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WORLDWIDE DOOR COMPONENTS, INC.
PRODUCT EVALUATION

PRODUCT EVALUATED
EZ FIT ADJUSTABLE STEEL DOOR FRAME, MODEL MJ-3-8-4716

EVALUATION PROPERTY
FIRE RESISTANCE WITH HOSE STREAM

REPORT NUMBER
191023009SHF-002

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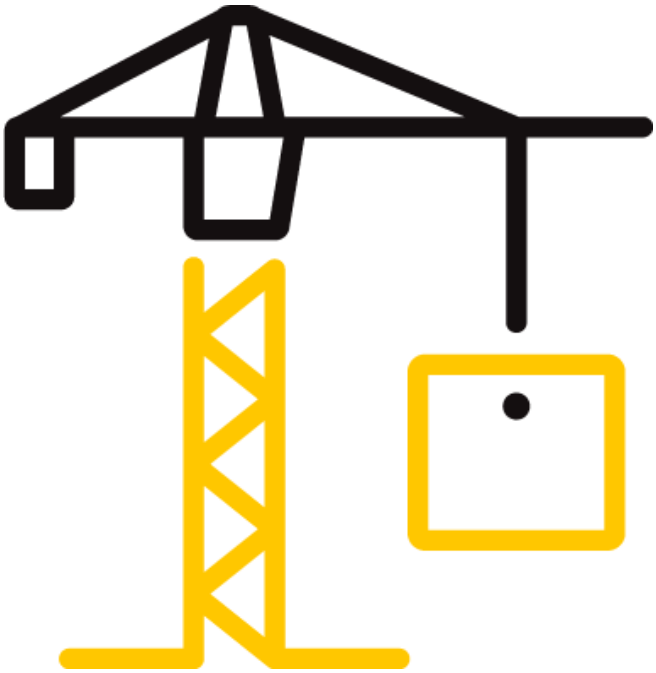

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PRODUCT EVALUATION FOR WORLDWIDE DOOR COMPONENTS, INC.

Report No.: 191023009SHF-002

Date: 2020-08-25

PRODUCT EVALUATION RENDERED TO:	
Company Name:	WORLDWIDE DOOR COMPONENTS, INC.
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1 Introduction

Intertek Testing Services Ltd., Shanghai (Intertek) is conducting a product evaluation for WORLDWIDE DOOR COMPONENTS, INC. on EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716 for a 1-1/2-hour exposure period with hose stream test, for installation in masonry wall opening. The evaluation was conducted to determine if the EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716 will comply with a 1-1/2-hour fire exposure period with hose stream, for installation in masonry wall opening in accordance with NFPA 252-2017, CAN/ULC-S104-15, UL 10C-2016, UL 10B-2008(R2015) and Intertek test report No. 191023009SHF-001, dated August 12, 2020.

2 Product and Assembly Description

2.1. Tested Assembly Description

The EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716 fitted with listed steel door leaf was built into a masonry unit partition, with fully mortared joints and the test assembly was tested in both orientations. Detailed description is shown in the following table. The fire door assembly drawing can be found in Appendix A.

WH Certified Door	Type	Single Leaf Single Action Swing Steel Fire Door
	Nominal Size	908 mm wide by 2417 mm high by 45 mm thick
	W/N number:	16364
	Facing:	1.2 mm thick Galvanized Steel sheet
	Stiffener:	Four strips 100 x 42 x 20 x 0.8 mm C type steel sheet vertically located inside the door leaf (equally spaced)
	Channel:	30 x 42 x 1.2 mm U type steel sheet at the top and bottom of the door leaf
	Core	Rock Wool
Frame	Frame Type	1.2 mm thick DC51D-C Cold rolled galvanized steel, adjustable steel frame, comprised jamb base and jamb closure, header base and header closure.
	Nominal Size:	994 mm wide by 2486.54 mm high by 116.7 mm
	Jamb depth:	Adjustable from 116.7 mm – 142.1 mm
	Frame Anchors:	50 mm long nails affixed to both two faces of the frame. 3 nails were placed along header base face and 4 nails were placed along header closure face. 7 nails were placed along each jamb base face and 8 nails were placed along each jamb closure face. M7x65 expansion bolts were used on rabbet of the frame. 4 bolts were placed along each jamb rabbet and 2 bolts were placed along header rabbet. Detail spacing were shown in the drawing.
	Supporting Construction:	Masonry construction
Hardware	Lock	Lock 1: Single Cylinder Deadbolt, model FD7 Series; Backset: 60 mm; Cross bore: 54 mm diameter; Bolt throw: 25.4 mm; Dead bolt: Disengaged
		Lock 2: Tubular lock, model FLG series Backset: 60 mm; Cross bore: 54 mm diameter;

		Latch throw: 12.7 mm; Latch: Engaged
	Hinge	Hinge Type & Material: Spring hinge, Stainless Steel, model SH404-01
		Size: 4” x 4” x 2.7 mm
		Quantity: 4

2.2. Product and Assembly Traceability

The specimens were randomly selected by Intertek B&C Luke Lv at the USA WORLDWIDE DOOR COMPONENTS (PINGHU) CO., LTD., located at No. 588 Xingping No.4 Road, Pinghu Economic Development Zone, Zhejiang, China 314200. The specimens were witnessed during production and signed prior to shipment on June 18, 2020.

The subject test specimen was a traceable specimen selected from the manufacturer's facility. Intertek selected the specimen and had verified the composition, manufacturing techniques and quality assurance procedures

2.3. Product and Assembly Test

Performance test, Based on NFPA 252-2017, CAN/ULC-S104-15, UL 10C-2016 and UL 10B-2008(R2015).

Authorities Having Jurisdiction (AHJ) should be consulted in all cases as to the particular requirements covering the installation and use of Intertek certified products, equipment, systems, devices and materials. The AHJ should be consulted before construction. Fire resistance assemblies and products are developed by the design submitter and have been investigated by Intertek for compliance with specific requirements. The published information (product and design listings) cannot always address every construction nuance encountered in the field. When field issues arise, it is recommended the first contact for assistance be the technical service staff provided by the product manufacturer noted for the design. Users of fire resistance assemblies are advised to consult the test standard referenced for each Intertek certified product. The test standard includes specifics concerning alternate materials and alternate methods of construction. Only products which bear Intertek's Mark are considered as certified. The appearance of a company's name or product in Intertek Directory of Listed Building Products does not in itself assure that products so identified have been manufactured under Intertek's Follow-Up Service. Only those products bearing the Intertek Mark should be considered to be Listed and covered under Intertek's Follow-Up Service. Always verify the Mark on the product before using it.

3 Reference Documents

As part of this evaluation, Intertek has directly or indirectly used the following referenced documents:

- NFPA 252-2017, Standard Methods of Fire Tests of Door Assemblies
- CAN/ULC S104-15, Standard Method for Fire Tests of Door Assemblies
- UL 10C-2016, UL Standard for Positive Pressure Fire Tests of Door Assemblies
- UL10B-2008(R2015), UL Standard for Fire Tests of Door Assemblies
- Intertek test report No. 191023009SHF-001, dated August 12, 2020

4 Evaluation Method

The purpose of this evaluation is to review the test data to determine if the EZ Fit Adjustable Steel Door Frame,

model MJ-3-8-4716 described in Section 2 of this report complies with NFPA 252 (2017), CAN/ULC S104 (2015), UL 10C (2016), UL 10B (2015) and meets a 1-1/2-hour exposure period with hose stream, for installation in masonry wall opening.

This evaluation is being conducted solely for the above referenced project or use or both. Due to the variables that exist from project to project and the fact that each evaluation requires review of the most current existing data and information, this evaluation is not to be used as justification for any other opinion nor used for any other project, without the express written consent of Intertek. This report should serve as Intertek's opinion regarding the use of the product in the conditions described herein.

Unless specifically discussed within this evaluation report, all details must remain as tested or verified.

This evaluation is based on the test results of the EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716. Testing was conducted in accordance with NFPA 252-2017, CAN/ULC-S104-15, UL 10C-2016 and UL 10B-2008(R2015). This test was conducted on July 6, 2020. Detailed results are reported in Intertek test reports:

- 191023009SHF-001, dated August 12, 2020

A full set of test data and photographs had been presented in the test reports of 191023009SHF-001, dated August 12, 2020.

According to the conclusion in report No. 191023009SHF-001, dated August 12, 2020, the fire door assembly that the EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716 did not met the requirements for a 1-1/2 hours exposure period with hose stream, for installation in masonry wall opening.

Observation was conducted during and after the fire endurance test. After exposed to the fire for a period of 22 minutes, sustained flame was observed on top right corner of the out-swing door assembly. Failure of fire endurance test was deemed to occur for the out-swing door assembly. After exposed to the fire for a period of 30 minutes, the leading edge at a 3/4 height from bottom edge adjacent to the door frame moved approximately 60 mm from the original position in a direction perpendicular to the plane of the door for the in-swing door assembly. The displacement with 60 mm was by more than the door thickness. Failure of fire endurance test was deemed to occur for the in-swing door assembly. There were no other significant changes throughout the 1-1/2-hour of fire endurance test. From the observation above for the out-swing door assembly, sustained flaming came from the top right corner of door leaf adjacent to leading edge, and this part of door leaf warped outward from the original position. There were no combustible materials in the header of steel door frame, but the core of the door leaf was glued rock wool. From the observation above for the in-swing door assembly, the leading edge of door leaf moved more than the door thickness, the deflection come primarily from the door leaf due to the long unsupported span between the latch and the top latch corner, the adjacent frame jamb was straight, stable, and in good condition. Observation was conducted during and after the hose stream test. There were no significant deflection and through openings on the unexposed surface of the in-swing door assembly. However, the strike jamb adjacent to the leading edge of door leaf was loosened from its fastenings and separated from the wall on the exposed surface of the out-swing door assembly after the hose stream test. There was no expanded anchor to fix the strike jamb at this location. Based on observation and test results, the performance of EZ Fit Adjustable Steel Door Frame have not been a contributing factor to two issues of sustained flaming and excessive door deflection from the fire endurance test. For installation of steel door frame, one extra expanded anchor needs to be added at the location near the strike to enhance the securing force of the frame. In the end, the EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716 will comply with a 1-1/2-hour fire exposure period with hose stream, for installation in masonry wall opening in accordance with

NFPA 252-2017, CAN/ULC-S104-15, UL 10C-2016 and UL 10B-2008(R2015). Photographs of the test can be found in the Appendix B.

5 Conclusion

Intertek has conducted this product evaluation for WORLDWIDE DOOR COMPONENTS, INC. on EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716, for installation in masonry wall opening. The evaluation was conducted to determine if the EZ Fit Adjustable Steel Door Frame, model MJ-3-8-47162 will comply with a 1-1/2-hour fire exposure period with hose stream, for installation in masonry wall opening in accordance with NFPA 252-2017, CAN/ULC-S104-15, UL 10C-2016, UL 10B-2008(R2015) and Intertek test report No. 191023009SHF-001, dated August 12, 2020.

Based on the information contained and referenced herein, it is Intertek's professional judgment based on sound engineering principles that the following is true:

- The EZ Fit Adjustable Steel Door Frame, model MJ-3-8-4716 met a 1-1/2-hour fire exposure period with hose stream, for installation in masonry wall opening in accordance with NFPA 252-2017, CAN/ULC-S104-15, UL 10C-2016, UL 10B-2008(R2015) and Intertek test report No. 191023009SHF-001, dated August 12, 2020.

Intertek Testing Services Shenzhen Ltd. Shanghai Fengxian Branch.

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Testing Engineer, Building & Construction

Reviewed by: Jason Xu
Jason Xu
Project Engineer, Building & Construction

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Report No.: 191023009SHF-002
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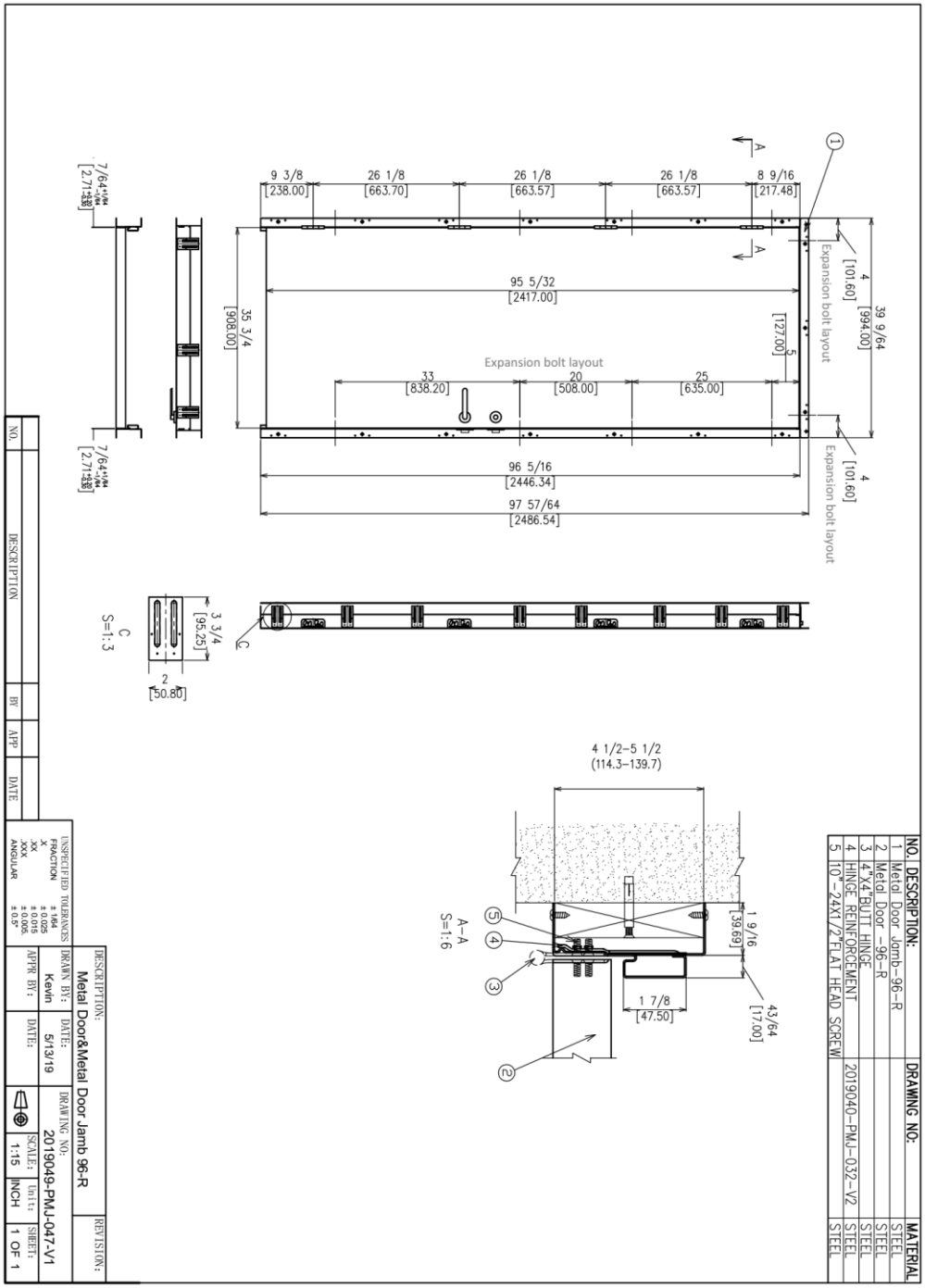
6 APPENDIX A FIRE DOOR ASSEMBLY DRAWING



7 APPENDIX B PHOTOGRAPHS

Photo 1.
Sustained flame on top right corner of the out-swing door on 22 minutes

Photo 2.
Unallowable perpendicular displacement at a 3/4 height of latch edge of in-swing door on 30 minutes

Photo 3.
The strike jamb adjacent to the door latch edge of out-swing door after the hose stream test

Photo 4.
Details of fire door frame after hose stream test

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8 LAST PAGE & REVISION SUMMARY

DATE	SUMMARY	REPORTER	REVIEWER
August 25, 2020	Original	Adolph Chen	Jason Xu