

### Fire Protection of air spaces enclosed behind ceiling, panelling or lining :

#### Draught Stops :

*With the international rules of IMO / SOLAS concerning Draught Stops the description and specifications are a little vague.*

*The following text is the recommendations from Rockwool Marine & Offshore based on our interpretation of the rules.*

*The definition from SOLAS, Part C, Chapter II-2, Regulation 8, sec 4 :*

“Air spaces enclosed behind ceilings, panelling or linings shall be divided by close-fitting Draught Stops spaced not more than 14 m apart. In the vertical direction, such enclosed air spaces, including those behind linings of stairways, trunks, etc., shall be closed at each deck. “

The interpretation of the rules given by IMO in MSC/circ.847 reg 35:

#### Regulation 35 - Details of construction

##### 35.1.1 Construction and location of draught stops:

1. Any of the following methods of construction may be used to construct draught stops
  - .1. the extension of the „B“ class bulkhead, ceiling or lining;
  - .2. the extension of the „C“ class bulkhead, ceiling or lining;
  - .3. 1 mm thick minimum steel sheet, stiffened where necessary, intermittently welded to the ship's structure and the top profile of the bulkhead, or fastened mechanically to the ceilings or linings;
  - .4. non-combustible board type material fastened mechanically to the ship's structure, bulkheads, ceilings or linings; or
  - .5. „A“ class mineral wool insulation, not less than 20 mm in thickness, faced on each side with expanded metal mesh, the mesh on one side being attached to the ship's structure, or expanded metal mesh may be fitted on one side and non-combustible cloth (glass-cloth) on the other side of mineral wool insulation.

Other equivalent arrangements may be accepted.

2. In general, the draught stops should coincide with the bulkheads where continuous ceilings are used.
3. Draught stops are not required in public spaces with open ceilings (perforated ceilings) with openings of 40% or more and arranged in such a way that a fire behind the ceiling can be seen and extinguished.“

To have the best fire technical solution and at the same time fulfilling the rules Rockwool Marine & Offshore recommends following solutions.

The material to use should be the same as used in tested and approved A-60 solutions.

It will normally be accepted by Class Societies to distinct between Bulkhead and Deck solutions equivalent to lining voids and ceiling voids.

But sometimes discussion can arise and therefore the general recommendation is to use A-60 Bulkhead material for the Draught Stops.

This means the specific recommendation is ;

***Rockwool Marine Wired Mat 105 in 75 mm thickness including reinforced aluminium foil surface.***

Or

***Rockwool Marine Firebatt 100 in 60 mm thickness including reinforced aluminium surface plus galvanised wire mesh.***

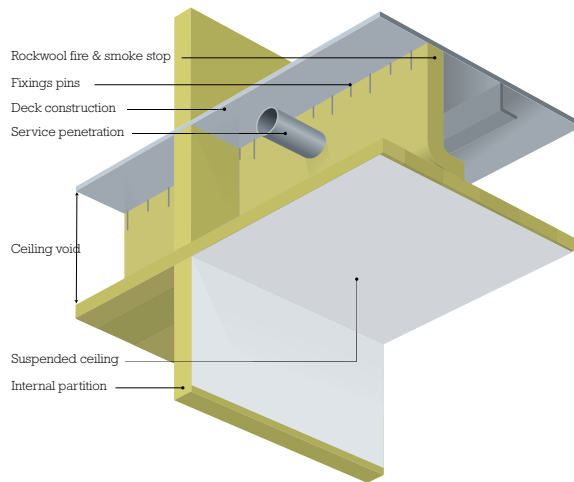
The material is to be installed with a inter distance of max 14 meter.

It is to be securely fastened to the bulkhead or deck structure by means of standard steel pin's and washers, or by a dedicated steel bracket system.

The Rockwool insulation is to create a fully tight fit of the void space. Preferably all joints, cuts and edges should be sealed by aluminium tape.

B-15 extension is also a possibility. Rockwool Marine & Offshore have an approved solution per MED-B-4194, where a 25 mm Rockwool Marine Slab 180 is utilised.

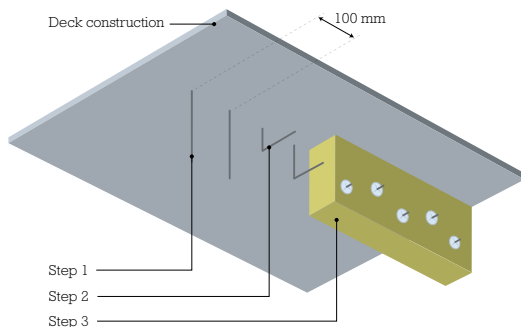
## General arrangement



## Ceiling void

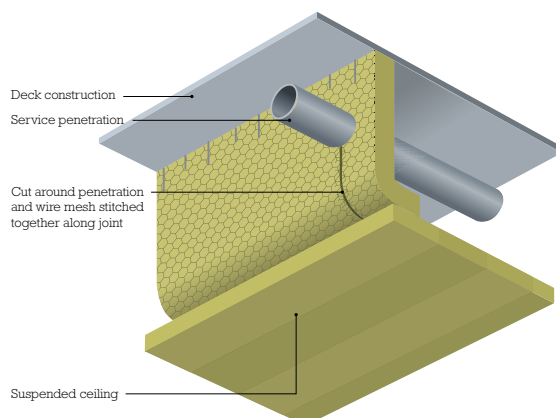
- Location: Suspended ceiling or cavity wall voids.
  - Fire attack: Either side.
  - Insulation: **Rockwool Marine Wired Mat 105 with aluminium foil, 75 mm or Rockwool Marine Firebatt 100 with aluminium foil, 60 mm + wire mesh**
  - Aluminium foil: Factory applied.
  - Wire mesh: Factory applied.
  - Steel pins: Carbon or stainless  $\varnothing$  3mm.
  - Steel washers: Carbon or stainless  $\varnothing$  38mm
- Note:** Joints in **Rockwool Marine Wired Mat 105 with aluminium foil, 75 mm or Rockwool Marine Firebatt 100 with aluminium foil, 60 mm** to be sealed with aluminium tape.

## Detail A - fixing pins



- **Rockwool Marine Wired Mat 105 with aluminium foil, 75 mm or Rockwool Marine Firebatt 100 with aluminium foil, 60 mm + wire mesh** is installed by means of steel pins welded to the underside of the deck.
- First the pins are welded vertically to the underside of the deck in alignment with the required position of the Draught Stopper. The pins are then bent 90° in a staggered pattern as shown.
- The Rockwool is then pushed over the pins so that they protrude by a minimum of 25mm. The Rockwool is secured by spring steel washers.

## Detail B - service penetrations



- Penetrations through the Draught Stopper are simply made by cutting out the shape of the penetrating items in the Rockwool, for example, pipes, HVAC ducts and cable racks.
- The cut edge of the Wired Mat must fit lightly to the edge of the penetrating item and the slit in the Rockwool must be stitched/taped back together using steel wire/alu tape.
- This solution can be used for any type of penetration including multiple penetrations.