frame.



5. Fill old rivet holes with silicone.



4. Repair of rivet holes

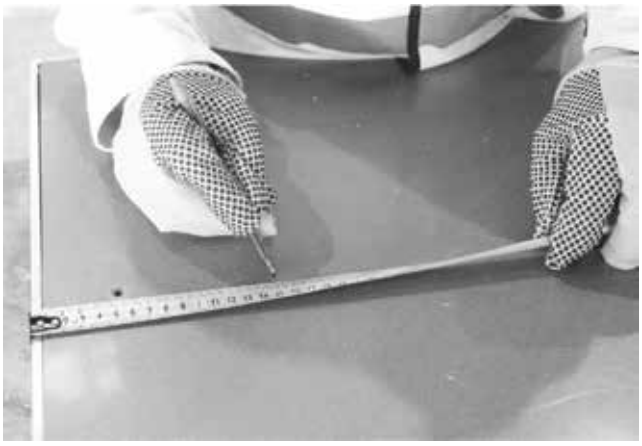
It is possible to use the other side of the board. Consequently, this will require reallocating the rivets, and repairing the old rivet holes.

1. Remove all old rivets using a rivet removal tool.

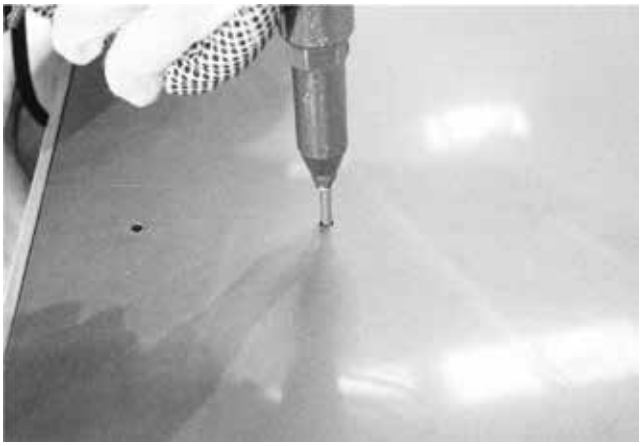
2. Remove board from metal frame by turning the frame upside and pushing the board out.

It is recommended to use a rivet removal tool when removing old rivets to avoid damaging the board. Although it is not advised to use nails with Acrow Board, in case it is used, old nail holes will seal on their own during the next pour.

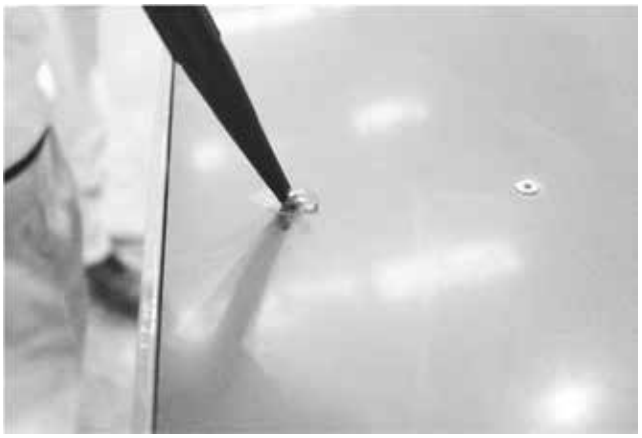
3. Realign the board in the metal frame, and mark the new location of the rivets



4. To fix the board in the metal frame, use the same steps described above in "Fixing the board in metal frames for pouring concrete".



5. For old rivet holes, use silicone to seal it



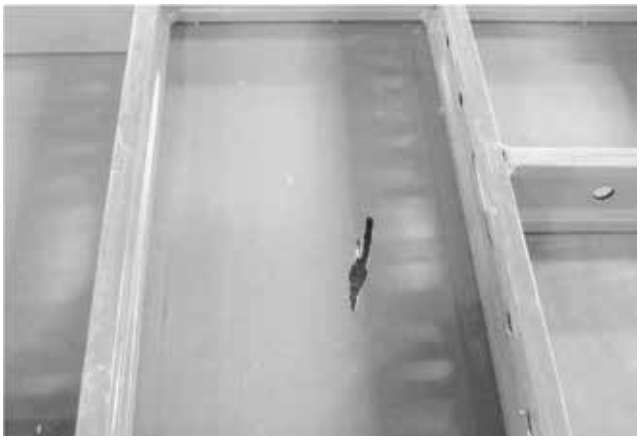
5. repair of any small damaged sections in acrow board

In the unlikely event of damaging part of the board surface, it is possible to replace this section alone instead of replacing the whole board.

1. Mark the damage zone and mark the area that will be replaced.

2. Locate the nearest two cross stiffeners to the damaged area, and mark the cut line on the cross stiffeners.

3. The line should be overlapping the cross stiffener by at least 2cm so that the cross stiffener acts as a base support for the replaced section, and so that the new section can be fixed by rivets in the cross stiffener.



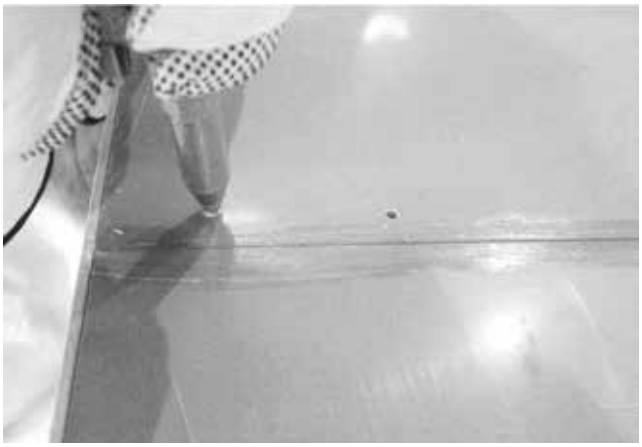
4.Remove the board from the metal frame, as explained in "Removal and fixation of Acrow Board in formwork metal frames" section above.

5. Cut the damaged area as marked in steps 2 and 3.

6. Re-install the old sections in the metal frame and fix the edges of the cut section using new drilled rivets.

7. Apply silicone on the cross stiffener before installing the cut section.

9. Install the cut section and fix with rivets to the secondary stiffener.

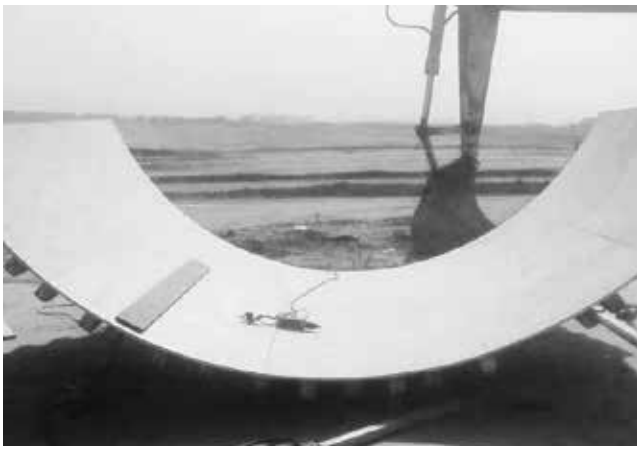


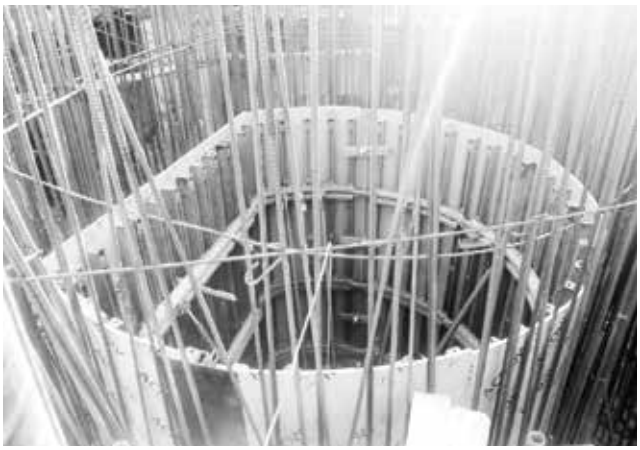
6. Installing acrow board in curved metal frame

As the board is made from a polymer composite, its molecules can be rearranged with heat, we supply curved boards as per the required curvature.

Installation

1. Put board on metal frame.
2. Apply gentle pressure to the board to imprint on the metal frame.
3. Fix board to the metal frame using rivets, and add 1cm washers with the rivets.





User Instructions & Maintenance of

BOARD in Flex Systems & Slabs

1. Unloading & storage of Acrow Boards

Acrow Boards are packed in boxes for overseas transport, and strapped for local delivery's, as show in the illustrations below.

Full Packaging (export)

Packing with straps (local)

Packing with belts (local)

2. Handling, Moving & transporting Acrow Board for usage

It is recomended to transport Acrow Board in the factory packaging. ~~As mentioned before~~ use cloth lifting belts, and never wire or chains for lifting.(Shown Below)
Transport the bundle as closest to the intended usage area, preferably lift on top of the formwork of the designated slab to be casted, to minimize manual transportation labor.

Do not unpack boards before unloading from containers or trucks. Keep wrapping of bundles. When lifting the bundles use cloth wire

Do not use steel wires or chains for lifting as this will damage the boards.

☛ **B Always store Acrow Board on flat smooth surface to avoid deformation, and surface damage.**

3. Covering the slab area with Acrow Board

The boards are distributed on the slab manually as per the approved drawings. Wearing the appropriate hand protection is essential. Do not drop the boards during distribution as this can damage the board.

Even though it is not recommended to cut the boards, if special dimensions are required the same tools used for wood can be used to resize the board.

Avoid inserting the board in the concreate sections, in slab connections with walls, beams, and columns.

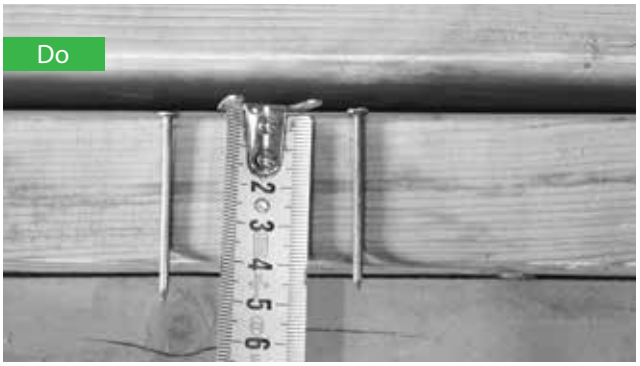
As if the edge of the board is imbedded in the concrete section it will be very difficult to dismantle.

In the unlikely event the edge of the board is damaged, resize the board using standard wood resizing tools.

4. Fixing Acrow Board on Slab

When using nails to fix the board it is recommended to use 5cm nails, and do not nail adjacent to the board edge less than 3cm.
Do not over nail the board.

Use 5cm nails



Do not over nail the board

5. Dismantling after casting

Systematically dismantle the formwork from top to bottom and not vice-versa

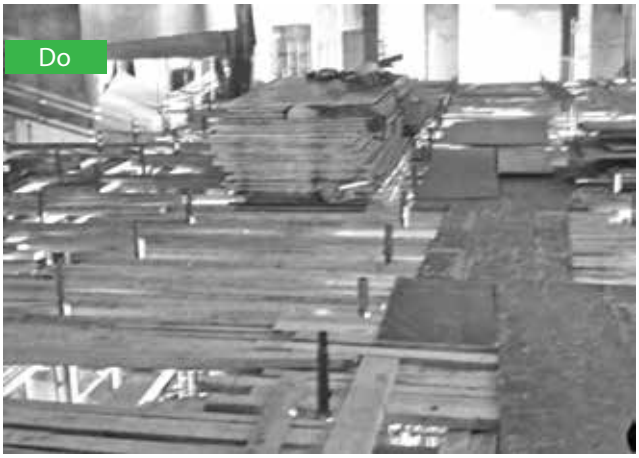
A- According to the used formwork system, release the top unit, so the primary and secondary Board support is released. (use Drop head, U-Head…ETC)

B- Prepare sufficient walk platform for dismantling, Secondary support can be used.

C- Acrow Board does not need release agent so it will not adhere to the concreate during dismantling. Due to this property a common it will fall easily during dismantling. Avoid dropping the board to prevent it getting damaged.

D- Standard board release tools are used.

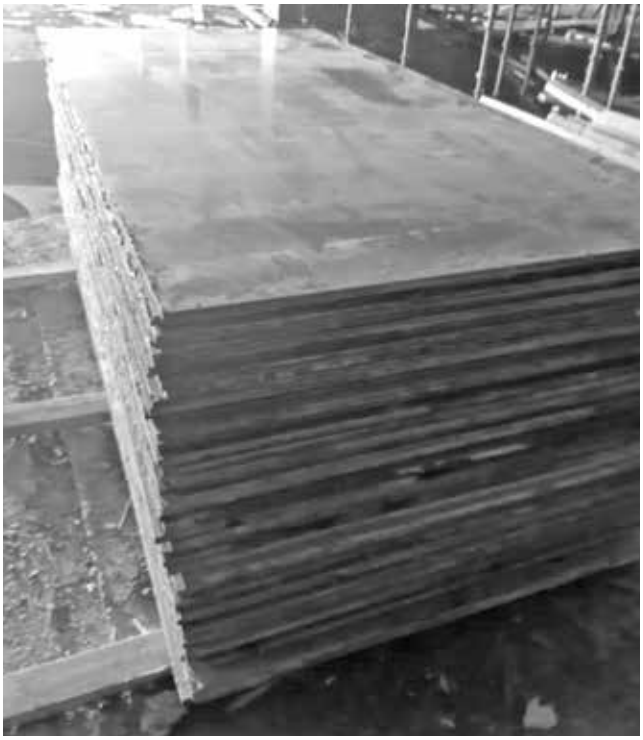
E- Collect the boards on the formwork walkways



F- lower manually without dropping.

G- Avoid lowering large area of the secondary and primary support, as due to Acrow board non-adherence to concreate, large areas of the boards may drop suddenly.

H- If the board edge is casted on and inserted in the concrete members, slowly chisel the stuck part to avoid damaging the board.

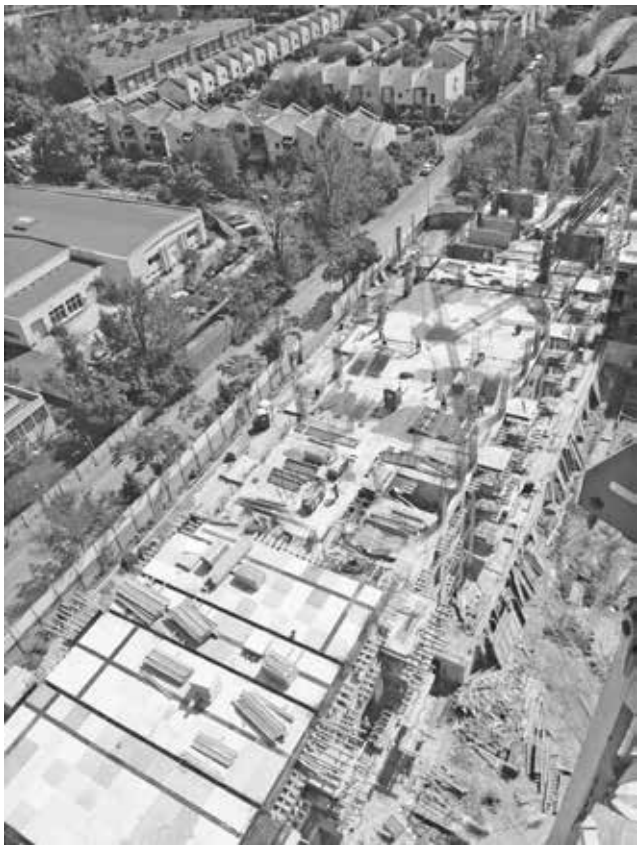


I- After cast clean and care please refer to page 7.

Previous project

Water reservoir - Algeria

Ceiling H20 - 50 times use - Romania branch



Acrow Board Vertical Walls With Acrow Beam From Basement Up To 28:00 So far, Alamein Towers - Arab Contracting Client

Drum Columns VMC Acro Project RCJY - Rezayat Co . Jubail Saudi Branch

One of the advantages of Acrow Board is that it is not affected by moisture and water, which allows the customer to use the plate in concrete castings compared to the plywood board if following the instructions outlined in the manual of Acrow Board

FAQ`S

Why do we replace a well-tested product like wood with Acrow Board?

Over time, humans have sought to improve their use of the abundant resources in their environment. We are constantly looking for innovations that allow us to work more efficiently, saving our time and reducing our efforts. Without this drive to evolve, humans would remain stuck in the Stone Age.
The change can be frightening, but history shows that there can be no progress without it. For the construction industry, using a cheaper product and better performance for a longer period and having positive environmental benefits will allow you to increase your productivity without compromising quality or increasing your expense.

This is why Acrow Board is the next level in technological development.

It was common practice for steel pipes to be used in all sanitary connections. When it was introduced, polypropylene pipes were a new and unexplored area. Plumbers and users were hesitant and unsure of turning into something new and untested. Plumbers had no experience or tools to use the pipes. Moreover, there were complaints that the tubes were softer than steel, which could lead to a hole or break. Today, after a decade of use, the advantages and superior durability, along with knowing how to use it, are high polymer tubes to be the right choice, and steel pipes are outdated.

Acrow Board alternative to plywood ?

Yes, a practical, economical alternative to Plywood

Does Acrow Board provide the same function as plywood in construction?

Yeah! Although it is a different product, Acrowboard provides the same function as plywood, for a lower cost with more durability.

Does Acrow board require special tools (nails, saws, etc.)?

No! The same tools that are used with plywood can be used with Acrow Board.

Does Acrow board require more strengthening and support?

No! The same spacing and arrangement of the member are used with Acrow Board. We also provide structural analysis for clients (conditions apply). Therefore, there is no additional cost for materials or workmanship required during installation.

Is Acrow Board expensive?

Acrow Board can be reused several times more than Brazilian plywood with appropriate use, each Acrow Board can be used 50 times, while providing the same consistent quality concrete. The cost resulting from multiple uses provides a value that is much greater than the minimum investment that is made in training workers to deal with the council properly.

What is the initial cost for Acrow Board compared to plywood?

Acrow Board is the same price as the imported Brazilian plywood, after deducting the repurchase value from the plate. In the long run, Brazilian plywood is cast 8 times, while Acrow Board cast 50 times.

What is the Acrow Board buy-back option, and what is the swap option?

Due to recycle Acrow Board, we can offer our customers an 18% and 20% buyback option to exchange swap with new boards. We repurchase or replace used panels of any size, as long as they are free of debris and nails.

How to measure return plates for repurchase or exchange if Was it small?

We purchase returned materials or replace them with new panels based on weight, and we recycle them to produce new ones.

Why is there an emphasis on care when dealing with acrow Board?

The most important feature of Acrow Board is to reduce costs with the long life of the plate when used for frequent casting. That is why care is necessary to obtain this value.

Acrow Board Advantages

- **Cheaper.**
- **More durable.**
- **Better concrete surface.**
- **100% recyclable and environment friendly. Repurchase option: After use, the plate residue is repurchased for recycling.**
- **The lack of water absorption maintains the concrete water content, and this improves the surface treatment and final finishing.**
- **No decoding agent needed: Acro Board surface does not stick to concrete.**
- **Water Resistant: Increases ease of storage and does not affect moisture or rain.**
- **Degree of fire resistance B2.**
- **Available in cut dimensions, removes waste.**
- **It can be shaped into curves.**
- **Insect and rodent resistance: easier to export and import (no fumigation required).**

Do Not

Avoid the following to prolong the usage of Acrow Board

To achieve the manufacturers number of uses please avoid the following:

- Using a pry bar or craw bar on the edge of the board.
- Dropping the board on its edges, or from high places.
- Dropping heavy items on the board. (avoid collision)
- Drilling close to the edges. Please follow the steps explained in "Removal and fixation of Acrow Board in formwork metal frames"
- Using nails or drilling on the edge of the board.
- Over use of nails. It is recommended when using nails to use 5cm nails.
- Using chemical solvents to clean board surface.
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- Storing the board on uneven or irregular surfaces. This will cause deformation to the board.
- Prying rivets out. Use a rivet removal tool.
- Drilling diagonally in the board. As this might crack and break the board.
- Punching or hammering to make holes in the board.
- Lifting the Boards using wires or chains. Acrow Board should be lifted using cloth belt.

warning and safety precautions when using Acrow Board

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- Always wear appropriate eye protection when cutting boards
- Wear protective gloves when handling Acrow boards. Acrow board edges are sharp.
- Wear appropriate limb safety gear, and avoid dropping the board on limbs as it may cause serious injury.
- When cutting, riveting, drilling… etc. or using any power tools, please refer to the tool instructions and safety procedure.

☛ This user guide contains the most important information and tips about using Acrowboard
Please make sure to read these instructions before starting use and observe the safety instructions to protect you and avoid damage to the boards.
When using our products, you must observe federal, state and local laws and regulations.

Issue No : 1 2020 Designed by : Adham Abdelazim for Acrow formwork tecnology

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