

BUBBLE MARINE PRODUCTS

MK3 SAFER STYLE MARINE FLUES

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MARINE CHIMNEY INSTALLATIONS	2
1. ILLUSTRATIONS	3
FIG5 MK3 GENERAL ARRANGEMENT	4
KEY TO FIG 5	4
ITEM 1 PRIMARY FLUE	4
ITEM 2 SINGLE TO TWIN WALL ADAPTOR	4
ITEM 3 TWIN WALL FLUE PIPE	4
ITEM 5. FIRESTOP SPACER	4
ITEM 6. CEILING RING	4
ITEM 7 DECK FLANGE ASS	4
ITEM 8 STORM COLLAR	5
ITEM 9 RAIN COWL OR TERMINAL	5
ITEM 10 CLAMPING BANDS	5
ITEM 18 DECORATIVE FILLER (MAINLY ON BOATS)	5
2. INSTALLATION	5
2.1 CUT THROUGH THE ROOF	5
2-1A CUT THE INNER ROOF LINING	5
2.2 POSITION THE DECK FLANGE	5
2.3 TRY THE FLUE PIPE	5
2.4 FIRE STOP SPACER	6
2.5 CEILING PLATE	6
FIG 6 BOAT STYLE INTERNAL TRIM RINGS AND FIRESTOP SPACERS	6
2.6 FINISHING	6
2.7 ABOVE DECK EXTENSION	6
2-8 MINIMUM FLUE HEIGHTS	6
FIG 7 MK3 FLUE FITTED TO A LUXE MOTOR WITH DYNAMIC TYPE SWEEP VENTURI COWL	7
2-9 SPECIAL FABRICATED FLUE PIPES	7
FIG 10	8
3. PARTS LIST	9
4. EXAMPLES OF FIREPLACES AND STOVE INSTALLATIONS	10
DELPH TILED FIREPLACE UNDER CONSTRUCTION	10
STOVE IN FINISHED DELPH FIREPLACE	10
CORNER STOVE RUNNING IN MOBILE DISPLAY	11
CORNER STOVE IN BOAT (INCORRECT FITTING)	11
5. FURTHER READING	12
LINKS	12
MORE INFO ABOUT RAYBURNS	12
PRICE LISTS	12
INSTALATION AND USER MANUALS	12
6. SAFETY	12
INSTALLATION / USE - CORRECT COMPLIANCE WITH MANUFACTURERS INSTRUCTIONS	12
FUMES - PROTECTION FROM	12
FIRE - PROTECTION FROM	12
BURNS - PROTECTION FROM	13
RELEVANT STANDARDS	13

MARINE CHIMNEY INSTALLATIONS.

Bubble Marine Products offer three styles of chimney system, Mk1, Mk2 and Mk3.

These chimney systems have been developed to be used in conjunction with some of our range of marine heating units but can also be used with any other make of heating unit.

The Mk1 is a development and improvement over the traditional cast iron deck flange used on UK narrow boats offering a better degree of safety and designed for customers who still want to use the outdated and ineffective traditional, narrow boat chimney extension.

The Mk 2 takes things a stage further by offering a much better above deck extension which is a high quality, stainless steel unit with 24mm of fireproof insulation incorporating a twist lock method of joining the chimney extensions.

The Mk3 takes things even further by offering even more fire resistance and performance. All of the systems are designed to -:

1. Allow accurate vertical alignment of the above deck chimney extension, irrespective of the roof curvature.
2. Create a fire stop distance from potential fire causing hazards. (HOT FLUE PIPES)
3. Provide a safer and neater way of getting a hot flue pipe through the inner and outer ceiling skin of a boat.

Mk3 consists of a series of components, which allow the use of purpose made, high quality, insulated stainless steel chimney systems to be fitted to boats.

The purpose made stainless chimney's are CE marked and comply with BSEN1856-1 and are still Kite marked under the old BS4543.

They are generally referred to as class 1 systems where flue gas temperatures are in excess of 260 deg C.

They are suitable for the evacuation of fumes from gas; oil, wood and coal fired atmospheric appliances.

The above deck insulated flue's will -:

1. Generate a better flue vacuum.
2. Be less likely to suffer from the effects of cold weather condensates.
3. Be safer.
4. Last longer.
5. Look Better

1. ILLUSTRATIONS.

FIG3 MK3 COMPONENT ASSEMBLY DETAILS

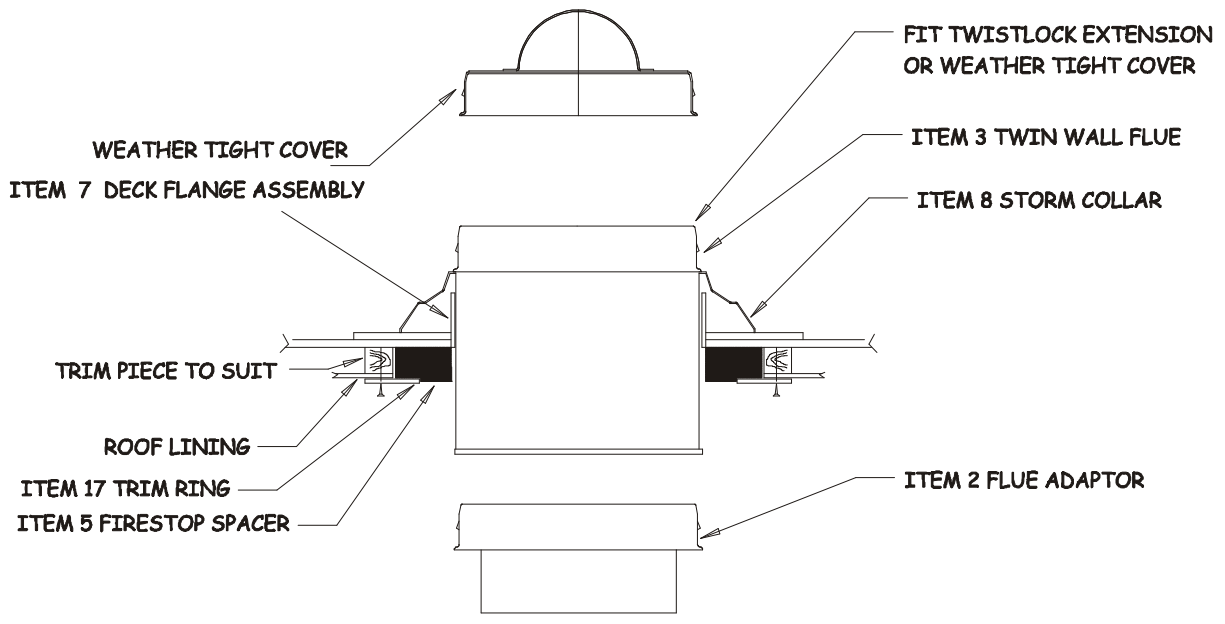
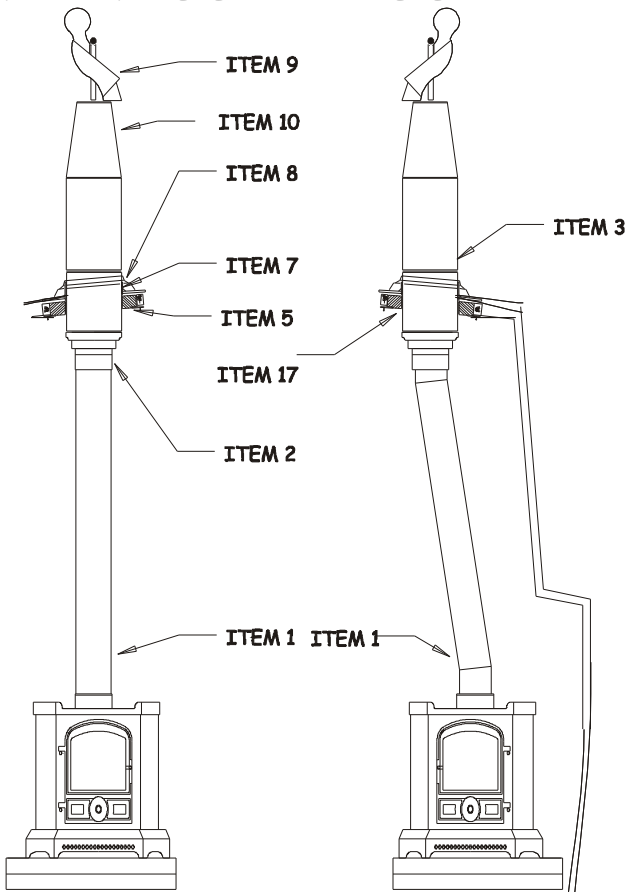


FIG5 MK3 GENERAL ARRANGEMENT



KEY TO FIG 5

ITEM 1 PRIMARY FLUE

The primary flue is the first pipe, which comes off the appliance, in some cases purpose made vitreous enamel flue pipes can be used and in other cases it has to be custom manufactured. See fig 10 for examples

ITEM 2 SINGLE TO TWIN WALL ADAPTOR

Is the adaptor, which takes the single wall flue pipe (primary flue) into twin wall flue pipe

ITEM 3 TWIN WALL FLUE PIPE

Twin wall flue pipe is the secondary flue, which can be supplied in straight lengths, tee pieces, elbows, adjustable lengths, inspection door lengths etc.

ITEM 5. FIRESTOP SPACER

This is a flat fireproof board designed to keep combustible materials at a specific distance away from the flue pipe.

ITEM 6. CEILING RING

This is the device, which masks the joint between the fire stop spacer and the boat roof lining material. See fig 6 for examples.

ITEM 7 DECK FLANGE ASS

This assembly generally consists of a horizontal flange and a vertical support tube fabricated

together to allow for a vertically aligned chimney extension see fig 2a

ITEM 8 STORM COLLAR

The storm collar is fitted above the deck flange and is designed to shed excessive water from the flue pipe. See fig 7,

ITEM 9 RAIN COWL OR TERMINAL

Terminals can come in a variety of different types; normally a standard rain cowl or a swinging cowl illustrated in fig 7 is used.

ITEM 10 CLAMPING BANDS

Are fitted at each twin wall chimney joint to lock the separate chimney sections together.

ITEM 18 DECORATIVE FILLER (MAINLY ON BOATS)

Circular trim or fillet to improve the look of the transition from single skin to twin wall flue pipe.

2. INSTALLATION.

1. Position the stove as required into a suitable fireplace.

2 Establish the position of the flue outlet hole in the roof of the boat.

If the hole is directly over the flue outlet on the stove then a straight flue can be used.

If hole is offset from the stove flue outlet then a flue pipe with suitable offset must be constructed.

NEVER USE A STRAIGHT PIPE AT AN ANGLE, USE PIPES AS ILLUSTRATED IN FIG 10 OR PURCHASE/ MANUFACTURE, PURPOSE MADE EQUIPMENT AS DETAILED IN FIG 5 ITEM 1.

If the flue pipe is correctly constructed it will expand and contract easily, via the vertical end at the stove and the deck flange, otherwise it may transmit pressure onto both the appliance and the deck flange.

2.1 CUT THROUGH THE ROOF

Establish the through ceiling position of the flue pipe and mark the centre point.

Using the deck flange as a marking template, cut the hole in the roof to the same inside diameter of the deck flange.

2-1A CUT THE INNER ROOF LINING.

Use the outside diameter of the fire stop spacer to mark out for cutting the roof lining.

If required fit the new trim timbers.

2.2 POSITION THE DECK FLANGE.

After the hole is cut, position the deck flange concentrically over it and mark out for drilling the fastener holes.

Drill the holes and temporarily bolt the deck flange to the cabin roof.

Fit the vertical support tube into the deck flange making sure that it is positioned vertically.

Mark the tube in its vertical position and tack weld it to the flange, making sure that the chimney will finish up in its correct vertical position.

Remove the tacked up assembly and finish welding all around the joint.

After welding, dress the joint and the underside of the flange to make sure that there is a clean flat surface.

Bolt the assembly to the boat with a suitable seal applied between the joint.

(Black, high temperature silicone adhesive, provided in the deck flange kit.)

2.3 TRY THE FLUE PIPE

Before the flue pipe can be fitted and adjusted to length, the twin wall chimney has to be fitted and temporarily secured into the deck flange.

2.4 FIRE STOP SPACER

The fire stop spacer will provide heat protection for any combustible materials located near to the through roof location.

It will be fitted around the flue pipe in the cavity between the ceiling lining material and the roof steelwork or outer skin.

The centre hole in the spacer may need to be profiled to suit the outside diameter of the twin wall flue pipe, this can be done using a half round rough file.

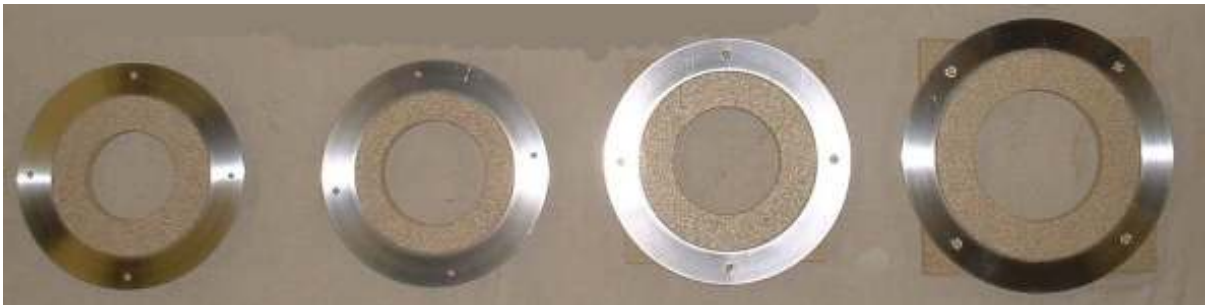
Make sure that any combustible foam insulation is removed from the cavity into which the fire stop spacer is to be fitted.

2.5 CEILING PLATE

The ceiling plate will be fitted inside the boat to finish off the through roof fitting of the flue pipe and mask the joint between the fire stop spacer and the pre cut roof lining.

It will be screwed up to the trimming timber or roof lining via fasteners as illustrated.

FIG 6 BOAT STYLE INTERNAL TRIM RINGS AND FIRESTOP SPACERS



2.6 FINISHING

Slide the twin wall flue pipe into the deck flange and let it locate onto the vertical support tube generally as per fig 3.

As a temporary support and so as to establish the correct length of the flue pipe, self tap the twin wall to the vertical support tube to hold it in position. (Use short self tappers 8mm max length)

Fit the flue pipe and mark it off at the finished length to allow final connection into the twin wall adaptor.

Cut the flue pipe to its final, correct length and then re fit the twin wall to its correct position as per fig 3.

Note that the black silicone can be used to seal the twin wall into the deck flange.

Fit three or four self-tapping screws through the vertical support tube to hold the twin wall firmly in position.

Fit the storm collar item 8 fig 3.

2.7 ABOVE DECK EXTENSION

When the assembly has gone off, (24hrs) fit the twist lock chimney extensions as required.

A short extension is used for cruising and a longer extension is used when mooring.

Fit a rotating cowl to minimise the effects of downdraughting.

2-8 MINIMUM FLUE HEIGHTS

When moored 2.1 meters.

FIG 7 MK3 FLUE FITTED TO A LUXE MOTOR WITH DYNAMIC TYPE SWEEP VENTURI COWL



2-9 SPECIAL FABRICATED FLUE PIPES

If the flue has to be offset to clear an obstacle or meet a required position then the flue pipe can be offset as illustrated in fig 10.

Note that it is important to keep the stove and chimney connections vertical, as illustrated.

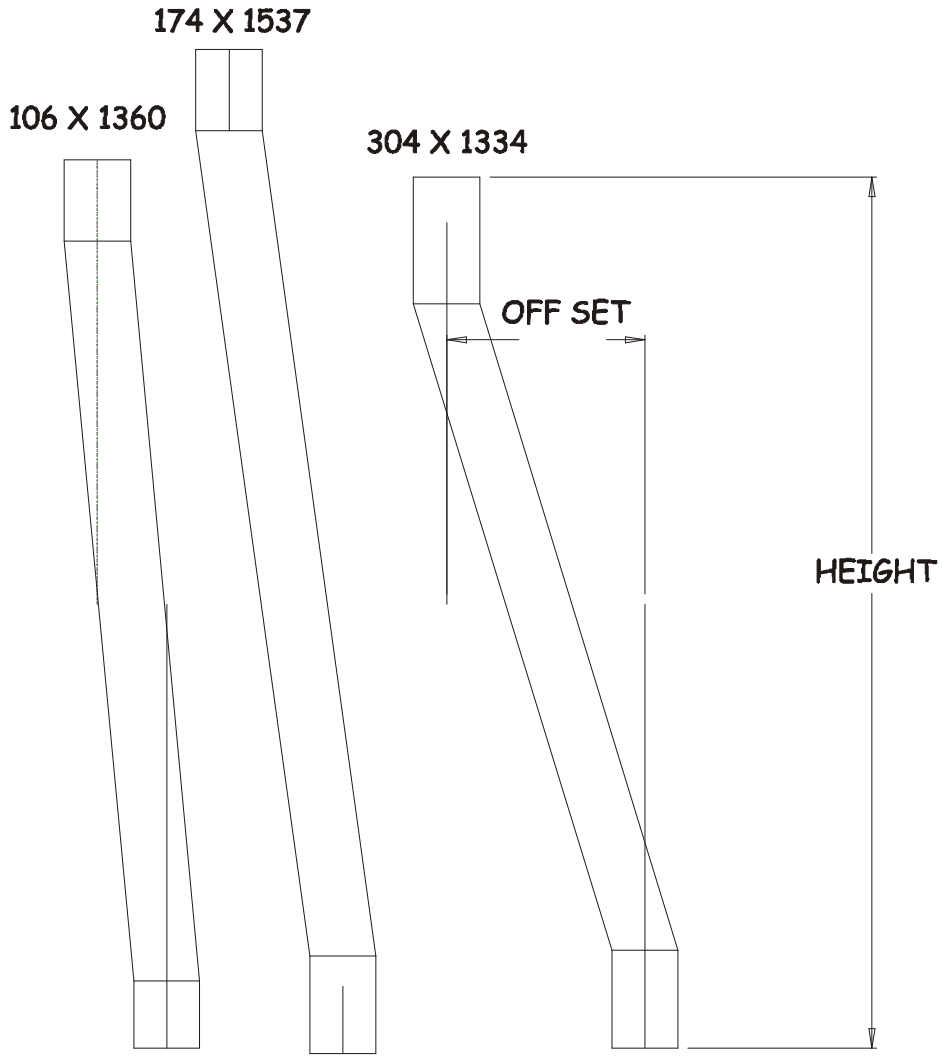
Class one flue pipes for solid fuel appliances must be made from 3mm wall thickness, steel tubes by a qualified welder.

After fabrication flue pipes must be tested for weld integrity to ensure that they do not leak and comply with -:

BS1344 Parts 1 and 7, BS1344 Part 3, BS 1449 Part 1, BS6461 Part 1. Building Regulations Part J

The pipes illustrated are classified by offset and height i.e. 106 offset x 1360 height. As per fig 10, any bend should be as gentle as possible.

FIG 10



3. PARTS LIST

Mk 3 Marine Flue System Parts List

<i>DESCRIPTION</i>	<i>PT NO</i>
COMPLETE DECK FLANGE KIT PART NOS	
COMPLETE KIT FOR 4" or 5" FLUE PIPES WITH 4" TWIN WALL ADAPTOR	
COMPLETE KIT FOR 4" or 5" FLUE PIPES WITH 5" TWIN WALL ADAPTOR	77-02-825
COMPLETE KIT FOR 5" or 6" FLUE PIPES WITH 6" TWIN WALL ADAPTOR	77-02-826
TWIN WALL FLUE PIPES 5" DIA	
STRAIGHT PIPE 6"	DEK-5STC-L6
STRAIGHT PIPE 12"	DEK-5STC-L12
STRAIGHT PIPE 18"	DEK-5STC-L18
STRAIGHT PIPE 24"	DEK-5STC-L24
STRAIGHT PIPE 36"	DEK-5STC-L36
STRAIGHT PIPE 48"	DEK-5STC-L48
TWIN WALL FLUE PIPES 6" DIA	
STRAIGHT PIPE 6"	DEK-6STC-L6
STRAIGHT PIPE 12"	DEK-6STC-L12
STRAIGHT PIPE 18"	DEK-6STC-L18
STRAIGHT PIPE 24"	DEK-6STC-L24
STRAIGHT PIPE 36"	DEK-6STC-L36
STRAIGHT PIPE 48"	DEK-6STC-L48
TOP STUBS	
TOP STUB 5"	77-02-927
TOP STUB 6"	77-02-927A
FLUE PIPE ADAPTORS	
4" SINGLE WALL TO 5" TWIN WALL	DEK-5STC-1A
5" SINGLE WALL TO 5" TWIN WALL	DEK-5STC-A
5" SINGLE WALL TO 6" TWIN WALL	DEK-6STC-1A
6" SINGLE WALL TO 6" TWIN WALL	DEK-6STC-A
STORM COLLARS	
STORM COLLAR 5" TWIN WALL	DEK-5STC-SC
STORM COLLAR 6" TWIN WALL	DEK-6STC-SC
CHIMNEY TERMINALS, WEATHER CAPS & RAIN COWLS	
4" SWIVEL COWL	77-02-451
5" SWIVEL COWL	77-02-459
6" SWIVEL COWL	77-02-593
WEATHER CAP FOR 5" TWIN WALL	77-02-827
WEATHER CAP FOR 6" TWIN WALL	77-02-828
STANDARD TWIN WALL RAIN COWL 5"	DEK-5STC-RC
STANDARD TWIN WALL RAIN COWL 6"	DEK-6STC-RC

4. EXAMPLES OF FIREPLACES AND STOVE INSTALLATIONS

Note that some of the following photographs illustrate chimneys, which are not correctly fitted.

DELPH TILED FIREPLACE UNDER CONSTRUCTION.



STOVE IN FINISHED DELPH FIREPLACE



CORNER STOVE RUNNING IN MOBILE DISPLAY



CORNER STOVE IN BOAT (INCORRECT FITTING)



Note that the inclusion of photographs of installations in this publication does not confirm technical suitability or correctness.

5. FURTHER READING

LINKS

http://www.oilstoves.co.uk/webdocs/articles/Building_Regs_J_Combustion.pdf

http://www.oilstoves.co.uk/webdocs/technical/Bubble/Bubble_Corner_Oil_Installation_Instructions.pdf

MORE INFO ABOUT RAYBURNS

http://www.oilstoves.co.uk/webdocs/articles/History_of_Rayburn_Solid_Fuel_Cookers.pdf

PRICE LISTS

<http://www.oilstoves.co.uk/prices.php>

INSTALLATION AND USER MANUALS

<http://www.oilstoves.co.uk/techman.php?Bubble>

6. SAFETY.

Safety issues are set out below.

INSTALLATION / USE - CORRECT COMPLIANCE WITH MANUFACTURERS INSTRUCTIONS.

Any appliance must be installed and used in line with the installation and user instructions provided with it.

FUMES - PROTECTION FROM.

These are some of the main causes of fume or smoke to leak from the appliance.

- The chimney is blocked or clock cold.
- There are too many bends in the chimney.
- The chimney is not airtight.
- Downdraughting or Vortexing is occurring.
- The Flue is not high enough to generate the required vacuum.
- Inadequate ventilation in the boat.
- A mixture of the above mentioned problems.

Don't leave an appliance running overnight.

Make sure that a reliable and functioning carbon monoxide alarm is fitted in your boat.

FIRE - PROTECTION FROM.

Fire can be caused by a variety of potential danger points and because of the space limitation in boats this risk is ever present and must be assessed.

Assure yourself by carrying out radiation tests.

Run the stove and check out the temperature on all surrounding, adjacent or nearby combustible materials and make sure that they are adequately protected from the effects of heat radiation.

Protection can be gained by the use of -:

- Sheet metal heat shields and spacers.
- Heat resistant boards.
- Fireguards.
- Adequately designed hearths.

Combustible materials can be-:

- Wooden furniture.
- Curtains.
- Wooden panels or frames adjacent to the flue pipe.

- Carpet or flooring close to the appliance.
- Items near to the appliance, which could fall onto it and ignite.

BURNS - PROTECTION FROM.

During normal use, many parts of appliances and appliance chimney's can become too hot to touch.

Always fit secure, suitable, fireguards and flue pipe heat shields.

When working on or near to stoves or chimneys ALWAYS USE heatproof gloves.

Most stove door glass panels conform to the requirements of BS 1945: 1971 and satisfies the heating appliance (Fireguards Safety) regulations 1991 but it does get very hot and must not be touched whilst the stove is running.

RELEVANT STANDARDS

BS1344 Parts 1 and 7, BS1344 Part 3, BS 1449 Part 1, BS6461 Part 1. Building Regulations Part J

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