QAI LABORATORIES
CERTIFICATION TESTING INSPECTION

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FIRE DOORS LISTING PROGRAM

Customer: Karona Doors Inc.
Class: Fire Doors
Location: Caledonia, Michigan
Website: www.karonadoor.com

Listing No. F441-1
Project No. F441-1 Edition 1

Effective Date: May 9, 2017
Last Revised Date: May 9, 2017

Standards:
CAN/ULC-S104	*Standard Method for Fire Tests of Door Assemblies.*
UL 10(b)	*Fire Tests of Doors Assemblies.*
UL 10(c)	*Fire Tests of Doors Assemblies.*
NFPA 252	*Standard Methods of Fire Tests of Door Assemblies.*

Product: 90 min Rated Fire Doors

Labels: See *FD001 - Fire Door Labeling requirements*

Models: **90-MINUTE LAMINATED CORE PANEL DOORS:**

Minimum 1-3/4" Thickness

Swing Type:	Maximum Dimensions		Panel Type:	Latching:
	Width:	Length:		
Single Swing	3'6" (1067 mm)	9'0" (2438 mm)	Flush or Raised	**Single Point** (Mortised or Cylindrical)
	4'0" (1067 mm)	7'0" (2134 mm)		
Pairs	6'0" (2134 mm)	8'0"(2438 mm)	Flush or Raised	**3 point** (Active: Mortised or Cylindrical) (Inactive: Surface Mounted Flush Bolts)
	7'0" (2134 mm)	8'0"(2438 mm)	Flush or Raised	**4 point** (Active: Mortised or Cylindrical) (Inactive: Surface Mounted Flush Bolts)
	8'0"(2438 mm)	7'0"(2134 mm)		
	7'0"(2134 mm)	9'0"(2438 mm)	Flush	

Minimum 2-1/4" Thickness

Swing Type:	Maximum Dimensions		Panel Type:	Latching:
	Width:	Length:		
Single Swing	4'0" (1067 mm)	10'0" (3048 mm)	Flush	**2 point** (Concealed or Surface Mounted)
Double Egress	8'0" (2438 mm)	10'0" (3048 mm)	Flush	**4 point** (Concealed or Surface Mounted)

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Temperature rise

- @30 min = 250°F MAX where light do not exceed 100 in²
- @60 min = 250°C MAX where light do not exceed 100 in²

Limitations: (Review Machining Report for further detail)

- Cylindrical Latches (Listed and Labelled)
- Mortise Lockset (Listed and Labelled)
  - [Max. mortise pocket 4-7/16" deep x 6-1/16" high x 1" thick]
- Fire Exit Devices
  - Surface mounted vertical rod, RIM and concealed vertical rod exit devices
- Surface Mounted and concealed door closer (Listed and Labelled)
  - Max mortise 22-1/2" long by 1-3/8" deep by 1-1/4" wide
- Light Kit (Listed and Labelled)
  - Listed Steel Lite Kit – max. 1080 sq. in. (max. dimension of 36")
  - BASF Proprietary steel channel light kit – max. 600 sq. in.
- Electric Raceway (Can only be installed in the Mid Rail, never through the door core)
- Surface Mounted and concealed door bottom (Listed and Labelled)
  - Max mortise 1-3/4" deep by 1" wide by full width of the door

Notes: *Refer to QAI evaluation report F441-1 and the applicable test reports for test assembly configurations used for fire endurance testing.*

Refer to the QAI FD002 - Fire Door Guidelines for general guidelines of fire door assemblies

Final acceptance of the product in the intended application is to be determined by the authority having jurisdiction (AHJ).

Product is to be installed in accordance with the manufacturer's published installation instructions by qualified installing personnel.

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