

Charles White

Refuse Chutes



UK Based Chute Manufacturer

Installation

Inspection & Testing

Maintenance & Certification

32 / UK

BSI

BRE



Agenda

Definitions, Regulation & Standards

When Things Go Wrong

Bin Room Chute Fire Closure Plates (Shutters)
Fusible Link v Smoke Sensor/Mag Lock

Chute Riser Testing & Results

Chute Hopper Smoke Testing

Staff Training – What “Good” Looks Like

HVAC Fire Dampers – Fit For Purpose?

Q & A

If we have time..... and if there is majority interest

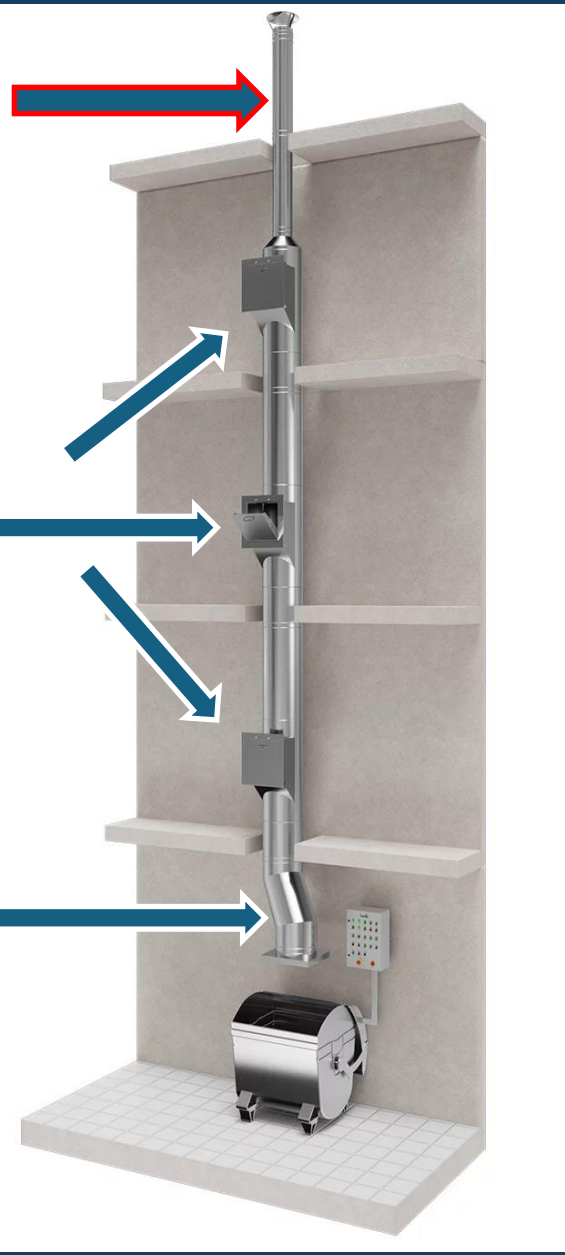
- Judicially Admissible Evidence
- Sectional Chute Replacement – How do you do it?
 - Contractor Competency



- Vent Pipe (reduced diameter)

- Hoppers

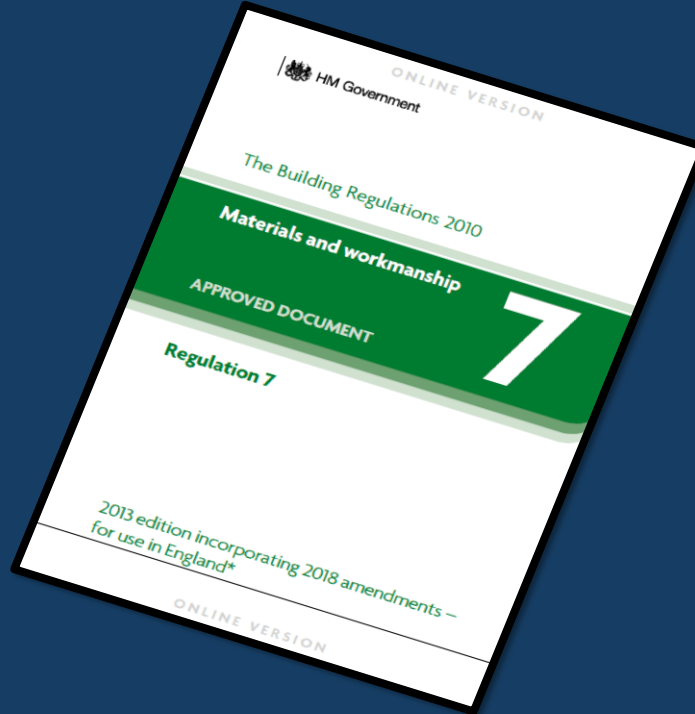
- Discharge Pipe



Definitions



Regulation



BS 5906:2005



BSI Standards Publication

Waste management in buildings. Code of practice

bsi.

...making excellence a habit.™

BS 5906:2005 Waste management in buildings. Code of practice

BS 5906

BS 1703:2005



BSI Standards Publication

Refuse chutes and hoppers. Specification

bsi.

...making excellence a habit.™

BS 1703:2005 Refuse chutes and hoppers. Specification

BS 1703

Standards

When Things Go Wrong (Part 1)



Chute Fire Closure Plate (Shutter)



Spring Loaded



Gravity Movement

Fusible Links



Testing & Service?
Location?



Smoke Sensor

Mag Lock FCP's



BRE Burn Hall

The facility for fire performance,
research and testing

One of Europe's largest dedicated facilities and part of BRE's world leading services for independent fire research, fire products and systems certification (including fire suppression) and forensic reconstruction.





Tests and calculations

- 1.17** Where there is no relevant harmonised European standard, tests, calculations or other means may be used to demonstrate that the material can perform the function for which it is intended. UKAS or an equivalent national accreditation body belonging to the EA may accredit the testing laboratories; this accreditation provides a means of showing that tests can be relied on.

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Photo 3. Installation of chute to underside of concrete slab.



Photo 4. Thermaflex Intumescent strip applied to the underside of Main frame.

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Photo 5. Installation of mag lock 600M onto Main frame.

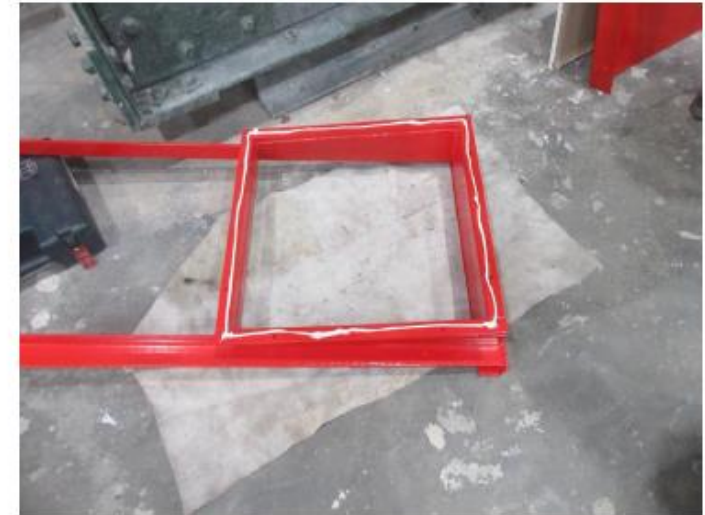


Photo 6. Application of Everflex Firemate Intumescent sealant on to the Main frame steel angle flange.



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Photo 7. Completed installation.



Photo 8. Chute viewed from Non-fireside (with installation of thermocouple for information only).

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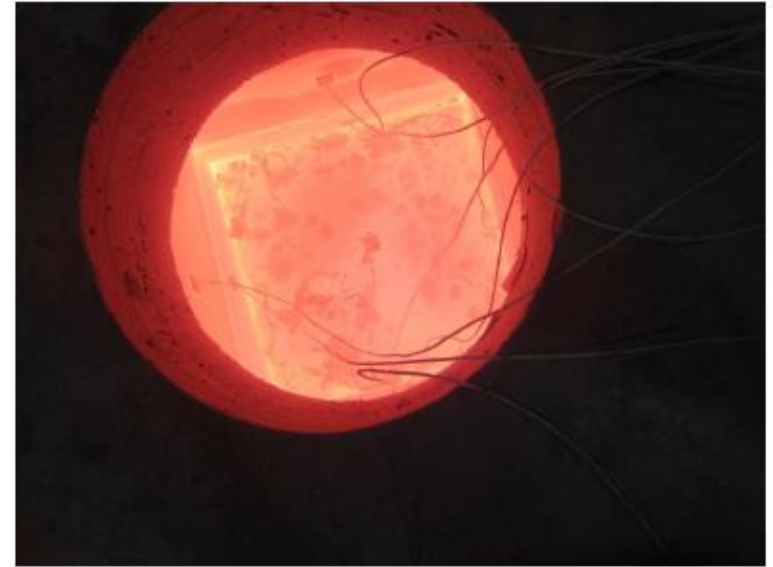


Photo 13. After completion of 180mins.



Photo 14. After completion of 240mins.

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240 Minute Fire Rating

Structural Integrity
&
Stopping Fire Spread
&
Smoke Tight
&
2 Second - Plate Closure Time



Summary

If a smoke sensor / mag lock FCP (Fire Closure Plate) had been fitted in Australia's tallest residential tower block the fire and smoke would have been contained in the bin room.

But..... Why was smoke descending the stairwell?



When Things Go Wrong (Part 2)

UK

- Fire in the chute
 - Smoke descending the stairwell
 - Smoke descending the lift shaft
- All hoppers on landings were smoke tight

Likely Cause?















Refuse Chute **Riser** Inspection & Testing

Large Social Housing Landlord - UK

April / May 2024

- 39 blocks / 70 chutes / 574 floors / circa 50 - 60 years old
- Construction: Clay/Pot / Concrete
- HD CCTV & “Still” Photos
- Positive pressure smoke test (chute leakage and vent to open air)
- Resident Engagement (Letters & Notice Board Reminders Of Dates)



Executive Summary

- **Of the 39 blocks.....**

- 9 blocks require no work at all

- **Of the total 574 floors served by a chute.....**

- 412 **(72%)** are in excellent condition with zero damage / wear & tear. These will last for several more decades
- However, 162 floors are damaged and are leaking smoke. A program to replace these “section by section” is needed
- **3 blocks with 2 chutes in each / serving 104 floors / significant damage / cracking to entire chute structure** occupying 62% of the total budget required

- **Other small works** such as vent pipes & cowls on the roof

- The above renewals will enable **multiple decades of good service** from all 39 blocks

- Replacing sections of chute, floor by floor, in an occupied building is achievable with negligible resident nuisance. **3 year program.**



Chute Hopper Smoke Testing?



Why?

Principle Reason: Fires often occur inside the chute (above the FCP)
(e.g. Chute Blockage)

Other: FCP's fitted with fusible link located away from the bin

Also: No smoke sensor / mag lock activation



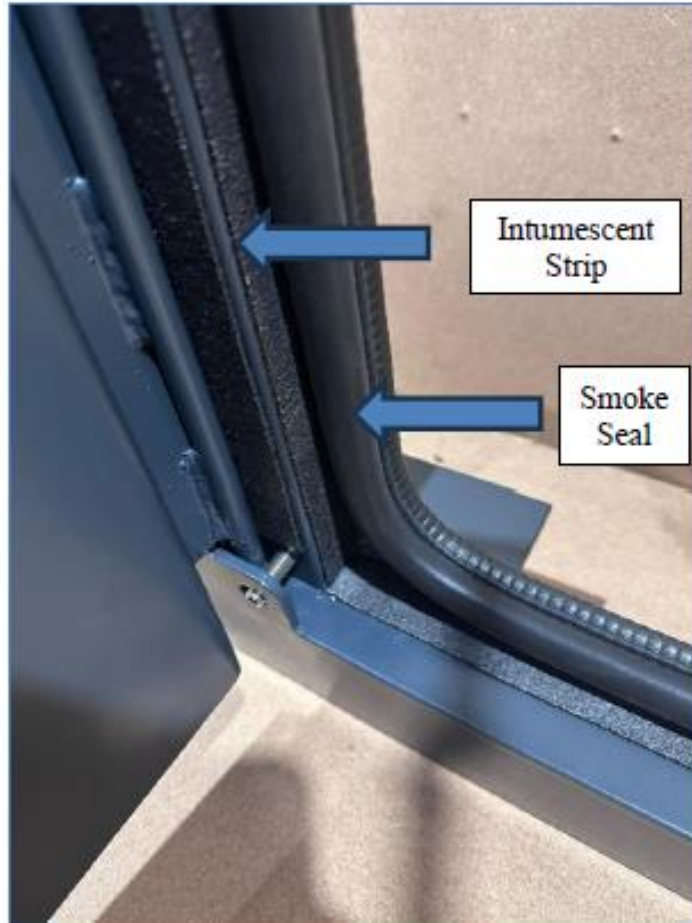
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BS EN13051-2:2007 + A1:2009.

Hopper Seal Locations



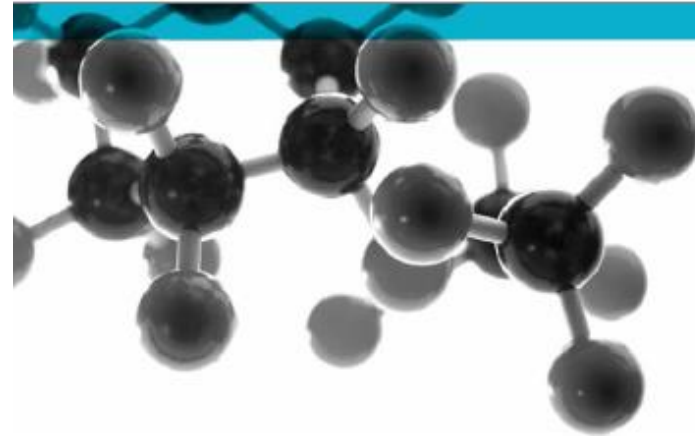
Akzo Nobel Powder Coatings Ltd.
Specification



Fire Test Reports for Interpon D Powder Coatings



BS 476: Part 6: 1989+A1:2009



Method Of Test For Fire Propagation For Products

A Report To: AkzoNobel Powder Coatings

Document Reference: 355372

Date: 13th August 2015

Issue No.: 1

Page 1

Staff Training?

Who?

Why?





In-House Inspections?

What to look for on chutes....

- Does the door shut?
- Does it “self-close”?
- Has the door dropped on its hinges?
- Can you see evidence of ‘bin rage’ (warping)?
- Is the intumescent strip damaged or missing?
- Is the smoke seal damaged or missing?
- Are the bins overflowing? (preventing FCP closure)



Are Fire Dampers Fit For Purpose?



“Quick-Quiz”



Do both buildings require a fire closure plate..... or neither?

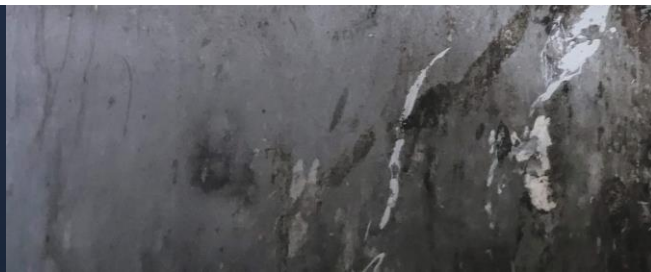




Is the chute an integral part of the building?

Yes = FCP needed

No = No FCP needed



Should this hopper be tested for smoke tightness?



Questions?



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Exhibitor @ FIREX



Addenda



If there's no room inside....





REVIZIO

INSPECTION & COMPLIANCE AUDITOR



JUDICIALLY
ADMISSIBLE
EVIDENCE

Refuse Chute Inspection Report 1.3

Complete

Score	42.31%	Flagged items	4	Actions	0
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Site conducted

Engineer

Tom Eagle

Date Conducted

07.06.2023 13:22 BST



Location

United Kingdom
(53.519174398127866,
-1.1360153607437327)

Site Address

Customer



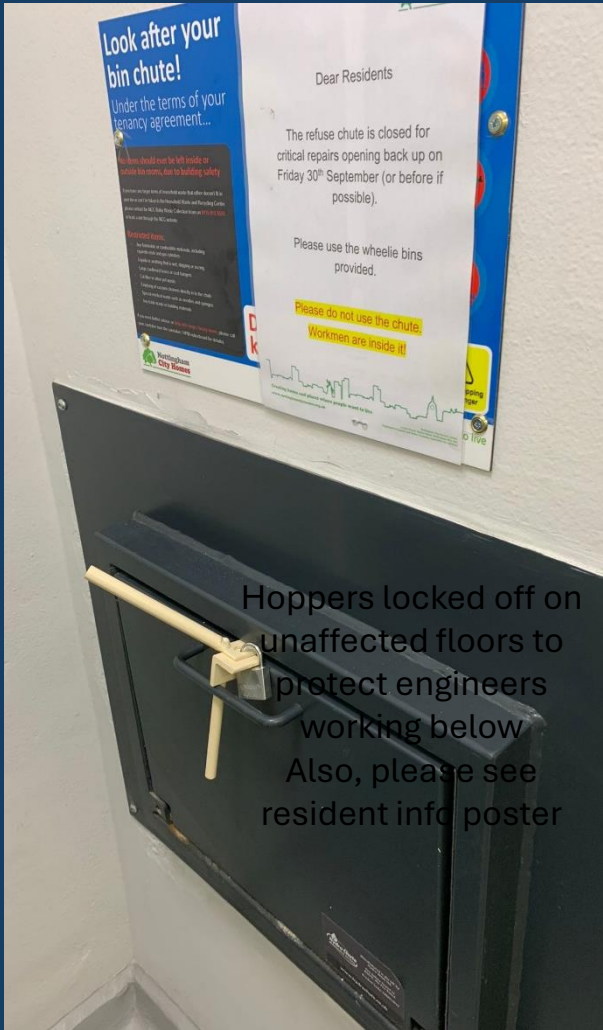
Inspection	4 flagged, 40%
Chute	4 flagged, 40%
Chute 1	4 flagged, 40%
Chute Number	1
Bin Room	2 flagged, 30%
Does this Chute have electrical components?	No
BR1.Chute Discharge Pipe. (If missing / needs replacing/ cannot be reused, select "FAIL" add a note and take a photo)	Fail
  <p>Photo 1 Photo 2</p>	
BR1-B. Please make a note of any obvious fire stopping issues/requirement around the base of the chute. Is attention required? Make a note-take a picture. *NOTE to Building owner/occupier.... this information is to fulfill our duty of care. These works are not within our remit. Please take necessary action.*	N/A
BR2. Can the FCP be economically repaired to meet our specifications? If not select fail. If there is no fire closure plate currently in place also select fail. (If Cassette type select N/A move to BR2-B)	Fail

Block Name	Post code	Chutes	No. of Floors	Chute No.	Floor No.
1-6 Serlby House	DN1 3BA	1	3	1	CH 1 - BR
					FL 1
					FL 2
					FL 3
7-14 Serlby House	DN1 3BA	1	3	1	CH 1 - BR
					FL 1
					FL 2
15-27 Serlby House	DN1 3BA	1	3	1	CH 1 - BR
					FL 1
					FL 2
1-8 Heath House	DN1 3BB	1	3	1	CH 1 - BR
					FL 1
					FL 2
1-8 Nossal House	DN1 3BB	1	3	1	CH 1 - BR
					FL 1
					FL 2
1-6 Walton House	DN1 3BB	1	2	1	CH 1 - BR
					FL 1
					FL 2
1-8 Wilsie House	DN1 3BE	1	2	1	CH 1 - BR
					FL 1
1-4 Chevot House	DN1 3BE	1	2	1	CH 1 - BR
					FL 1
1-4 Girdle House	DN1 3BE	1	2	1	CH 1 - BR
					FL 1

Sectional Chute Replacement











Final Checks



Fire stopping from above with sand/cement or
C20 concrete or intumescent cement





New Riser Walls

New **240 Minute**
Fire Rated **AND** Smoke Tight Rated Hoppers



Contractor Competency



Who trained the contractor?

Is the training accredited by a recognised industry authority?

Does the contractor provide **judicially admissible** evidence along with certification?

Evidence of being CDM compliant?

Previous examples of similar work?

SSiP?

(CHAS, Construction Line, Alcumus/Safe Contractor etc)

Construction phase Health & Safety plan?



2019

breACADEMY® www.breacademy.com

Certificate of Attendance

This is to certify that:

Lewis Brown
of
Hydrowash
completed the

Refuse chutes: inspection, maintenance and installation training course
on the
10 April 2019

This counts as 6 hours towards Continuing Professional Development


Signed on behalf of BRE Global Ltd
Pauline Traetto
Director, BRE Academy

 **CPD hours**
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2021

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Certificate of Attendance

This is to certify that:

Michael Fawcett
of
Hydro Tech Maintenance Services
Has attended the

Refuse Chute Training Course
on
20 February 2021

This counts as 6 hours towards Continuing Professional Development


Signed on behalf of BRE Global Limited
Michael Jaggs
Associate Director, BRE Academy

 **CPD hours**
breACADEMY

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2023

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**BRE and DHF
Fire Door Education Programme**

Tom Eagle
of
Hydro Wash Ltd
has successfully completed the

BRE/DHF Installation and Maintenance of Steel Hinged Fire Doors
on
11 July 2023

This counts as 6 hours towards Continuing Professional Development

Expiry Date


Signed on behalf of BRE Global Limited
Michael Jaggs
Associate Director, BRE Academy

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