Airodek Prop and Panel

1.0 Introduction

This guidance note is for the erection, use and dismantling of the Airodek Prop & Panel support system for concrete slabs up to 450mm thick.

This document shall not be used as a working method statement. It is the customer's responsibility to assimilate this information into a document specific to the site conditions.

This document must be read in conjunction with the RMD Kwikform (RMDK) drawings, when provided.

It is assumed that work with RMDK equipment is undertaken or supervised by competent personnel familiar with the products. Where necessary, product familiarisation can be provided by RMDK.

2.0 References

Please refer to the RMDK Airodek brochure, Technical Data Sheets and the attendant RMDK Risk Assessment. Reference should also be made to the Project Work Method Statement and construction drawings provided by the contractor for specific details and sequence.

3.0 Health & Safety

This document is for general guidance only and does not remove the responsibility for safe erection, use and dismantling of the Airodek System from the customer.

We recommend that only trained, competent operatives erect, or dismantle Airodek equipment.

The Customer must provide safe access and a safe working surface at all times. Safe systems of work shall reflect industry best practice and comply with applicable local legislation.

4.0 Design Parameters

The Airodek Prop & Panel System is designed to support reinforced concrete slabs up to 450mm thick and the live loads associated with placing the concrete. Where appropriate RMDK will provide scheme drawings, which will clearly indicate the design parameters used. If any of this information is believed to be incorrect, the relevant RMDK office must be contacted prior to erection.

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4.1. Stability

During erection equipment is stabilised by fitting Airodek Spacing Gates and Spacing Gate Legs to the props at the noted centres, the maximum spacing is 5.4m in each direction

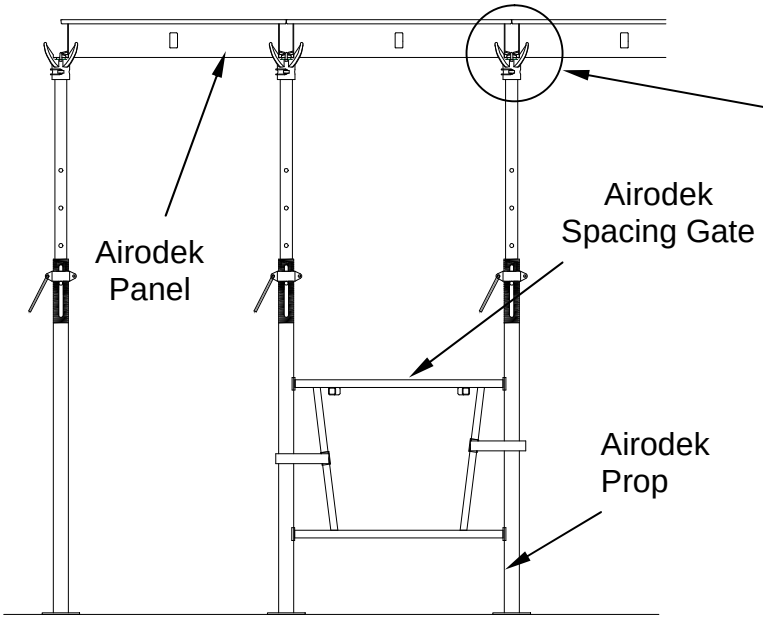
Stability during all subsequent stages of construction is provided at the top of the system by the soffit infill plywood being cut in tight around the column heads and/or walls.

It is the customer's responsibility to ensure that the permanent works and the interface with the soffit, as constructed on site, can safely resist all notional and actual horizontal loads.

5.0 Component Identification

The system comprises aluminium-framed panels supported by crowns and props.

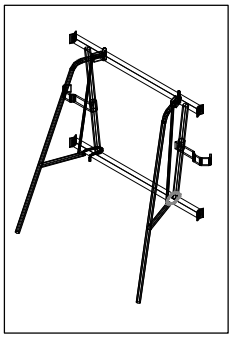
Figure 1.



Airodek HD Crown

Rapidshor Sleeve Clip

Spacing Gate and Legs



Telescopic Strut

5.1. Telescopic Strut

A Telescopic Strut is used for temporary support of panel ends during erection and dismantling. The claw at the top of the strut engages in the rectangular cut out in the end of the panel frame. During the raising and lowering operations engage the claw as figure 2. Engage the locking tab shown in figure 3 when the Telescopic Strut supports the panel temporarily at high level to prevent accidental dislodging of the strut.

Figure 2.

Figure 3.

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6.0 Foundations

Airodek Prop and Panel equipment is usually founded on a previously cast and cured concrete slab. Foundations need to be relatively flat and of a suitably compacted material that will adequately withstand the indicated leg loads without undue settlement. In multi storey construction backpropping may be necessary to enable load sharing between 2 or more floor slabs. Where falsework is founded directly on the ground use appropriate sole boards to spread the load from the standards.

7.0 Assembly

7.1. Preparation

Adjust all of the props to the approximate length required. This will be the floor to ceiling height minus 170mm. Check that there is a minimum of five threads available on the prop outer to allow the collar to be wound down during striking. Ensure that the Stepped Prop Pins are engaged correctly and are not in their notched stuck positions. Add an Airodek HD Crown to the top of each prop and connect using a Rapidshor Sleeve Clip.

If an RMDK drawing has been supplied, the position of the prop grid will be clearly set out. It is important that the falsework system is in the correct location relative to the structure. Set out the first line of props adjacent to a wall and the position of the first prop on the line.

7.2. Erection Sequence (Figure 4)

1. Lay the first pair of Airodek Props horizontal on the slab with their bases in their approximate final position. This will normally be adjacent to a wall. Join the props with a 900mm Spacing Gate. Ensure the gate is orientated the correct way up and the correct way round so that the Spacing Gate Legs will be able to be fitted to the same side as the panels will be erected. Set the upper rail of the gate in line with the paint band on the props (The top of the rail will be 935mm off the bottom of the props). Tighten the connection by engaging the integral sliding clamps with the prop bodies and driving them lightly down the inclined Spacing Gate members with a hammer.
2. Raise the assembled pair of props and attach a pair of Spacing Gate Legs to the Spacing Gate. Fit both legs to the side of the gate remote from the wall securing with the integral latch. Adjust the position of this first assembly to suit the setting out of the prop grid. The assembly should now be stable. (If the equipment is not founded on a cured concrete slab use four spacing gates to make a stable initial assembly of four props and work away from this assembly. Use 1800mm spacing gates to brace the first row of props to the second row every other bay with the progress of erection)
3. Lift an Airodek Panel and hang the top end on the crown prongs.
4. Rotate the lower end of the panel part way up by hand and engage the claw of the Airodek Telescopic Strut in the rectangular cut out in the end of the panel frame. Complete the raising of the panel using the Telescopic Strut and support it at soffit level. Ensure that the locking tab of the claw is engaged as figure 3. Check that the telescopic Strut is set to the correct length to support the panel without the base sliding and that the clamping screw that sets the strut to length is adequately tightened.

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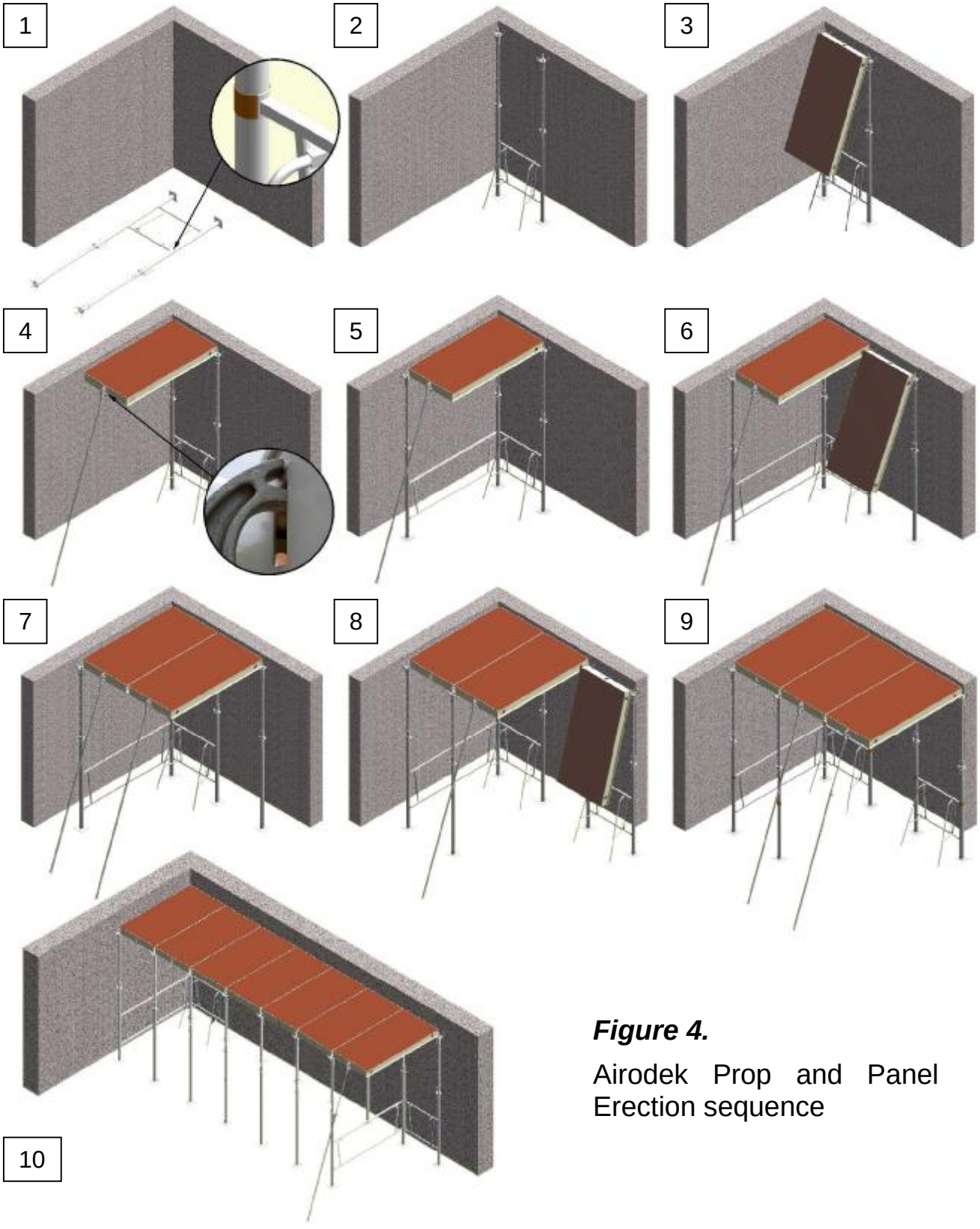

Figure 4.

Airodek Prop and Panel Erection sequence

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5. Place an Airodek Prop under the free corner of the first panel. Ensure the panel frame engages snugly with the seating in the Airodek Crown. Install an 1800mm Spacing Gate.
6. Install an Airodek Prop 900mm away from the first pair of props and stabilise with a 900mm Spacing Gate or manually restrain. Engage a second panel on the crowns.
7. Raise the panel as before and support with a second Telescopic Strut.
8. Place an Airodek Prop under the adjacent corners of the erected panels. Remove the Telescopic Strut from first panel. Install a further Airodek Prop 900mm away from the first three props and stabilise with an assembly of 900mm Spacing Gate and Spacing Gate Legs or manually restrain. Engage a third panel on the crowns.
9. Raise the panel and support it with a Telescopic Strut. Place an Airodek Prop under the adjacent corners of the erected panels etc. As erection of the first row of panels progresses check the position and squareness of the prop grid and adjust.
10. Once seven panels have been erected and a second 1800mm Spacing Gate is in-situ then all except the first and last 900mm Spacing Gates and Legs installed may be removed for use to assist with further erection of the first row of equipment.

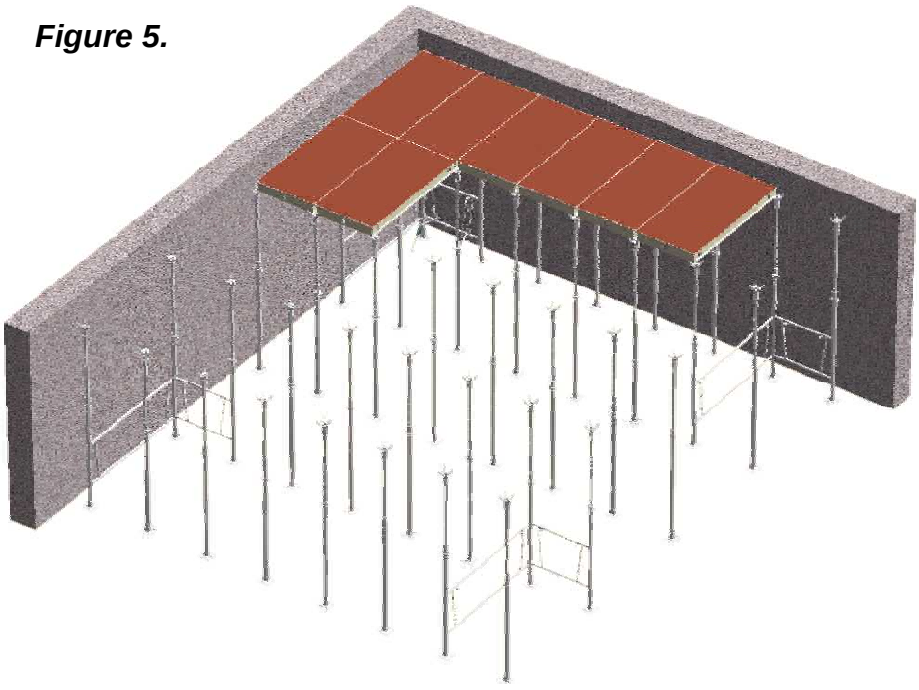
Continue this sequence to complete the soffit, positioning spacing gates as indicated in 7.3. Check the level of the soffit as each row of panels is erected to minimise gaps between panels. Carry out minor adjustments by rotation of the Airodek Prop Collars.

Place Infills to column heads and perimeter walls in accordance with 7.4 before allowing full access to the soffit or loading it with any materials.

7.3. Spacing Gates

Install pairs of spacing gates at 5.4m centres in each direction as the soffit is erected to ensure stability of the equipment. This corresponds to every third bay in the 1800mm pitch direction and every sixth bay in the 900mm pitch direction (Figure 5).

Figure 5.

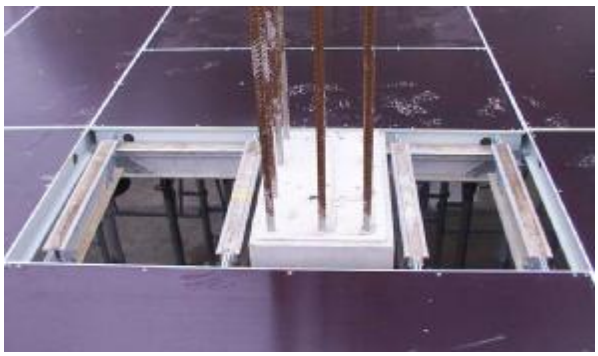


7.4. Infill Formwork

MATERIALS, PLANT & REINFORCEMENT SHALL NOT BE LOADED ONTO THE SOFFIT PRIOR TO SECURING THE INFILLS

Controlled personnel access is permitted on the soffit before the infills are placed for the carpenters to secure the infill plywood. Appropriate safety measures shall be taken to ensure that these operatives work at a safe distance from unguarded edges and/or wear appropriate fall arrest equipment.

Add infills around the columns and the perimeter of the soffit as shown on the RMDK drawing supplied. Infills should be constructed using the Airodek 1800mm and 900mm Infill Beams and 17-19mm thick plywood.



Add infills to any ancillary soffit support shown constructed using alternative equipment as indicated on the RMDK scheme drawing.

7.5. Access Accessories

Install Airodek Handrail Sockets and Rapidshor Standards to any open edges as required. Fix Rapidshor Ledgers as handrails and install toeboards. Provide barriers and warning notices to prevent access to incomplete sections of the soffit. Ensure that safe access and egress routes are provided to all working areas, and that such routes, including ladders and stairways, are clear.

7.6. Wind Precautions

Airodek panels are lightweight. Controlling the accidental movement of large area, lightweight materials on a windy day on site will always be an issue and Ascent panels are no exception. Between uses in windy conditions, panels should not be left loose on the slab or leaning against columns or cores but should be stacked in Airodek panel stillages which more effectively contain the panels and can be readily handled using a pallet truck thus easing the transport of materials between levels.

Erected panels are vulnerable to uplift in high winds. Connect panels down to Airodek Crowns and together through the edge sections using the details drawn.

If the falsework is to be left unloaded during conditions exceeding the Maximum Working Wind Speed of 18m/s, strap the soffit down to the supporting slab every other panel around the perimeter and on a 3.6m grid in both directions internally.

7.7. Checks and Loading

Ensure that bins or stillages loaded out onto the Airodek soffit are not stacked and that the weight of materials in each container does not exceed 1000kg spread evenly over the four feet of the unit. Timber bites supporting bundled reinforcement should be placed such that each bite attracts a maximum weight of 250kg.

Prior to placement of concrete, check the Airodek system to ensure that all connections are sound and all necessary components are correctly installed. Check the props are vertical and their foundations are firm. Check that the Stepped Pins are not positioned within their striking notches. Consult the drawings for any specific requirements for placement of concrete and any restrictions to loading.

Place the concrete ensuring that heaping is avoided throughout.

8.0 Striking and Dismantling

After a suitable curing period strike the Airodek Stepped Pins by driving them into their striking notches with a hammer. This will result in a lowering of the soffit by 4mm. Wind down the prop collars by four turns each (25mm).

WARNING! If the above procedure is not carried out prior to lowering the panels then the panel edges will be damaged during the subsequent stages of striking.

- Begin the stripping operation at a soffit infill section. Remove the soffit infill area(s) adjacent to the stripping face.
- Position two Airodek Telescopic Struts on the front edge of adjacent panels. Ensure the locking tab on the claw is not engaged and is passed through the rectangular cut out in the end of the panel (figure 2).
- Remove the three Airodek Props beneath the ends of the panels now supported by the Telescopic Struts.
- Lower the first panel to its hanging position supported by the crown prongs. Repeat for the second panel removing the Telescopic Struts in the process.
- Lower the remaining panels in the first line alternating installation of the Telescopic Struts, removal of the Airodek Props and lowering of the panels.
- Remove the first row of panels from the crown prongs, clean and stack carefully in the Airodek Pallets or Stillages provided.
- Repeat this procedure for subsequent rows of panels and props removing the spacing gates and legs as stripping progresses.

Ensure that at all stages the props and panels are stable during the stripping procedure. It is recommended that stripping progresses back towards the location where erection of the panels was first started.

Clean and stack the dismantled components neatly in the appropriate containers or stillages. Oil the ply surface if appropriate.

IT IS THE CUSTOMER'S RESPONSIBILITY TO ENSURE THAT ALL EQUIPMENT IS CLEAN AND THAT STACKED EQUIPMENT IS SAFE TO HANDLE AND TRANSPORT.

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