McGregor [®]

Agile 4250 Operations & Maintenance Manual

This document outlines the operating and maintenance procedures for the Agile 4250. Read this manual before operating within and around the structure. Always keep this manual with the structure.

Following installation, the structure should be inspected and signed-off by a responsible member of staff. Once the installation is signed off it is the customers responsibility to ensure the product is well maintained and inspected regularly for damage, wear & tear, this can be done by the customer themselves or a contracted maintenance provider.



Customer name:

Customer reference number:

Site address:

Installation completed by:

Date of installation:

Date of sign-off/ completion:

Building Overview

The Agile 4250 has two variants: free-range and organic. Each variant is available in two lengths as shown in the table below. This operations & maintenance manual covers all building variants and sizes and details best practice for how to operate and maintain the building. Note: the illustrations in this manual show the 8.2 metre long building only, however, all methodologies an principles match the 16.4 metre long building.

Housing	Building	Building	Slatted	Popholes	Bird Numbers
Туре	Length	Width	Floor		(max)
Free-Range	16.4m	4.25m	4 Bays	4	540
Free-Range	8.2m	4.25m	2 Bays	2	235
Organic	16.4m	4.25m	4 Bays	4	400
Organic	8.2m	4.25m	2 Bays	2	162

Building Overview

Image 01



ltem No.	Item Name	
1	Ridge Vent	
2	Roof Sheet	
3	Personnel Door	
4	Tow Bar	
5	Door Latch	
6	Drag Flap	
7	Auger Anchor	
8	Pophole	
9	Pophole Chain	
10	Skid	
11	Anchor Pin	

Building Overview Image 02 Image 0



Item No.	Item Name	
12	Wire Support	
13	Water Tank Support	
14	Slatted Floor	
15	Hoop Frame	
16	Inner Sheet	
17	Insulation	
18	Outer Sheet	
19	Polyboard	

Scope Of Applications

The Agile 4250 mobile poultry house is designed for small commercial laying hens, with an internal environment suitable for the production of free-range or organic eggs.

The Agile 4250 is designed to be towed between laying cycles for efficient mucking out or to move the building to fresh pasture. The building is best suited to being towed in a straight line between multiple static sites, however, the building can be turned at a broad radius with caution. Full instructions on towing can be found on pages 8, 9 and 10 of this manual.

Ground Suitability

Suitable ground for the Agile 4250 is a firm and relatively level grass field.

Where the ground is excessively soft an aggregate base can be laid in excess of the buildings length (to provide multiple static locations between towing). Excessively uneven ground can disrupt the travel of the skids. An unsuitable ground can cause damage to the structure during towing. High abrasion surfaces can damage the surface of the skids, where the ground is soft, the building can sink - sinking can inhibit towing and increase stress on the structure.

Variation in soil type can inhibit the installation of anchors and reduce their stability in the ground. If the ground has low coherence or a noticeably loose structure then it is the customers responsibility to ensure the anchors have an appropriate level of purchase on the ground. This can be achieved by a mechanical 'pull-out' test using a load cell (or equivalent). Loadings required for pull out are as follows:

Skid Pin: 80KG Auger Anchor: 200KG

Structural Loading

The Agile 4250 has not been formally tested against wind or snow loadings. This building has been utilised widely across the UK since 2005, in this time these buildings have withstood numerous storms and extreme weather conditions.

Structure

The Agile 4250 is manufactured from cold-rolled steel hoops and a roof sheet composed of an inner and outer 600gsm PVC sheet with a 80mm insulating fibreglass core. Side and gable polyboard is composed of reinforced HDPE panels.



Securing the building

When the building is not being towed (when it is stationary), it should be secured to the ground using the skid pins and auger anchors that are supplied with the building. The table below shows how many skid pins and anchors should be fitted for each of the building sizes.

Building Length	Skid Pin No.	Auger Anchor No.
16.4m	10	10
8.2m	6	6

To insert the skid pins, pass the pins through the holes in the skids and hammer them into the ground. The holes in the skids pass through at an angle so that the pins can be safely hammered clear of the building.

To install the auger anchors, insert the tip of the anchor through the ring on the auger bracket and wind the anchor into the ground using a metal bar (passed through the box section on top of the anchor). Wind the anchor down until the cross bar makes contact with the auger bracket. A detailed illustration of how to install skid pins and auger anchors can be found on page 10 of this manual.



Operating methods & features

Personnel doors - A personnel door is sited at each gable end. Care should be taken stepping over the raised threshold into the building. The personnel door can be secured from the outside with the tower bolt, a hasp and staple is fitted for adding a padlock when required. The doors can be held open using the cabin hook.

Popholes - Manually operated popholes are distributed across both sides of the building. To open the popholes, lift the pophole by its handle and thread the chain back through the handle and hook the chain back on itself. Use the tower bolt to secure the pophole in its closed position.

Pophole gutters - Individual pophole gutters are positioned above each pophole to manage water run-off from the roof. Pophole gutters do not have downpipes and need no further drainage provision, gutters are formed of an open aluminium channel wider than the pophole. Water running off the roof into the gutter is spread either side of the pophole ensuring water build-up is minimised where birds enter and exit the building.

Water tank support - A water tank support is provided allowing for a tank at up to 70 litre/ 15 gallons. Tanks must be no higher than 450mm to allow for clearance between the tank and inner surface of the roof, the base frame of the water tank support is 780 x 480mm. Water tanks are not supplied with the building.

Nest-boxes, feeders, drinkers - The Agile 4250 provides space on the slatted floor area for nest boxes, feeders and drinkers. Internal equipment is not supplied with the building.

Drinkers and feeders can be secured to the hoop frame - ensure any equipment is well secured and attached to an appropriate section of the structure. Do not exceed 50kg per hoop. If additional fixing points are required then chains can be strung between hoops.

Nest boxes are installed onto the slatted floor section. The structure is supplied with a raised slatted floor, the slatted floor is formed of interlocking plastic tiles fitted into a grid of supporting steel beams. Nest boxes are placed in-between the uprights and cannot be larger than 1990mm (wide) x 1500mm (high).

Ensure not to overfill the slatted area. If too much weight is placed on the raised floor it can cause bending and fracturing. In addition to the equipment, it is prudent to account for the additional weight of people walking on the slats during 'normal' operating procedures. Allow for a maximum of 165KG per hoop.

Egg collection - Egg collection equipment is part of the internals setup and should be considered during the procurement of this equipment.

Typically, nest-boxes are fitted with an egg collection belt running underneath - at this scale of poultry house, most belts will be manually operated using a crank wheel. The belt can be specified to run in ether direction, this will dictate the collection zone - if the belt runs into the building, the eggs will be collected from the open end of the slatted floor. If the belt is setup to run towards the gable end where the nest boxes are housed then the collection zone will be on the outside of the building - if collecting outside, the personnel door will need to be fixed shut with aperture cut through the lower section of the door to accommodate for the belt exit.

Lighting - Lighting can be added to the internal space to assist daily operations and bird welfare. Any lighting should be fitted by a qualified electrician and should consider the operating methods detailed in this manual along with welfare guidelines. Lighting can be secured to the internal framework using cable ties.

Ground anchors - Reference: section 'Securing the building' on page 5 of this manual and Section 'Moving the building on pages 8, 9 & 10 of this manual.

Tow bar - The tow bar must be installed when moving the building, the building must not be pulled directly from the skids as this will result in damage to the structure. Remove the tow bar after use. Reference: step 4 & 5 of the section 'Moving the building' on page 9 of this manual for detailed fitting/ use instructions.

Operating methods & features

Ventilation - Ventilation is created by a combination of inlets/ outlets allowing clean air to be drawn into the building and dirty air to be exhausted.

A 50mm wide baffled side vent runs the length of the building (on both sides), sited between the top of the polyboard and the base of the roof sheet. A hinged ridge vent in the roof is operated by a cranked handle and can be opened and closed to increase/ decrease ventilation (shown below). Both personnel doors have a moveable ventilation panel fitted, this panel can be moved up and down to increase/ decrease ventilation.



Precautions in use

Fabric roof sheet - The fabric roof sheet is robust and resilient. However, it can be punctured if struck with heavy or sharp objects. Ensure to take care when moving the building or lifting materials within or around the structure.

Framework - The steel framework is made from structural grade material designed to support the structure and canopy during 'normal' operations detailed in this manual. If the steel structure becomes damaged in any way this can compromise the structural integrity. Care should be taken when towing the structure and when vehicles and machinery are operating in close proximity to the building.

Skids - Skids should be checked before and after every towing procedure. Ensure the bottom surface has not been excessively worn or damaged. Inspect for fractures and bending in high-stress areas, especially where the tow bar is attached to the skids and skids are joined.

Cleaning - A standard cleaning procedure is to jet-wash the entire interior of the building thoroughly after each moving cycle to eliminate chicken waste and additional grime that may have manifested. All surfaces can be cleaned with water and a suitable detergent, no adsorbent materials are used in the construction of the building so water can be used liberally without causing damage. Bird waste can build up on the skids, this should be broken off or washed away wherever possible.

Hinged popholes and personnel doors - Check regularly that the closures fasten securely and hinges pivot correctly with the full range of movement expected. Keep handles clean and operational for frequent use.

Moving the building - Before attempting to move the building it is prudent to check the weather forecast for strong wind speeds. During the moving procedure the building will not be anchored to the ground, the building should not be moved in winds greater than 20mph.

Moving the building

Step 1/ **Removing the anchors.** First remove the anchors and skid pins. Use the steel bar to twist out the anchors, then remove the auger brackets and skid pins. Store the anchors, brackets and pins so they are ready to be re-inserted once the building has been moved.



Step 2/ Raising the drag flaps and attaching wire to towing saddles. When moving the structure, all three drag flaps need to be raised and secured in their elevated position using the hooked chains fitted to the building. Connect the braided wire between the towing saddles as shown below.



Moving the building

Step 3/ Attaching the tow bar. Attach the tow bar to the skids and inspect the building has not sunk into the ground over time. The skids must be free to move along the surface - towing a building that has sunken into the ground can over-stress the structure.



Step 4/ Tow the building. Attach a strop or chain between the vehicle and the tow bar as shown (towing strops/ chains are not provided with the building). Accelerate slowly to begin towing and stop after 50m, check that progress is not causing damage, resume if there are no issues. Limit speed to 2-3mph, keeping to a slow walking pace. Maintain as straight a line as necessary. If turning is required, a turning radius of 100m is recommended.



Moving the building

Step 5/ Replace the Anchors - Once the building has been successfully moved, install auger anchors and skid pins. To install the skid pins, pass the pins through the holes in the skids and hammer into the ground. The holes in the skids pass through at an angle so that the pins can be safely hammered through. To install the auger anchors, insert the tip of the anchor through the ring on the auger bracket and wind into the ground using a metal bar passed through the box section on top of the anchor. Wind the anchor down until the cross bar makes contact with the auger bracket.



Step 6/ Remove the tow bar and reset the drag flaps - Check underneath the raised floor to ensure the floor supports are hanging in the correct position (vertically). The floor supports can be hanging but must be able to reach the ground below to provide their intended support. Finally remove the tow bar, lower the drag flaps and use the drop bolt to latch them shut.



Maintenance Schedule

If the PVC top sheet is punctured take the following action:

- Puncture less than 10mm in any direction: Mark with an indelible marker, record the date and monitor on a monthly basis.
- Puncture between 11-30mmin any direction: Mark with an indelible marker, record the date and monitor on a weekly basis.
- Punctures greater than 31mm in any direction: Prompt repair is required, Mark with an indelible marker, record the date and monitor on a daily basis.

If the PVC top sheet has been punctured and begins to tear take the following action:

Tears on or near the gable end pocket of any size require immediate attention. Tears can be rectified with a patch repair welded on-site (using specialist fabric welding equipment) or when necessary a full sheet replacement.

Tears in the body of the main roof sheet:

- Tears less than 100mm in any direction: Prompt repair is required, photograph the area, contact your supplier, mark with an indelible marker and monitor on a daily basis.
- Tears between 100-700mm in any direction: Prompt repair is required, photograph the area, contact your supplier, mark with an indelible marker and monitor on a twice daily basis. It is recommended to tension ratchet straps over the building 500mm on either side of the tear to prevent the damaged area from increasing.
- Tears greater than 701mm Prompt repair is required, contact your supplier, mark with an indelible marker and monitor on a twice daily basis. It is recommended to tension ratchet straps over the building 500mm on either side of the tear to prevent the damaged area from increasing. A new roof sheet is likely to be required.

Damaged sheets - IMPORTANT NOTE:

If the sheet is significantly damaged and high winds are forecast it may be necessary to remove the damaged sheet.

It is the building and site owners responsibility to assess and manage the risk to prevent the sheet from causing damage to the structure or any adjacent structures or equipment. In the worst case, a sheet with significant damage can flap uncontrollably in high winds and act as a sail causing damage to the structural framework - if the sheet becomes separated from the building in high winds it is likely to travel in the air and risks damaging neighbouring sites. The judgement to remove the sheet is the responsibility of the owner.

DO NOT ATTEMPT TO REMOVE THE SHEET IN HIGH WINDS.

For emergencies, general maintenance and assistance contact McGregor by phone or email.

01962 772368 info@mcgregorltd.com

Maintenance Schedule

Weekly checks - During daily use of the structure, look out for any obvious damage caused from accidental impacts, excessive weather or flying debris. Ensure the building is securely anchored and unlikely to move. Pay attention to hinged components and ensure they are operating freely.

Monthly checks - Visually inspect the structure and roof sheet. If the building has been towed check the skids are in good condition and are free of excessive soil and bird waste build-up.

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
- 4. Check the personnel doors are seated well and that the hinges are moving freely.
- 5. Check the personnel door latches are secure and latch properly.
- 6. Check the popholes are seated well and that the hinges are moving freely.
- 7. Check the pophole latches are secure and latch properly.
- 8. Visually inspect the framework alignment to ensure the building remains square. Check from inside and outside the building.
- 9. Check the slatted floor is well seated and the plastic edging strip around the floor perimeter is sitting in its correct position.
- 10. Visually inspect underneath the slatted floor for uncommon features/ debris.

Twice yearly checks - Visually inspect the structure and roof sheet. If the building has been towed check the skids are in good condition and are free of excessive soil and bird waste build-up.

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
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- 5. Check the personnel door latches are secure and latch properly.
- 6. Check the popholes are seated well and that the hinges are moving freely.
- 7. Check the pophole latches are secure and latch properly.
- 8. Visually inspect the framework alignment to ensure the building remains square. Check from inside and outside the building.
- 9. Check the slatted floor is well seated and the plastic edging strip around the floor perimeter is sitting in its correct position.
- 10. Visually inspect underneath the slatted floor for uncommon features/ debris.
- 11. Visually inspect the full length of both skids inside and outside the building. Ensure there is no build-up of mud or bird waste on the skis. Ensure the skids have not sunk into the ground.

6 Month - maintenance checks

Date:

Checked by (name/ business):

Cleaning & maintenance undertaken:

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
- 4. Check the personnel doors are seated well and that the hinges are moving freely.
- 5. Check the personnel door latches are secure and latch properly.
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- 7. Check the pophole latches are secure and latch properly.
- 8. Visually inspect the framework alignment to ensure the building remains square. Check from inside and outside the building.
- 9. Check the slatted floor is well seated and the plastic edging strip around the floor perimeter is sitting in its correct position.
- 10. Visually inspect underneath the slatted floor for uncommon features/ debris.
- 11. Visually inspect the full length of both skids inside and outside the building. Ensure there is no build-up of mud or bird waste on the skis. Ensure the skids have not sunk into the ground.

Reported Issues Found:

12 Month - maintenance checks

Date:

Checked by (name/ business):

Cleaning & maintenance undertaken:

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
- 4. Check the personnel doors are seated well and that the hinges are moving freely.
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- 11. Visually inspect the full length of both skids inside and outside the building. Ensure there is no build-up of mud or bird waste on the skis. Ensure the skids have not sunk into the ground.

Reported Issues Found:

18 Month - maintenance checks

Date:

Checked by (name/ business):

Cleaning & maintenance undertaken:

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
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- 10. Visually inspect underneath the slatted floor for uncommon features/ debris.
- 11. Visually inspect the full length of both skids inside and outside the building. Ensure there is no build-up of mud or bird waste on the skis. Ensure the skids have not sunk into the ground.

Reported Issues Found:

24 Month - maintenance checks

Date:

Checked by (name/ business):

Cleaning & maintenance undertaken:

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
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Reported Issues Found:

30 Month - maintenance checks

Date:

Checked by (name/ business):

Cleaning & maintenance undertaken:

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
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- 11. Visually inspect the full length of both skids inside and outside the building. Ensure there is no build-up of mud or bird waste on the skis. Ensure the skids have not sunk into the ground.

Reported Issues Found:

36 Month - maintenance checks

Date:

Checked by (name/ business):

Cleaning & maintenance undertaken:

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
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Reported Issues Found:

Yearly maintenance checks after 36 months

To continue maintenance after 3 years, visually inspect the structure and canopy from the ground and on top of the containers. Use the numbered maintenance check list below to mark each action on the yearly schedule.

- 1. Ensure the building is securely anchored and unlikely to move. Check all anchor and skid pin positions.
- 2. Visually inspect the roof sheet for punctures or any obvious signs of wear.
- 3. Check that the gable end tension is applied evenly throughout the gable end pocket and that the U&T infill is securely seated in the aluminium channel, trapping the sheet.
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Notes:	

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