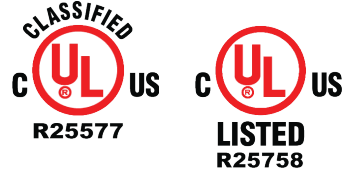


Fire-Rated Steel Doors

Models: FRD, FRX
3-Hour Fire Rating
ANSI/UL 10C & CAN/ULC-S104



Fire-Rated Steel Doors

Model: FRN
4-Hour Fire Rating
BS 476-20:1987 & BS 476-22:1987



with
Airborne Sound Transmission Loss (TL),
STC = 39

Fire-Rated Steel Doors

Model: CSD
2-Hour Fire Rating
BS 476-20:1987 & BS 476-22:1987



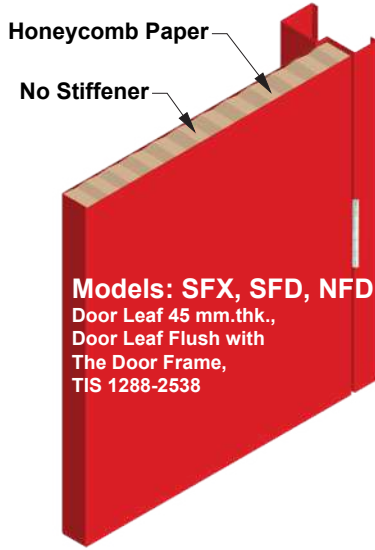
Steel Doors

Models: SFX, SFD, NFD
TIS 1288-2538



Thai Industrial Standards
TIS 1288-2538

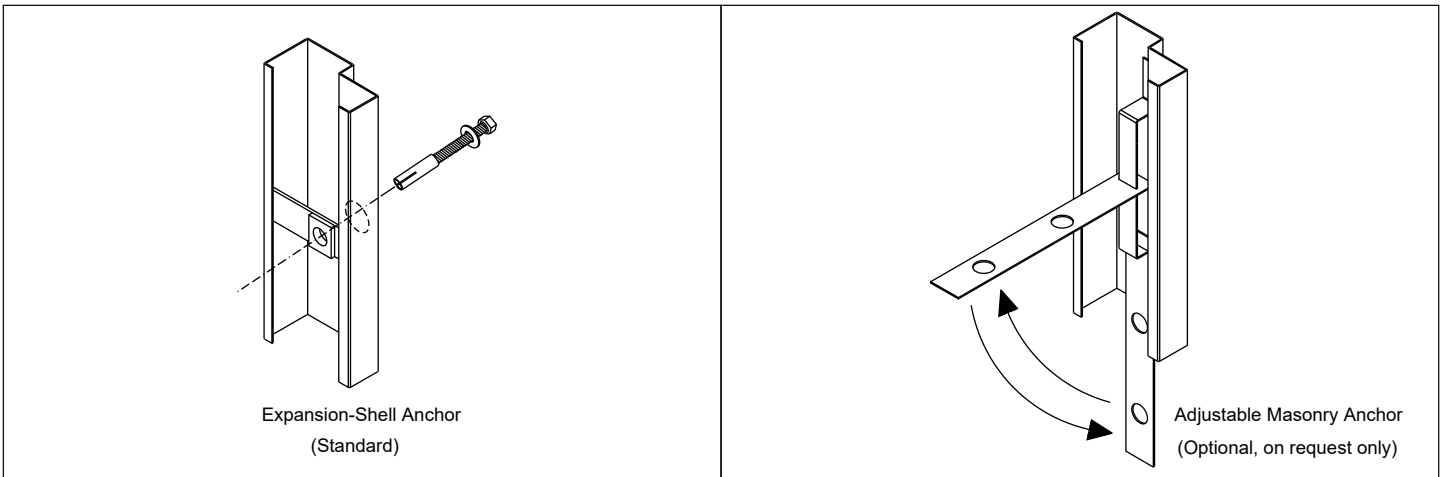
Door Constuction



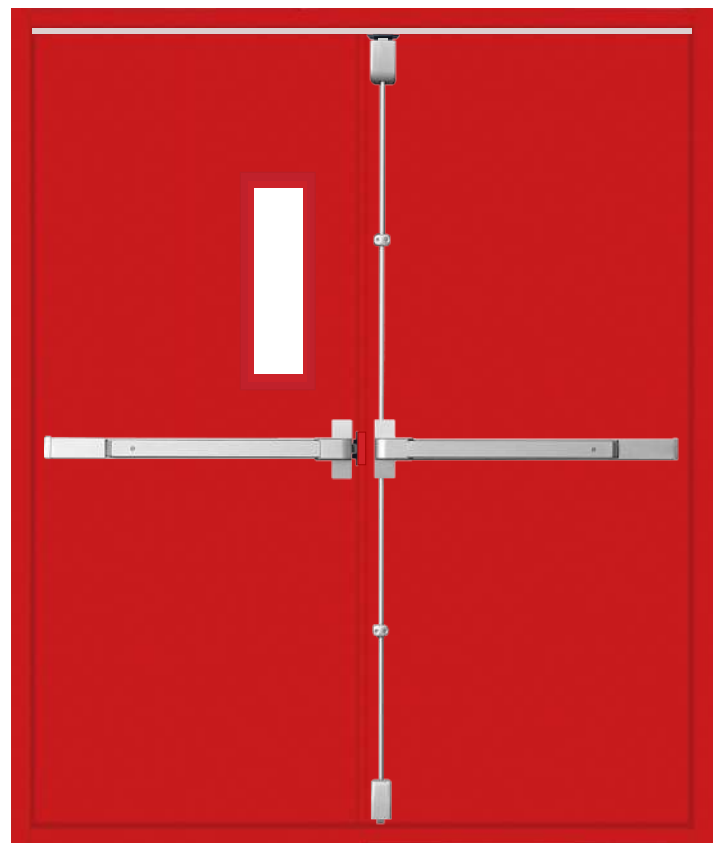
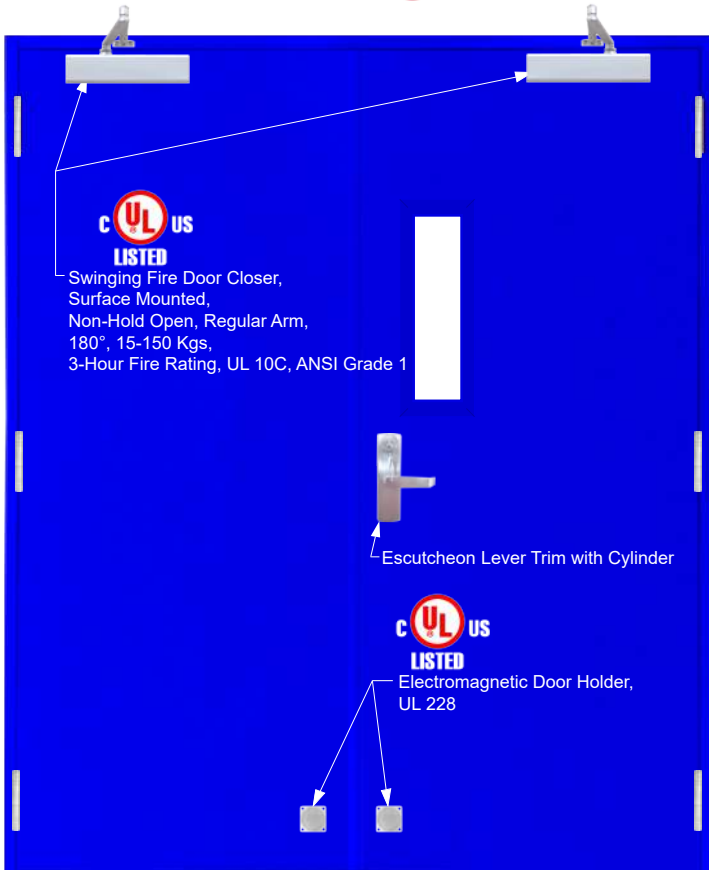
Door Frame Profiles for All Models

Single Rabbet, without Architrave	Single Rabbet, with Architrave at Pull Side	Single Rabbet, with Architrave at Push Side	Double Rabbet, without Architrave	Double Rabbet, with Architrave at Pull Side	Double Rabbet, with Architrave at Push Side

Anchor Types



Door Components for Models: FRD, FRX

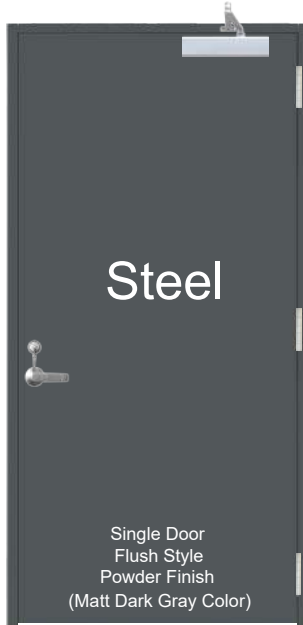
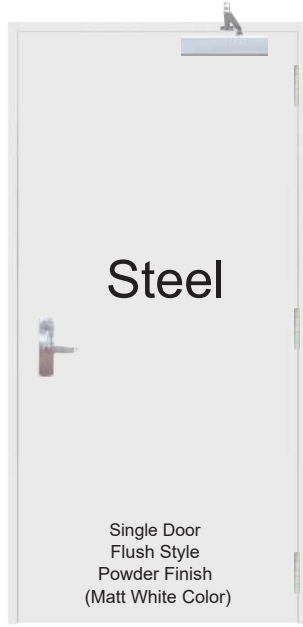


Automatic Door Bottom Seal, Surface Mounted, 3-Hour Fire Rating, UL 10C (Without Threshold / Bottom Frame)

With Threshold / Bottom Frame (Without Automatic Door Bottom Seal)

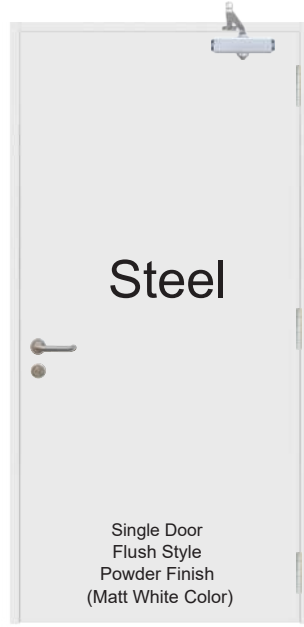
Styles and Colors for Fire-Rated Steel Doors

Models: FRD, FRX, FRN, CSD

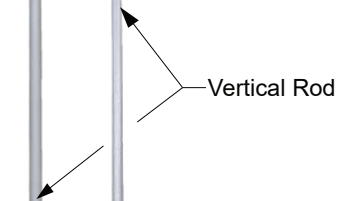
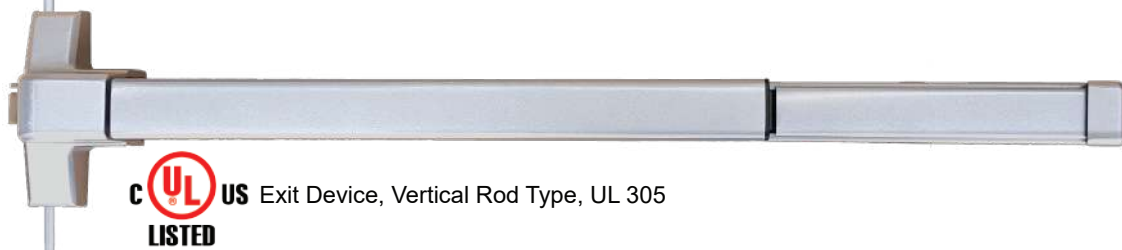
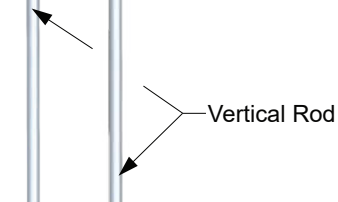
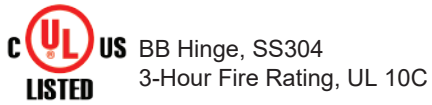
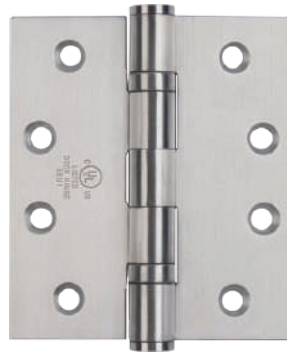


Styles and Colors for Steel Doors

Models: SFX, SFD, NFD



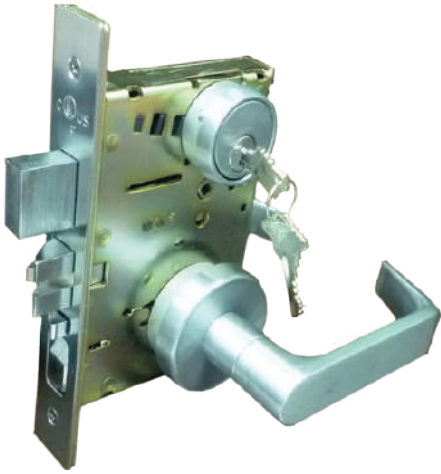
Door Hardware



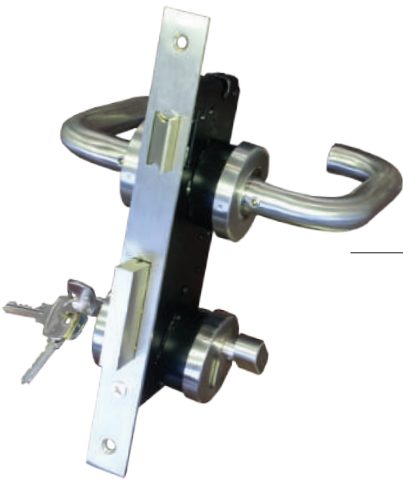
Escutcheon Lever Trim with Cylinder

Lever Trim with Cylinder

Door Hardware



c UL US LISTED Fire Mortise Lock, Cylinder with Thumbturn
3-Hour Fire Rating, UL 10C



Mortise Lock, Cylinder with Thumbturn



c UL US LISTED Swinging Fire Door Closer, Surface Mounted, Non-Hold Open, Regular Arm, 180°, 60-85 kgs, 3-Hour Fire Rating, UL 10C

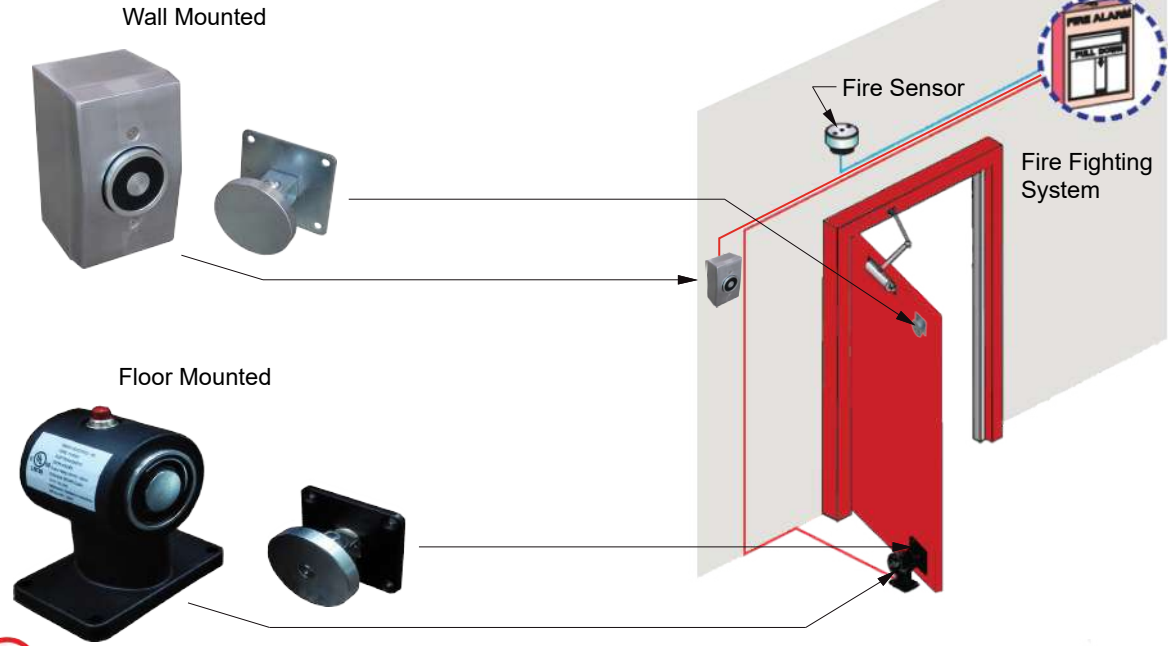


c UL US LISTED Swinging Fire Door Closer, Surface Mounted, Non-Hold Open, Regular Arm, 180°, 60-150 kgs, 3-Hour Fire Rating, UL 10C



c UL US LISTED Swinging Fire Door Closer, Surface Mounted, Non-Hold Open, Regular Arm, 180°, 15-150 kgs, 3-Hour Fire Rating, UL 10C, ANSI Grade 1

Door Hardware



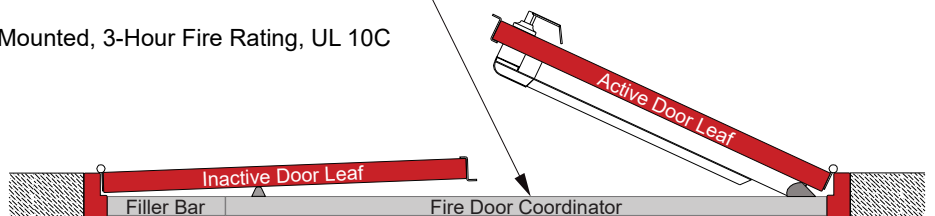
UL **US** Electromagnetic Door Holder, UL 228
LISTED

CLASSIFIED
UL **US** Smoke Seal, 3-Hour Fire Rating, UL 10C

CLASSIFIED
UL **US** Automatic Door Bottom Seal, Surface Mounted, 3-Hour Fire Rating, UL 10C

The seal has a spring loaded mechanism which lifts the seal clear of the floor as soon as the door is opened. Pressure against the door frame on the adjustable strike button operates the seal automatically.

UL **US** Fire Door Coordinator, Surface Mounted, 3-Hour Fire Rating, UL 10C
LISTED



How to Order

XXX - X XX X-XX - XX

Door Model:

- FRD** = Fire-Rated Steel Door, 3-Hour Fire Rating, ANSI/UL 10C & CAN ULC-S104
- FRX** = Fire-Rated Steel Door (Extra Type), 3-Hour Fire Rating, ANSI/UL 10C & CAN ULC-S104
- FRN** = Fire-Rated Steel Door, 4-Hour Fire Rating, BS 476-20:1987 & BS 476-22:1987
- CSD** = Fire-Rated Steel Door, 2-Hour Fire Rating, BS 476-20:1987 & BS 476-22:1987
- SFX** = Steel Door, TIS 1288-2538 (Heavy Duty)
- SFD** = Steel Door, TIS 1288-2538 (Standard)
- NFD** = Steel Door, TIS 1288-2538 (Economy)

Door Type:

- S** = Single Door
- D** = Double Door

Door Style:

- 00** = Flush
- OG** = Flush with Ordinary Glass 6 mm.thk.
- WG** = Flush with Wired Glass 6 mm.thk.
- FG** = Flush with Fire-Rated Glass 5 mm.thk.
- 0L** = Flush with Louver
- OL** = Flush with Ordinary Glass 6 mm.thk. and Louver
- WL** = Flush with Wired Glass 6 mm.thk. and Louver
- 05** = Embossed, 5 panels
- 11** = Embossed, 11 panels

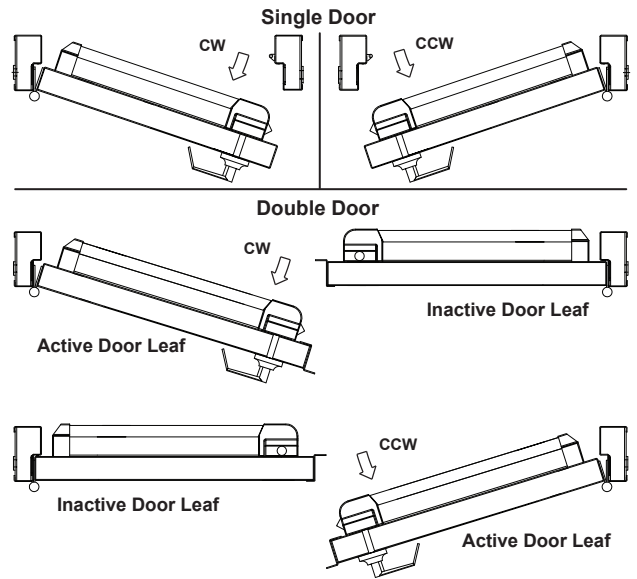
Finish:

- P** = Powder
- W** = Wood Grain

Size:

Width x Height = Outer Width of door frame x Outer Height of door frame
(Height from finished floor level to top of the door frame)

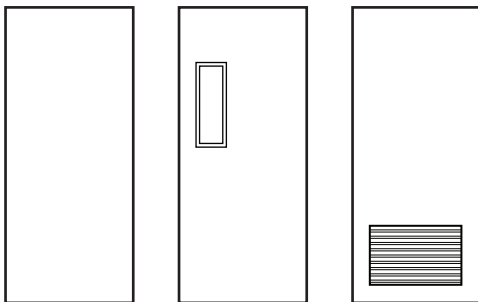
Opening Direction (Top View):



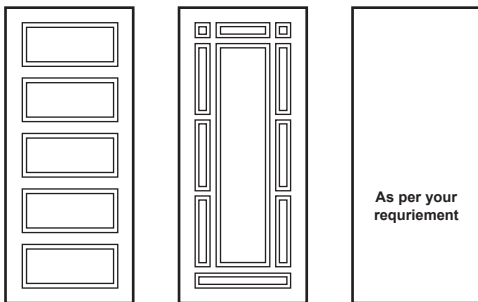
- CW** = Door Leaf (Active Door Leaf in case of Double Door) Opened to ClockWise Direction
- CCW** = Door Leaf (Active Door Leaf in case of Double Door) Opened to CounterClockWise Direction

Example : FRD-DFGP-1500x2100-CCW = Fire-Rated Steel Door, 3-Hour Fire Rating, ANSI/UL 10C & CAN ULC-S104, Double Door, Flush Style with Fire-Rated Glass & Frame, 3-Hour Fire Rating, UL 10C, Powder Finish, Outer Width 1500 mm x Outer Height 2100 mm, Active Door Leaf Opened to CounterClockWise Direction

Single Door

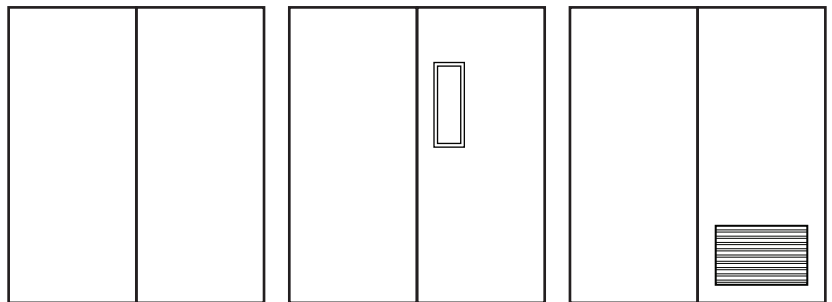


- Flush
- Vision Panel*
- Louver**

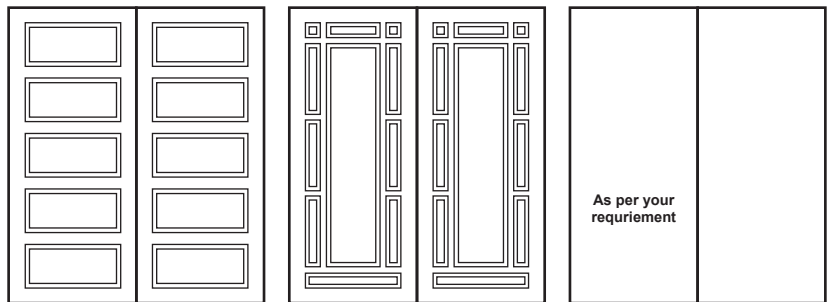


- Embossed Style, 5 Panels
- Embossed Style, 11 Panels
- Custom Design

Double Door



- Flush
- Vision Panel*
- Louver**



- Embossed Style, 5 Panels
- Embossed Style, 11 Panels
- Custom Design

* Vision Panel : _____ (W) x _____ (H)

** Louver Panel : _____ (W) x _____ (H)

* Vision Panel : _____ (W) x _____ (H)

** Louver Panel : _____ (W) x _____ (H)

Certificates

Model: FRD 3-Hour Fire Rating, UL 10C

CERTIFICATE OF COMPLIANCE

Certificate Number 20150210-R25577
Report Reference R25577-20150129
Issue Date 2015-FEBRUARY-10

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: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

B. Mahesh
 Bruce Mahesholtz, Assistant Chief Engineer, Global Inspection and Field Services

UL LLC
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Model: FRX 3-Hour Fire Rating, UL 10C

CERTIFICATE OF COMPLIANCE

Certificate Number 20190418-R25577
Report Reference R25577-20190412
Issue Date 2019-April-18

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

This certificate confirms that representative samples of SWINGING TYPE FIRE DOORS, POSITIVE PRESSURE TESTED
 FRX, swinging-type fire door assembly of the hollow metal typewith Max. 100 sq in. glazing material, intended to provide protection for openings in Max. 3 hour locations.

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

Standard(s) for Safety: ANSI/UL 10C, Positive Pressure Fire Tests of Door Assemblies
 ANSI/UL 10B, Fire Tests of Door Assemblies
 CAN/ULC-S104, Standard Method for Fire Tests of Door Assemblies

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

B. Mahesh
 Bruce Mahesholtz, Director North American Certification Program

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Models: FRD, FRX 3-Hour Fire Rating, UL 10C

CERTIFICATE OF COMPLIANCE

Certificate Number 20150129-R25758
Report Reference R25758-20150129
Issue Date 2015-JANUARY-29

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

This is to certify that representative samples of FIRE DOOR AND WINDOW FRAMES
 The single-unit type, pressed-steel frames for masonry walls at least 2 inches (50.8 mm) thickness.

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/UL10C - Positive Pressure Fire Tests Of Door Assemblies
 CAN/ULC-S104 - Standard Method for Fire Tests of Door Assemblies

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

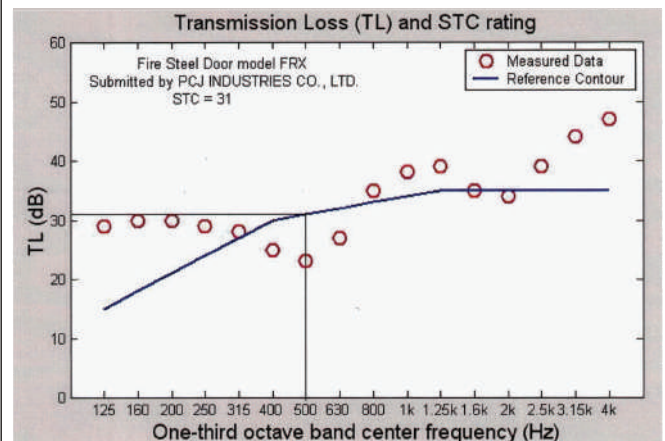
B. Mahesh
 Bruce Mahesholtz, Assistant Chief Engineer, Global Inspection and Field Services

UL LLC
 Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at ul@ul.com



Model: FRX Airborne Sound Transmission Loss

Figure 1. The airborne sound transmission-loss (TL) and the STC rating of the test sample.



W. S. Wong
 วิศวกร
 วิศวกร
 วิศวกร

Certificates

Model: FRN
4-Hour Fire Rating, BS 476-20:1987 & BS 476-22:1987

Reference No. FSRC-007/65 Page 1 of 16

**FACULTY OF ENGINEERING
 CHULALONGKORN UNIVERSITY
 FIRE SAFETY RESEARCH CENTER**

TYPE OF TEST : DETERMINATION OF THE FIRE RESISTANCE OF NON-LOADBEARING ELEMENTS OF CONSTRUCTION

TEST SPECIMEN : **Fire Steel Door, Model: FRN-D00P-2400x2400-CCW Double Door, Overall Size 2400x2400 mm, Flush Style with Mortise Lock**
 The specimen is a doorset consisting of double-sided steel door leaves and a steel door frame. The dimensions of each door leaf are 2337 mm x 1160 mm x 45 mm (overall dimensions: 2337 mm x 2324 mm x 45 mm). The door leaf is constructed of 1.5-mm thick cold rolled steel sheet in-filled with ceramic fiber with a density of 96 kg/m³. The specimen was mounted in a 15-cm thick reinforced concrete wall, which was installed on the 3 m x 3 m testing frame. The door leaves were locked with the door frame by a mortise lock and 8 stainless steel hinges. Smoke seal was installed around the inner perimeter of the door frame. The details of the specimen are shown in Appendix C. The specimen was provided and installed by the client.

CLIENT : PCJ INDUSTRIES CO., LTD.
 199/24-25 Vibhavadee Rangsit Road
 Samsennai, Phayathai, Bangkok 10400, Thailand

DATE OF TEST : February 3, 2022

TEST MACHINE : Large-scale vertical furnace at the Fire Safety Research Center (FSRC), Department of Civil Engineering, Chulalongkorn University Thailand. The furnace is capable of producing a standard temperature-time relationship according to BS 476 Part 20: 1987.

TEST METHOD : The testing procedures follow the British Standard BS 476: Fire tests on building materials and structures
 BS 476 Part 20: 1987: Method for determination of the fire resistance of elements of construction (general principles)
 BS 476 Part 22: 1987: Methods for determination of the fire resistance of non-loadbearing elements of construction Section 6: Determination of the fire resistance of fully insulated doorsets and shutter assemblies.

TEST RESULTS : The non-loadbearing element of construction described above has the fire resistance of each criterion for the period stated:
 (The test results are good only for the specimen tested.)

Criteria	Fire Resistance (hr:min)	Remarks
Insulation	0:19	The maximum temperature of the unexposed face of the specimen exceeded 180°C above the initial mean value of 30°C.
Integrity	4:00	During the test, all integrity criteria were fulfilled (no sustained flaming and no through gap such that the 6 mm diameter gap gauge could penetrate).

Date: February 17, 2022

Tested by: *Assoc. Prof. Dr. Akhrawat Lenwari* Checked by: *Assoc. Prof. Dr. Tirawat Boonyatee*
 (Associate Prof. Dr. Akhrawat Lenwari) (Professor Dr. Tirawat Boonyatee)
 On Behalf of Head of Civil Engineering Department

Fire Safety Research Center, Faculty of Engineering, Chulalongkorn University
 Phayathai Road, Pathumwan, Bangkok 10330, Thailand. Tel: (662) 251-8336 Fax: (662) 251-8337
 FM-LAB-04/02.01 (00)

Model: CSD
2-Hour Fire Rating, BS 476-20:1987 & BS 476-22:1987

Reference No. FSRC-001/65 Page 1 of 14

**FACULTY OF ENGINEERING
 CHULALONGKORN UNIVERSITY
 FIRE SAFETY RESEARCH CENTER**

TYPE OF TEST : DETERMINATION OF THE FIRE RESISTANCE OF NON-LOADBEARING ELEMENTS OF CONSTRUCTION

TEST SPECIMEN : **Fire Steel Door, Model: CSD-D00P-2400x2400-CCW Double Door, Overall Size 2400x2400 mm, Flush Style with Mortise Lock**
 The specimen is a doorset consisting of double-sided steel door leaves and a steel door frame. The dimensions of each door leaf are 2337 mm x 1160 mm x 45 mm (overall dimensions: 2337 mm x 2324 mm x 45 mm). Each door leaf is constructed of 1-mm thick cold rolled steel sheet in-filled with ceramic fiber with a density of 96 kg/m³. The specimen was mounted in a 15-cm thick reinforced concrete wall, which was installed on the 3 m x 3 m testing frame. The door leaves were locked with the door frame by a mortise lock and 8 stainless steel hinges. Rubber seal was installed around the inner perimeter of the door frame. The details of the specimen are shown in Appendix C. The specimen was provided and installed by the client.

CLIENT : PCJ INDUSTRIES CO., LTD.
 199/24-25 Vibhavadee Rangsit Road
 Samsennai, Phayathai, Bangkok 10400, Thailand

DATE OF TEST : January 5, 2022

TEST MACHINE : Large-scale vertical furnace at the Fire Safety Research Center (FSRC), Department of Civil Engineering, Chulalongkorn University, Bangkok, Thailand. The furnace is capable of producing a standard temperature-time relationship according to BS 476 Part 20: 1987.

TEST METHOD : The testing procedures follow the British Standard BS 476: Fire tests on building materials and structures
 BS 476 Part 20: 1987: Method for determination of the fire resistance of elements of construction (general principles)
 BS 476 Part 22: 1987: Methods for determination of the fire resistance of non-loadbearing elements of construction Section 6: Determination of the fire resistance of fully insulated doorsets and shutter assemblies.

TEST RESULTS : The non-loadbearing element of construction described above has the fire resistance of each criterion for the period stated:
 (The test results are good only for the specimen tested.)

Criteria	Fire Resistance (hr:min)	Remarks
Insulation	0:15	The average temperature of the unexposed face of the specimen exceeded 140°C above its initial value of 32°C.
Integrity	2:47	Sustained flaming on the unexposed face of the specimen for a period of more than 10 seconds.

Date: January 19, 2022

Tested by: *Assoc. Prof. Dr. Tanate Srisrirojjanakorn* Checked by: *Assoc. Prof. Dr. Tirawat Boonyatee*
 (Assistant Prof. Dr. Tanate Srisrirojjanakorn) (Professor Dr. Tirawat Boonyatee)
 On Behalf of Head of Civil Engineering Department

Fire Safety Research Center, Faculty of Engineering, Chulalongkorn University
 Phayathai Road, Pathumwan, Bangkok 10330, Thailand. Tel: (662) 251-8336 Fax: (662) 251-8337
 FM-LAB-04/02.01 (00)

All Models
TIS 1288-2538

ใบอนุญาตที่ (ก) 3856-13/1288 แบบ นอ. ๒

ใบอนุญาต
แสดงเครื่องหมายมาตรฐานกับผลิตภัณฑ์อุตสาหกรรม
 สังกัดกรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๖๑
 กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัยและนวัตกรรม
 ออกใบอนุญาตฉบับนี้ให้
 บริษัท พีซีเจ อุตสาหกรรม จำกัด

แสดงเครื่องหมายมาตรฐานกับผลิตภัณฑ์อุตสาหกรรม สังกัดกรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๖๑
 ที่ทำถูกต้องตามมาตรฐานผลิตภัณฑ์อุตสาหกรรม สังกัดกรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๖๑
 ประเภทผลิตภัณฑ์ ชื่อรุ่น/ยี่ห้อ เลขที่ มอก. 1289-2538
 เครื่องหมายการค้า **Classic Steel** (ทะเบียนเลขที่ ก 153207)
 ทำที่โรงงานชื่อ บริษัท พีซีเจ อุตสาหกรรม จำกัด
 ตั้งอยู่ที่อาคารเลขที่ 45/2 ครอบคลุม ถนน บางกอก - แสงจันทร์
 หมู่ที่ 8 ตำบลบางขวาง อำเภอเมือง จังหวัด สุพรรณบุรี
 ทะเบียนโรงงานเลขที่ ก. 3 - 63 (ก) - 1/42 สบ

ทั้งนี้ ต้องปฏิบัติตามเงื่อนไขในการอนุญาตที่คณะกรรมการกำหนด

ออกให้ ณ วันที่ 28 พฤษภาคม พ.ศ. 2565

สุวิมล วัฒนศิริ
 (นายสุวิมล วัฒนศิริ)
 รองปลัดกระทรวง ภาควิชาการแผน
 ปลัดกระทรวงอุตสาหกรรม
ประธานกรรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม

สำนักงานมาตรฐานผลิตภัณฑ์อุตสาหกรรม
 กระทรวงอุตสาหกรรม

คำเตือน
 ผู้รับใบอนุญาตต้องปฏิบัติตามเงื่อนไขที่คณะกรรมการกำหนด

Model: CSD
TIS 1220-2541

ใบอนุญาตที่ (ก) 4065-2/1220 แบบ นอ. ๒

ใบอนุญาต
แสดงเครื่องหมายมาตรฐานกับผลิตภัณฑ์อุตสาหกรรม
 สังกัดกรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๖๑
 กระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัยและนวัตกรรม
 ออกใบอนุญาตฉบับนี้ให้
 บริษัท พีซีเจ อุตสาหกรรม จำกัด

แสดงเครื่องหมายมาตรฐานกับผลิตภัณฑ์อุตสาหกรรม สังกัดกรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๖๑
 ที่ทำถูกต้องตามมาตรฐานผลิตภัณฑ์อุตสาหกรรม สังกัดกรมการมาตรฐานผลิตภัณฑ์อุตสาหกรรม พ.ศ. ๒๕๖๑
 ประเภทผลิตภัณฑ์ ชื่อรุ่น/ยี่ห้อ เลขที่ มอก. 1220-2541
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