

PART 1 GENERAL

1.01 SUMMARY

- A. Model HL Fire Doors shall be manufactured by Lawrence Roll-Up Doors, Inc.

1.02 SYSTEM DESCRIPTION

- A. Doors shall be designed for 20,000 cycles usage.
B. Doors shall be fire rated up to 3 hours for installation on walls of masonry or non-masonry construction.

1.03 QUALITY ASSURANCE

- A. Doors shall be Underwriters Laboratories classified (UL), Underwriters Laboratories certified for Canada (c-UL) and listed by the California State Fire Marshall (CSFM). Doors to 12'-0" wide, 12'-0" high, 120 sq. ft. shall be provided with a UL/c-UL label. Larger doors to 60'-0" wide, 50'-0" high, 1320 sq. ft. shall be provided with a UL/c-UL oversize door label.

1.04 WARRANTY

- A. Doors shall be warranted against defects in workmanship and materials for two years from date of shipment, provided designed cycle life is not exceeded. Factory finishes are excluded from warranty.

PART 2 PRODUCTS

2.01 MATERIALS

- A. **Curtain** shall be assembled from interlocking Type T (2 5/8" x3/4") flat slats, roll-formed from galvanized steel strip. Slats shall be 22 gauge minimum on doors to 14'-0" wide, 20 gauge minimum on doors over 14'-0" to 36'-0" wide, 18 gauge on doors over 36'-0" wide. Endlocks shall be riveted to ends of alternate slats.
- B. **Bottom bar** shall be formed by two 2" x 2" x 1/8" minimum steel angles bolted together and attached to bottom of curtain. Provision shall be made for thermal expansion at assembly bolts.
- C. **Guides** shall be formed 11 gauge minimum steel channels on doors to 24'-0" wide and 3/16" minimum steel angles on wider doors, sized to retain curtain. Channels shall be bolted to 3/16" minimum structural steel wall angles, sized to support door. Guides shall be assembled and attached to wall with 3/8" minimum bolts no more than 24" on center. Provision shall be made for thermal expansion at assembly and wall bolts. Removable curtain stops shall be provided.
- D. **Barrel** shall be 6 5/8" minimum diameter steel pipe, sized to contain counterbalance assembly and support curtain with a maximum deflection of 0.03" per ft. of width. Counterbalance assembly shall consist of torsion spring(s) and fittings mounted to a continuous cold finished steel shaft. Precision ground grease packed sealed bearings shall be used to support each end of counterbalance assembly. Spring tension shall be adjustable by adjusting wheel outside bracket.
- E. **Brackets** shall be 3/16" minimum steel plates bolted to wall angles. Plates shall be sized to support curtain and barrel and provided with 1/8" flanges for hood attachment. Bracket on operator side shall be fitted with a precision ground grease packed sealed bearing.
- F. **Hood** shall be formed from 24 gauge minimum galvanized steel sheet with top and bottom reinforcements to reduce deflection. Intermediate support(s) shall be provided on doors over 13'-6" wide.
- G. **Operation** of doors shall be as follows:
PUSH-UP operated on doors to 8'-0" wide, 8'-0" high with 22 gauge slats.
"EASY-RESET" CHAIN operated (on larger doors to 24'-0" wide, 20'-0" high, 350 sq. ft. or over 24'-0 to 30'-0" wide, 300 sq. ft. with 22 or 20 gauge slats; to 24'-0" wide, 20'-0" high, 250 sq. ft. with 18 gauge slats) with hand chain to open door and pull cable to close door [option on doors with push-up operation]. (Consult factory for availability of chain operator on larger doors)
"EASY-RESET" CRANK operated (on doors to 20'-0" wide, 10'-0" high with 22 or 20 gauge slats) with removable handle to open door and pull cable to close door [option on all doors].
"EASY-RESET" MOTOR operated with UL Listed inline gear drive assembly, mounted horizontally in front of and parallel to door coil, and not requiring additional clearance above top of coil [option on all doors].
NOTE: For ease of drop-test and reset, "Easy-Reset" chain, crank or motor operator is recommended on all doors. For ease of operation, "Easy-Reset" motor operator is recommended on doors over 24'-0" wide, 16'-0" high, 300 sq. ft. with 20 gauge slats; over 20'-0" wide, 16'-0" high, 250 sq. ft. with 18 gauge slats.
- H. **Automatic closing** of doors shall be thermally activated by 165 deg. F. fusible links. A governor shall be provided to control the rate of descent. Average closing speed shall be approximately 9" to 12" per second, but no less than 6" nor more than 24" per second per the requirements of NFPA-80. All doors shall be easily reset with a single-side release. "Easy-Reset" chain, crank and motor operators shall include an internal release and governor, designed for automatic closing without a loss of spring tension, and reset by reconnecting fusible link cable and reopening door.
- I. **Locking** shall be by slide locks coil side on bottom bar of push-up, chain hoist and awning crank operated doors.
NOTE: Motor operators provide self-locking gear reduction - if slide locks are required on motor operated doors, guide mounted electrical interlocks are required to prevent opening door with locks engaged.

2.02 FINISHES

- A. Galvanized steel slats and hood shall have a baked-on primer and polyester top coat (tan color opposite coil side with off-white color coil side (colors may be reversed), or grey color both sides). Steel bottom bar, guides and brackets shall be shop painted with a black color rust-inhibiting primer.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Doors shall be installed in accordance with Lawrence Roll-Up Doors, Inc. installation instructions and NFPA-80.

3.02 FIELD QUALITY CONTROL

- A. Doors shall be tested for proper operation and full closure at time of installation. A written record shall be maintained.

3.03 SCHEDULES

- A. Doors shall be maintained, inspected and tested in accordance with NFPA-80.

Brackets [] denote an available option.

Lawrence Roll-Up Doors, Inc. reserves the right to change specifications without notice or obligation.

Classification	FM Approved (includes flame baffle inside hood) UL or FM S-label for air leakage rated smoke doors (includes UL listed brush guide and header seals and field installed UL recognized heat resistant caulking)
Rating	4-hour fire rating
Usage	Designs for 50,000 or 100,000 cycles usage
Windload	Designs to withstand specified windloads for doors on exterior openings
Mounting	Between-jamb mounting (includes filler angles) Under lintel mounting (includes fascia) Tube mounting system (face of wall, between-jamb, or guides and brackets directly attached, to independent support tubes either in front of, or concealed inside of, rated wall construction – <i>tubes must be provided by Lawrence Doors – consult factory for details</i>)
Curtain	Heavier than standard gauge Type T slats (18 gauge maximum) Type F (2" x 9/16") flat slats on doors to 14'-0" wide (22 or 20 gauge) Malleable iron endlocks (on Type T slats) Vision lites of single or multiple (16 maximum) 4" x 1 1/2" cut-outs (with Type T slats) or 4" x 1" cut-outs (with Type F slats) spaced at least 2 1/2" apart, covered with UL classified glazing material Stainless steel slats (Type T - 22 or 20 gauge on doors to 36'-0" wide, Type F - 22 gauge on doors to 14'-0" wide)
Bottom Bar	Vinyl bottom seal to reduce smoke and air infiltration Sensing edge to reverse closing of a motor operated door upon contact with an obstruction Sloping bottom bar for non-level sills (1/2" per foot of width maximum slope) Stainless steel angles
Guides	UL Listed brush seals to reduce smoke and air infiltration Stainless steel channels or angles
Hood & Covers	Heavier than standard gauge hood (20 gauge maximum) UL Listed brush header seal (field installed) to reduce smoke and air infiltration between wall and curtain Flame baffle inside hood, activated by fusible link, to close area between hood and curtain when door is closed Fascia to close area behind brackets when no wall or fire barrier is present End caps to enclose operating or tension brackets (recommended when bottom of coil is less than 8 feet above the floor and to protect mechanisms on doors mounted to the exterior of a building) Motor cover (recommended on motor operators less than 8 feet above the floor or on the exterior of a building) Stainless steel hood, fascia, end caps and motor cover
Operation	Keyed handle release to close and test chain or crank operated doors and prevent unauthorized use (requires field installed conduit from enclosure to operator mounting bracket to conceal pull cable) "Auto-Reset" chain and crank operators, designed for detector/alarm activated and failsafe closing upon a loss of power through the operator's internal release and governor – to reset, clear alarm/restore power and open door "Auto-Reset" motor operator, designed for detector/alarm activated motor controlled closing if power is present, or failsafe closing upon a loss of power through the operator's internal release and governor – will stop upon sensing an obstruction while closing and continue closed when the obstruction is removed if power is present and sensing edge is functioning, or will close through the internal release and governor – to reset, clear alarm/restore power and activate open control (requires door be provided with a monitored sensing device) <i>NOTE: "Auto-Reset" chain and crank operators require connection to a 115VAC power source</i> R-BBU battery backup to prevent automatic closing of "Auto-Reset" motor operators upon a loss of power for up to 10 hours
Finishes	Galvanized steel bottom bar, guides and brackets Powder coated slats, bottom bar, guides and hood
Closing Systems	AR-D alarm release for time delayed automatic closing upon detector/alarm activation and failsafe closing upon a loss of power (115~230VAC, 24VAC/DC) AR-D2 alarm release with battery backup for time delayed automatic closing upon detector/alarm activation, prevents automatic closing upon a loss of power for up to 72 hours (115~230VAC, 24VAC/DC) <i>NOTE: (alarm release not required with "Auto-Reset" operators)</i> Audible, visible and voice warnings prior to automatic closing Photo-electronic smoke, ionization and heat detectors