

## Filing Category: FIRE-PROTECTED OPENINGS

### WON-DOOR SPECIAL FIRE DOORS

**WON-DOOR CORPORATION**  
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#### 1.0 SUBJECT

Won-Door FireGuard 20, FireGuard 60, FireGuard 90, FireGuard 180, FireGuard 60TR, FireGuard 90TR and FireGuard 180TR Special Fire Doors.

#### 2.0 DESCRIPTION

##### 2.1 General:

The Won-Door horizontal sliding fire door assemblies protect openings in accordance with Sections 504.6.2, 713, and 1003.3.1.2 of the *Uniform Building Code*™ (UBC) and Sections 705.8, 706.6, 714 1003.3.1.3.2 and 1003.3.1.3.3 of the *International Building Code*® (IBC). The doors are smoke and draft-control assemblies in accordance with UBC Standard 7-2, Part II, and Section 714.2.3 of the IBC.

The horizontal sliding fire door assemblies protect openings in accordance with Sections 708.2, 709.3, 717.0, 1017.4.3 and 1017.4.4 of the *BOCA National Building Code*/1999 (NBC), and Sections 705.1.3, 1012.2 and 1012.4 of the 1999 *SBCI Standard Building Code* (SBC).

##### 2.2 Materials:

The doors consist of two independently suspended and parallel steel curtains separated by a cavity. An extruded metal post connects to and closes off the movable end of the door. A gasket of polyvinyl chloride material is riveted along the top and bottom of the door for smoke and draft control. The power operating system includes a controller, emergency battery power supply and drive motor assembly. The construction of the doors is essentially the same for all models; the differences are that the cavity of doors designated "TR" is filled with an 8 pcf (64 kg/m<sup>3</sup>) ceramic liner and the construction of the surrounding drywall construction (pockets, header and strike wall) changes to meet the basic fire requirements for the hourly fire-resistance rating.

##### 2.3 Operation:

The doors are programmed to close upon sensing a fire condition. The doors automatically move to a closed position, and the system includes overrides that allow the doors to open to a predesignated width for egress after which the doors automatically reclose and seal. The predesignated opening width must be approved by the building official.

The door systems include limit controls and sensors that detect and control the door position at all times. Logic circuitry in the control unit prevents the door from opening when heat sensors detect a fire on the other side of the door. Low-charged battery conditions cause the fire door to close.

##### 2.4 Means of Egress:

The FireGuard door systems comply with the special door requirements of Section 1003.3.1.2, Exception 2, of the UBC; and the horizontal sliding door requirements of Section 1003.3.1.3.3 of the UBC, Section 1017.4.4 of the NBC and Section 1012.4 of the SBC.

In jurisdictions enforcing the UBC, the door systems are recognized for use under Section 1003.3.1.2 of the UBC in a means of egress when serving an area having less than 50 occupants in any occupancy other than a Group H Occupancy. When the doors are used in smoke barriers in other than Group A and H Occupancies, or in elevator lobby separations, the occupant load limitation of 50 occupants is waived.

In jurisdictions enforcing the IBC, the door systems are recognized for use under Section 1003.3.1.3.3 of the IBC in a means of egress in any occupancy other than Group H, without occupant load limitations.

In jurisdictions enforcing the NBC, the door systems are recognized for use under Section 1017.4, Exception 5, as a means of egress. In jurisdictions enforcing the SBC, the door systems are recognized for use as egress doors under the exceptions to SBC Section 1012.2.2.

##### 2.5 Opening Protection:

The FireGuard 90 TR and 180TR door systems are recognized for use in up to 50 percent of the wall length, in each story, of area separation walls in accordance with Section 504.6.2 of the UBC, provided the building is protected throughout by an approved sprinkler system complying with Chapter 9 of the UBC, the door is activated by an approved smoke detector when the opening exceeds 25 percent of the length of the area separation wall, and each installation is approved by the building official having jurisdiction. The Fire-Guard 90 TR door system is used in area separation walls of two-hour fire-resistive construction, and the FireGuard 180TR door system is used in area separation walls of four-hour fire-resistive construction.

The FireGuard "TR" door systems are recognized for use in fire walls in accordance with Section 705.8 of the IBC, and for use in fire barrier walls in accordance with Section 706.6 of the IBC.

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The FireGuard "TR" door systems are recognized for use in fire walls in accordance with Section 708.2 of the NBC and in fire separation assemblies in accordance with Section 709.3 of the NBC. The door systems are recognized for use in wall openings in accordance with Section 705.1.3 of the SBC.

#### **2.6 Fire-resistance Rating:**

The numerical designation of the door corresponds to the fire-resistance rating in minutes as determined in accordance with UBC Standard 7-2, UL 10B and NFPA 252. The FireGuard 20 has a 20-minute fire-resistive rating; the FireGuard 60 and 60TR have one-hour fire-resistance ratings; and the FireGuard 90 and 90TR have one- and one-half-hour fire-resistance ratings; the FireGuard 180 and 180TR have three-hour fire-resistive ratings.

#### **2.7 Smoke and Draft Control Assemblies:**

Doors required to be smoke- and draft-control assemblies have a spring-loaded cap, formed of extruded aluminum with integral slots holding round PVC seals on each side, mounted on the lead post, which must fit tightly into the wall-mounted striker cavity. PVC sweeps are mounted around the perimeter of the door to seal against the floor, track system and side walls of the assembly storage pocket. Each face of the sliding door has continuous PVC sweeps top and bottom to seal against the track system and the floor. A cap must be installed in the top of the striker so that a continuous surface from the track into the striker cavity is provided.

#### **2.8 Identification:**

Each door and automatic closing device bears a label with the Won-Door Corporation name, the evaluation report number (ICBO ES ER-3890), the fire-resistance rating, the temperature rise developed on the unexposed surface of the door after the first 30 minutes of fire exposure (450°F maximum for TR doors), and the name of the quality control agency (Enterprise Engineering). Smoke and draft control assemblies are labeled with the letter "S," following the hourly fire rating.

### **3.0 EVIDENCE SUBMITTED**

A quality control manual, and reports of tests in accordance with UBC Standard 7-2, Part I; UL 10B; NFPA 252; UBC Standard 7-2, Part II; UL 1784; and UBC Standard 7-8.

### **4.0 FINDINGS**

**That the Won-Door Special Fire Doors described in this report comply with the 1997 *Uniform Building Code*<sup>™</sup>, the 2000 *International Building Code*<sup>®</sup>, the BOCA *National Building Code*/1999 and the 1999 *SBCI Standard Building Code*, subject to the following conditions:**

- 4.1 The door assembly is installed in accordance with the manufacturer's instructions, the fire door listing and this report.**
- 4.2 Use in a means of egress is limited to conditions of this report.**
- 4.3 In jurisdictions enforcing the UBC, IBC or NBC, where a fire-resistance rating is required, doors with dimensions exceeding 12 feet (3658 mm) length or 10 feet (3048 mm) height may be installed when approved by the building official. A certificate of inspection from an approved agency must be furnished as noted in Section 713.3 of the UBC, Section 714.2.5.2 of the IBC or Section 717.2.2 of the NBC.**
- 4.4 In jurisdictions enforcing the SBC, installation of the door systems must be in accordance with NFPA 80.**
- 4.5 Fabrication is at the Salt Lake City, Utah, facility under a quality control program with inspections by Enterprise Engineering (AA-617).**

**This report is subject to re-examination in two years.**