

CERTIFICATE OF COMPLIANCE

Certificate Number 20150210-R25577
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Issued to: PCJ INDUSTRIES CO LTD
199/24-25 VIBHAVADEERANGSIT RD
SAMSENNAI
PAYATHAI 10400 THAILAND

**This is to certify that
representative samples of**

SWINGING TYPE FIRE DOORS, POSITIVE PRESSURE
TESTED ; SWINGING TYPE FIRE DOORS
Model FRD, swinging-type fire door assembly of the hollow
metal type with Max 100 sq in. glazing material, 3 Hr rating.

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

ANSI/UL 10B - Fire Tests of Door Assemblies
ANSI/UL 10C - Positive Pressure Fire Tests Of Door
Assemblies
CAN/ULC-S104 - Standard Method for Fire Tests of Door
Assemblies

Additional Information:

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Bruce Mahrenholz, Assistant Chief Engineer, Global Inspection and Field Services
UL LLC

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Swinging-type Fire Doors

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PCJ INDUSTRIES CO LTD

R25577

199/24-25 VIBHADEERANGSIT RD
SAMSERNAI
PAYATHAI, BANGKOK 10400 THAILAND

Swinging doors may be provided as follows:

Max Rating	Opening Type	Hollow Metal Type Steel Stiffened	Steel Covered Composite Type Door
3 Hr	Single/Single Point Lock or Fire Exit Hardware	X	—
3 Hr	Single/Mortise Single Point Lock or Mortise/Rim Fire Exit Hardware	X	—
3 Hr	Pair With Astragal/Mortise Single Point Lock/Flush Bolts	X	—
3 Hr	Pair With Astragal/Mortise/Vertical Rod or Flush Bolts Fire Exit Hardware	X	—
3 Hr	Pair With Astragal/ Vertical Rod/Vertical Rod Fire Exit Hardware	X	—
3 HR	Single or Pair With Astragal/Single Point Lock or Rim Fire Exit Hardware With Max 100 sq in. of Glazing Material	X	—



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[Fire Doors] Swinging-type Fire Doors

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GENERAL

This category covers swinging-type fire doors consisting of the following constructions: composite, hollow-metal, metal-clad, sheet-metal, tin-clad and wood core.

INSTALLATION

Swinging-type fire doors are intended for installation in concrete, masonry and nonmasonry walls.

ASTRAGALS

Doors swinging in pairs in the same direction and double-egress doors swinging in opposite directions marked "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" may be provided with or without an astragal by some manufacturers as indicated in the individual certifications.

VENTS

Tin-clad fire doors having 14 x 20 in. metal sheets are intended to be provided with vents as specified in ANSI/NFPA 80, "Fire Doors and Fire Windows," to provide the protection indicated.

GLAZING

Glazing materials referenced in this category are certified as to fire resistance only. The glazing materials are intended to be installed in fire doors in accordance with ANSI/NFPA 80 and the installation instructions provided by the manufacturer of the door, glazing frame members or glazing materials. See Fire Door Glass Light Frames ([GVVX](#)) and Fire-protection-rated Glazing Materials ([KCMZ](#)).

Doors marked "4 H" are not intended to be provided with vision panels.

Doors marked "3 H," "1-1/2 H" or "1 H" may be provided with certified glazing materials for the vision panel. The sum of the exposed glazing area should not exceed 100 sq in. per door and the width and height should not exceed 12 and 33 in., respectively. Doors rated 3 h and provided with a vision panel are intended for the protection of openings as specified in the applicable sections of specific building codes.

Doors marked "3/4 H," "30 MIN" or "20 MIN" may be provided with one or more certified glazing materials for the lights. The exposed area of each light should not exceed 1296 sq in. with no dimension exceeding 54 in.

Doors marked "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" may be provided with one or more certified glazing materials for the lights. The exposed area of each light should not exceed 1296 sq in. with no dimension exceeding 54 in. (except as indicated in the individual certifications).

Certified 1/4 in.-thick wired glass, as well as other types of certified glazing material, are covered under Fire-protection-rated Glazing Materials ([KCMZ](#)). The glazing material is intended to be installed in accordance with the manufacturer's instructions to provide the protection indicated.

A door prepared at the factory for a light includes the glazing frame members, but generally does not include the glazing material. The glazing material (glass) is usually provided by other than the door manufacturer and is installed in the field at the time of the door installation.

LOUVERS

Doors marked "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" may be provided with a certified fire door louver (see Fire Door Louvers [[GVZS](#)]) by some manufacturers as indicated in the individual certifications.

Authorities Having Jurisdiction should be consulted before installation.

DUTCH DOOR

Single-swing composite, hollow-metal and wood-core Dutch-type doors marked "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" may be provided by some manufacturers as indicated in the individual certifications.

A horizontal astragal is intended to be provided between the top and bottom door leaves.

STAINLESS-STEEL DOOR

Hollow-metal single-swing and pairs of doors swinging in the same direction marked "3 H," "1-1/2 H," "1 H," "3/4 H," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" may be provided with stainless-steel door faces by some manufacturers as indicated by the individual certifications.

CLADDING MATERIALS

Doors marked "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" may be provided with stainless-steel cladding or other types of cladding material by some manufacturers as indicated in the individual

certifications.

HARDWARE

Single-swing doors marked with a minimum latch throw and "4 H," "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" are intended to be provided with certified single-point locks or latches with a minimum 1/2-in. throw (except as indicated on the individual manufacturer's product) to provide the protection indicated.

Single-swing doors marked with a fire-exit-hardware marking and "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" are intended to be provided with certified mortise- or rim-type fire-exit hardware to provide the protection indicated.

Doors swinging in pairs (same direction) marked with a minimum latch throw and "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" are intended to be provided with certified single-point locks or latches with a minimum 3/4-in. throw (except as indicated on the individual manufacturer's product) and certified top and bottom flush bolts or surface bolts to provide the protection indicated.

Doors swinging in pairs (same direction) marked with a fire-exit-hardware marking and "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" are intended to be provided with a certified mortise-type fire-exit-hardware device and/or a certified vertical-rod-type fire-exit device to provide the protection indicated. For doors rated up to and including 1-1/2 h, a certified vertical-rod-type fire-exit-hardware device may be used on both doors, if the doors are so prepared by the door manufacturer.

Double-egress doors (doors swinging in pairs - opposite direction) marked "3 H," "1-1/2 H," "1 H," "3/4 H," "30 MIN," "20 MIN" or "TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM" are intended to be provided with certified vertical-rod fire-exit-hardware devices to provide the protection indicated.

Hollow-metal-type doors may be provided with certified two- or three-point locks or latches.

Corrugated sheet-metal and tin-clad-type doors are intended to be provided with certified swinging Fire Door Hardware ([GZYX](#)) to provide the protection indicated.

For certifications of hardware, see:

- Single-point Locks and Latches ([GYJT](#))
- Electrically Controlled Single-point Locks and Latches ([GYQS](#))
- Flush and Surface Bolts, Automatic Type ([GXOW](#))
- Flush and Surface Bolts, Manual Type ([GXSR](#))
- Flush and Surface Bolts, Self-latching Type ([GXVV](#))
- Fire-exit Hardware ([GXHX](#))
- Two- and Three-point Locks and Latches ([GYXR](#))
- Fire Door Hardware ([GZYX](#))

HINGES

Doors are intended to be provided with hinges, pivots or olive knuckles in accordance with the specifications in ANSI/NFPA 80. For other types of certified hinges, see Door Hinges ([GWZQ](#)).

Corrugated sheet-metal and tin-clad doors are intended to be provided with certified surface-applied hinges to provide the protection indicated. See Fire Door Hardware ([GZYX](#)).

DOOR FRAMES

Doors are intended to be installed in certified door frames to provide the protection indicated. See Fire Door and Fire Window Frames ([GVTV](#)).

DOOR CLOSERS

Doors are intended to be provided with door closers in accordance with ANSI/NFPA 80.

For certifications of closing devices, see:

- Combination Fire Door Closers and Holders ([GTIS](#))
- Fire Door Operators ([GUCZ](#))
- Fire Door Operators with Automatic Closers ([GUJY](#))
- Swinging Fire Door Closers ([GVEV](#))

DOOR TYPES AND SIZES

The following tabulation of doors is provided as a reference guide and includes the maximum sizes currently certified. The maximum door sizes will vary for each individual certification.

Composite Type

Composite doors include steel-covered-, wood-covered- and plastic-covered-type fire doors. They consist of a manufactured core material with steel edges, untreated wood edges or chemically impregnated edges and face sheets of steel, wood veneer or laminated plastic. Steel-covered composite doors are rated up to 3 h. Wood-covered and plastic-covered composite doors are rated up to 1-1/2 h.

Sizes:

Type of Door	Maximum Size of Opening	
	Width	Height

Swinging, single (steel-covered)	4 ft, 0 in.	10 ft, 0 in.
Swinging, single (plastic-covered)	4 ft, 0 in.	10 ft, 0 in.
Swinging, single (wood-covered)	4 ft, 0 in.	10 ft, 0 in.
Swinging in pairs (steel-covered)	8 ft, 0 in.	8 ft, 0 in.
Swinging in pairs (steel-covered)	8 ft, 0 in.	8 ft, 0 in.
Swinging in pairs (plastic-covered)	8 ft, 0 in.	9 ft, 0 in.
Swinging in pairs (wood-covered)	8 ft, 0 in.	9 ft, 3 in.

Hollow-metal Type

Hollow-metal doors consist of formed steel of the flush and paneled designs. Hollow-metal doors are rated up to 3 h.

Sizes:

	Maximum Size of Opening	
Type of Door	Width	Height
Swinging, single	4 ft, 0 in.	10 ft, 0 in.
Swinging in pairs	8 ft, 0 in.	10 ft, 0 in.

Metal-clad Type

Metal-clad (Kalamein) doors consist of the flush and paneled designs having metal-covered wood members. Metal-clad doors are rated up to 1-1/2 h.

Sizes:

	Maximum Size of Opening	
Type of Door	Width	Height
Swinging, single	4 ft, 0 in.	10 ft, 0 in.
Swinging in pairs	8 ft, 0 in.	10 ft, 0 in.

Sheet-metal Type

Sheet-metal doors consist of formed steel of the corrugated, flush and paneled designs. Sheet-metal doors are rated up to 3 h.

Sizes:

	Maximum Size of Opening	
Type of Door	Width	Height
Swinging, single	6 ft, 0 in.	12 ft, 0 in.
Swinging, single*	4 ft, 0 in.	8 ft, 0 in.
Swinging in pairs	10 ft, 0 in.	12 ft, 0 in.
Swinging in pairs*	8 ft, 0 in.	7 ft, 2 in.

* Bearing the notation "FIRE DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE"

Tin-clad Type

Tin-clad doors consist of two- or three-ply wood core construction covered with galvanized steel or terneplate. Tin-clad doors are rated up to 3 h.

Sizes:

	Maximum Size of Opening	
Type of Door	Width	Height
3-ply swinging, single	6 ft, 0 in.	12 ft, 0 in.
3-ply swinging in pairs	10 ft, 0 in.	12 ft, 0 in.
2-ply swinging, single	6 ft, 0 in.	10 ft, 0 in.
2-ply swinging in pairs	10 ft, 0 in.	10 ft, 0 in.

Wood-core Type

Wood-core doors consist of a wood block or wood particleboard core material with untreated wood edges and face sheets of wood veneer,

hardboard or plastic laminate. Wood-core doors are rated 20 or 30 min.

Sizes:

Type of Door	Maximum Size of Opening	
	Width	Height
Swinging, single - 20 min	4 ft, 0 in.	10 ft, 0 in.
Swinging, single - 30 min	4 ft, 0 in.	9 ft, 0 in.
Double-egress doors - 20 min	8 ft, 0 in.	8 ft, 0 in.

**TWENTY-MINUTE-TYPE DOOR ASSEMBLIES
FIRE TESTED WITHOUT HOSE STREAM**

Twenty-minute-type Door Assemblies Fire Tested Without Hose Stream exposure are intended for use as door assemblies designed for the protection of openings in walls and partitions as specified in the applicable sections of the Model Building Codes.

The 20-min rating indicates the duration of fire exposure only. These 20-min-type door assembly components have not been subjected to a hose stream exposure.

Sizes:

Type of Door	Maximum Size of Opening	
	Width	Height
Swinging, single	4 ft, 0 in.	8 ft, 0 in.
Swinging in pairs	8 ft, 0 in.	8 ft, 0 in.

RELATED PRODUCTS

For swinging doors tested to positive-pressure test methods, see Swinging-type Fire Doors, Positive-pressure Tested ([GSZN](#)).

ADDITIONAL INFORMATION

For additional information, see Fire Doors ([GSNV](#)) and Fire-resistance Ratings ([BXRH](#)).

REQUIREMENTS

The basic standards used to investigate products in this category are [ANSI/UL 10B](#), "Fire Tests of Door Assemblies," and [ANSI/UL 10A](#), "Tin-Clad Fire Doors."

UL MARK

The Certification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Certification and Follow-Up Service. The [Certification Mark](#) for these products includes the UL symbol, the words "CERTIFIED" and "SAFETY," the geographic identifier(s), and a file number.

The Certification Mark is applied to the hinge edge of the door or to the head (top edge) of the door when the door is intended for use with a continuous hinge.

Additional Certification Markings

Products covered under this category are additionally marked with the following information:

**SWINGING-TYPE FIRE DOOR
MINIMUM LATCH THROW: + IN.
RATING: ++
TEMP RISE: +++**

or

**TWENTY-MINUTE-TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM
MINIMUM LATCH THROW: + IN.**

+ 1/2, 5/8 or 3/4

++ 4 H, 3 H, 1-1/2 H, 1 H, 3/4 H, 30 MIN or 20 MIN

+++ 30 MIN - 250°F MAX, 30 MIN - 450°F MAX, 30 MIN - 650°F MAX, or no reference to temperature rise when the temperature rise exceeds 650°F at 30 min

In addition, some manufacturers can furnish doors bearing the notation "FIRE DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE" in lieu of the notation "MINIMUM LATCH THROW: + IN.," as indicated in the individual certifications.

Alternate UL Mark

The Classification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

SWINGING TYPE FIRE DOOR NO. _____
MINIMUM LATCH THROW: + IN.
RATING: ++
TEMP RISE: +++
No.

+ **1/2, 5/8 or 3/4**
++ **4 HR, 3 HR, 1-1/2 HR, 1 HR, 3/4 HR, 30 MIN or 20 MIN**

+++ **30 MIN - 250 F MAX, 30 MIN - 450 F MAX, 30 MIN - 650 F MAX**, or no reference to temperature rise when the temperature rise exceeds 650°F at 30 min

In addition, some manufacturers can furnish doors bearing the notation "FIRE DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE" in lieu of the notation "MINIMUM LATCH THROW: + IN.," as indicated in the individual Classifications.

The Classification Mark is applied on the hinge edge of the door or on the head (top edge) of the door when the door is intended for use with a continuous hinge.

The Classification Mark for Twenty-minute-type Doors Fire Tested Without Hose Stream includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory), and the following additional information:

TWENTY MINUTE TYPE DOOR FIRE TESTED WITHOUT HOSE STREAM
MINIMUM LATCH THROW: + IN.

+ **1/2, 5/8 or 3/4**

In addition, some manufacturers can furnish doors bearing the notation "DOOR TO BE EQUIPPED WITH FIRE EXIT HARDWARE" in lieu of the notation "MINIMUM LATCH THROW: + IN.," as indicated in the individual Classifications.

The Classification Mark is applied on the hinge edge of the door or on the head (top edge) of the door when the door is intended for use with a continuous hinge.

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