

Building Compliance  
Design & Testing

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ON-SITE

# Air Leakage Testing

Build stage sealing information

ATSPACE

DELIVERING BEYOND COMPLIANCE



## Air Leakage Testing

Build stage sealing information

### Blockwork

All blockwork leaks, from 0.1 to 60 m<sup>3</sup>/h/m<sup>2</sup>. Plastered blockwork does not leak, however, any area that is not plastered is a potential problem i.e. above false ceilings and below raised floors. Painting good quality blockwork reduces leakage but painting poor quality blockwork has little effect.

### Pipework and electrical services

Pipework and electrical penetrations through the envelope into plant rooms and electrical switch rooms should all be sealed, as collectively they can add up to a large area of leakage.

### Beams and steelwork

Steelwork encased in fire cladding and hollow concrete beams. If they are not sealed properly, then sealing after construction could prove either futile or at the very least expensive.

### Ceilings

All types of ceilings are a potential area of leakage due to light fittings.

### Curtain walling systems

All joints are weak points, especially where it abuts the floors, walls and roof sections.

### Dry lining systems

Dry lining systems should be sealed with a continuous bead of plaster along the length of the bottom of the board. All penetrations should be sealed. Where these systems join the external walls extra care must be taken to ensure that there are no leakage paths.





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#### Lift shafts

Lift doors should have adequate seals. Special attention must be made to any raised floors adjacent to the lift. The vent at the top of the shaft should not be sealed for the test.

#### Profiled metal decking

The underside of profiled metal decking and all joints will require effective sealing during the laying of the sheets. Perforated liner sheets and relying on the vapour barrier should be avoided as they under perform.

#### Windows and door frames

Windows and doorframes need to be sealed to the inside surface of the envelope. Any cavities must be sealed before final finishes are made.

#### Wall to ceiling and roof joints

All walls to ceiling and roof joints need to be sealed properly at the time of construction, as these areas are the hardest to reach and not easily inspected after construction. All expansion joints between concrete beams and blockwork should be deep filled with an airtight compound.

#### Riser shafts

Riser shafts need to be very tightly air sealed to prevent leakage into plant rooms and the building cavity.

#### Steelwork penetrations

Steelwork penetrations that pass through the internal surface must be sealed with a compound that will allow for expansion and contraction.





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### Loading bay doors

Loading bay doors should preferably be of the panel tight with adequate seals.

### Roller Shutter Doors

BS EN 12426 classifies the air permeability of doors. The seven Classes run from 0 – 6. The higher the class, the lower permeability. A Class 1 door has a permeability of  $24\text{m}^3/\text{m}^2\text{h}$  at 50 Pa. Each class has a permeability rate half that of the previous Class.

### Water and condensate traps

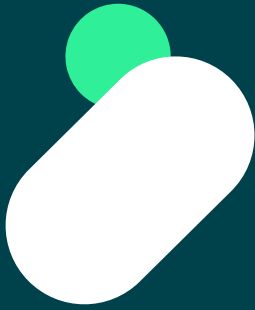
Water and condensate traps should be filled at the time of the test.

### Materials that must be avoided when sealing any joints

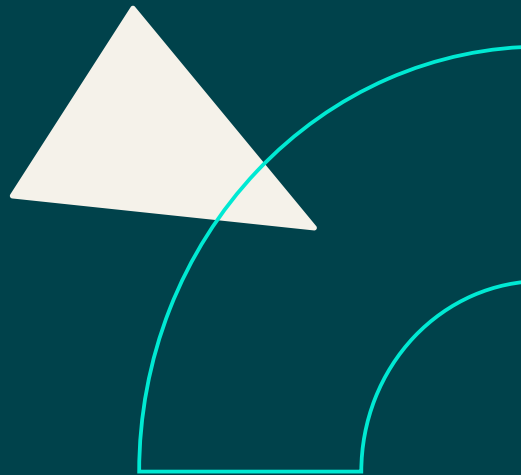
Mineral wool and rockwool.

### Tape and expanding foam

The life span of tape and expanding foam is too short for use in a building that would be standing for many years. Only foam designed for air sealing should be used.



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