CENTRA

MATERIAL SUBMITTAL

# Linen Chute System

Gravity linen chute with fire rated intake doors and fire protection

| | |
|---|---|
| MANUFACTURER | Ostermeier FZE, Jebel Ali, Dubai, UAE |
| PRODUCT | Linen chute system, ⌀600 mm |
| REVISION | Rev. 0 |
| DATE | |
| SUBMITTED BY | CENTRA \| Building Systems Machinery & Equipment Co. |

SUBMITTAL INFORMATION

# Project & **Team**

| | |
|---|---|
| **Project** | |
| **Client / Employer** | |
| **Consultant** | |
| **Main Contractor** | |
| **Submittal No.** | |
| **Specification Section** | |
| **Product** | Linen chute system (1 no.) |
| **Manufacturer** | Ostermeier FZE, P.O. Box 61378, Jebel Ali, Dubai, UAE |
| **Supplier** | CENTRA \| Building Systems Machinery & Equipment Co., Riyadh |

## CENTRA PROJECT TEAM

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## CONSULTANT'S REVIEW

- ☐ A – Approved
- ☐ B – Approved as noted
- ☐ C – Revise & resubmit
- ☐ D – Rejected

**Reviewed by** _____

**Signature** _____

**Date** _____

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01

# PROJECT INTRODUCTION

Material Submittal | Linen Chute System

01 INTRODUCTION

# Project **Introduction**

| Ø600 mm | SS 304 | 540 × 730 | 68 °C | 1 door |
|---|---|---|---|---|
| Chute tube diameter | 1.5 mm stainless steel | Intake door frame (mm) | Sprinkler activation | Opens at a time (interlock) |

This project consists of 1 no. linen chute system running from the ground floor linen room to the last typical floor, with the vent extending above the roof.

The chute is 600 mm in diameter, made of 1.5 mm stainless steel (grade 304). The outside of the chute tube is coated with sound dampening compound to absorb noise from falling linen bags.

Soiled linen is placed in a bag and dropped through the fire rated intake door on any floor. The doors have a self-locking electromagnetic interlock that allows only one door to open at a time, and pilot lamps on each door show whether it is locked or free.

The linen falls by gravity to the linen cart in the ground floor linen room. A glass bulb sprinkler inside each intake throat protects the chute against fire, and the chute is vented to the roof.

The control panel in the linen room controls the interlocking of the intake doors and the exhaust fan.

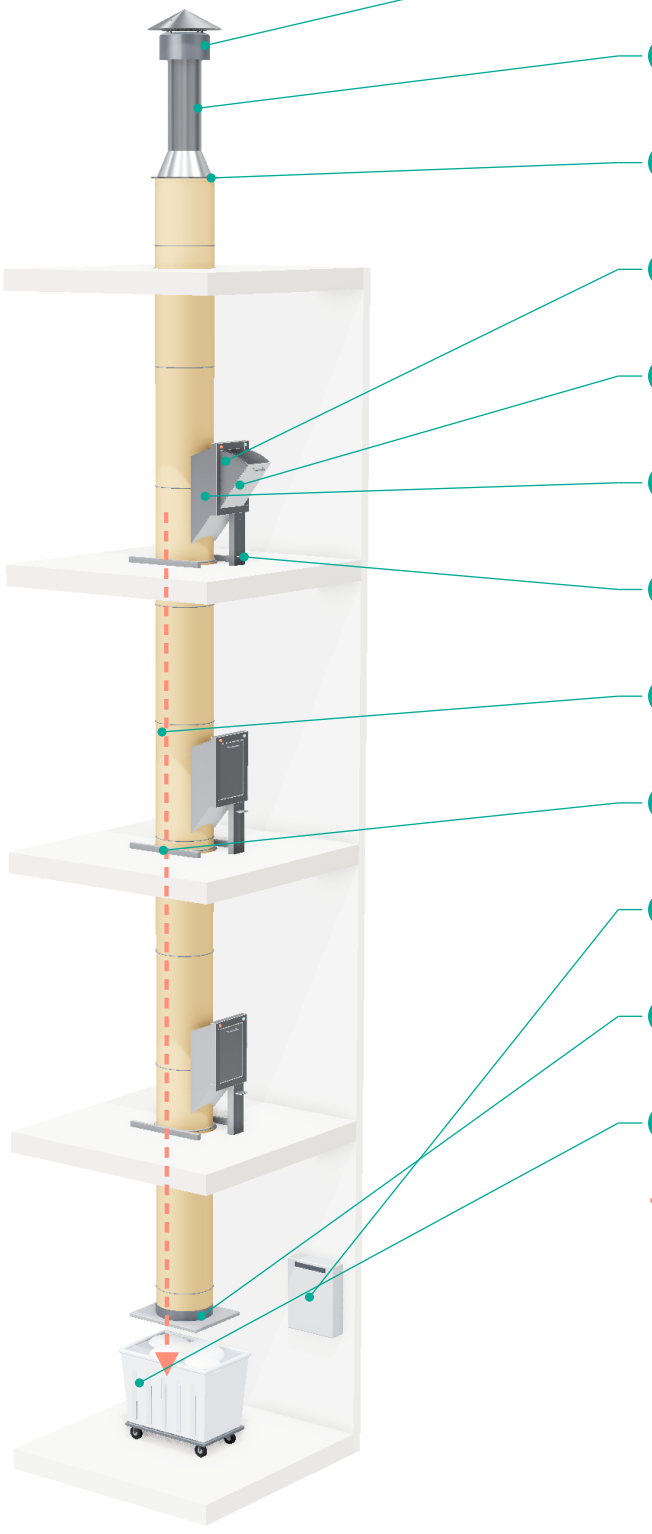
**INTERFACE BY OTHERS**

The sprinkler feed from the fire fighting riser, power supply to the control panel, block work around the intakes and the linen room finishes are by others.

SYSTEM OVERVIEW

# How the chute **works**

Linen bags dropped through any intake door fall by gravity down the Ø600 mm chute into the linen cart in the ground floor linen room.



1. **Exhaust fan**
   Roof level; ventilates the chute
2. **Chute vent**
   Ø340 mm, extended above the roof
3. **Chute head plate**
   SS 304 plate with Ø340 mm vent neck
4. **Glass bulb sprinkler**
   Pendent, ½", activates at 68 °C
5. **Fire rated intake door**
   Bottom hinged, interlocked, pilot lamps
6. **Intake throat**
   SS 304, slopes down into the chute
7. **Foot pedal**
   Hands-free opening
8. **Chute tube**
   Ø600 mm, SS 304, 1.5 mm, sound dampened
9. **GI supporting frame**
   At every slab opening
10. **Control panel**
    Linen room; door interlock and fan
11. **Discharge end**
    With discharge frame, above the cart
12. **Linen cart**
    On castors, in the linen room

Linen path: by gravity, from every floor to the cart

Illustrative 3D view; three typical floors shown.

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02

# TECHNICAL SPECIFICATION

Material Submittal | Linen Chute System

02 SPECIFICATION

# Technical **Specification**

| | |
|---|---|
| **CHUTE** | |
| Chute tube | Ø600 mm, stainless steel grade 304, 1.5 mm, rolled section, butt joint MIG welded |
| Sound dampening | Factory-applied insulant coating on the full outer surface of the tube and throat |
| Length | To suit the actual building height |
| Supports | GI frame at every slab opening: 50 × 6 flat ring, 50 × 50 × 4 angles, 75 × 40 × 4 channels |
| **TOP OF CHUTE** | |
| Head plate | Stainless steel AISI 304, 1.5 mm, with Ø340 mm vent neck; removable |
| Vent & exhaust fan | Ø340 mm vent above the roof with exhaust fan (fan to be confirmed for linen) |
| **INTAKES** | |
| Intake throat | Stainless steel grade 304, clear opening 405 × 635 mm, door 250 mm from the chute |
| Intake door | Bottom hinged, interlocking type, stainless steel 304, 1.2 mm; frame 540 × 730 mm, panel 390 × 580 mm |
| Fire rating | **To be confirmed** |
| Operation | By hand or foot pedal; electromagnetic interlock, pilot lamps |
| **FIRE PROTECTION** | |
| Sprinkler | Glass bulb, pendent, ½", 68 °C, inside each intake throat (right side); MAF / SHIELD / POWER or any DCD approved brand |
| Supply | ½" line from the fire fighting riser, by others |
| **DISCHARGE & CONTROLS** | |
| Linen cart | Wheeled linen cart in the linen room; type and capacity **To be confirmed** |
| Control panel | Door interlock, lock / unlock, fire alarm and exhaust fan controls; layout **To be confirmed** |

**BASIS OF THIS SUBMITTAL**

Chute, intake, door, sprinkler and support data are taken from the Ostermeier FZE chute system submittal. Items marked "To be confirmed" are specific to the linen application and will follow the manufacturer confirmation and shop drawings.

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# 03

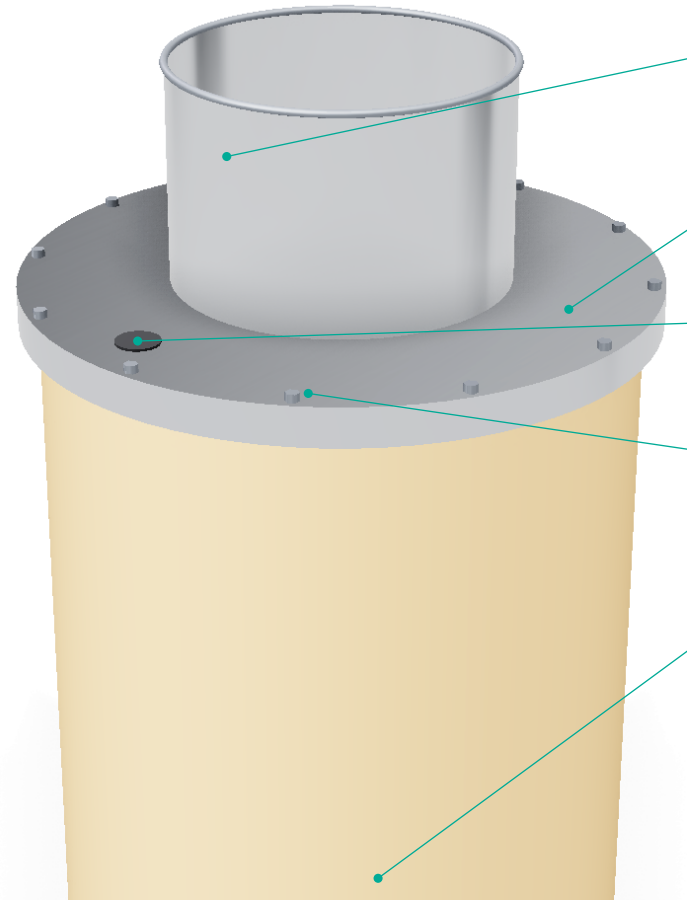
# TECHNICAL DETAILS

Material Submittal | Linen Chute System

3.1 CHUTE HEAD PLATE

# Chute Head **Plate**

The head plate closes the top of the chute. A Ø340 mm neck at the centre connects the chute vent, which is extended above the roof. The plate can be removed for maintenance.



1. **Ø340 mm neck**
   Connects the chute vent
2. **Head plate**
   Stainless steel AISI 304, 1.5 mm
3. **Air vent opening**
   In the head plate
4. **Fixing bolts**
   Removable for maintenance
5. **Chute tube**
   Ø600 mm, sound dampened

## TECHNICAL DATA

| | |
|---|---|
| **Material** | Stainless steel |
| **Grade** | AISI 304 |
| **Thickness** | 1.5 mm |
| **Vent neck** | Ø340 mm, at the centre |

## KEY FEATURES

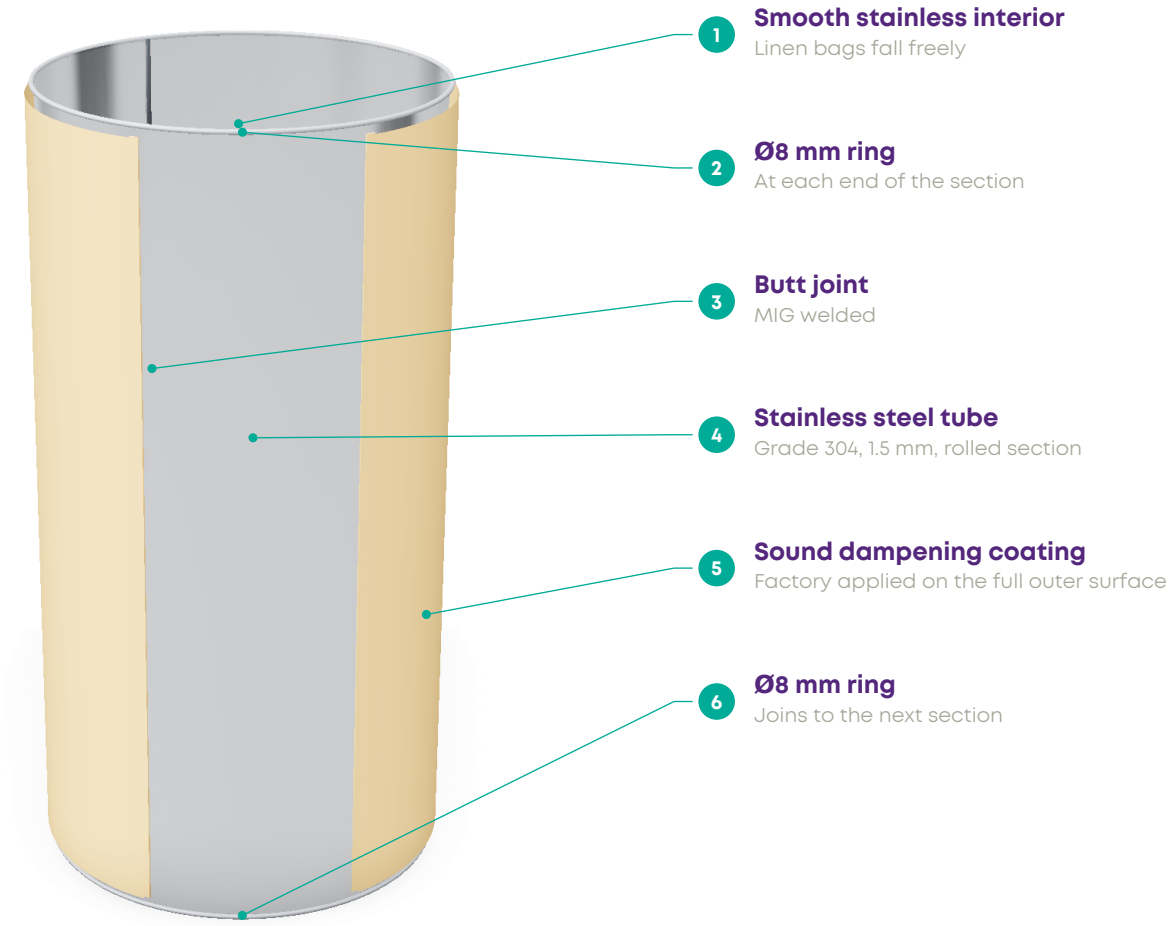
- **Removable**
  Taken off for maintenance of the chute.
- **Vented**
  The vent extends above the roof.

Illustrative 3D view based on manufacturer data. Original manufacturer drawings are reproduced in Appendix A.

3.2 CHUTE TUBE | SOUND DAMPENING

# Chute Tube & **Sound Dampening**

Ø600 mm tube rolled from 1.5 mm stainless steel sheet, butt jointed and MIG welded, with Ø8 mm rings at the ends. The full outside surface is coated in the factory with a sound dampening compound.




## TECHNICAL DATA

| | |
|---|---|
| **Diameter** | 600 mm |
| **Material** | Stainless steel |
| **Grade** | 304 |
| **Thickness** | 1.5 mm |
| **Section** | Rolled, butt joint, MIG welded |
| **Length** | To suit the actual building height |

## KEY FEATURES

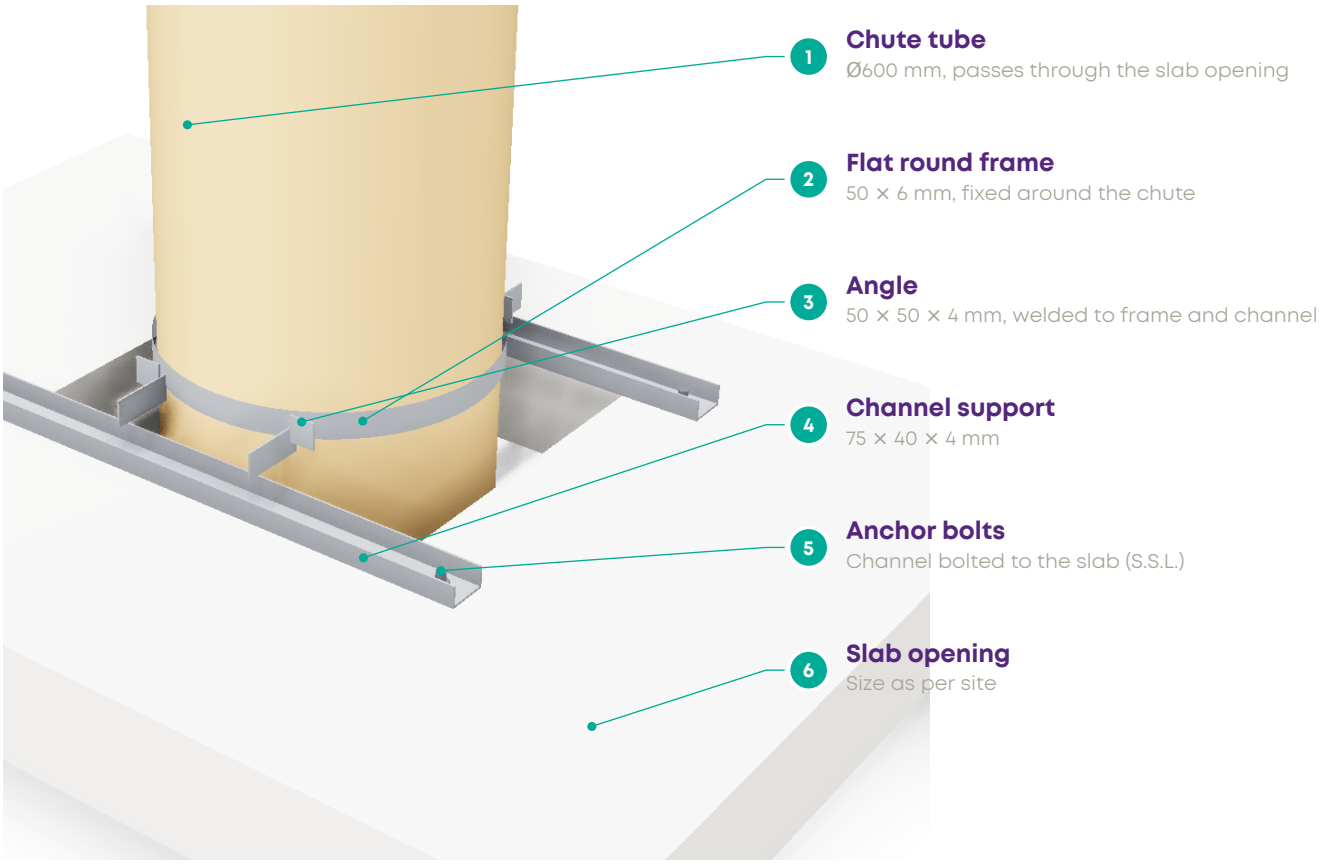
- **Quiet**
  The coating reduces the noise of falling bags considerably.
- **Durable coating**
  Excellent weathering properties; removable only by heat.
- **Smooth bore**
  Stainless interior with no sharp edges to snag linen.

Illustrative 3D view based on manufacturer data. Original manufacturer drawings are reproduced in Appendix A.

3.3 SUPPORTING FRAME

# GI Chute Supporting **Frame**

A galvanised iron frame supports the chute at every slab opening. A flat round frame clamps the chute and is welded to angles, which sit on channels bolted to the slab.




## TECHNICAL DATA

| | |
|---|---|
| **Material** | Galvanized iron |
| **Flat frame** | 50 × 6 mm, round |
| **Angle** | 50 × 50 × 4 mm |
| **Channel** | 75 × 40 × 4 mm |
| **Fixing** | Channels bolted to structural slab level |
| **Welding** | Arc welded |

## KEY FEATURES

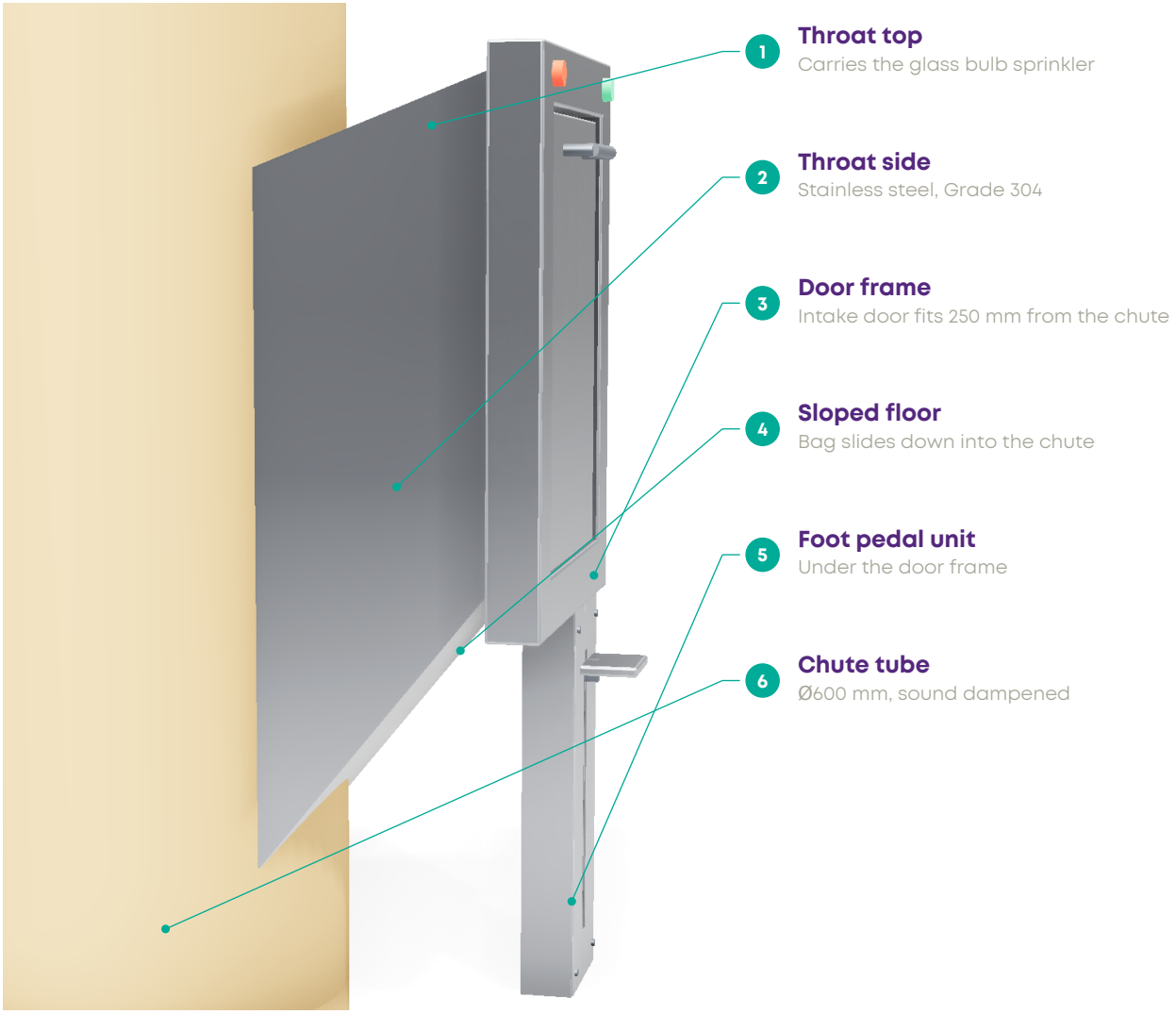
- **Every slab**
  One frame at each slab opening carries the chute.
- **Site fit**
  Slab opening size as per site conditions.

Illustrative 3D view based on manufacturer data. Original manufacturer drawings are reproduced in Appendix A.

3.4 INTAKE THROAT

# Intake **Throat**

The stainless steel throat connects each intake door to the chute. Its floor slopes down into the chute so the linen bag slides in easily, and it carries the fire sprinkler.




## TECHNICAL DATA

| | |
|---|---|
| Material | Stainless steel, Grade 304 |
| Clear opening | 405 × 635 mm |
| Door position | 250 mm from the chute |
| Accessories | Glass bulb sprinkler (right side) |

## KEY FEATURES

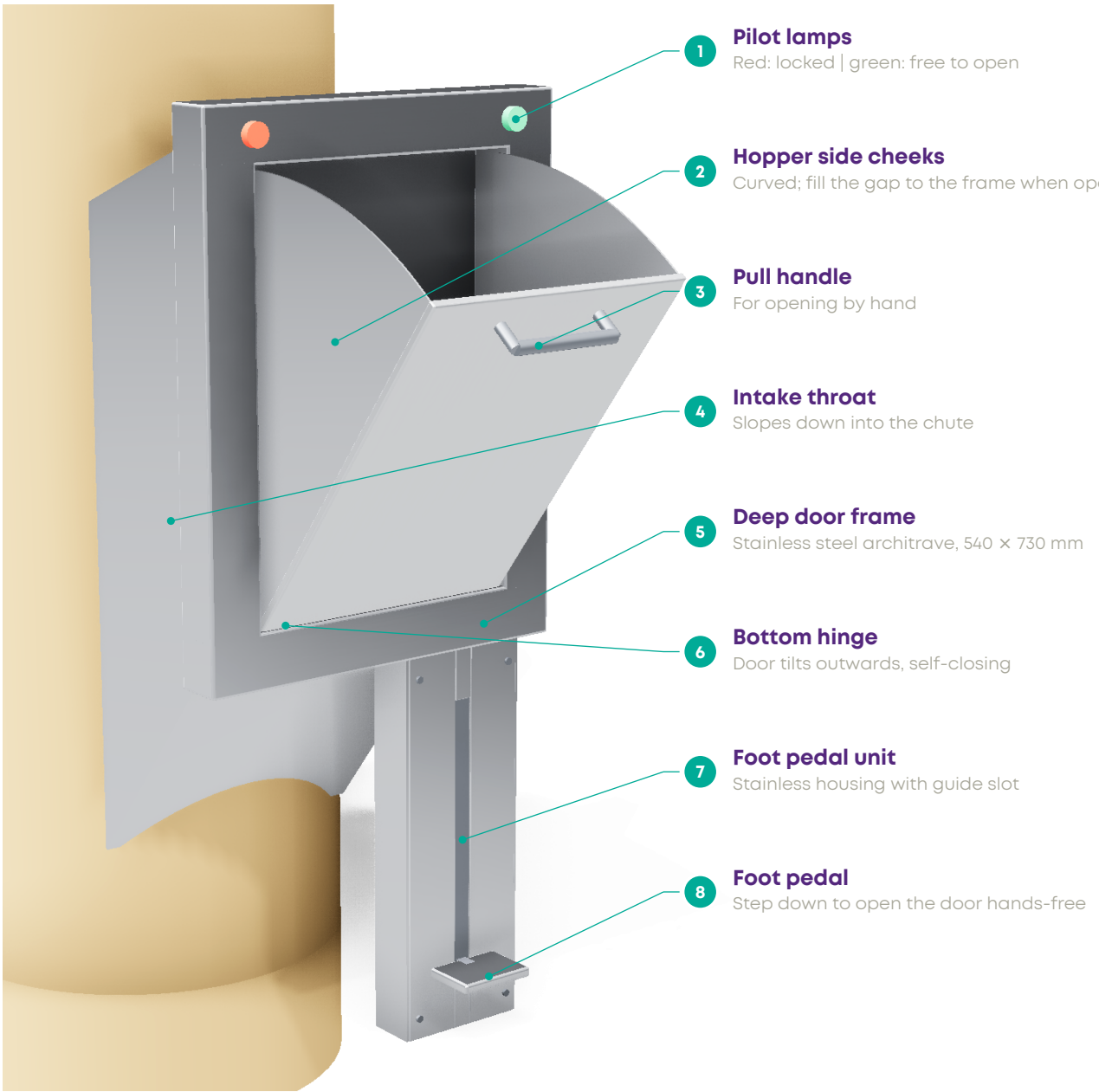
- **Easy loading**
  Helps the linen bag slide down into the chute.
- **Fire protection**
  Sprinkler fitted inside the throat.

Illustrative 3D view based on manufacturer data. Original manufacturer drawings are reproduced in Appendix A.

3.5 INTAKE DOOR

# Fire Rated Bottom Hinged **Door**

Stainless steel hopper door in a deep frame, one per floor. Shown open: the door tilts outwards on its bottom hinge and its curved side cheeks close the gap to the frame, so linen can only go into the chute.




## TECHNICAL DATA

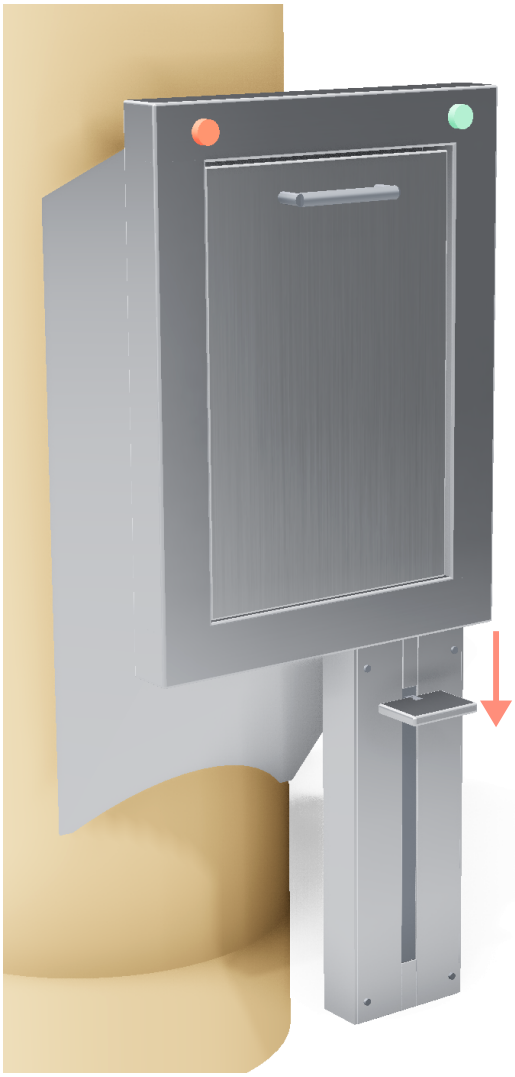
| | | | |
|---|---|---|---|
| **Manufacturer** | Ostermeier FZE | **Door panel** | 390 (W) × 580 (H) mm |
| **Type** | Bottom hinged hopper, interlocking | **Thickness** | 1.2 mm (18 gauge) |
| **Material** | Stainless steel, Grade 304 | **Fire rating** | **To be confirmed** |
| **Architrave** | 540 (W) × 730 (H) mm | **Operation** | By hand or by foot pedal |

Illustrative 3D view based on the Ostermeier intake door. Dimensions per manufacturer data.

3.5 INTAKE DOOR

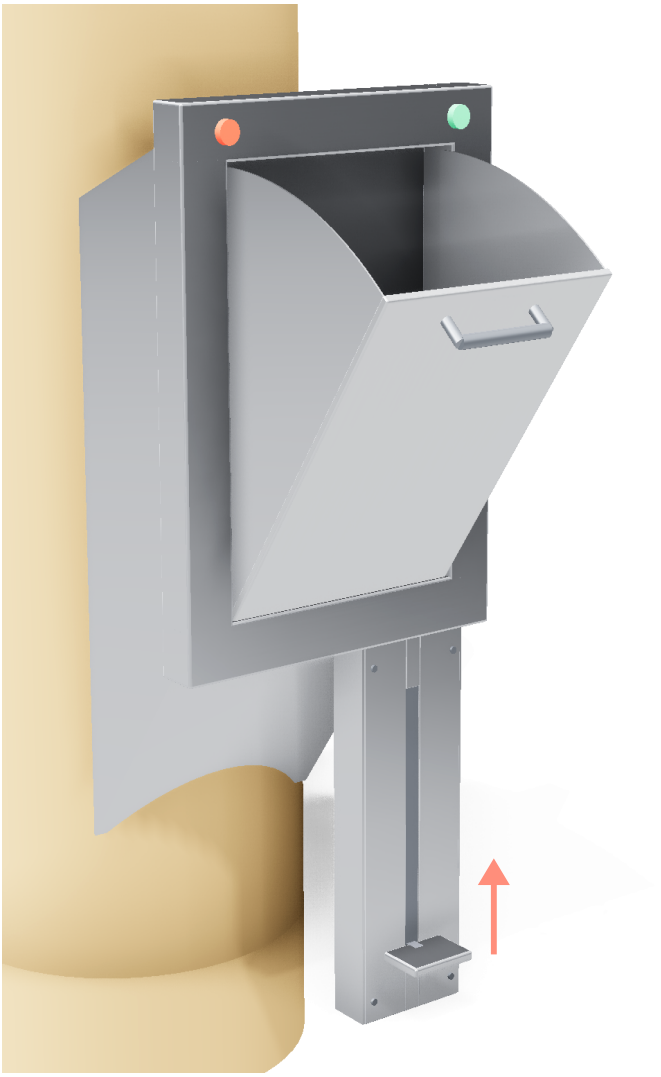
# Foot Pedal **Operation**

The pedal slides in a vertical slot in the stainless housing under the door. Pressing it down pulls the door open; releasing it lets the door close and seal by itself. The interlock still applies: the pedal only opens a door that is free.



**1 Pedal up: door closed**

Door sealed in its frame. Green lamp: free to use.



**2 Pedal pressed: door open**

Door tilts out on its bottom hinge; drop the linen bag in.

HOW IT WORKS

**01**
**Step on the pedal**
The pedal moves down the slot and pulls the linkage.

**02**
**Door opens**
The door tilts outwards; the curved cheeks guide the bag in.

**03**
**Bag drops**
The linen bag slides down the sloped throat into the chute and falls to the linen cart.

**04**
**Release**
The pedal returns up and the door closes and seals by itself.

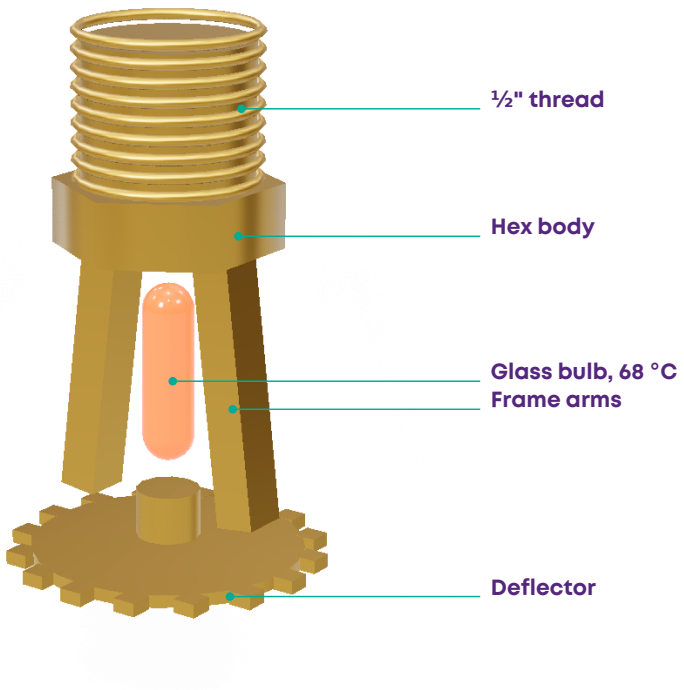
Illustrative 3D views based on the Ostermeier intake door and foot pedal unit.

3.7 FIRE PROTECTION

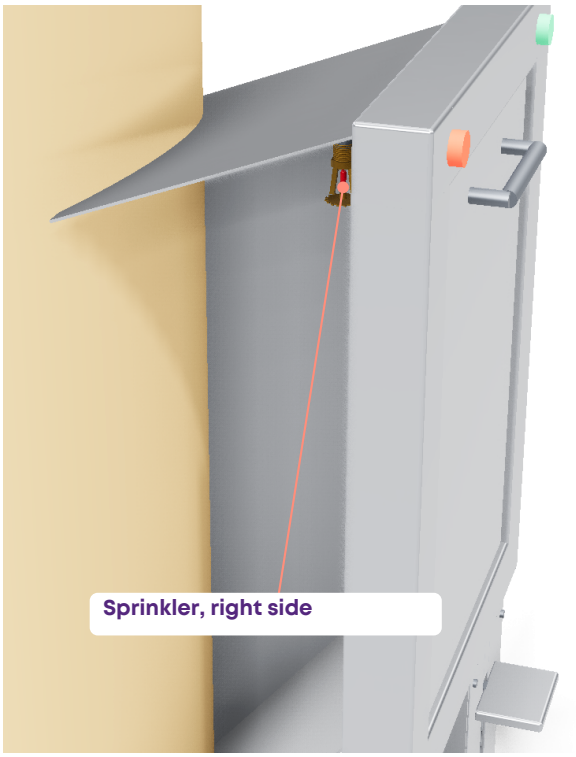
# Glass Bulb **Sprinkler**

A pendent glass bulb sprinkler sits inside every intake throat, on the right side. If a fire inside the chute raises the temperature above 68 °C, the glass bulb breaks and the sprinkler douses the fire.

THE SPRINKLER




LOCATION | THROAT CUT AWAY




TECHNICAL DATA

| | |
|---|---|
| Type | Glass bulb, pendent, ½" |
| Activation | 68 °C |
| Brand | MAF / SHIELD / POWER (any DCD approved brand) |
| Location | Inside the intake throat, right side, every floor |
| Supply | ½" line from the fire fighting riser to the female socket on the chute |

KEY FEATURES

- **Automatic**
  No power needed; the bulb breaks at 68 °C.
- **Every intake**
  From the topmost intake level and on every floor.

**BY OTHERS**

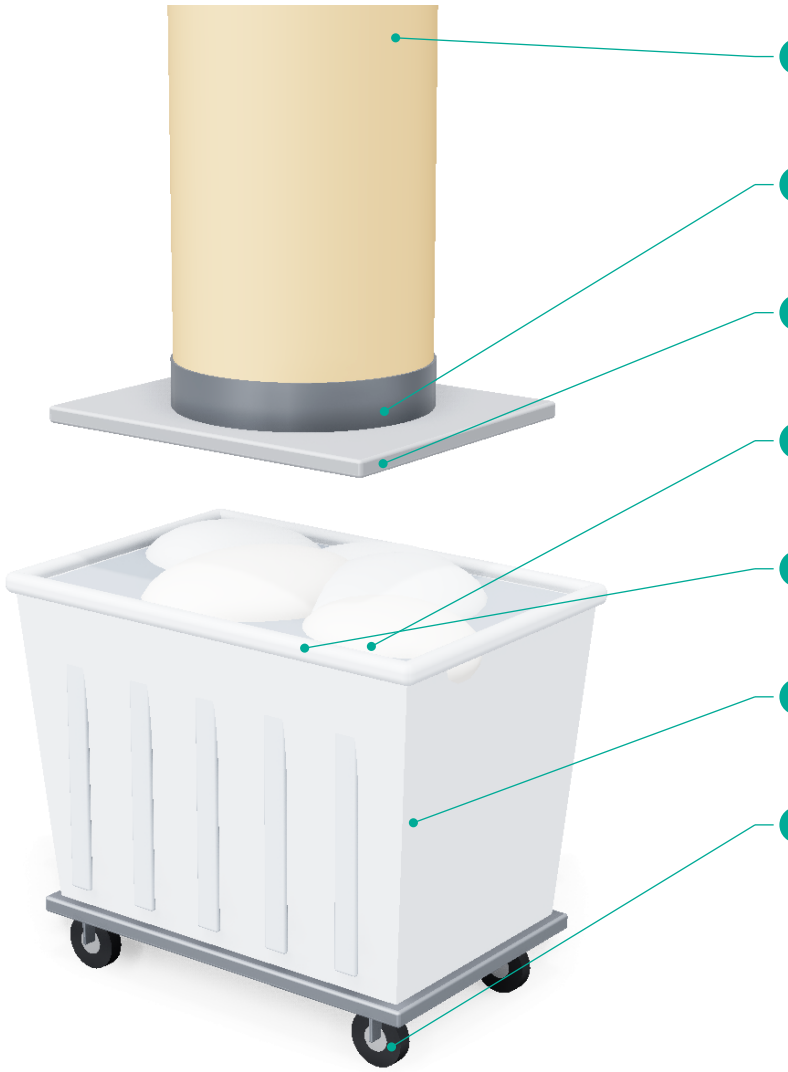
Feed from the main fire fighting riser line to each sprinkler socket.

Illustrative 3D views based on manufacturer data. Technical sheets in Appendix A.

3.8 DISCHARGE

# Linen **Cart**

The chute ends above the linen cart in the ground floor linen room. Bags drop straight into the cart, which is wheeled to the laundry when full.



1. **Chute tube**
   Ø600 mm
2. **Discharge end**
   Reinforced ring at the chute end
3. **Discharge frame**
   Fixed to the soffit
4. **Linen bags**
5. **Rolled rim**
   Smooth edge
6. **Linen cart**
   Moulded tub on a steel base
7. **Swivel castors**
   For easy movement

## TECHNICAL DATA

| | |
|---|---|
| Cart type | Moulded linen cart on castors (indicative) |
| Capacity | To be confirmed |
| Quantity | To be confirmed |

## KEY FEATURES

- **Direct drop**
  Linen falls straight into the cart; no handling at the chute.
- **Options**
  Cart size and type can be chosen to suit the linen room and laundry.

Illustrative 3D view based on manufacturer data. Original manufacturer drawings are reproduced in Appendix A.

3.9 CONTROL PANEL

# Control **Panel**

The control panel in the ground floor linen room controls the door interlock and the exhaust fan. It holds the main isolator, indicating lamps and selector switches.




FRONT PANEL LEGEND

1. Control voltage on
2. All doors unlocked
3. One door open
4. All doors locked
5. Door lock / unlock switch
6. Fire alarm on
7. Exhaust fan on
8. Exhaust fan off / on switch
9. Control 220 V on
10. Emergency stop push button
11. Main isolator

TECHNICAL DATA

| | |
|---|---|
| Location | Ground floor linen room |
| Functions | Door interlock, fire alarm, exhaust fan |
| Layout | **To be confirmed** |

**BASED ON THE CHUTE PANEL**

Taken from the Ostermeier chute control panel, without the cleaning and brushing functions. The final layout will follow the manufacturer panel drawing.

Illustrative panel; final layout per the manufacturer panel drawing.

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04

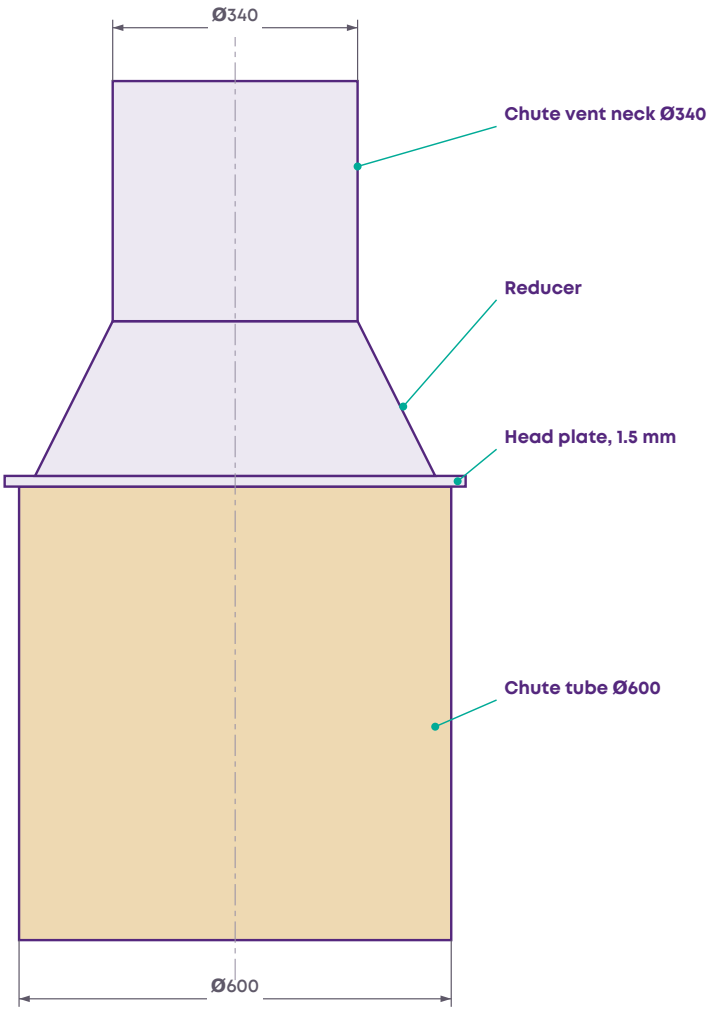
# APPENDIX A

Material Submittal | Linen Chute System

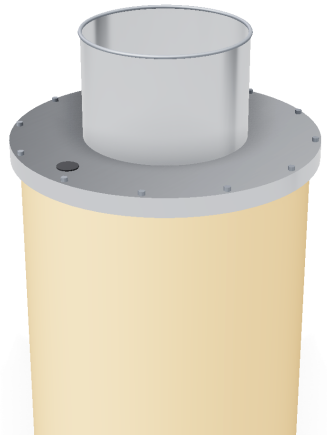
APPENDIX A | TECHNICAL SHEET 3.1

# Chute Head Plate

ELEVATION




3D VIEW



DATA

| | |
|---|---|
| Material | Stainless steel |
| Grade | AISI 304 |
| Thickness | 1.5 mm |
| Vent neck | Ø340 mm, at the centre |

NOTES

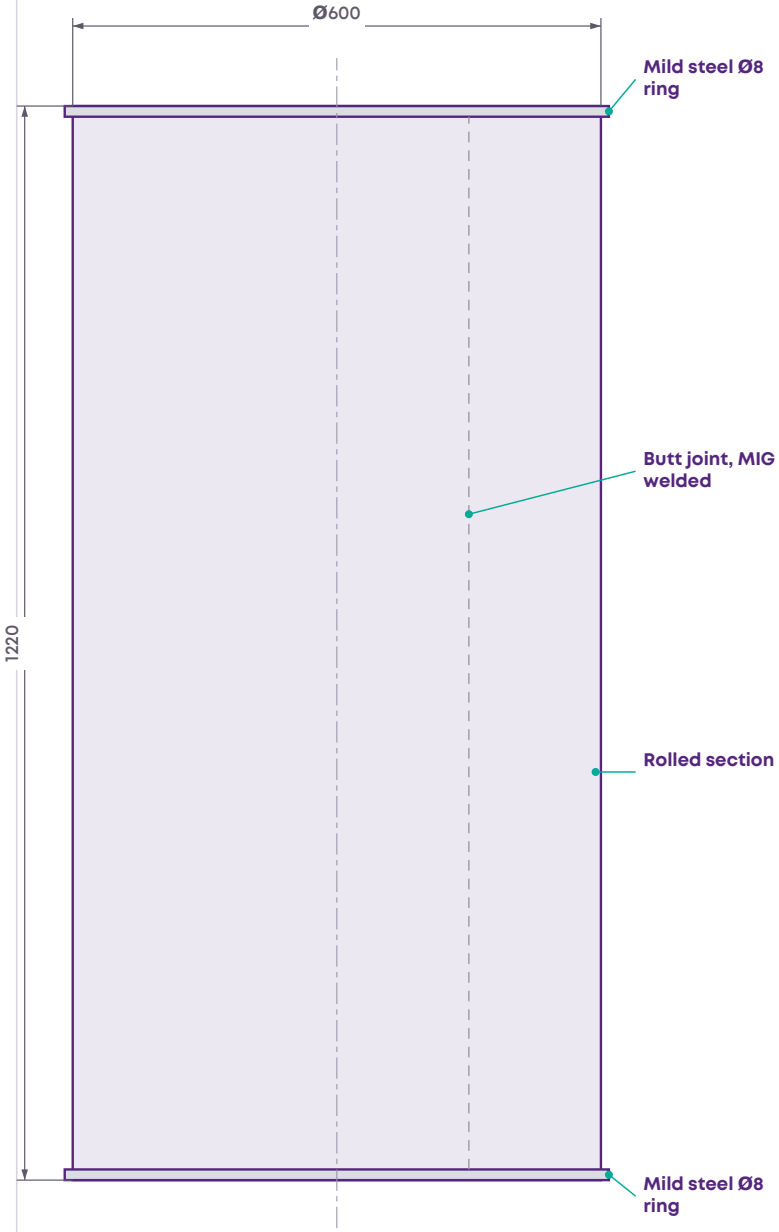
1. Same diameter as the chute tube; hole provided for the air vent.
2. The plate can be removed for maintenance.

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.1 | **Chute head plate with Ø340 vent neck** | Stainless steel AISI 304, 1.5 mm | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

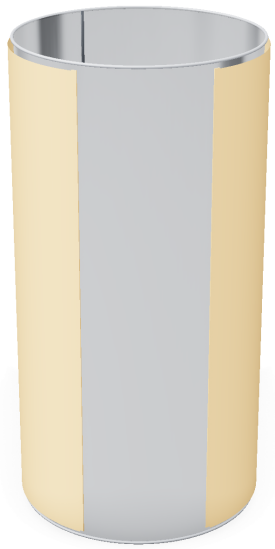
APPENDIX A | TECHNICAL SHEET 3.2

# Chute Tube

ELEVATION OF ONE SECTION




3D VIEW



DATA

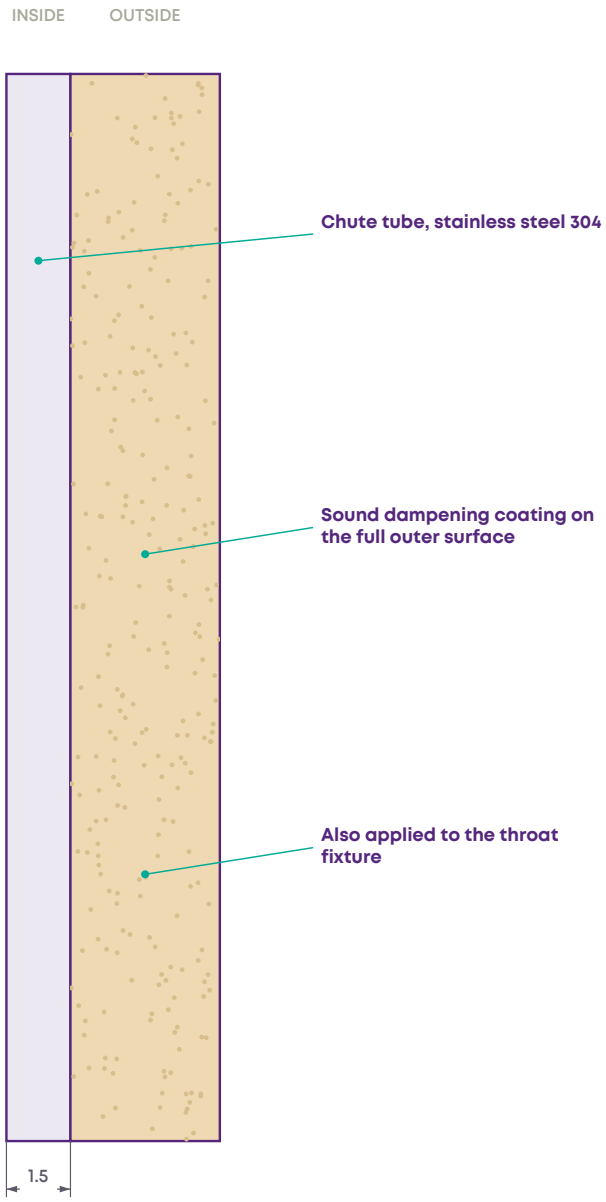
| | |
|---|---|
| Material | Stainless steel |
| Grade | 304 |
| Thickness | 1.5 mm |
| Diameter | 600 mm |
| Length | To suit the actual building height |

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.2 | Chute tube section | Stainless steel grade 304, 1.5 mm | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

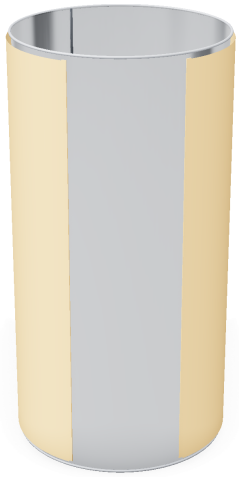
APPENDIX A | TECHNICAL SHEET 3.2.1

# Sound Dampening Material

WALL SECTION | ENLARGED




3D VIEW



NOTES

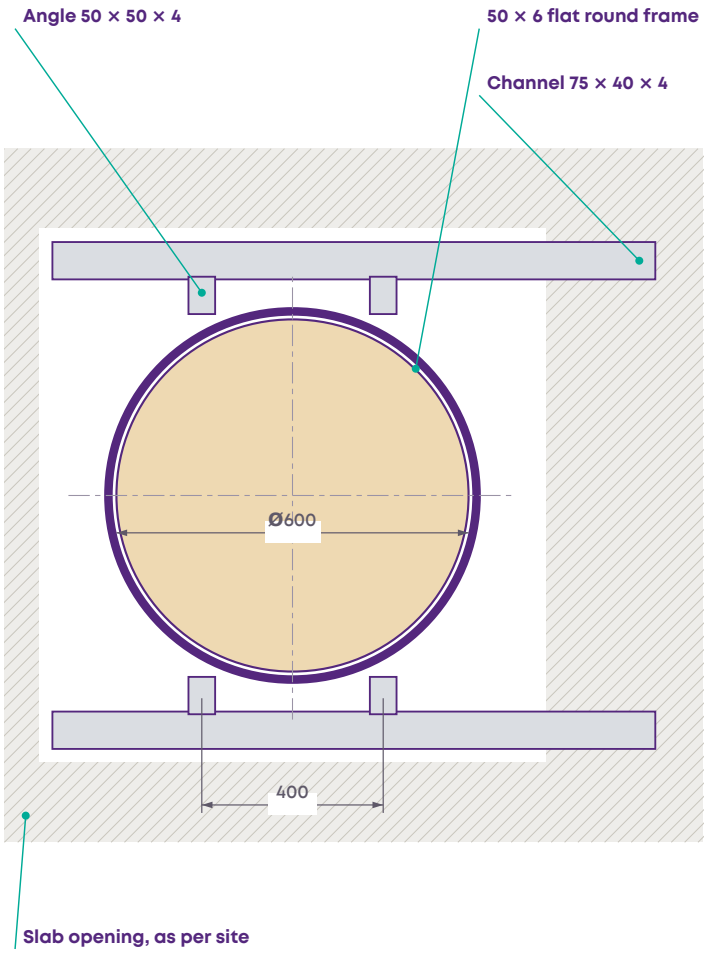
1. The insulant coating applied in fabrication reduces the noise level considerably.
2. Applied in the factory to the complete external surfaces of the chute tube and the throat fixture.
3. Excellent weathering properties; can only be removed by heat.
4. Paint damage in transport or installation is rectified on site by Ostermeier.

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.2.1 | **Sound dampening coating** | Factory-applied insulant compound | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

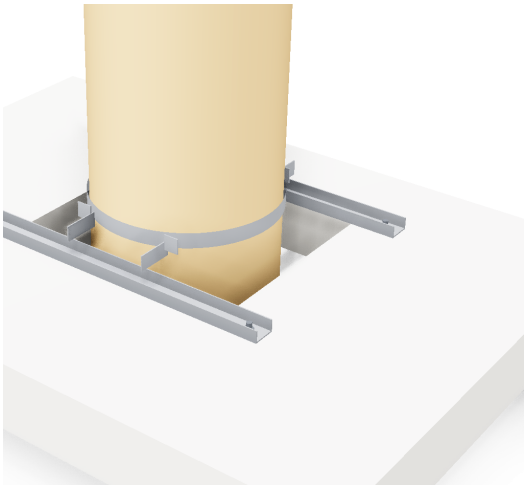
APPENDIX A | TECHNICAL SHEET 3.3

# GI Chute Supporting Frame

PLAN AT SLAB OPENING




3D VIEW



NOTES

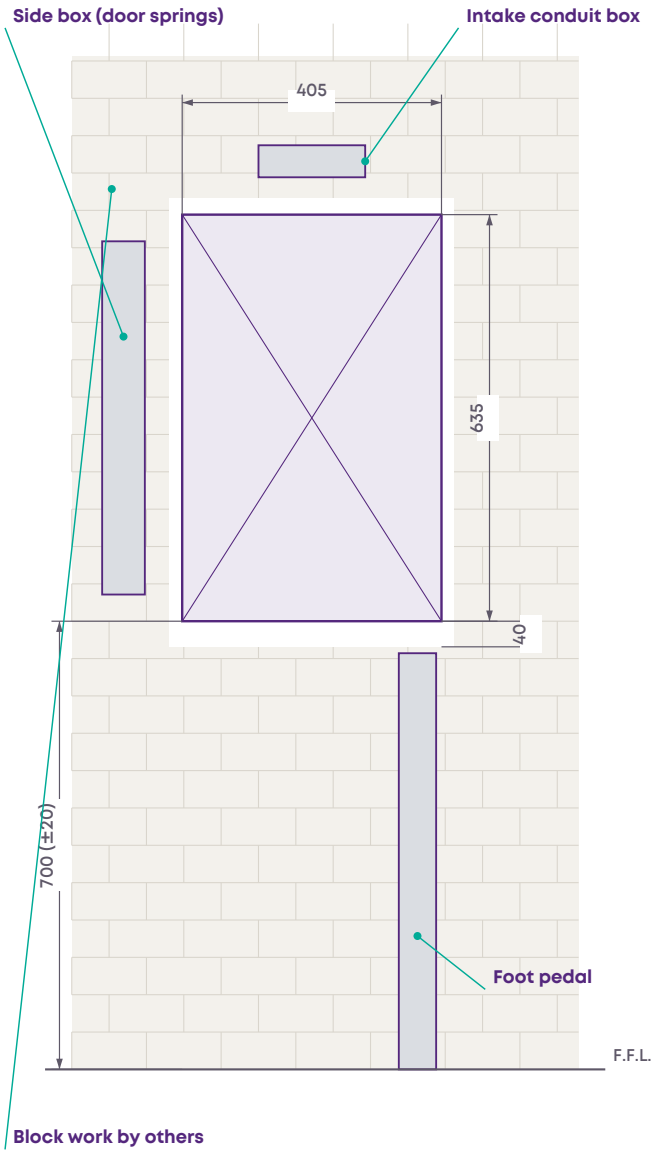
1. Flat round frame 50 × 6 fixed around the chute and welded to the 50 × 50 × 4 angles.
2. Angles arc welded to the 75 × 40 × 4 channel supports.
3. Channels bolted to the structural slab level (S.S.L.).
4. One frame at every slab opening; galvanised iron.

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.3 | **Supporting frame at slab opening** | Galvanised iron | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

APPENDIX A | TECHNICAL SHEET 3.4

# Intake Throat

FRONT ELEVATION AT INTAKE




3D VIEW



NOTES

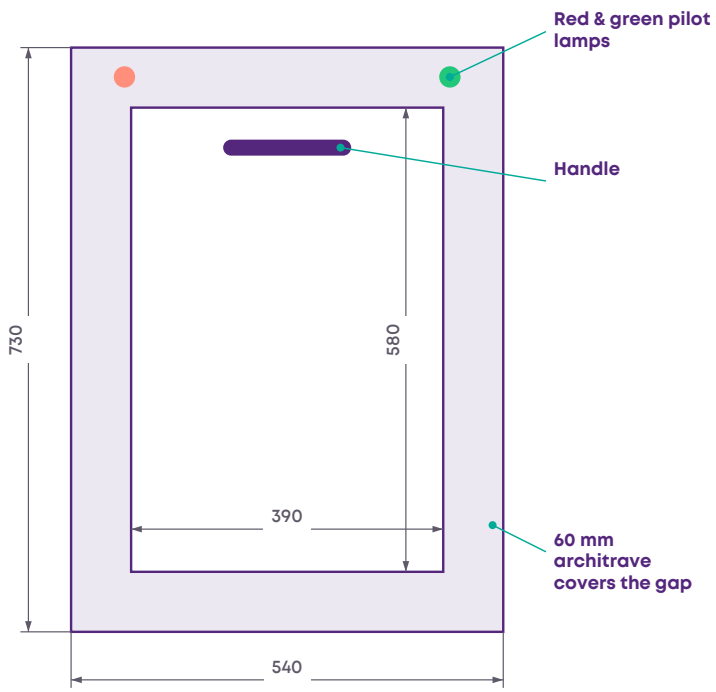
1. Clear opening 405 × 635 mm; the intake door is fitted 250 mm away from the chute.
2. 20 mm gap to the right and left of the intake; 40 mm gap at the bottom of the throat.
3. Block work in front of the chute only after chute erection, plumbing and electrical works.
4. Glass bulb sprinkler on the right side of the throat.

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.4 | Intake throat and wall opening | Stainless steel grade 304 | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

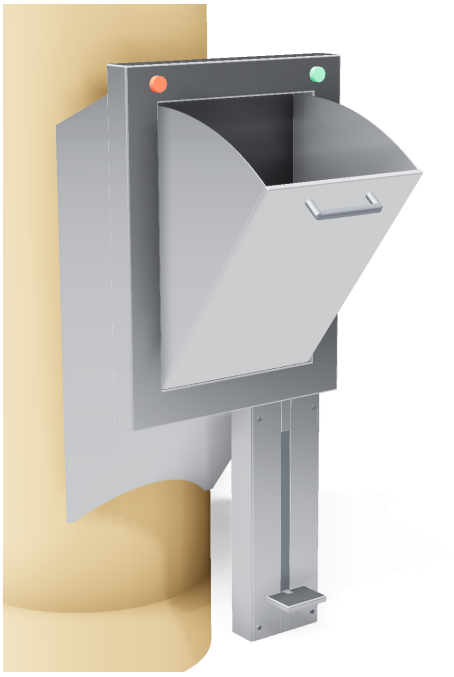
APPENDIX A | TECHNICAL SHEET 3.5

# Bottom Hinged Intake Door with Foot Pedal

## FRONT ELEVATION




## 3D VIEW | DOOR OPEN



## DATA

| | |
|---|---|
| Manufacturer | Ostermeier FZE |
| Type | Door interlocking type |
| Material | Stainless steel grade 304 |
| Outer dimension | 540 × 730 mm |
| Door panel | 390 × 580 mm |
| Thickness | 1.2 mm (18 gauge) |
| Fire rating | To be confirmed |

## NOTES

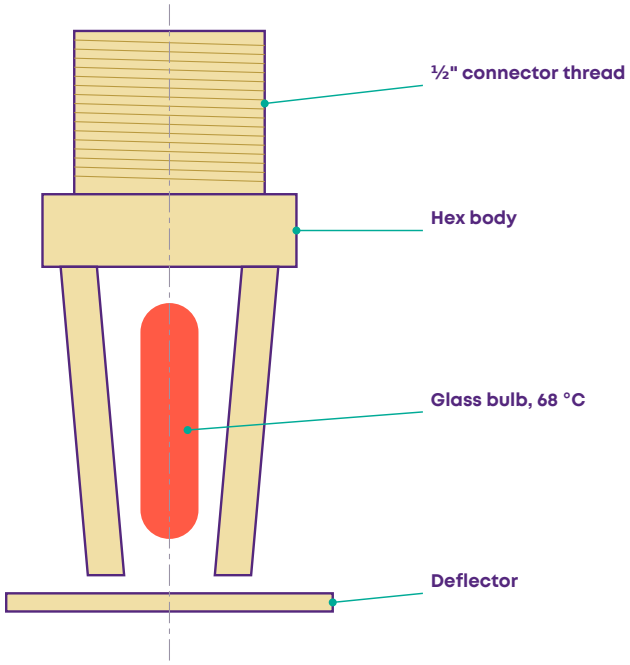
1. Electromagnetic interlock: only one door opens at a time; all doors lock during maintenance.
2. Pilot lamps show the lock / unlock status.
3. Bottom hinged with door spring; opened by hand or by the foot pedal.

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.5 | Intake door, interlocking type | Stainless steel grade 304, 1.2 mm (18 ga) | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

APPENDIX A | TECHNICAL SHEET 3.7

# Glass Bulb Sprinkler

ELEVATION




LOCATION | RIGHT SIDE OF THROAT



NOTES

1. At the topmost intake level and on every floor, inside the throat on the right side.
2. Above 68 °C the glass bulb breaks and the sprinkler douses the fire.
3. Fed by a ½" line from the main fire fighting riser to the female socket on the chute.

DATA

| | |
|---|---|
| Type | ½", pendent |
| Activation | 68 °C |
| Brand | MAF / SHIELD / POWER (any DCD approved) |

| SHEET | ITEM | MATERIAL | SUPPLIED BY | SCALE | SOURCE |
|---|---|---|---|---|---|
| A-3.7 | Glass bulb sprinkler, pendent | Brass body, glass bulb 68 °C | Ostermeier FZE | NTS | Ostermeier FZE, JK/OSTS/CENT/MS/Rev.0 |

# CENTRA

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