# CONTENTS

Isometric Profile of MFE System Formwork ................................................................. 3

## SECTION (1) - PRE-CONCRETE ACTIVITIES

1. Receipt Of Equipment On Site .................................................................................. 4
2. Level Surveys ............................................................................................................. 6
3. Setting Out ............................................................................................................... 7
4. Control / Correction Of Deviations ......................................................................... 8
5. Erect Formwork ....................................................................................................... 9
6. Erect Deck Formwork ............................................................................................. 11
7. Setting Kickers ......................................................................................................... 12
8. Pre-pour Check List ............................................................................................... 13

## SECTION (2) - DURING CONCRETING

9. Stand By During Concreting .................................................................................. 14

## SECTION (3) - POST CONCRETE ACTIVITIES

10. Strike Wall Form ................................................................................................... 15
11. Strike Deck Form .................................................................................................. 17
12. Clean, Transport And Stack Formwork .................................................................. 18
13. Strike Kicker Formwork ......................................................................................... 19
15. Erect Wall - Mounted Working Platform .............................................................. 21
16. Working Platform Sequence ................................................................................ 22-31

## SECTION (4) – MISCELLANEOUS

17. Instructions .......................................................................................................... 32
18. Details ................................................................................................................... 33
1. RECEIPT OF EQUIPMENT ON SITE

Unload components from transport and where possible, stack by code and size.
Panels can normally be stacked safely up to 25 panels high on skids or pallets.

When stacked, holing in the formwork should be aligned allowing easy identification by code.

Ensure the first panel at the bottom of the stack has the contact face upwards.

All pins, wedges, wall ties, P.E. sleeves, L.D.P.E. sheet and special tools to be put into proper storage and only distributed as required.

A check requires to be carried out against the packing list ensuring all items stated are received.
<table>
<thead>
<tr>
<th>Item Ref</th>
<th>Delivery No. (D/O)</th>
<th>Pallet Ref No.</th>
<th>Date Goods Received</th>
<th>Description of Goods</th>
<th>Formwork M2 Received</th>
<th>MFE Representative ‘s Signature</th>
<th>Client’s Representative</th>
<th>Date of Signatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>121046</td>
<td>1005</td>
<td>12th May 2004</td>
<td>Formwork</td>
<td>40.5</td>
<td></td>
<td></td>
<td>14th May 2004</td>
</tr>
<tr>
<td>2</td>
<td>121046</td>
<td>1006</td>
<td>12th May 2004</td>
<td>Formwork</td>
<td>37.26</td>
<td></td>
<td></td>
<td>14th May 2004</td>
</tr>
<tr>
<td>3</td>
<td>121046</td>
<td>1007</td>
<td>12th May 2004</td>
<td>Formwork</td>
<td>51.45</td>
<td></td>
<td></td>
<td>14th May 2004</td>
</tr>
<tr>
<td>4</td>
<td>121046</td>
<td>1008</td>
<td>12th May 2004</td>
<td>Formwork</td>
<td>43.75</td>
<td></td>
<td></td>
<td>14th May 2004</td>
</tr>
<tr>
<td>5</td>
<td>121047</td>
<td>1506</td>
<td>14th May 2004</td>
<td>Accessories</td>
<td>0.00</td>
<td></td>
<td></td>
<td>16th May 2004</td>
</tr>
<tr>
<td>6</td>
<td>121047</td>
<td>1009</td>
<td>14th May 2004</td>
<td>Formwork</td>
<td>29.64</td>
<td></td>
<td></td>
<td>16th May 2004</td>
</tr>
<tr>
<td>7</td>
<td>121047</td>
<td>1507</td>
<td>14th May 2004</td>
<td>Scaffolding</td>
<td>0.00</td>
<td></td>
<td></td>
<td>16th May 2004</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Client’s Company Chop and Signature of Representative confirming the above to be accurate and correct.  

Name: .................................................  
Company’s Chop
2. LEVEL SURVEYS

A concrete level survey should be taken on all sites and remedial work carried out prior to the erecting of formwork.

All level surveys should be taken from a T.B.M. (Temporary Bench Mark). A record of all surveys should be kept on file by the allocated Supervisor.

In certain cases it is good practice to mark the slabs with paint indicating a plus (+) or minus (-) as the survey is being conducted. This eliminates unnecessary circulation of paper copies to site personnel, and the Supervisor can identify at a glance any remedial work required.

High spots along the wall line to be chipped off to the proper level.

Low spots along the wall line should be packed to the required level, using plywood or timber. Packing the corner and the centre of the wall length to the required level will normally be adequate, as the formwork when pinned together will bridge across low spots.

Concrete up to (+6mm high) is acceptable, above 6mm must be chipped to the (correct level).

After concreting, level surveys should also be carried out on the top of the kickers. One reason for structural deviation from the centre line can be on a - level kicker. This in turn means the formwork is not plumb.

Kickers are manufactured with a 26mm slotted hole on the face to allow for adjustment after concreting.

As with the concrete level survey, proper records of the kicker survey should be kept on file by the allocated Supervisor.

Also a deviation survey requires to be carried out and kept on file.
3. SETTING OUT

Only approved shell drawings supplied by MFE Formwork Design should be used for setting out.

Setting out lines should continue through openings, external corners e.t.c., by a minimum of 150mm. This makes it easier to fix the formwork in position prior to concreting.

It is very important that the reference points and the setting out points are protected against accidental movement or damage.

Transferring of reference points from the level below requires to be done quite accurately. Incorrect reference points give incorrect deviations therefore creating unnecessary work for the formwork erection. It is suggested a theodolite be used for transferring the points through openings provided in the slab.
A study of the deviation and kicker level survey should confirm what, if any, corrective action is required.

If the kicker requires adjustment for level, loosen the holding-in bolt by turning anti-clockwise, adjust kicker to the required position and retighten the bolt.

Once the vertical formwork is fixed in position, the external corners should be checked for plumbness. This will determine if further action is required to control the deviation.

In addition to the kicker levels, the formwork can be pulled by using bottle screws and chain blocks. If the formwork requires to be pushed adjustable props can be used.
5. ERECT FORMWORK

For the initial set up only, 50mm x 25mm timber stays can be nailed to the concrete slab, close to the internal
an external corners, to ensure the formwork is erected to the setting out lines.
All formwork begins at a corner and proceeds from there. This is to provide temporary lateral stability. A
single panel at a corner will give sufficient lateral support to a very long section of wall. Ensure all edges of the
formwork and contact face are properly cleaned and oiled prior to fixing in place.

When satisfied the corner is stable and the internal corner is positioned to the setting out lines continue
erecting the formwork to one wall. Use only 2 no pins and wedges to connect the formwork at this stage as
the pins and wedges will have to be removed later to insert the wall ties. Alternatively the wall ties can be
positioned as the formwork is erected. For ease of stripping, pin the wall panels to the internal corners with
the head of the pin to the inside of the internal corner if possible.

Wall ties should be coated with the releasing agent provided before being fixed to the formwork. Fit the wall
ties through slots in the wall formwork and secure in position with pins and wedges.
Prior to closing the formwork, pre-wrapped corrugated PVC sleeves are placed over the wall ties. Please
ensure, since preparation of the sleeves they have not been abused in any way before installing, as this can
have an adverse effect on the removal of the wall tie after concreting. Also, ensure they are located properly
to the contact face of the formwork on each side of the wall. Sleeves installed with one end fixed between the
side rails of two adjoining panels, exposes the wall tie at the opposite end, therefore impossible to retrieve
the wall tie after concreting.

When deviations of external walls occur, they must be brought back to the correct plan location as quickly as
possible. This is done by slightly tilting the external wall forms in one plane. If a deviation from plumb has
occurred in two directions, then this should be improved over two floors, one for each direction. A re-
alignment in two directions should not be attempted on a single lift.

A maximum of 6mm in vertically improvement in one lift is sufficient.
METHOD OF ERECTING FORMWORK

It is important maximum efficiency to define a sequence of erection to be followed by each team. One side is erected using only on upper and lower pin and wedge connection. Later, ties are inserted at the other connections and fixed with pin and wedge. Then the previously installed pins is removed and those ties inserted and pinned. Subsequently, panels for the other side are inserted between the existing ties and fixed with pins and wedges.

The Advantages of This Erection Method Are As Follows :-

(1) Rooms can be closed and squared by assembling only one side of wall panels. If misaligned, it is easier to shift rows of single panels.

(2) If steel reinforcement is likely to interfere with the placement of the ties, it can be seen and corrected without delaying the panel erection.

(3) Enables fast start up of deck teams as the first rooms can be closed quickly.

(4) Continuous steel reinforcement for the walls, creates a barrier between the two sides of the formwork, so the work proceeds at the pace of single erector.

Special care must be taken at the lift shafts. The interior panels will align properly on their own because they are set on the kicker from the formwork below. Ensure the kickers are level and will not affect the verticality of the lift shaft. However, the matching panels are set on the concrete that may not be level. If the concrete is too high in place, it can distort the alignment of the four sides of the lift shaft and must be broken out to allow a level base.

Care must be taken so that the concrete and in particular the reinforcement does not become contaminated due to excessive or negligent application of the releasing agent.

The ends of walls and door openings should be secured in position by nailing timber stays to the concrete slab. Walls require to be straightened by using a string line and securing in place by nailing timber stays to the concrete slab. During this operation verticality of door openings also requires to be checked for plumb. Where possible, door spacers should be fitted.
PRE-CONCRETE ACTIVITIES

6. ERECT DECK FORMWORK

Before fixing in position the soffit lengths (SL) and soffit corners (SC) should be coated on the contact face plus the top and bottom rails with a release agent.

When connecting the soffit lengths and soffit corners to the vertical formwork, the pins should be inserted from the top prevent the possibility of the pin falling out during concreting. After fixing of the soffit lengths the deck panels can be pinned at the corners again ensuring oil has been applied to the edges only.

In most cases the deck beams to support the deck formwork, can be assembled on the concrete slab. Lay the beam components on the floor as per the deck layout drawing.

Components are held together by pinning BB 350 (Beam Bars) through two adjoining beams with a D.P. 200 (Deck Prop) located between using the 132mm pin.

Fit the prop lengths to the preassembled beam with the shoe of the prop facing in the direction of the beam. This protects the bottom of the prop length when striking the prop.

Using the prop lengths lift the beam into position. The beam is held in place by inserting a pin from the beam, through the end of the deck panel already fixed to the corner.

Ensure side rails of the Deck beam has been oiled prior to fixing.

The first panel in a row has to be pinned to the soffit length and the deck beam. The second panel should be pinned to the first deck panel only, (two pins are normally enough).

Ensuring the second panel is not fixed to the deck beam will leave sufficient movement in the beam to place the third panel of that row. Fix the third panel to the second panel, and then pin the second panel to the deck beam. Place the remaining panels in the row using the same method.

A numbers of rows can be fixed simultaneously. The face of the deck panels on completion can be oiled prior to the placing of the slab reinforcement.

On the completion of fitting the deck panels a survey team is required to check the level of all soffit formwork and adjust accordingly if required, by shimming the bottom of the PL’s.
7. SETTING KICKERS

Where there is a continuous vertical wall, e.g. lift shaft, external face of the building etc., a kicker forms the perimeter of the slab and also acts as the connecting component for the vertical formwork on the next level.

After casting of the first level of formwork, two levels of kicker are required, one coming off the previous floor to which the formwork is fixed and the other fixed to the top of the wall formwork which forms the perimeter of the slab.

This kicker remains in place after concreting and is used to start the wall form on the next level.

Connecting Kickers To Wall Panels

Ensure kickers are properly cleaned and oiled prior to fixing in position. To prevent the pin being dislodged during concreting, pins should be inserted in a downward direction through the bottom rail of the kicker and top rail of the wall panel.

Kickers are manufactured with a 26mm x 16.5mm vertical slotted hole. Prior to concreting, a 16mm dia M.S bolt is fixed to the kicker, located tight to the bottom of the slot. This bolt remains fixed to the casted concrete with a flat washer and nut to act as anchor. After concreting the slotted hole allows for an adjustment if required for improvement on the level of the kicker which also controls the verticality of the formwork.

Aligning Kickers

Kickers should be checked for alignment using a string line: A straight kicker will ensure the wall on the next level is also straight.

The method used to align kickers.

Steel vertical soldiers fixed in place using a tie-rod, through the cast in PVC sleeve, which will be used later for the fixing of the wall mounted scaffold brackets.

Where the end of two kickers meet, a B.K.S. (strap across the top of the kickers) should be used, keeping the two adjoining components flush.
### 8. PRE-POUR CHECK LIST

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>YES:</th>
<th>NO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. All Formwork has been cleaned and coated with an approved release agent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. All Flat Wall Ties installed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. All P.E. wall tie sleeves correctly installed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. External &amp; internal wall vertically adjusted accordingly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Verticality and alignment of Door openings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Alignment of all internal walls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Check all required Pins and Wedges are installed and secure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Verticality of all Prop lengths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Ensure there is no vertical movement in the Prop lengths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Slab soffit formwork level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Door spacers installed as per Drawings issued</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Alignment Walers installed as per Drawings issued</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Vertical Soldiers installed as per Drawings issued</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. All Kickers have been lined and adjusted accordingly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. All Kickers Bolts installed correctly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. All Rockers have been installed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. All excessive spaces between Rocker and floor level have been sealed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Ensure all working platform brackets are securely fastened to the concrete structure</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Remark:**

**Inspected By:** (Name)  Signature:

**Company:**

**Date:**
At least two operatives should be on stand by during concreting, to cover both sides of the wall being casted. During concreting, the ideal position is slightly in front of the pour, checking pins, wedges and wall ties as the pour is in progress.

Pins, wedges or wall ties missing could lead to a movement on the formwork and the possibility of the formwork being damaged. This effected area will then require remedial work after striking of the formwork.

Things to look for during concreting :-

(a) Dislodging of Pins/Wedges due to vibration.
(b) Beam/Deck props adjacent to drop areas slipping due to vibration.
(c) Ensure all bracing at special areas stays intact.
(d) Overspill of concrete at window openings etc.

Operatives on stand by should have the following equipment (at hand) :-

(a) Pins and Wedges
(b) Adjustable props
(c) Masonary nails
(d) Joinery saw and hammer
(e) A few lengths of timber for additional bracing, (if required).
POST CONCRETE ACTIVITIES

10. STRIKE WALL FORMWORK

Normally wall formwork can be struck after 12 hours. Striking times are confirmed on a project to project basis.

Before striking wall formwork ensure the following are removed:-

(a) All timber stays nailed to the concrete slab.
(b) Walers (if any).
(c) Vertical soldiers.
(d) All pins and wedges from the panels identified for striking.
(e) Care must be taken when removing pins and wedges on the external and void areas, especially on the safety issue. Also considerable amount of pins and wedges can be lost over a short period of time due to inadequate care taken when removing.

Ensure commencement of work on the thickest walls first therefore enabling commencement of extracting the wall ties as soon as possible. The wall ties can be removed before the removal of the formwork. The sooner they are extracted from the wall, less force required and less time consuming.

External walls are also critical to enable the progress of installing the scaffold bracket for placing of the formwork on the next level. While removal of the wall ties is in progress ensure they are kept neatly in an appropriate area where they can be prepared for the next level.

As soon as the removal of ties is progressing then striking of the formwork can commence.

All components must be cleaned as soon as they are removed. The longer the cleaning process is delayed, the more difficult it will be. Wall panels are designed to be struck by pulling the top of the panel away from the concrete where a rocker is fitted.

The rocker at the bottom of a panel enables the panel to pivot about a point against the concrete slab. Where the wall formwork is pinned to a kicker, the panels are removed by pulling the bottom away first.
The first panel in a row is the most difficult to remove as it is also held by the adjacent panels. If properly cleaned and oiled prior to concreting and using the panel pullers provided, the panels will come away with ease.

The remainder of the wall panels on this wall will strike easily by breaking the bond to the adjacent panel using the panel puller as mentioned above.

To strike internal corners the wall ties are removed first as the wall ties prevent the removal of the internal corner.

As the wall panels are being removed, removal of the sleeves can commence. The same situation applies to the sleeves as to removal of the wall ties, the sooner they are extracted from the wall the less time consumed. Also less damage will occur therefore maximum uses can be achieved per sleeve.

Sleeves are removed by using long nose pinch pliers. Ensure the sleeves are being stored in a proper container when removed and returned to the preparation location as they can be prepared for the next use.

When moving the formwork to the next area, proper stacking of panels is a clear sign of a well run operation. Stacking at the right place and in the right order greatly benefits the following erection work, and prevents clutter that impedes all activities.

Striking of the external walls also requires urgent attention to enable the installation of the working platform bracket.
11. STRIKE DECK FORMWORK

Normally deck panels can be struck after 36 hours. Striking times should be confirmed on a project to project basis.
The striking begins with the removal of deck beam. Remove the 132mm pin and the beam bars from the beam which has been identified for removal.
This is followed by removing the pins and wedges from the deck panels adjacent to the deck beam to be removed.
The Deck beam can now be taken out.

As the first panel in a row rests on the support lip of the soffit length, the adjacent panel should be removed first. After removing the pins and wedges from the panel to be removed, a panel puller can be used to break the bond from the adjacent formwork.

Where there is no deck beam supports and the panels span from wall to wall, one wall will have the supporting lip of the soffit length removed.
Pins and wedges only to be removed on the identified component that is to be struck.
Deck panels remain in place longer than wall panels and will not come away easily unless proper cleaning and oiling is done during the erection process. Panels should be cleaned immediately after striking.
Consequently the sequence of striking should confirm to the sequence of erection.

PROP LENGTHS
Whenever the PL’s is to be removed, use a wooden mallet to strike the bottom of the PL in the same direction as the beam and holding the PL with your other hand.
Cleaning
All components should be cleaned with scrapers and wire brushes as soon as they are struck. Wire brush is to be used on side rails only.
The longer cleaning is delayed, the more difficult the task will be.
It is usually best to clean panels in the area where they are struck.

Transporting
There are 3 basic methods recommended when transporting to the next floor level :-

(a) The heaviest and longest which is full height wall panels can be carried up the nearest stairway.
(b) Passed up through void areas.
(c) Raised through slots specially formed in the floor slab for this purpose. Once they have served their purpose they are closed by casting in a concrete filler.

Striking
Once cleaned and transported to the next point of erection, panels should be stacked at the right place and in the right order.
Proper stacking is a clear sign of a well managed operation and greatly aids the next sequence of erection as well as preventing clutter and impeding other activities.
<table>
<thead>
<tr>
<th>POST CONCRETING ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>13. STRIKE KICKER FORMWORK</strong></td>
</tr>
</tbody>
</table>

Only the kicker pinned to the bottom of the wall panels should be struck. The top kicker will be used for starting the wall formwork on the next floor level.

Once the wall panels are removed, disconnect the lower kicker, remove the cast in bolt. This leaves the kicker free to be taken off and prepared for reuse, i.e. cleaned and oiled.

Ensure the cast in bolts are also cleaned by wire brush after each use.

Each level of kicker will "leap-frog" up the building.
As there are two complete levels of scaffold brackets, one team member will be on the upper level and another inside the building on the level below.

The worker on the upper level will require a rope attached to a S type steel hook which he will hook to the scaffold bracket below.

The worker inside the building will then commence to unscrew and remove the tie nut, thus releasing the scaffold bracket, and allowing the worker holding the rope on the upper level, to gently raise the rope while the tie rod is being gently knocked through from the inside, until the bracket is completely free from the building. At this stage, the safety bracket is pulled to the next level in preparation for fixing to the level above.

The Fall Arrest Block is attached to the bracket above, using a quick release shackle. The Fall Arrest Block will be moved to its next fixing point by the helper on the level above.

Remove the toe-board and decking, passing them to the helper above. This is followed by the removal of the handrail.

The scaffolders must ensure that no part or parts are left partially removed, as this will endanger themselves and their fellow workers.

Another section of the team will follow behind to remove the scaffold brackets and the same crew will be responsible for fitting the scaffold bracket on the next level.

As there are two complete levels of scaffold brackets, one team member will be on the upper level and another inside the building on the level below.

The worker on the upper level will require a rope attached to a S type steel hook which he will hook to the scaffold bracket below.

The Fall Arrest Block is attached to the bracket above, using a quick release shackle. The Fall Arrest Block will be moved to its next fixing point by the helper on the level above.

Remove the toe-board and decking, passing them to the helper above. This is followed by the removal of the handrail.

The scaffolders must ensure that no part or parts are left partially removed, as this will endanger themselves and their fellow workers.

Another section of the team will follow behind to remove the scaffold brackets and the same crew will be responsible for fitting the scaffold bracket on the next level.

As there are two complete levels of scaffold brackets, one team member will be on the upper level and another inside the building on the level below.

The worker on the upper level will require a rope attached to a S type steel hook which he will hook to the scaffold bracket below.

The worker inside the building will then commence to unscrew and remove the tie nut, thus releasing the scaffold bracket, and allowing the worker holding the rope on the upper level, to gently raise the rope while the tie rod is being gently knocked through from the inside, until the bracket is completely free from the building. At this stage, the safety bracket is pulled to the next level in preparation for fixing to the level above.

The Fall Arrest Block is attached to the bracket above, using a quick release shackle. The Fall Arrest Block will be moved to its next fixing point by the helper on the level above.

Remove the toe-board and decking, passing them to the helper above. This is followed by the removal of the handrail.

The scaffolders must ensure that no part or parts are left partially removed, as this will endanger themselves and their fellow workers.

Another section of the team will follow behind to remove the scaffold brackets and the same crew will be responsible for fitting the scaffold bracket on the next level.

As there are two complete levels of scaffold brackets, one team member will be on the upper level and another inside the building on the level below.

The worker on the upper level will require a rope attached to a S type steel hook which he will hook to the scaffold bracket below.

The worker inside the building will then commence to unscrew and remove the tie nut, thus releasing the scaffold bracket, and allowing the worker holding the rope on the upper level, to gently raise the rope while the tie rod is being gently knocked through from the inside, until the bracket is completely free from the building. At this stage, the safety bracket is pulled to the next level in preparation for fixing to the level above.
Before commencing the operation, ensure the following equipment has been procured:–
(a) Scaffold brackets and all the necessary fixings.
(b) Scaffold bracket, vertical safety post.
(c) Safety harness and fall arrest block.
(d) Timber and all materials for the platform decking and handrails.

For the initial set up of the formwork and when using the wall mounted scaffold brackets, 20mm diameter holes require to be drilled through the formwork to position the PVC sleeves, which when cast in the concrete, should be used for fixing the scaffold brackets. This hole also accommodates the bolting up of the formwork to control the alignment at the kicker level.

As the external formwork is being removed, a team of allocated people working in pairs will commence erecting the working platform. With the tie-rod through the hole provided in the working platform bracket, and using a small ladder, fix the bracket by pushing the tie rod through the PVC sleeve which is cast in the concrete. A helper inside the building can fix and tighten the locking nut.

During this operation, the person on the external must have his safety belt secured to the kicker above. As this operation progresses along the building, another pair of the team should follow, placing the decking, toe-board and hand rails. One person should remain on the lower platform and pass the decking to his helper on the upper level.

When working on the outside edge, safety equipment MUST be worn at all times.
ACTIVITIES:

1. Erect all formwork on 2nd floor.
ACTIVITIES:

1. Strike all vertical formwork on 2nd floor. (Concrete was poured on previous day)
ACTIVITIES:
1. Position working platform bracket on 3rd floor level and secure nuts on tie rod on inside of building
ACTIVITIES:

1. Place timber joists, plywood, railing and the toe board to 3rd floor platform.
   
   Note: Safety belt to be used and can be attached to the kicker during this operation.
ACTIVITIES:

1. Remove kicker from 2nd floor level.
2. Erect all formwork on 3rd floor.
ACTIVITIES:

1. Remove platform timbers and railings from 2nd floor working platform bracket and pass up o be stacked on level 3 platform.

This operation to be carried out on day of concreting – level 3 wall and level 4 slab.
ACTIVITIES:

1. Strike all vertical formwork on 3rd floor.
   (Concrete was poured on previous day)
ACTIVITIES:

1. Remove nuts from tie rod on 2nd floor working platform bracket.
ACTIVITIES:

1. Hoist 2nd floor working platform bracket up to 3rd floor level.
   (Brackets weigh about 16kg each)
ACTIVITIES :

1. Position working platform on 4th floor level and secure nuts on bolts on inside of building.
INSTRUCTIONS

17. TO BE IMPOSED ON EVERY WORKER, ARE THE THE FOLLOWING THINGS NOT TO BE DONE

* Do not lay bottom panel contact face down, when starting a stack
* Do not drop equipment from any height
* Do not use panels as ramps, bridges or scaffold
* Do not use hammer and wedge to pull panels together
* Do not drive wedge until full length of panels are butted together
* Do not use extreme hammer force when installing wedges
* Do not erect elements not properly cleaned and oiled
  (Deck panel faces are oiled after erection)

SAFETY
(a) Ensure all scaffold brackets are in good condition and have not been damaged since the last installation.
(b) Ensure platform is fully decked out and toe-board and handrail installed.
(c) Penetration holes in the slab for transferring panels must be covered when not in use until cast with concrete.
(d) Any workers working above platform level must wear safety belt attached to a secured formwork component or the wall steel.
(e) When removing of the timber batons from the floor after casting ensure no nails have been left exposed.
(f) Pins and wedges to be removed with care especially on the external of the building. (g) Handling of equipment.
(h) Formwork not to be stacked on the scaffold.
The work involved in using MFE System Formwork is segregated into duties for specified teams of workers as listed below. Each team is responsible for following the correct procedures as laid out in the previous sections.

(a) Formwork Erection Team (section 5 & 6)
(b) Formwork Striking Team (section 10 & 11)
(c) Working Platform/Safety Team (section 14 - 16)
(d) Alignment Team (section 4 & 7)
(e) Kicker Team (section 7 & 13)
(f) Survey Team (section 2 & 3)
**WALL COMPONENTS**

**WALL PANEL**
The Top Panel is used to form the wall face above Standard height Wall Panels

**WALL PANEL**
The Wall Panel forms the face of the wall from the top of the Rocker to the underside of the Top Panel.

**ROCKER**
The Rocker forms the wall face at the bottom of the Wall Panels and helps to facilitate striking.

**KICKER**
The Kicker forms the Wall Face at the top of the Top Panels. It is anchored to the concrete and acts as a ledge for the Wall Panels on the next floor to sit on.

**STUB PIN**
The pin is used to fix one component to another.
BEAM COMPONENTS

BEAM SIDE PANEL
The Beam Side Panel is used to form the beam side.

PROP HEAD FOR SOFFIT BEAM
Forms the soffit of the beam and connects to the Prop Length and to the Beam Soffit Formwork.

BEAM SOFFIT PANEL
The Beam Soffit Panel is used to form the soffit of the beam. It is used for beams wider than 300mm.

BEAM SOFFIT BULKHEAD
The Beam Soffit Bulkhead is used to form the soffit of the beam. It is used for beams less than 300mm.
INTERNAL SOFFIT CORNER
The Internal Soffit Corner forms the vertical internal corner between walls and/or beam faces and horizontal internal corners between wall/beam face and soffit of slabs.

EXTERNAL SOFFIT CORNER
The External Soffit Corner forms the vertical external corner between walls and/or beam faces and horizontal external corners between wall/beam face and soffit of slabs.

EXTERNAL CORNER
The External Corner connects vertical or horizontal formwork together at right angles.

INTERNAL CORNER
The Internal Corner connects 2 pieces of vertical formwork together at their internal intersection.
DECK COMPONENTS

DECK PANEL
The deck panel rests between pairs of mid-beams and provides a horizontal surface for casting the slabs.

DECK PROP
The deck prop fits onto the end of the mid-beam. It transmits the load through to the prop length. The deck prop and prop length stay in position when the deck panels and mid-beams are removed to provide backpropping.

PROP LENGTH
The prop length is manufactured to a specific length for each project. It transmits load to the previous slab.

MID-BEAM
This fits onto the end of the deck prop using 2 No. Beam bars, pins and wedges. The Mid-Beam provides support to the deck panels.

SOFFIT LENGTH
The Soffit Length fits onto the top of the Wall Panels. It provides support to the edge of the Deck Panels at perimeters of the room.

BEAM-BAR
These are used in pairs to fix the Mid-Beam and End-Beams to the deck prop. The beam-bar is removed when the slab is cast to allow quick striking of the deck formwork.
The drawing below shows the layout of formwork at the top of the wall. The deck panels rest on the lip on the soffit length and span onto the end-beams. The opposite side of the wall and the end-beams have been omitted for clarity.
The Panel Puller is used to aid striking of the wall formwork. One of the circular lugs is inserted into one of the panel holes. The other lug rests on the outside of the adjacent panel. Force is applied downwards on the Panel puller which in turn forces one of the panels away from the other.
The components shown here are the Deck Prop, Pins & Wedges, Beam Bar and Mid-Beam. The pins and wedges are removed, which in turn release the beam bars. Once these have been removed, the mid-beam and panels can be removed leaving the deck prop undisturbed as backpropping.

*BEFORE STRIKING*

*AFTER STRIKING*

Early striking of Deck Formwork can take place when the concrete has reached a strength of 10N/mm².
The first stage of erecting the beam and slab formwork is to connect the beam prop to the prop length. The beam soffit panels are then connected to the beam prop using pins and wedges.
Once the beam soffit has been erected and supported, the beam sides are fixed into position. For external beams the external beam side panel is higher than the internal beam side to provide formwork for the slab edge.
Next the kicker panels and soffit panels are fixed. The soffit panels provide a means of support for the deck panels and aligns the beam sides.
Finally, the deck panels are inserted to provide a horizontal surface to support the slab soffit.
This detail shows a typical slab box-out. The box-out is used to form an opening in the slab to allow easy handling of formwork to the next floor. Similar box-outs can be manufactured to any dimension to form other voids in the slab.