

Dunham Strip Radiant Panels

Installation, Operation & Maintenance Instructions

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IDENTIFICATION

Introduction

This booklet provides guidance for site activities necessary to prepare, install and commission Dunham Strip radiant panels. The instructions apply for standard product only; please study them carefully before commencing any installation work.

Description

Dunham Strip comprises aluminium sheet panels with steel pipe clamped to the upper surface. The pipes are located in a groove in the panel to maximise the physical interface between pipe and panel, ensuring efficient heat transfer to the radiating surface. The panels have a durable coating of epoxy polyester powder, and are fitted with insulation to minimise heat losses above the panel.

The insulation is retained by insulation backing plates to complete the radiant panel.

A range of accessories are supplied loose, giving flexibility in system design and configuration. Accessories include hanging brackets, cover plates and end closers

Sizes

The number of pipes and the nominal length of each strip are identified by the figure number. A suffix is added to signify the weight of pipe and type of pipe ends. Dunham Strip is a modular system; M3 panels comprise M2 and M1 panels; M4 panels comprise two M2 panels.

Code position	1	2	3
Code			

Code position	Code	Description
1	M1	1 pipe Dunham Strip
	M2	2 pipe Dunham Strip
	M3	3 pipe Dunham Strip (comprising M2 and M1 panels)
	M4	4 pipe Dunham Strip (comprising M2 and M2 panels)
2	15	Nominal length 1.5m
	30	Nominal length 3.0m
	45	Nominal length 4.5m
	60	Nominal length 6.0m
3	MP	Medium series DN32 (1¼") pipe - plain ends
	MS	Medium series DN32 (1¼") pipe - screwed ends
	MF	Medium series DN32 (1¼") pipe - flanged ends - PN40 BS4504
	MG	Medium series DN32 (1¼") pipe - grooved ends
	HP	Heavy series DN32 (1¼") pipe - plain ends
	HS	Heavy series DN32 (1¼") pipe - screwed ends
	HF	Heavy series DN32 (1¼") pipe - flanged ends - PN40 BS4504
HG	Heavy series DN32 (1¼") pipe - grooved ends	

Table 1: Product description code for Dunham Strip - for specifying individual radiant panels.

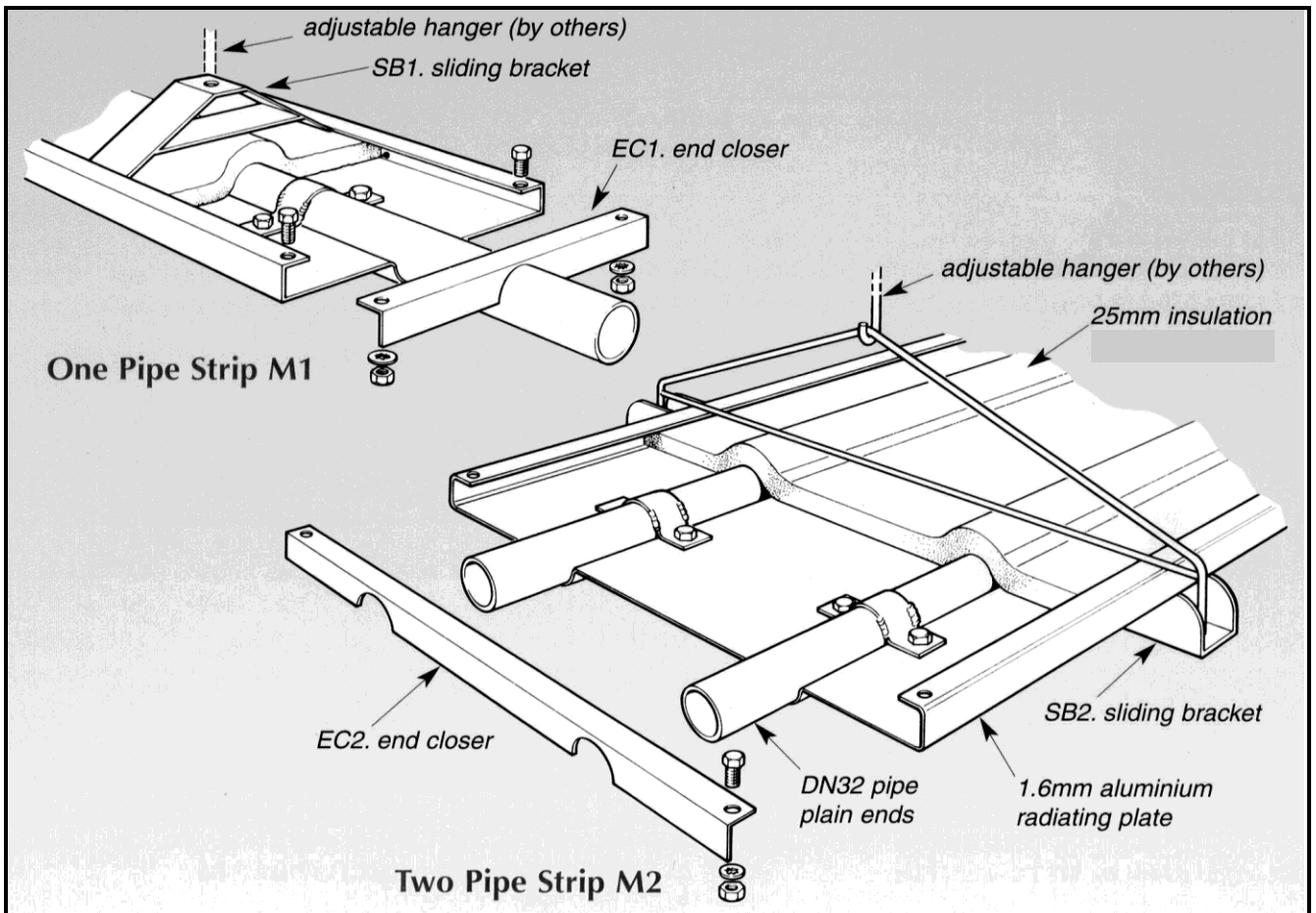


Diagram 1: General view of Dunham-Strip M1 and M2 panels

CONSTRUCTION

Handling

The purchaser is responsible for off-loading. 1.5m and 3.0m radiant panels can usually be lifted by two persons, but longer panels may require a third person providing support in the middle. When a significant quantity is delivered, they may be palletised and shrink-wrapped, so a fork lift truck or similar equipment is required. Panels must not be dropped or suffer impact in any circumstances.

Storage

Radiant panels should be stored in clean, dry indoor conditions; packaging should not be removed until installation, unless damage is suspected. The purchaser should examine the panels promptly upon delivery and any claims for damage will only be accepted if the delivery note is endorsed with a note detailing the damage. Each panel may be marked with a stencil reference if specified on the order.

Preparation

Extensive modification to the building fabric should not normally be necessary. However, proper provision for fixings must be arranged. The structure to which the panels are to be fixed must be fit for purpose and be capable accepting drop rods or similar suspension fixings.

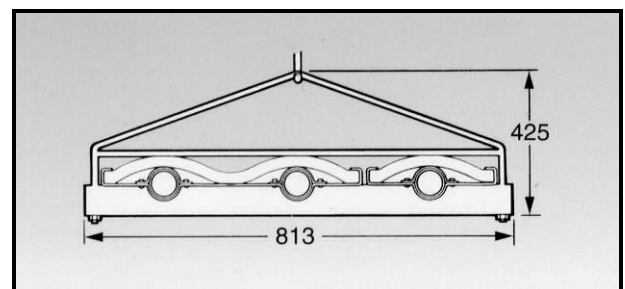


Diagram 2: Section detail of M3 Dunham strip with SB3 sliding bracket

Medium pipe	Water content (l/m)	Heavy pipe	Water content (l/m)
M1	1.02	M1	0.93
M2	2.04	M2	1.86
M3	3.06	M3	2.79
M4	4.08	M4	3.72

Table 2: Water content per linear metre of M1, M2, M3 and M4 Dunham Strip

Medium pipe	Mass (kg/m)	Heavy pipe	Mass (kg/m)
M1	5.3	M1	6.1
M2	10.3	M2	11.8
M3	15.6	M3	17.8
M4	20.6	M4	23.6

Table 3: Approximate masses per linear metre of Dunham Strip without accessories

INSTALLATION

Refer to the Dunham-Bush BL drawing provided.

Fixing

Leave sufficient clearance at each end, to make pipe connections. Fit sliding brackets at 3m centres to suit fixing points and adjustable hanger rods previously installed. Lift and position each panel into the brackets.

Grading

Grade each run by means of adjustable drop rods
Hot water installations are usually graded to a minimum 1:250 in the direction of flow, to the highest point of the return main, which should have an air vent. Steam installations must be graded to a minimum 1:200 in the direction of flow, down to a suitable steam trap.

Cover Plates and End Closers

If supplied, fit cover plates to joints between individual lengths and fit end closers at the end of each run or between individual strips. Fix using screws, lock nuts and washers supplied. Cover plates cannot be used with MF or HF (flanged connection) type panels.

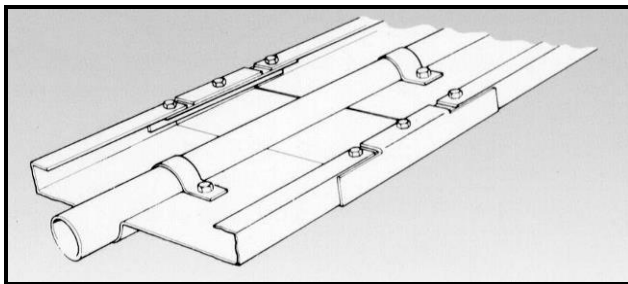


Diagram 3: Cover plate CP1 for M1 Dunham Strip

Pipework Connections

The system should be designed to allow for expansion of radiant panels. Refer to the mechanical services drawings.

Connections will be supplied as specified, from a choice of plain ends for welding, screwed ends for use with unions or flanged ends.

The position of flow and return connections will depend upon the circuitry of the installation. Tubes should be connected in parallel to minimise bowing due to differential expansion. Expansion compensators, expansion loops or floating pipe connections should be used depending on the size and layout of the system,.

N.B. Sliding brackets are designed to give variable installation position only, not to accommodate expansion movement i.e. hanging rods should be long enough to allow for expansion movement

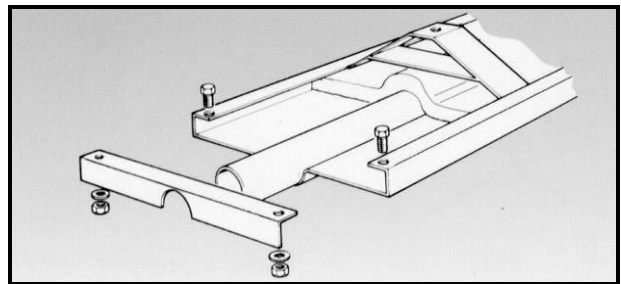


Diagram 4: End closer EC1 for M1 Dunham Strip

COMMISSIONING

Fill and vent the systems and pressure test in accordance with recognised practice.

Adjust the water volume flow rate in each circuit by means of balance valves to obtain the specified water temperature drop.

With the system operational, check that the strip is not distorted due to expansion movement.

Pipe Type	Cold test pressure (barg)	Max. working pressure (barg)
Plain ends (for welding)	25	17
Screwed ends 1½" BSP taper	21	14
Flanged ends	25	17

Table 2: Site test and working pressures

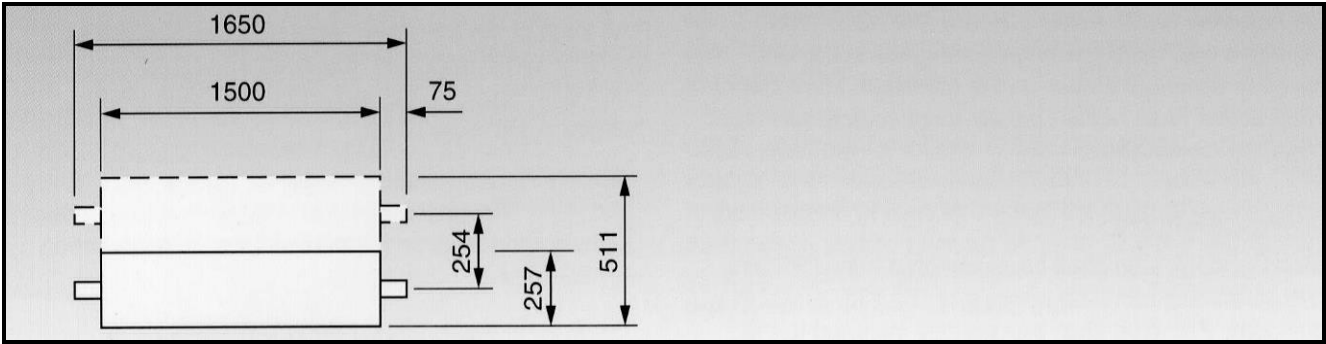


Diagram 5: M1 and M2 Dunham Strip - nominal length 1.5m

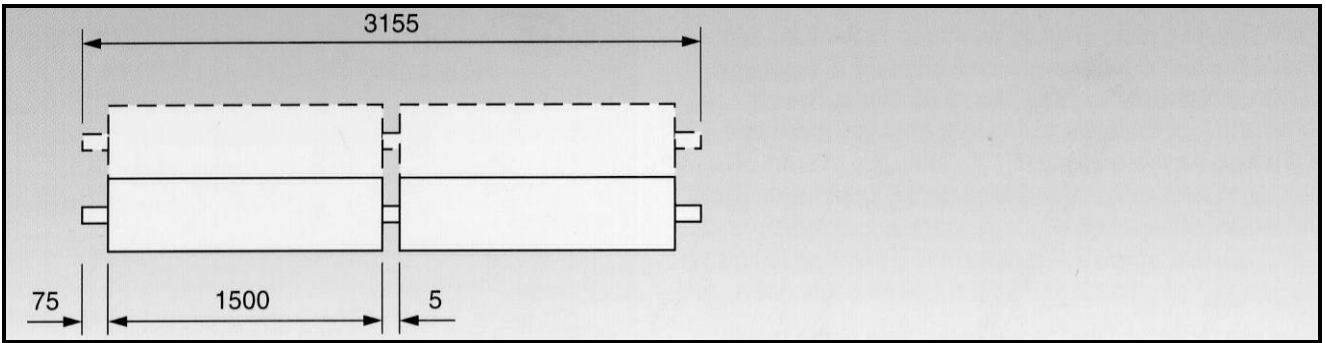


Diagram 6: M1 and M2 Dunham Strip - nominal length 3.0m

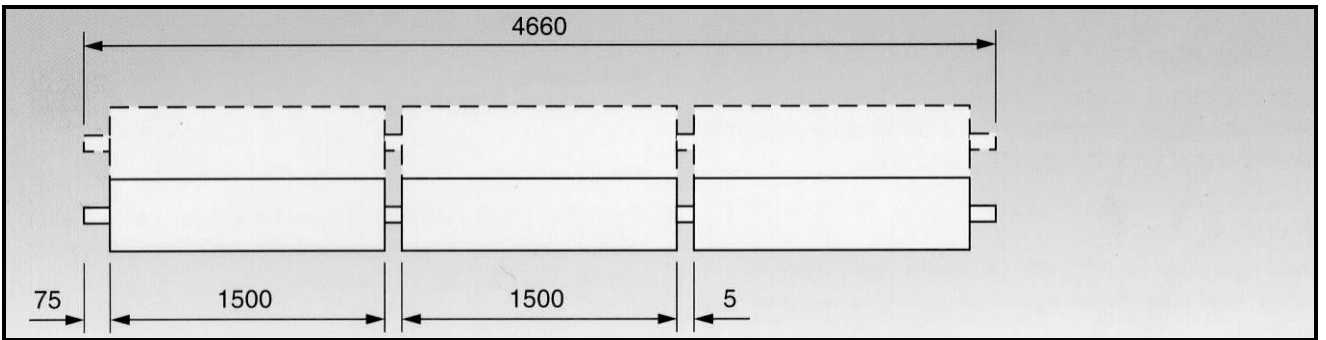


Diagram 7: M1 and M2 Dunham Strip - nominal length 4.5m

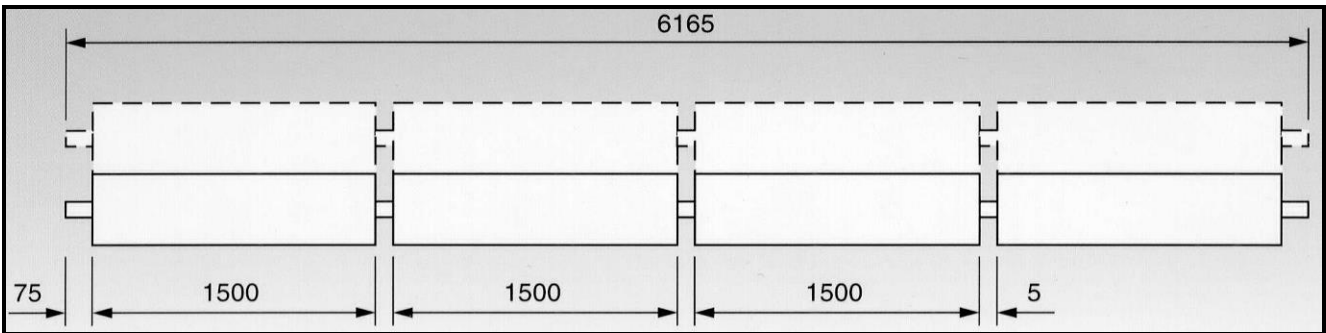


Diagram 8: M1 and M2 Dunham Strip - nominal length 6.0m

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Manufacturer reserves the right to change any product specification without notice

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