

# DHSI

## DOOR AND HARDWARE SYSTEMS, INC.

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### **08710 FULL SPEC with Typical Hardware Sets**

## **GASKETING OF DOORS AND FRAMES (02-02-09)**

You may find it easier to e-mail us your specification and we will e-mail it back to you with proposed changes highlighted in yellow. We will do this for any specification writer or architect for use on a standard specification or for use on a specific job. We realize specs may not include all information.

The following specifications are in CSI format. You may need to change paragraph letters to coincide with your own sequence. You can copy and paste into a specification and then delete current references and manufacturer's names until they show evidence of compliance. A few recommendations such as 1.04 A on substitutions are of a general nature in our recommendations.

#### 1.02 REFERENCES:

A. Documents and Institutes that shall be used in estimating, detailing and installing the items specified:

1. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People. CABO/ANSI A117.1-1999
2. NFPA 80 - Fire Doors and Windows. 1999 Edition.
3. NFPA 101 - Life Safety Code. 2000 Edition
4. NFPA 105 - Installation of smoke-control door assemblies 1993 Edition
5. Local and state building codes.
6. UL Labeled for Rated Doors.
7. DHI - Door and Hardware Institute.
8. SDI - Steel Door Institute.
9. AWI - Architectural Woodwork Institute.
10. UBC Standard 7-1 and 7-2(1997), IBC positive pressure where applicable.
11. UL 10 C (1998) where applicable.
12. NFPA 252 (1999) where applicable.

#### 1.04 QUALITY ASSURANCE:

A. Substitutions: Manufacturers and model numbers listed are to establish a standard of quality and design. The architect must approve all product substitutions. Any request for substitutions must be submitted 10 days before bid date, to allow sufficient time for addendum to be added to the bid document. In accordance with Section 016000, required data and physical samples must be provided.

C. Manufacturer's Qualifications for sealing systems:  
To ensure and validate the proper closing, latching, sealing and securing of a door the manufacturer of gasketing shall provide a written program of Field Quality Assurance and appropriate architectural details. The program shall be acceptable to the architect and provide the site superintendent and installers machining and installation documentation as well as forms indicating the industry acceptable standards for tolerances.

When a warranty is requested, the manufacturer will also include the "Installation Checklist", "Industry Guidelines" and Architectural Details, which will be job specific. It is suggested these be used for verification of acceptability of related door, frame and hardware components prior to installing gasketing.

An acceptable program can be found by DHSI here: <http://dhsi-seal.com/inspectionforms.htm>

Evidence shall be provided that the STC specified and/or required by local code, as well as any requirements for smoke gasketing can be maintained under industry allowable tolerances for warp (AWI) and plumb (SDI). Evidence shall be provided that the gasketing system can meet and maintain

this criteria under the Field Quality Assurance Standards. If a substitute to the listed manufacturer for gasketing is desired, proof of compliance with the specification and with specific products shall be submitted prior to bid. See 3.03 A

Where a positive pressure label is required, it is the responsibility of the door manufacturer to provide a Category A label; or where a Category B label is furnished, the sealing system for either a Category G or H must meet the Performance Criteria contained in this specification.

- D. Qualification of Installers of the Components of Life Safety Products:  
The site supervisor shall be responsible for informing each component installer, or their supervisor, of the requirements in this specification and those parts of the DHSI forms which are applicable. The site supervisor must be informed of any condition that is beyond tolerance and/or adversely affects the operating assembly. Any conditions that are not within tolerance must be acknowledged in writing to the architect before proceeding. The architect will inform the GC as to corrective course of action.

See Section 2.02, O, #2 for installation procedures using threshold and frame alignment brackets for proper setting of frames.

- E. Mock-ups: Unless otherwise specified by the architect  
The General Contractor shall provide operating assemblies for 2 complete entry and 1 connecting room opening.  
A sample of the carpet with pad or substrate, or threshold where shown, per the architectural details, shall be installed at the frame.

The opening system shall operate within the criteria and standards established.  
The General Contractor shall adjust the door bottom and demonstrate express checkout procedure if a security door bottom is specified.

#### 1.05 DELIVERY, STORAGE AND HANDLING:

- C. Storage:  
1. Store DHSI products in a flat, not upright condition

#### PART 2 - PRODUCTS:

##### 2.01 MANUFACTURERS:

- A. List of manufacturers represented in this section:  
Door and Hardware Systems Inc. – [www.dhsi-seal.com](http://www.dhsi-seal.com)  
17 Silver Street  
Rochester, New York 14611  
TEL: 585-235-8543 or 800-836-8085  
FAX: 585-235-0431  
e-mail: [info@dhsi-seal.com](mailto:info@dhsi-seal.com)  
contact: Robert Rissone, President

##### 2.02 MATERIALS:

- A. Thresholds, Weather strip and Gasket:
2. Interior thresholds at Guest Entry:
- a. Provide a solid color, fire rated material. At guest entry, top of threshold shall be 1/8" higher than carpet height and allow the carpet to be secured within the threshold. Thresholds shall be pre-cut by the manufacturer for exact width of frame opening. A threshold shall be used as a template to ensure proper width of frame. Thresholds shall be removed during construction and replaced prior to installing rugs. Brackets attached to the frame and within the 5/8" stop projection, and interlocking with the threshold, shall be furnished by the manufacturer at the time of setting the frame and will ensure proper frame alignment and avoid twist. Any thresholds that do not interlock with the brackets at the time of final installation shall serve as quality assurance that the frames need to be reset properly.

- 1) Provide DHSI #FT 2.75 at guest entry.
  - 2) Provide DHSI #FA/SB frame alignment /security brackets.
- b. Construction: Thresholds shall be manufactured from a composition of PVC (or equal material that complies with the following), ADA requirements for change of level, meets or exceeds ASTM E 648 Class 1 Flammability requirements. Thresholds shall incorporate a carpet acceptance cove of a minimum of 3/8" of carpet and be contoured downward from its top of level a minimum of 1/16" to the distal point of contact with the carpet so as to "grip and encapsulate" the carpet. The carpet pad shall not be part of the recess.  
The overall height of the threshold shall be determined by the thickness of the pad and the carpet height and shall remain within the design parameters for ADA etc.
- c. Product Performance and Technical Data:  
Hardness: ASTM D 2240 - not less than 85 Shore A  
Abrasion Resistance: ASTM D 3389- 0.22 mg/cycle. meet or exceed ADA requirements  
Slip Resistance: ASTM D 2047  
Fire Resistance: ASTM E 648/NFPA 253(Critical Radiant Flux) Class 1  
ASTM E 662/NFPA 258 (Smoke Density)- 450 or less
3. Connecting room details:  
Provide door bottom selected and as detailed by the architect.
    - a. Provide DHSI #CS36 door bottom per DHSI Connecting-2-CTC Detail unless otherwise shown.
    - b. If code or property standards require a threshold to be the full depth of the frame, use the DHSI #CTC-ADJ "Adjustable" threshold (up to 12 3/8") and list depth of frame. If a full threshold is not supplied, provide one or two DHSI FT 2.75 thresholds as may be required by local fire code – see DHSI Connecting Details.
  4. Weather strip and Gasket (see also section 3.03 FIELD QUALITY CONTROL):  
Manufacturer shall show evidence that they can provide an STC of 30 on guest entry openings. Evidence shall be provided that this STC, as well as any requirements for smoke gasketing can be maintained under industry allowable tolerances for warp (AWI) and plumb (SDI). Evidence shall be provided that the gasketing system can meet this criteria and maintain this criteria under the Field Quality Assurance Standards.
    - a. Any opening, allowing light to pass the frame perimeter (exclusive of door bottom) shall be rejected. (U/L 1784 and NFPA 80)
    - b. Gasket that binds the door, requiring more than 15lbf to release the latch (per NFPA 101) is unacceptable.
    - c. Filing of strike plates is unacceptable. (NFPA 80)
    - d. Provide DHSI #105 "Cush 'N' Seal".
    - e. To avoid self-adhesive failure, due to stretching during installation, self adhesive frame seals shall be inelastic and shall not be subject to stretching. Failure of a smoke seal voids the Listing of the opening.
  5. Door Bottoms: Where door bottom seals are to be used, as listed in the hardware sets, provide DHSI #AMDB3-2, #CS-36, or #SSDB3 or #SAS "Secur-A-Seal" as selected and detailed in the hardware sets. Where an undercut is desired at the guest entry between the bottom of the door and the flooring surface for HVAC design, provide the "AMU" option, "Allowance and Means for Undercut" and suffix the DHSI door bottom with "x AMU". If a "Solid Wood Lock Edge" is desired on a mortise door bottom, suffix part # with "x SWE".
  6. Meeting Stile Gasket: When a metal astragal is not permitted due to the operation of hardware or by code restrictions, provide a self-adhesive seal at the meeting stiles. Provide DHSI #SA surface astragal. Where a mortise astragal is listed provide a DHSI #A-MA3 adjustable mortise astragal. Provide DHSI #105 "Cush 'N' Seal" if metal astragal is used.
  7. Where positive pressure labeling is required, surface applied intumescent, on either the door or frame is unacceptable.
  8. Screw-on type weatherstripping on frames is unacceptable.

9. Where DHSI frame seals, door bottoms and transition strips are listed, it is intended that all openings requiring similar products be DHSI products.
- B. Privacy Guards:
1. Provide only a product that cannot be used to hold open a fire door, automatically and quietly disengages upon the closing of the door, and is easily engaged and released. Swing bar type products are not acceptable.
    - a. Provide DHSI "Secur-A-Latch".

### PART 3 - EXECUTION:

#### 3.01 EXAMINATION:

- A. Examine doors, frames and related items for conditions that would prevent the proper application of any finish hardware items. Do not proceed with installation until all defects are corrected.
- B. It is recommended the GC and installers download the DHSI Installation Checklist forms for inspecting related products for satisfactory tolerances before installation of doors; and for satisfactory clearances after hanging and prior to installation of gasketing products. Forms include industry guidelines and recommendations for inspecting and maintaining the requirements required in NFPA 80, NFPA 101, ADA and any other applicable codes.  
<http://dhsi-seal.com/inspectionforms.htm>

#### 3.02 INSTALLATION:

- A. Frames shall be prepared to receive gasketing per the manufacturer's installation instructions and the #50 grit sand paper in order to ensure proper adhesion. Frames not prepared properly shall be subject to rejection. New material shall be installed at no cost to the owner and in a timely manner.
- B. Where DHSI thresholds are specified, installer shall not further cut to width or trim the thresholds to compensate for frames set improperly.
- C. Where #FA/SB "Frame Alignment/Security Brackets" are furnished, installer shall not modify threshold factory cuts if threshold does not align with brackets, frame must be adjusted.
- D. See 1.05 Qualification of Site Superintendents and Qualification of Installers.

#### 3.03 FIELD QUALITY CONTROL (see also section 2.02, A, #4 Materials):

- A. After installation has been completed, obtain the services of a qualified hardware consultant to check for proper application of finish hardware, according to the finish hardware schedule and check all hardware for adjustment and proper operation.
- B. Inspection:
  1. Any light passing the frame perimeter shall be cause for rejection (NFPA 80 )
  2. Door shall close from 70 degrees and latch freely without latch or hinge bind. (NFPA 101)
  3. The closing speed for ADA shall not exceed 3 seconds to within 3 inches of the latch position. Lever torque shall not exceed ADA (NFPA 101 Life Safety) of 15 inch pounds.
  4. Filing of strike plates to relieve lock bind is unacceptable (as per NFPA 80 = no field modifications of fire tested components is allowable).
  5. If issues with door bind are encountered, it is suggested the "Industry Standards and Recommended Guidelines For Installation" be used to govern field inspection.  
<http://dhsi-seal.com/inspectionforms.htm>
  6. Field inspection and acceptance of sealing product and any related hardware, will be based upon the criteria of "Nationally Referenced Standards (including NFPA 80 )."
  7. If a problem with the sealing of doors and hardware occurs the contractor and/or distributor shall first contact DHSI. A DHSI consultant will attempt to determine the cause of the problem and determine to what extent it is a manufacturing error, such as door machining for hinge backset or depth of mortise, or an out of tolerance condition for plumb, or installation error. DHSI will recommend solutions.

8. To avoid self-adhesive failure, due to stretching during installation, self-adhesive frame seals shall be inelastic and shall not be subject to stretching. Failure of a smoke seal voids the Listing of the opening.

3.06 SAMPLE HOTEL HARDWARE SCHEDULE:

A. Hardware items listed in the hardware sets are listed in the catalogs of the following manufacturers:

Weather strip	DHSI (DHS)
Frame Seal Gasket	DHSI (DHS)
Thresholds	DHSI (DHS)
Door Bottoms	DHSI (DHS)
Security Door Guards	DHSI (DHS)

NOTE: Architectural Details are furnished with every quotation and should be forwarded by the estimating department to the detail department to be included in the submittal package.

NOTE: Where frame seals, door bottoms and/or transition strips are listed, it is intended that all openings requiring similar products be DHSI products.

NOTE: The products listed are a guideline for hotels. Request typical sets for hospitals and other commercial projects. Choices of door bottoms, colors and details selected from DHSI drawings will vary by job.

**Sample Finish shown, Consult DHSI for options**

**HW-1 TYPICAL GUEST ROOM ENTRY**

**FINISH MFG**

3 EA. HINGES			
1 EA. CLOSER			
SPRING HINGES OR CLOSERS AS REQUIRED			
1 EA. CARD LOCKSET	Section 08711		
1 EA. PRIVACY GUARD	#SAL	626	DHS
1 EA. DOOR VIEWERS			
1 EA. FLOOR STOP			
1 SET FRAME SEAL GASKET	#105	DB	DHS
1 EA. THRESHOLD	#FT 2.75	BLK	DHS
1 SET FRAME ALIGNMENT BRACKET	#FA/SB		DHS

The architect shall choose one of the following door bottoms, determine need for "AMU" suffix and color choice:

1 EA. DOOR SWEEP	#CS-36 X AMU	DB	DHS
1 EA. DOOR BOTTOM	#AMDB3-2 X SWE X AMU		DHS
1 EA. DOOR SWEEP	#SSDB3-2 X AMU	OW	DHS
1 EA. DOOR SWEEP	#SAS-36 X AMU	OW	DHS

NOTE: Provide 2 door viewers on H/C guest rooms.

SEE SUBMITTAL DETAIL SHEET FOR SWE AND AMU OPTIONS  
AS AN EXAMPLE, WE HAVE INCLUDED THEM IN THIS TYPICAL SET

**HW-2 TYPICAL CONNECTING ROOM DOORS**

6 EA. HINGES			
2 EA. DEADLOCK			
2 EA. CONNECTING ROOM LATCHSET			
2 EA. WALL STOP			
2 EA. PRIVACY GUARD	#SAL	626	DHS
2 SET FRAME SEAL GASKET	#105	OW	DHS
1 EA. THRESHOLD, ADJUSTABLE	#CTC-ADJ x frame depth		DHS
2 SET DUST PLUGS	#DP .250		DHS

The architect shall choose one of the following door bottoms and color choices:

2 EA. DOOR SWEEP	#CS-36	DB	DHS
2 EA. DOOR BOTTOM	#AMDB3-3		DHS
2 EA. DOOR SWEEP	#SSDB3-3	OW	DHS
2 EA. DOOR BOTTOM	#SAS-36	DURO	DHSI

NOTE: If code or property standards require a threshold to be the full depth of the frame, request DHSI #CTC-ADJ "Adjustable" threshold (up to 12") and list depth of frame. If a full threshold is not supplied, provide one or two DHSI FT 2.75 thresholds as may be required by local fire code – see DHSI Connecting Details.

**HW-3 TYPICAL EXTERIOR**

3 EA. HINGES
1 EA. EXIT DEVICE
1 EA. RIM OR MORTISE CYLINDER AS REQUIRED
1 EA. DOOR PULL

1 EA.	CLOSER/STOP			
1 SET	WEATHERSTRIP	#105	DB	DHS
1 SET	DUST PLUGS	#DP .250		DHS

The architect shall choose one of the following door bottoms, thresholds and color choices:

1 EA.	1/4" RISE THRESHOLD REQUIRED WITH CS SWEEP			
1 EA.	1/2" RISE THRESHOLD OPTIONAL WITH SSDB SWEEP OR AMDB X CC			
1 EA.	DOOR BOTTOM	#AMDB3-3 X AMDB3-CC		DHS
1 EA.	DOOR SWEEP	#CS-36	DB	DHS
1 EA.	DOOR SWEEP	#SSDB3-3	DB	DHS

NOTE: With pairs active, use #SA Surface Astragal  
With pairs inactive, use #105 on typical 'Z' Astragal by HM mfg.

#### **HW-5 TYPICAL MEETING ROOM PAIR**

6 EA.	HINGES			
2 EA.	PUSH/PULL OR FIRE EXIT HARDWARE (ELEC RETRACT) AS REQUIRED			
2 EA.	ELECTRO-MECHANICAL HO CLOSERS			
2 EA.	KICK PLATES			
2 EA.	WALL STOPS			
1 SET	FRAME SEAL GASKET	#105	DB	DHS
1 SET	DUST PLUGS	#DP .250		DHS

The architect shall choose one of the following astragals for pairs active.

Use "CNS" on inactive leafs.

1 EA.	MTG STILE SEAL	#SA	DB	DHS
1 EA.	MTG STILE SEAL	#AMA3-2 for non-rated		DHS

The architect shall choose one of the following door bottoms:

2 EA.	DOOR SWEEP	#CS-36	DB	DHS
2 EA.	DOOR BOTTOM	#AMDB3-3		DHS
2 EA.	DOOR SWEEP	#SSDB3-3	OW	DHS

#### **HW-6 TYPICAL U/L STAIRWELL SINGLE**

3 EA.	HINGES			
1 EA.	FIRE EXIT HARDWARE OR LEVER PASSAGE AS REQUIRED			
1 EA.	CLOSER			
1 EA.	FLOOR STOP			
1 SET	FRAME SEAL GASKET	#105	DB	DHS
1 EA.	THRESHOLD	#HS 3.50	BLK	DHS
1 SET	DUST PLUGS	#DP .250		DHS

The architect shall choose one of the following door bottoms and color choices:

1 EA.	DOOR SWEEP	#CS-36	DB	DHS
1 EA.	DOOR BOTTOM	#AMDB3-3		DHS
1 EA.	DOOR SWEEP	#SSDB3-3	DB	DHS

#### **HW-7 TYPICAL U/L LAUNDRY JANITOR**

3 EA.	HINGES – Swing Clear			
1 EA.	STOREROOM LOCKSET			
1 EA.	CLOSER			
1 EA.	WALL STOP			
1 SET	FRAME SEAL GASKET	#105	DB	DHS
1 SET	DUST PLUGS	#DP .250		DHS

The architect shall choose one of the following door bottoms, thresholds and color choices:

1 EA.	DOOR SWEEP	#CS-36	DB	DHS
1 EA.	DOOR BOTTOM	#AMDB3-3		DHS
1 EA.	DOOR SWEEP	#SSDB3-3	DB	DHS
1 EA.	TRANSITION STRIP	#HS 3.50 if carpet to concrete or VTC		DHS

GC to coordinate appropriate flooring transition strip if by flooring supplier.

The Listing for a fire door now includes a smoke seal as necessary. It is no longer a "Recommendation" in Life Safety. CONTACT DHSI FOR A FULL LIST OF TYPICAL OPENINGS AND DETAILS.

**Request DHSI electronic architectural details for other transition requirements such as carpet to tile.**

END OF SECTION.

08710 GEN-09 2-02-09

PROJECT NAME 08710 (2-02-09) - 6 DOOR GASKETING, SEALS, AND THRESHOLDS