

InstaFibre[®]
CAVITY WALL INSULATION

Installer manual

InstaFibre White Wool 040

BBA Certificate No: 89/2294

KIWA BDA Certificate BAW 17-071-S-A-UK

 **InstaGroup**

www.instagroup.co.uk

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The Company

InstaFibre is a division of the Insta Group of Companies based at Wokingham in Berkshire.

InstaFibre supplies a range of products and machinery to a network of approved installing companies throughout the United Kingdom and Southern Ireland.

InstaFibre products for Cavity Wall Insulation are British Board of Agrément approved in conjunction with specified machinery.

All commercial and technical enquiries concerning the InstaFibre Cavity Wall Insulation system should be addressed to:



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Equipment Check List

To undertake an effective and professional installation of Cavity Wall Insulation the following equipment will be required.

Installation Equipment

- Approved Blowing machine
- Blowing hoses
- Injection nozzles
- HSE approved extending ladders
- Additional approved access equipment as required
- Drilling machines – heavy duty, 110 volt single phase electric with safety clutch
- Drilling bits - 22mm
- Cavity brushes (plus lines and weights)
- Density test box - 70mm x 500mm x 500mm
- Weighing scale (0 – 2kg)
- Stopwatch
- Airbrick sleeving material
- Borescope and inspection lamp/torch
- Meter box key
- Smoke pellets and matches

Making Good Equipment

- Bucket, trowel, mortar hawk, sand, cement, range of colour pigments, range of rendering finishes, air bricks or sleeving brush and proprietary combustion vent kits.
- Tool kit including hammer, chisel, spanners, screwdrivers, hacksaw, pliers, water hose, hose couplings, yard brush, shovel, dustpan and brush and tape measure.

Safety Equipment

- Ladder safety harness and ladder safety ties
- Hardhat
- Ear protectors
- Goggles
- Dust masks
- Safety shoes
- Protective clothing
- First Aid kit



The above is not an exhaustive list of equipment that you may be required to use.

All aspects of safety must conform to the current Health and Safety at Work Act regulations.

It is advised that you acquaint yourself with and understand your own company's current safety policy manual.

Site Preparation

Before installation commences each building must be assessed individually to ensure that it is suitable for Cavity Wall Insulation and all details must be recorded on the survey form and the Technicians Safety Check Sheet.

This suitability is assessed in conjunction with reference to the following publications:

- BBA Agrément Certificate 89/2294 & KIWA BDA Cert BAW-17-071-S-A-UK – InstaFibre White Wool 040 Cavity Wall Insulation system.
- IAA Assessors Guide – Suitability of external walls for filling with Cavity Wall Insulation.
- IAA Technicians Guide – Installing Cavity Wall Insulation.
- IAA Technicians Guide – Flues, chimneys and combustion air ventilators.
- IAA Technical Notes.

It is imperative that the position of all flues, chimneys and combustion air ventilators are located, recorded, as detailed above, and addressed to comply with the IAA Technicians Guide, (Flues, chimneys and combustion air ventilators).

Post installation checks are also vitally important and again all details should be recorded appropriately.

Further information

Please refer to the Knauf Site Preparation & Housebuilders Guide for new build installations.

<http://bitly.ws/PpQh>

Technician's safety check sheet

Flues, Chimneys and Combustion Air Ventilators

This check sheet specifies the minimum checks, and actions that **must** be carried out during installation of CWI to buildings containing fuel-burning appliances.

It must be read in association with "Technicians guide to best practice – Flues, chimneys and combustion air ventilators."

Survey Identify and record:

- Fuel type(s) Gas Oil Coal Wood
- Appliance type(s) Boiler Gas Fire Open Fire Balance Flue
- Flue / chimney location(s) Internal Wall External Wall Front Side Rear
- Location of combustion air ventilator(s) Front Elevation Side Elevation Rear Elevation

Pre-Installation

- Appliance identified, flue / chimney routes, internal & external Yes No N/A
- Appliance run* Yes No N/A
- View and note flame colour* Yes No N/A
- Combustion gases checked externally* Yes No N/A
- Appliance checked (smoke test / spillage test)* Yes No N/A
- Smoke / spillage test satisfactory* Yes No N/A
- Combustion air supply adequate Yes No N/A

Installation – Visually Check

- Flue, chimney routes to avoid drilling into them Yes No N/A
- Flue, chimney routes to avoid ingress of material Yes No N/A
- Combustion air ventilator(s) unobstructed Yes No N/A

Post Installation

- Appliance(s) run at maximum for a minimum of five minutes* Yes No N/A
- Visual check that flame compares with pre-installation* Yes No N/A
- Smoke test / spillage test satisfactory* Yes No N/A
- If results were unclear, re-test after a further 10 minutes* Yes No N/A
- Re-test satisfactory* Yes No N/A

Comments

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If there is any doubt or any question answered 'N' then

1. Switch OFF appliance and
2. Issue WARNING NOTICE and
3. ADVISE occupants and owner and
4. CALL OUT a competent body or person such as fuel supplier or maintenance contractor (e.g. GAS SAFE for gas).

Installation address:

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Name of Technician

Signature

Date

* Only on appliances fitted to flues & chimney on external walls



It is the installing firm's responsibility to ensure that the Technician is trained to be able to discharge these responsibilities.

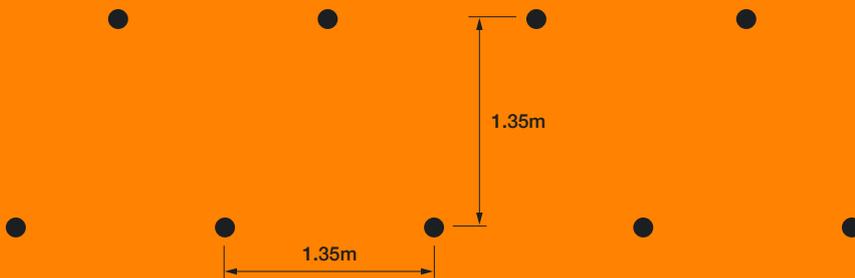
Failure to carry out these safety checks could lead to the death of an occupant and prosecution of the Technician

Drilling Pattern

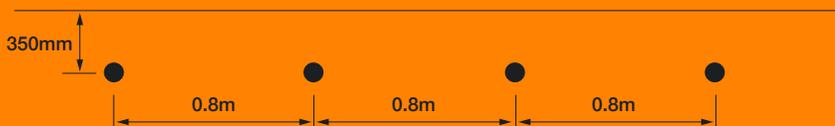
The InstaFibre systems generally use 22mm diameter drill holes, with the option of 25mm or 26mm if required which form the required pattern for the injection of material.

The lowest row of injection holes should not be more than 0.8m above the horizontal dpc.

Subject to the restraints given below the distance between successive injection holes should be a maximum of 1.35m. Wherever possible, when drilling the injection holes, a diamond pattern should be used so that an injection hole in one row is equally spaced between two holes in the rows above and below.



At the tops of walls and under gables, the topmost injection holes should not be more than 350mm below the upper edges of the cavity to be filled. Additionally under horizontal boundaries, for example under eaves windows or lintels, the centres between the topmost holes should not exceed 0.8m.



With sloping boundaries, for example under the eaves of a gable end, the centres between the successive injection holes should be spaced at 1.0 – 1.35m depending on the slope of the boundary.

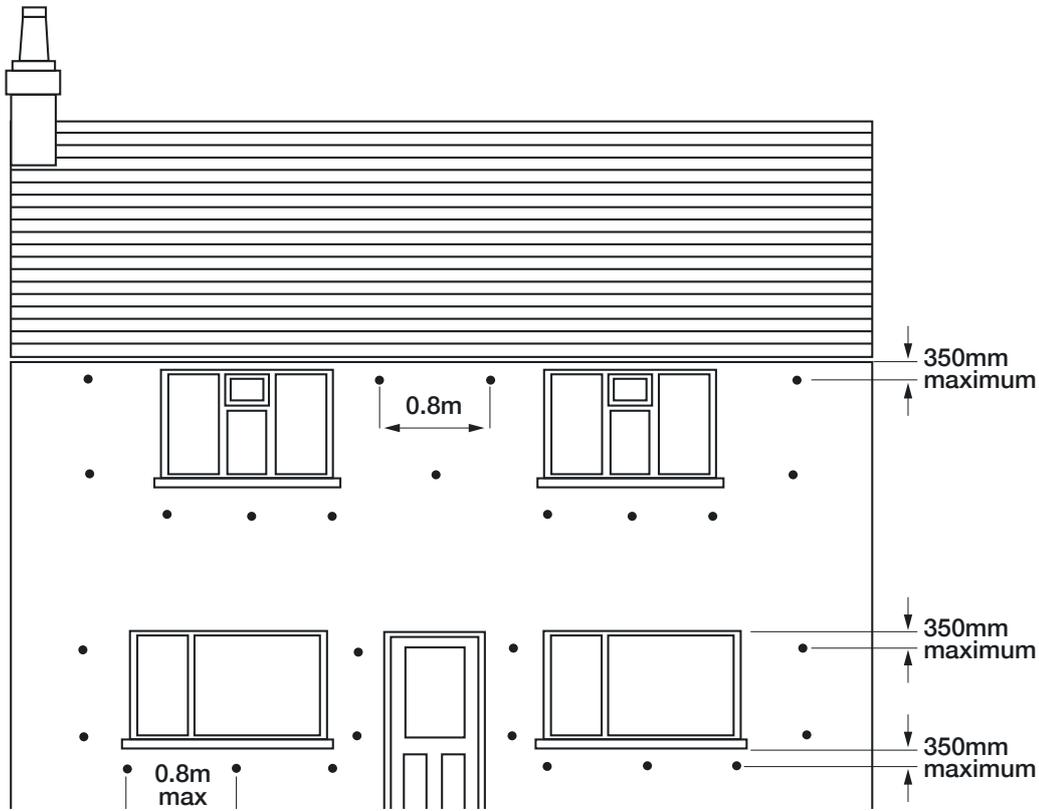
The nearer the boundary is to the horizontal, the closer the holes should be.

Where the standard diamond pattern can not be used, additional injection holes will be required to ensure completeness of fill (for example around building features).

The above information should be read in conjunction with the recommended drilling operation in the Technicians guide to Best Practice – Installing Cavity Wall Insulation.

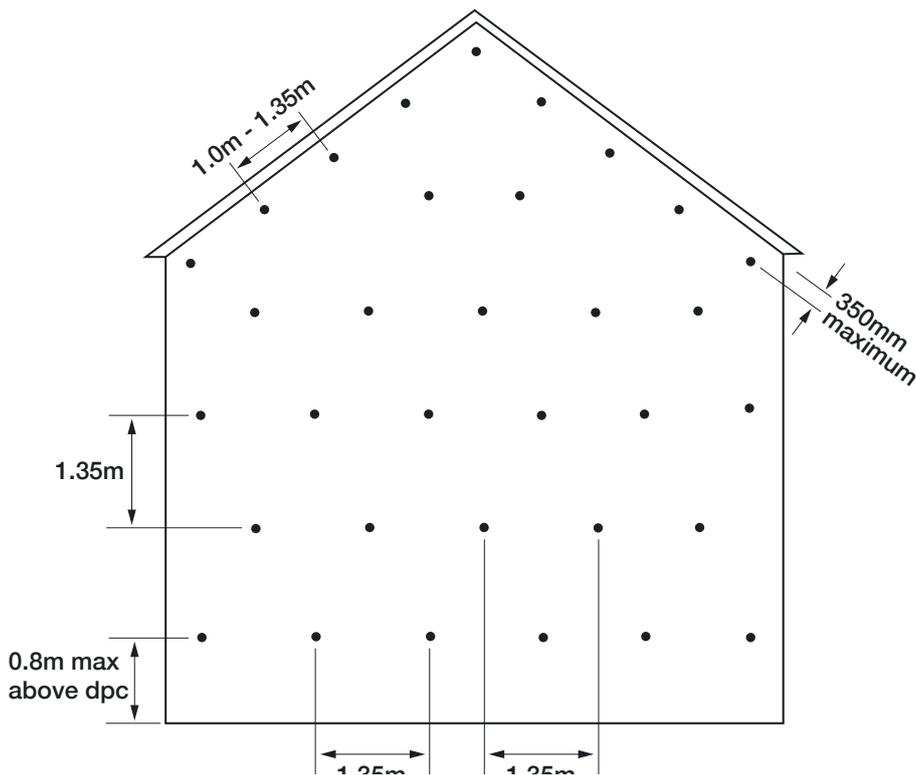
InstaFibre White Wool

Standard drilling pattern – frontage



InstaFibre White Wool

Standard drilling pattern – plain gable end



InstaFibre White Wool

Detached House – Standard drilling pattern



Blowing Machines

InstaFibre 040 insulation systems must be installed using an approved blowing machine.

The following blowing machines are approved by InstaFibre and the British Board of Agrément (BBA):

Peak Diesel and Electric

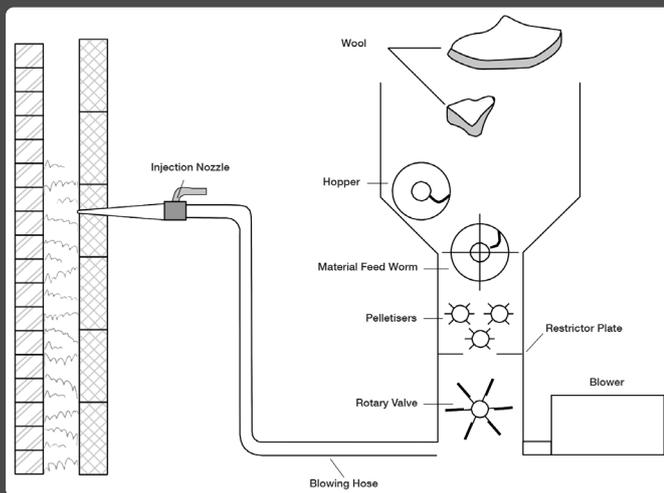
Stewart Energy Electric 500

Stewart Energy Diesel 750 & 1000

Timco

InstaFibre

Each machine is identified as being approved by bearing a plate denoting the BBA Certificate number 89/2294 and KIWA Certificate BAW 17-071-S-A-UK.



Installation in external wall

As far as the handling and treatment of InstaFibre 040 is concerned, the blowing machines are virtually identical.

The job of each piece of equipment is detailed below:

- The BALE BREAKER opens up the compressed bale of blowing wool
- The WORM SCREW meters the blowing wool at a fixed rate
- In the PELLETISING section, the wool length is reduced by the shredder bars and a pelleted form of the desired shape is given by circulation of the wool within the pelletising chamber
- The adjustable RESTRICTOR PLATE at the base of the pelletising chamber controls the wool residence time in the chamber, which in turn controls the pellet characteristics to achieve the required installed density
- As the processed insulation passes through the ROTARY VALVE it enters the airstream generated by the BLOWER and passes into the blowing hose and through the nozzle for delivery in to the cavity being insulated

A pressure switch is connected to the machine control circuits, when actuated it causes the drive clutches to disengage thus stopping the blower and wool feed once the cavity wall area is filled to the required density.

A dump/lift valve arrangement is fitted to all blowing machines and is used for fine control of the installed density.



At no time should technicians put their arms or hands into any hopper while a machine is switched on and working.

Quality Checks

Density Box Test

This test must be carried out at the beginning of every installation to ensure that material and machinery are performing within specification. Results of this test must be recorded on relevant paperwork to comply with the British Board of Agrément Technical Schedule.

Specification

Blowing Time
30 seconds \pm 15%

Box Weight
0.7kg \pm 15%

InstaFibre Blowing Machine

- Set machine to air setting 5.
- Blow wool into a hessian sack.
- Fill test box with wool and note time taken (30 seconds \pm 15%).
- Visually check adequacy of fill.
- Empty contents of box into bag and weigh - (weight of 0.7kg equates to a density of 25kg/m³).
- If weight is over 0.7kg reduce air setting and repeat above.
- If weight is under 0.7kg increase air setting and repeat above.

Other Blowing Machines

- Ensure that the pressure switch is operating correctly. To adjust, turn the screw in to increase pressure and out to reduce the pressure.
- Blow the density box and note time taken and weight as above.
- If weight is over 0.7kg open restrictor plate 1/4 turn at a time and repeat test.
- If weight is under 0.7kg close restrictor plate 1/4 turn at a time and repeat test.
- Where fitted, the air dump may also be used to control density. To increase density reduce the amount of air being dumped – to reduce density increase the amount of air being dumped.

The Filling Operation

Filling should proceed from the bottom row of holes to the top of the walls and from the most to the least restricted areas.

The injection nozzle is located in the pre-drilled hole. Nozzle rotation is not required.

Wool should be injected into each hole in turn – starting at the lowest row at one end of an elevation and working across from side to side. Filling in this sequence ensures a more even distribution of materials.

Once the blowing machine is started the wool will continue to flow at a steady rate until that part of the cavity adjacent to the injection hole is filled within the required density range.

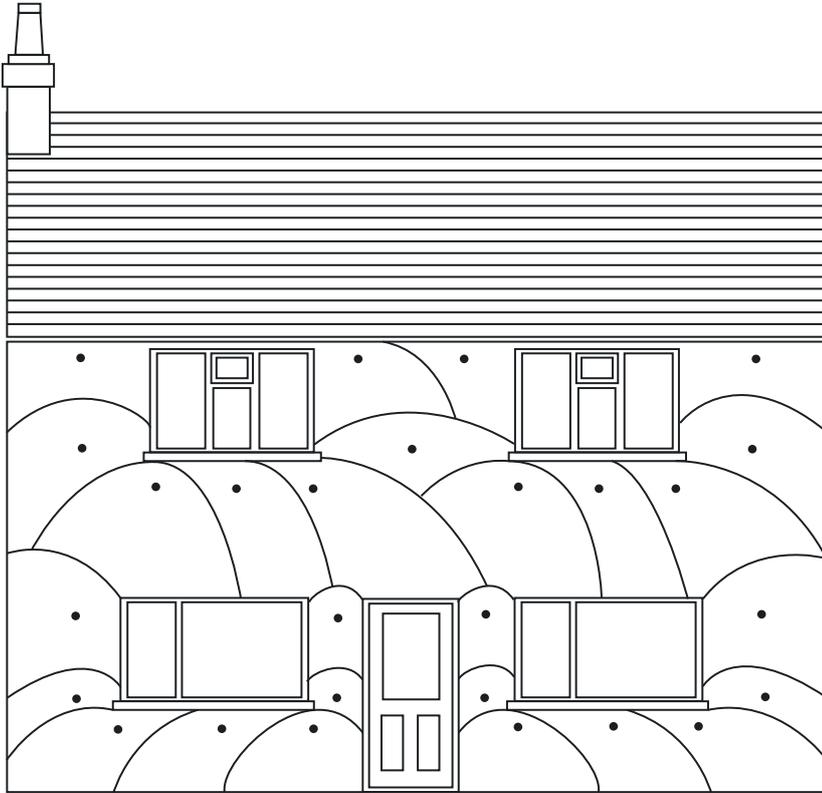
Once a fill has been achieved the material flow is temporarily halted by back pressure and the nozzle should be turned off.

As soon as the nozzle has been moved to the next injection hole it is turned back on and injection can be continued immediately.



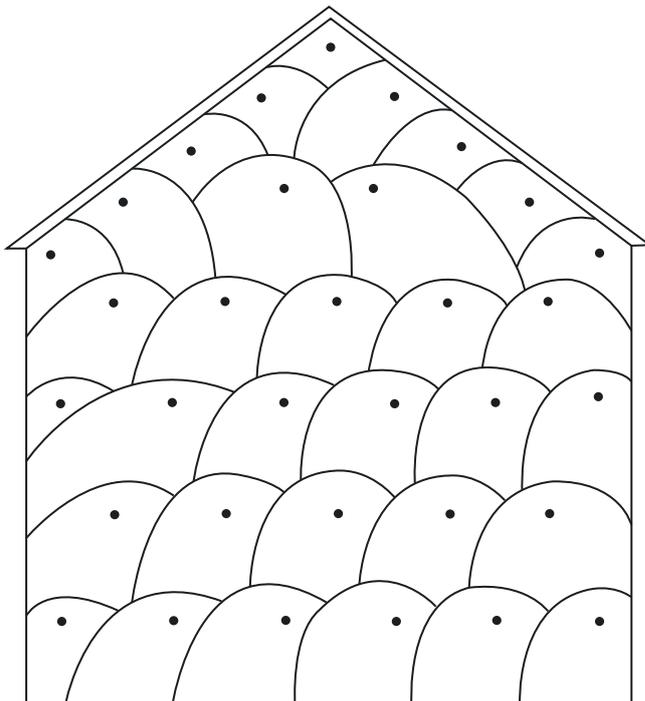
InstaFibre White Wool

Standard filling pattern – frontage



InstaFibre White Wool

Standard filling pattern – Plain gable end



Installed Density

To check that a correct fill has been obtained, the number of bales used on site should be counted and recorded on the relevant paperwork and an average density calculated.

Example						
Gross area of walls	Less openings	Net area	Cavity width*	Area of cavity filled	Number of bales used	Average Installed Density
95m ²	20m ²	75m ²	71mm = 0.071m	75m ² x 0.071 = 5.325m ³	5.75 bales x 16.6kg = 94.45kg	$\frac{95.45\text{kg}}{5.325\text{m}^3} = 17.92\text{kg/m}^3$

*Cavity widths can vary considerably within one building. Cavity widths tend to increase the greater the distance from ground level. At least 10 width measurements should be made at various heights in the building to obtain a realistic average.

For an installed density of 18kg/m³ the following coverage should be obtained per bale.

Cavity Width – mm	50	55	60	65	70	75	80	90	100	125
Coverage – m ² / bale	18.40	16.80	15.40	14.20	13.20	12.30	11.50	10.20	9.20	7.40



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