

## Tubular Daylighting Systems



Perhaps not the first product that springs to mind when thinking of sustainable products, but tubular daylighting systems, light pipes, sun pipes or sun tubes, offers daylight into a darkened area reducing the need to always use some form of electric lighting.

This BMF Selling Guide covers the main elements to be considered when supplying tubular daylighting systems, light pipes, sun pipes or sun tube (for the purpose of this Guide, we will refer to them as light pipes).

Light pipes can be installed almost anywhere in a property, even in rooms without direct roof access making them an effective and efficient way of maximising natural daylight by bringing energy free lighting into a building.

They are suitable for use on both pitched and flat roofs.

Light pipes require a u-value of 2.2 W/m<sup>2</sup>K in compliance with Building Regulations Approved Documents L1 and L2.

Light pipes fall into two categories rigid and flexible. Both rigid and flexible systems comprise of three basic elements, which, depending on their efficiency, determine the amount of light that is actually transferred.

### Flexible Systems

- tend to be the cheaper option
- Belief that they are easier to fit, particularly if a bend is included

### Rigid Systems

- Can deliver 10 – 30 times more light than a flexible system



### Element 1:-

#### *Dome or Port*

The purpose of the dome is to capture the light and bring it into the tube as well as protect the tube from weather conditions.

Dome technology can include lens systems and built-in reflectors to capture the maximum amount of light.

## Element 2:-

### Tube

The more reflective the tube the more light will be transferred.

The most efficient tube on the market states 99.7% reflectivity.

The simple rule is that the more reflective the tube – the more light will be transferred.

The difference of just 1% reflectivity will make a significant difference to the amount of light delivered, particularly over longer lengths.

e.g. 99.7% reflectivity system will lose 6% of its original source light, a 98% reflectivity system will lose more than 33%.

The maximum length of tubing will be determined by the reflective value and with width of the tube. A 99.7% reflectivity system with a 350mm tube will deliver light up to 9 metres from the roof.

Bends can be added to the tube to get around existing roof support work but may have an adverse affect on the performance of the light pipe.

## Element 3:-

### Diffuser

This is what is seen in the ceiling. A good lens is required to evenly distribute the light around the area with a double glazing system to prevent solar gain and heat loss. Double glazed systems prevent condensation build-up.

Number of Extension Tubes Required	Roof to Ceiling distance
0	400mm
1	960mm
2	1520mm
3	2080mm
4	2640mm
5	3200mm
6	3760mm
7	4320mm

## Add on Products

- Extension Tubes
- Light add on kit - for night-time
- Ventilation/Extractor fan add on kit - for damp locations
- Dimmer switch – for controlling the level of daylight
- Fire protection collars
- Rigid pipe extensions
- Bends or angle adaptors

## Giving the right advice.

Both types of system require the same skills and time for installation, the overall cost of a top-quality system may not be that much more than a cheap inefficient one. The golden rule to remember is; the more reflective the tube, the more light into the room – the more light into the room, the happier the customer.

### ADDITIONAL INFORMATION:

Planning permission is not required to install light pipes. (This does not apply to Listed or conservation-grade building).

Most popular applications are in landings, en-suites and hallways in bungalows.

These products are becoming more and more popular; the simple rule being if you can get the tube from the roof to the room an area can be transformed.

**For further information on this subject and other BMF SELLING... guides please visit [www.bmf.org.uk](http://www.bmf.org.uk)**

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