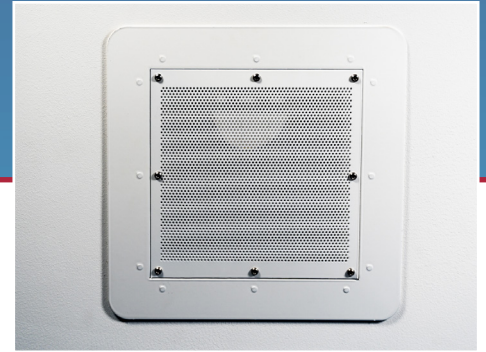
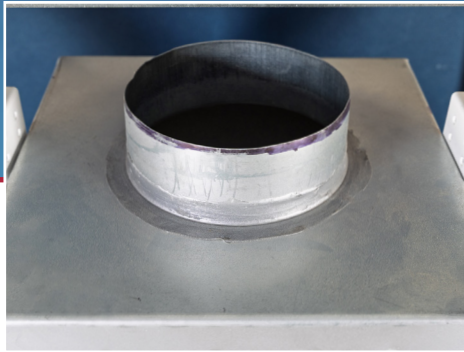


Anti-Ligature Ventilation Plenum



Overview

Contour Heating's Anti-Ligature Ventilation Plenum designed specifically mental health environments. The plenum connects standard circular ductwork to IP3X-rated anti-ligature grilles, with a construction specification that addresses safety, hygiene, and long-term maintainability from the outset.

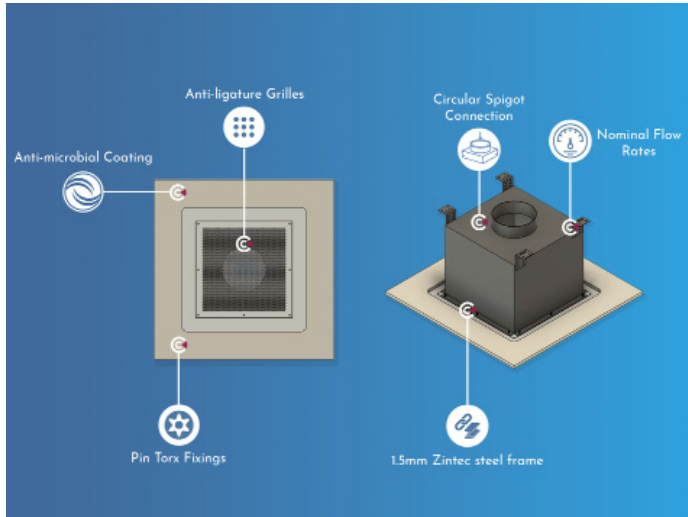
Designed and built with the practical demands of NHS specification in mind, the plenum is suitable for both new-build hospital construction and phased refurbishment programmes in occupied clinical environments.

The Anti-ligature Ventilation Plenum supports routine cleaning, inspection, and infection control procedures, without compromising the secure anti-ligature design of the installation.



Key Features

Each element of the Anti-ligature Ventilation Plenum specification is deliberate. The product is built for environments where reliability, safety, and maintainability are not negotiable.



Flush Ceiling Installation:

The grille sits flush with the ceiling surface once installed, with the plenum body attached internally to the ductwork. No projecting frames, exposed fixings, or surface-mounted elements.



BioCote® Antimicrobial Protection:

Powder coated inside and out as standard in RAL 9003 white. BioCote® antimicrobial agent is incorporated into the finish, supporting hygiene standards and infection prevention requirements in clinical environments.



Robust Construction:

1.5mm Zintec steel (full frame) suited to high-use clinical settings. Magnelis steel is available for wet-room and ensuite environments where additional corrosion resistance is needed.



IP3X Anti-Ligature Grille:

Punched steel grille with 2mm holes at 4mm centres in a triangular pitch. Restricts the passage of objects, reduces ligature opportunities, and sits flush with the ceiling once installed with no projecting edges.



Anti-ligature Fixings:

Pin Torx button head fixings provide a flush, secure closure. All fixing points are located internally, protecting against unauthorised access or manipulation. Threaded inserts support repeated removal for maintenance without wear to the fixing points.



Top-Entry Spigot:

Top-entry circular spigot in 125mm, 160mm, and 200mm nominal sizes. Compatible with standard round flexible and rigid ductwork.



Supply and Extract:

Supports both supply and extract applications. For supply, air enters via the top-entry spigot, diffuses through the plenum chamber, and passes through the grille. For extract, the airflow direction is reversed.

Technical Data

Manufacture

- 1.5mm Zintec steel
- Magnelis steel available for wet-room and en-suite applications
- Removable access door for internal cleaning and ductwork inspection
- IP3X-rated punched steel grille - 2mm holes at 4mm centres, triangular pitch
- All fixings internal
- Pin Torx button head anti-ligature fixings as standard
- Threaded inserts to support repeated maintenance access without wear

Specification

Grille

- IP3X-rated anti-ligature punched steel grille
- 2mm holes at 4mm centres - triangular pitch
- Flush ceiling installation; no projecting edges or frames

Spigot Connection

- Top-entry circular spigot
- Nominal sizes: 125mm, 160mm, 200mm
- Compatible with standard round flexible and rigid ductwork

Finish

- Polyester powder coated RAL 9003 white as standard (other colours available)
- Patented BioCote® anti-microbial agent as standard - powder coated inside and out

Fixings

- All fixings internal
- Pin Torx button head anti-ligature fixings as standard
- Threaded inserts for maintenance access

Sizing & Technical Specification

The following table summarises the three standard plenum sizes. The plenum body (H x W x D) sits inside the ceiling void above the grille face.

Grille Size	H x W x D	Spigot Ø
200 x 200 mm	250 x 250 x 250 mm	Ø125 mm
300 x 300 mm	350 x 350 x 300 mm	Ø160 mm
450 x 450 mm	520 x 520 x 400 mm	Ø200 mm

Performance Data

- Pressure drop at nominal flow rate (80L/s, based on 300 x 300 mm grille)
- Supply air: 10Pa
- Extract air: 26.4 Pa
- Supply air testing across the product range shows a pressure drop typically in the range of 8-10 Pa at nominal flow rates – low enough to avoid adverse system effects. Extract pressure drop is higher due to grille restriction and should be factored into system design at specification stage.

Optional Extras

- Magnelis steel for wet rooms and en-suite environments

Typical Applications

The Anti-ligature Ventilation Plenum is specified for secure mental health estates where standard ventilation grilles present unacceptable risk. Typical applications include:

- Acute adult inpatient wards requiring anti-ligature specification
- PICU and high-dependency mental health settings
- CAMHS inpatient units
- Rehabilitation and step-down wards
- Seclusion, low-stimulus, and en-suite bathroom areas
- Any space where standard ventilation grilles present a ligature or tamper risk