LIEN HO
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Fire Resistance Roller Shutter
Type LH-FRS
MS 1073 : Part 3 : 1996
BS 476 : Part 22 : 1987

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Fire Resistance • Security • Safety • Good Appearance
**MATERIAL SPECIFICATION**

**Shutter Curtain**
Roll formed from first grade high quality phosphated galvanised steel with interlocking groove and advance design auto cut-off edge endlock to achieve maximum holding strength to each interlocking lath. Curtain design to be LH-C (single skin design) or LH-VIS (double skin). Material specification according to JIS G3302 SGCCP HOPHATE.

**Side Guide**
Fabricated from first grade steel sheets with groove about 75mm depth. Concealed to wall type design LH-M015 (1.5mm thick) and exposed face fixed type design LH-F20 (2.0mm thick) or LH-F025 (3.0mm thick). Material specification accordance to JIS G3302 SGCC-ZSCV Z 18.

**Bottom Bar**
For single skin curtain, model: LH-T012 constructed from two pieces hot dipped galvanised steel angles of 38mm x 38mm x 3mm thick bolted together as T-shape section, or, LH-F28 flat bar design. Model: LH-VIS, constructed from double wall steel 0.8mm thickness ended by U-shape capped, with 73mm height for stability, special design for double skin curtain. Material specification according to JIS G3302 SGCC.

**Shutter Box**
Fabricated from 1st grade steel hollow sections with galvanized steel sheets covers with corner folded edge to achieve maximum strength, minimum thickness of 1.2mm of minimum size 25mm x 50mm or 38mm x 65mm welded to the heavy duty endplate of minimum of 5.8mm thickness.

**Drive Barrel**
Fabricated from British Standard Welded Steel Pipes BS 1387 or JIS G3452 with both sides solid steel shafts supported by enclosed bearings to both heavy duty endplates. All drive shafts shall be of solid steel shaft in single piece and fabricated from two heavy duty flange as standard and fully welded to the edge of barrel steel pipe both end. Barrel pipe size to be selected according to fire test and assessments from fire test laboratory for correct diameter to be assembled to each individual size of fire shutters width & height.

**Shaft Support**
All the support bearings and bearing housing shall be designed & bolted to the heavy duty endplate at both sides. Each bearing housing must provide with 4 pieces of bolts and nuts tightened to the endplate as standard. All hanging bolts shall be set as fire rated tested specifications according to the BS or MS specifications.

**Operation Control**
The control for opening and closing of shutters by means of 3 ways push button switch. Each motor is equipped with built in thermal protector, reduction speed gear box, manual override chain when power failure occurs, limit switches for setting upper and lower limit of shutter travel, minimum design of insulation class E, built in release level for gravity close as standard. Power source available in 230v single phase 50Hz and 415v three phase 50Hz. A power switch over relay of 24vdc for auto close when fire signal received as standard. Selection of power source according to manufacturer standard for various size of shutter door opening width and height.

**Fire Mode Control Sequence**
Standard fire mode operation is direct fully close design. Fire Shutter closed down fully when fire signal is received.

**Optional fire mode accessories**
1. Emergency Releaser
   When shutter received 24V DC (400mA) fire signal from Building Management System, shutter will fully closed down by gravity force.
2. Thermal Fuse
   When room temperature reached 90C degree, fire shutter will fully closed down by gravity force.
3. Timer Delay
   It allow the shutter to closed in 2 stage blocking the smoke spread thru and allow people escape in preset time.

**Shutter Finishing**
1. Steel Natural finishing.
2. Powder coating.

**Optional accessories items**
1. Remote Control
2. Safety Edge Sensor

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**FIRE SHUTTLE IN ACTION**

*High integrity fire shutter arduous locations including commercials & industrial applications.*

*Available in galvanised mild steel, pre-painted (80microns) & stainless steel construction.*


*Suitable for motorised & thermal fusible link (90°C) Emergency Releaser and Timer Delay operation.*
The calculations referred to below tables concern the expected stability of the critical components. At elevated temperatures up to 240 minutes FRP (Fire Resistance Periods) which is based on Warrington Fire Research Centre, WFRA Assessment Report. (Report available upon request only.)

*We reserve the right to change or modify specification without alteration to this leaflet. Pictures shown for illustration purposes only. This brochure does not form part of any contract.
Security • Safety • Solid • Good Appearance

LH GRP Shutters Manufacturing Sdn Bhd is a manufacturer and distributor of Shutter Doors mainly in Malaysia, South East Asia region and Middle East Gulf countries.

LH GRP range of products is of premier quality, high security, safety, comfort, convenient and speedy. Our Research & Development team is constantly exploring new ideas and reviewing existing products to make a difference. Disciplined with a vision that aims to keep up with and even exceed the competitive shutter doors industry.

LH GRP has a comprehensive range of shutter doors ranging from commercial, industrial to Residential use, they are:

- Speed Rolling Shutter Doors,
- Square & Sectional Roller Doors,
- Aluminium Art Roller Doors,
- Roller Grille Shutters,
- Light Weight & Perforated See Thru Shutter,
- Heavy Duty & Insulated Shutters,
- 1-4 hours Fire Resistant Shutters.


LH GRP Roller Door's continuous sheet curtain is made from the COLORBOND STEEL of Blue Scope Steel with 10 years Anti Rust Warranty Given.

LHGRP SHUTTERS MANUFACTURING SDN BHD
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