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CAVITY WALL INSULATION

SYSTEM SUPPLIER'S MANUAL

INSTAFIBRE WHITE WOOL

InstaFibre

British Board of Agrément Certificate No: 89/2294

FILLING THE GAP

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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

Ladders – 14ft double – two sets

Scaffold boards

Drilling machines – heavy duty, 110 volt single phase electric with safety clutch

Drilling bits - 22mm, 25mm or 26mm (depending on machinery used)

Cavity brushes (plus lines and weights)

Density test box

Weighing scale (0 – 2kg)

Stopwatch

Airbrick sleeving material

Instascope and inspection lamp

Meter box key

Smoke pellets

Making good equipment:

Bucket, trowel, mortar hawk, sand and cement, range of colour pigments, range of rendering finishes, air bricks or sleeving device.

Tool kit including:- hammer, chisel, spanners, screwdrivers, hacksaw and pliers

Water hose and couplings, yard brush, shovel and dustpan and brush

Safety equipment:

Hard hat, ear protectors, goggles, dust masks, gloves, safety shoes, protective clothing and first aid kit

NB. 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.

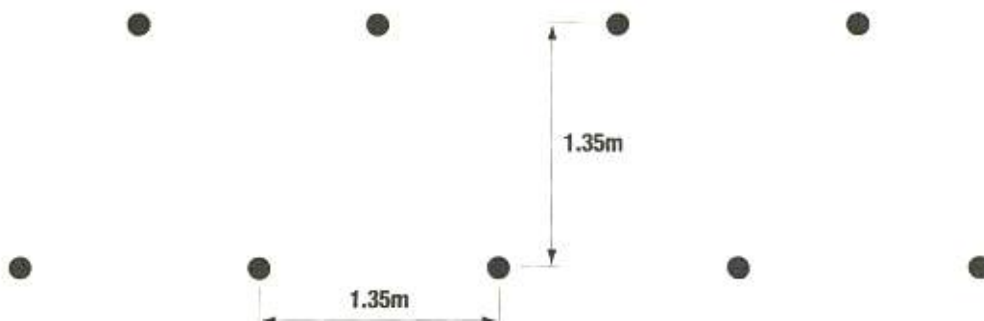
It is advised that you acquaint yourself with and understand your own company's current safety policy manual.

Drilling Pattern

The InstaFibre systems use either 22mm, 25mm or 26mm diameter drill holes 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

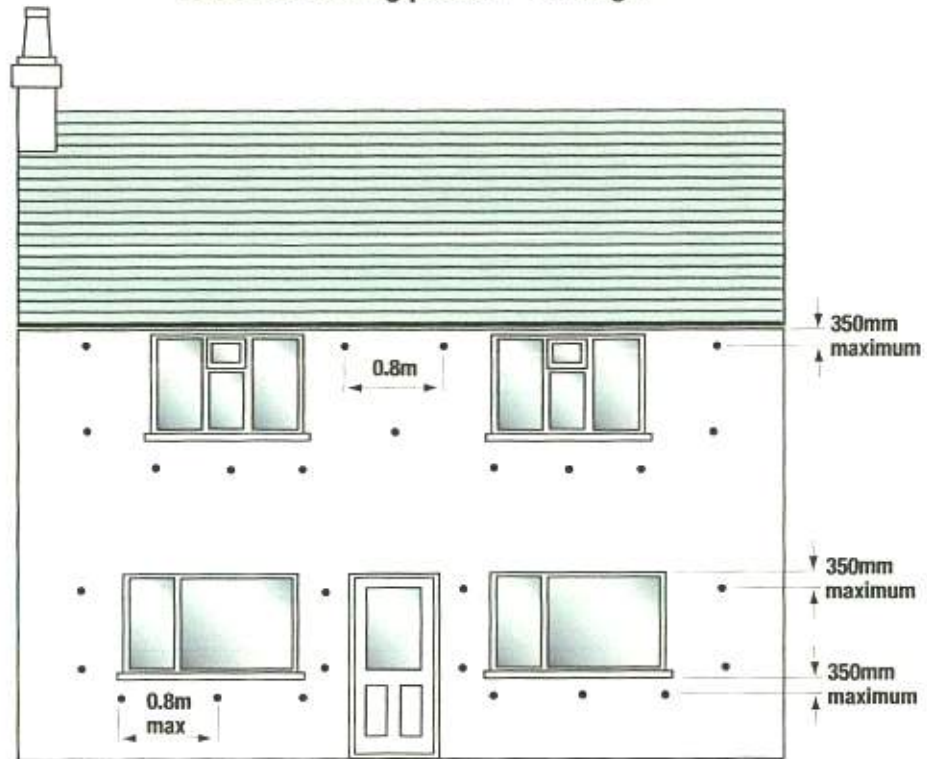


With sloping boundaries, for example under the eaves of a gable end, the centres between the successive injection holes should be spaced at 1.0 – 1.35m depending on the slope of the boundary. The nearer the boundary is to the horizontal, the closer the holes should be.

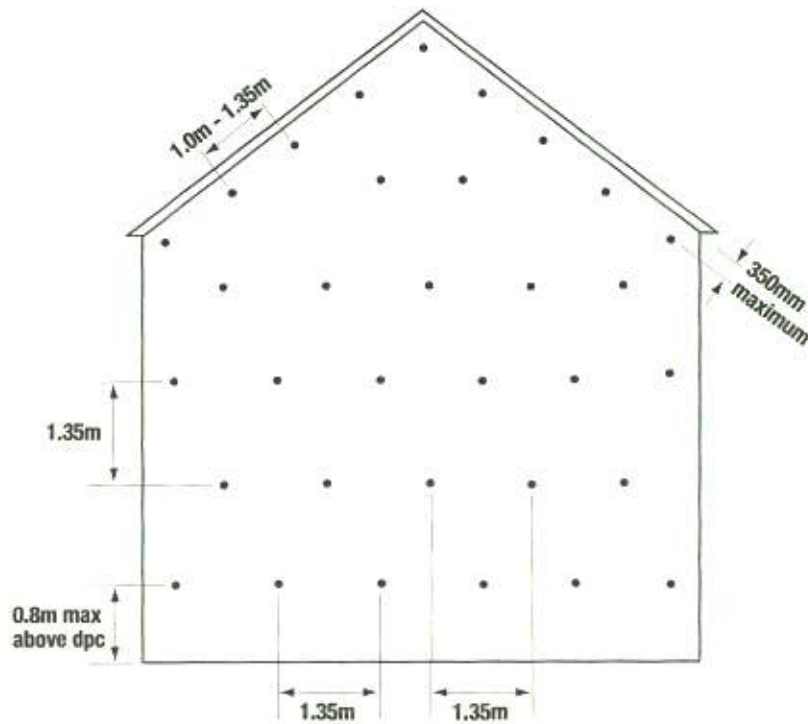
Where the standard diamond pattern can not be used, additional injection holes will be required to ensure completeness of fill (for example around building features).

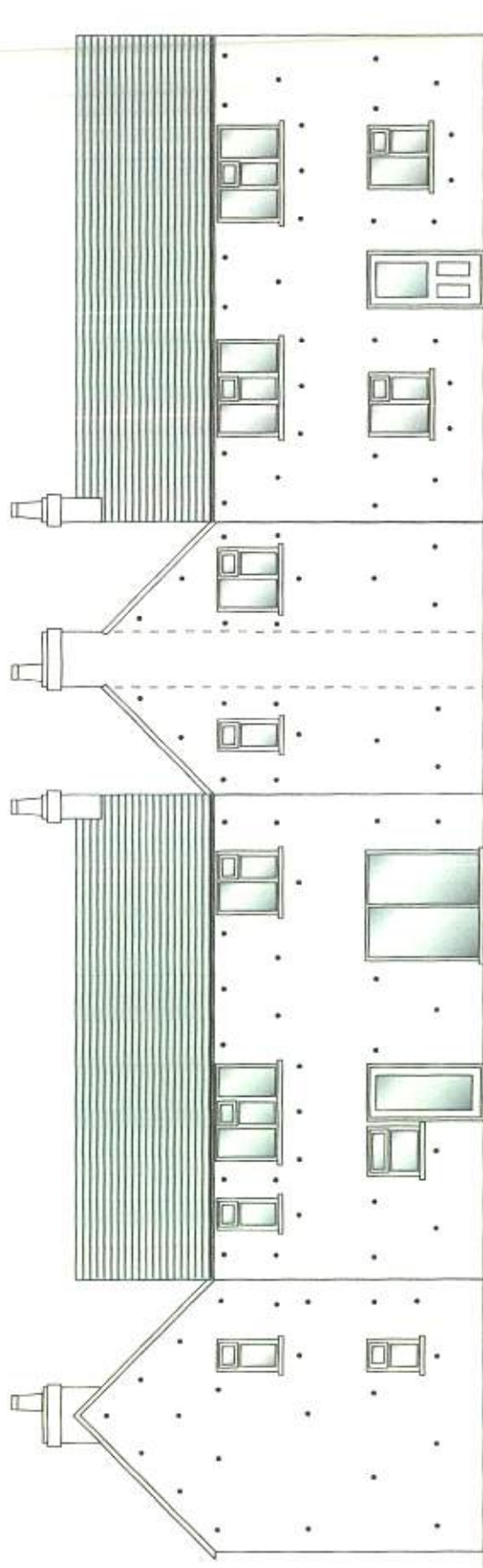
The above information should be read in conjunction with the recommended drilling operation in the Technicians guide to best practice – Installing cavity wall insulation.

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 White Wool is approved for use by the BBA in conjunction with the following blowing machines.

InstaFibre single or double

Peak Diesel and Electric

REB / Fibremaster 500, 750 and 1000.

Timco

ITM / Walltherm / Taskgrip

Each machine is identified as being approved by bearing a plate denoting the BBA Certificate number 89/2294.

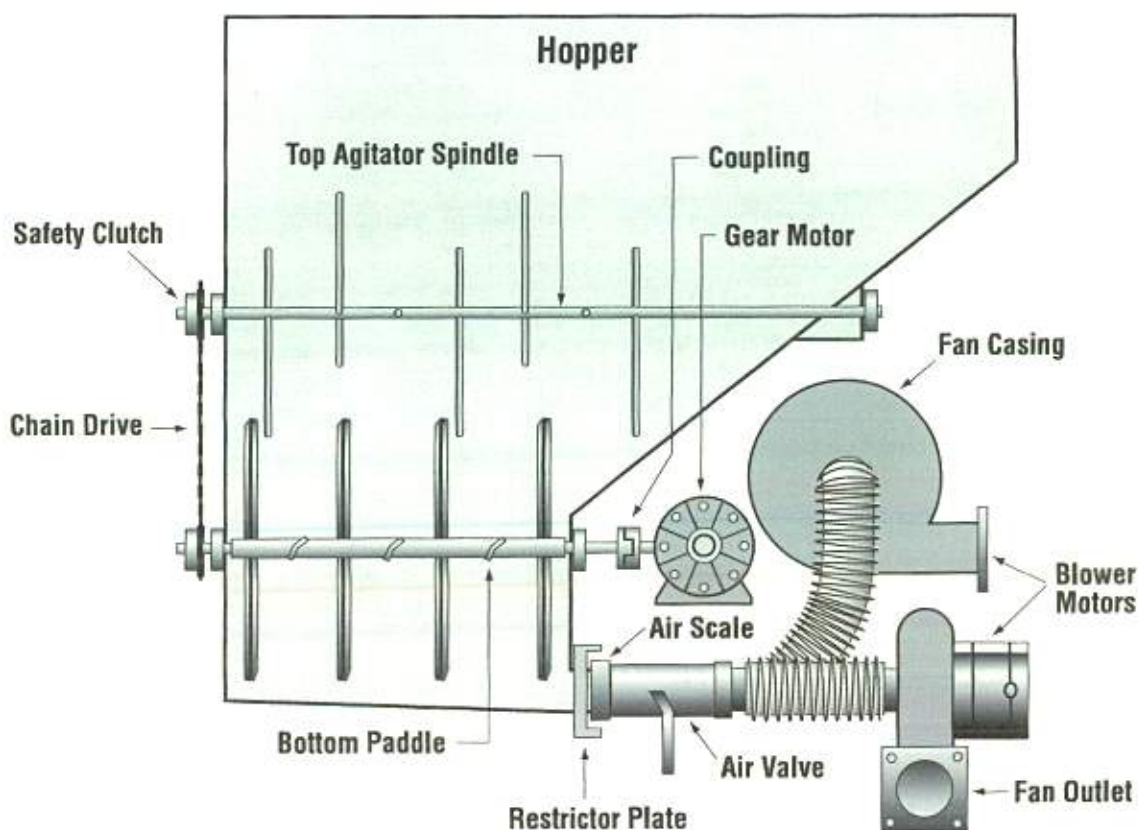
The above machines fall into two basic categories.

The InstaFibre Blowing Machine

Material, which is supplied in compressed bags, is fed into the hopper. The top agitator spindle breaks up the compressed material allowing it to fall to the bottom paddle. The angle of the blades on the bottom paddle steers the material towards the restrictor plate. The material is sucked through the restrictor plate into the blower motors and blown along the delivery hose to the cavity being insulated.

The amount of material being drawn through the blower motors is regulated by adjusting the air valve and the restrictor plate.

The InstaFibre Blowing Machine



Other Blowing Machines

The other blowing machines approved for use with InstaFibre White Wool are classed as chamber machines. The principle of all chamber machines is as follows although design varies from machine type and model.

The compressed material is broken up by a bale breaker at the top of a hopper.

The material is fed into a pelletising section by a worm screw.

The material is held within the pelletising section for the required length of time by means of a restrictor plate.

The pelletised material then passes through a rotary valve and into an air stream created by a blower motor when it is blown along the delivery hose to the cavity being insulated.

The amount of material passing through the rotary valve is controlled by the restrictor plate and control of installed density may be achieved by adjustment of a dump / lift valve.

For more information regarding individual machines please refer to the specific machine manual.

AT NO TIME SHOULD TECHNICIANS PUT THEIR ARMS OR HANDS INTO ANY HOPPER WHILE A MACHINE IS SWITCHED ON AND WORKING.

If machinery requires repair or servicing the electricity supply must be disconnected before work commences.

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 + /- 15%.

Box Weight 0.7kg + /- 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 +/- 15%)

Visually check adequacy of fill.

Empty contents of box into bag and weigh - (weight of 0.7kg equates to a density of 18kg/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.

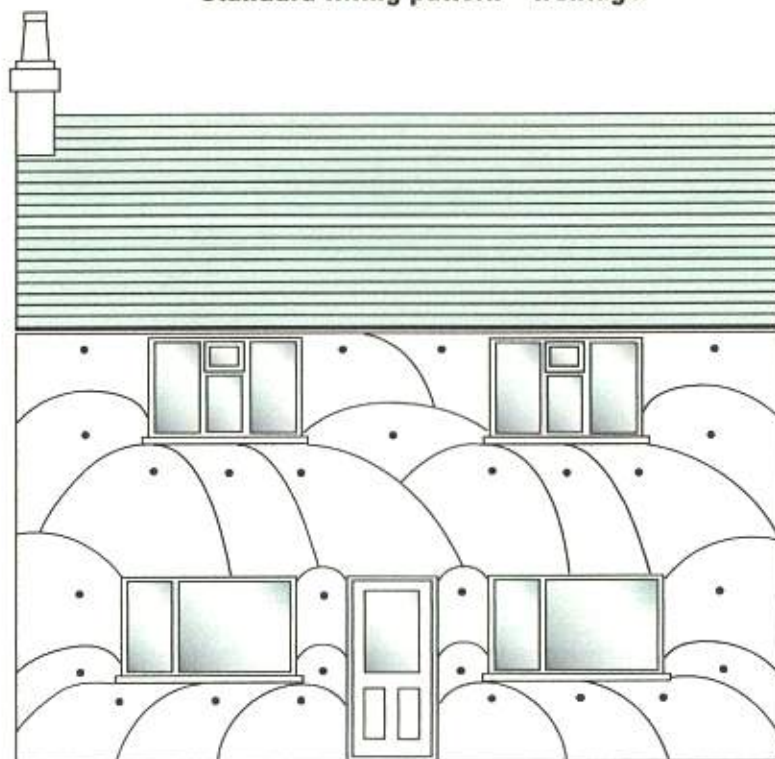
Wool should be injected into each hole in turn – starting at the lowest row at one end of an elevation and working across from side to side. Filling in this sequence ensures a more even distribution of materials

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.

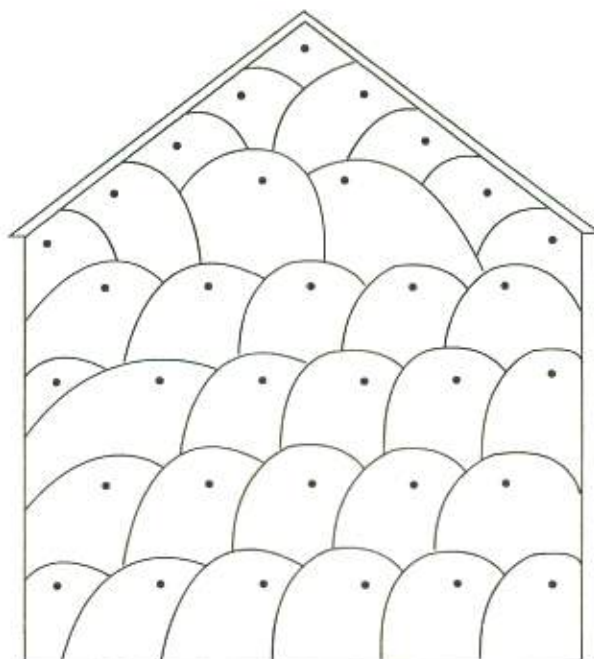
Once a fill has been achieved the material flow is temporarily halted by back pressure and the nozzle should be turned off.

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.

For example:

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

* Cavity widths can vary considerably within one building. Cavity widths tend to increase the greater the distance from ground level. At least ten 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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