

DHSI

Door and Hardware Systems, Inc.

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SECTION 08710 SPEC

GASKETING OF DOORS AND FRAMES (02-27-06)

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, however, **the sections highlighted are absolutely necessary.**

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. The program shall be acceptable to the architect and provide the site superintendent and installers with knowledge as to the industry acceptable standards for tolerances in manufacturing and field installation. The program shall create an audit trail of documentation for the inspection of pre-machined doors for machining and sizing, including hinge backset and depth of mortise, width and height. An "Installation Checklist" and the "Industry Guidelines" shall also be furnished for verification of acceptability of related door, frame and hardware components prior to installing gasketing. These forms shall be part of the submittal process and shall be acknowledged by the site supervisor and returned to the manufacturer on a timely basis.

1. <http://dhsi-seal.com/inspectionforms.cfm>

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 this criteria 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
13 Silver Street
Rochester, New York 14611
TEL: 585-235-8543 or 800-836-8085
FAX: 585-235-0431
e-mail: 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 that 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 bracket.
- 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/cucle. 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 "CS" door bottom and DHSI Connecting-2-C-07 Detail unless otherwise shown.
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)
 - 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, #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 "AMU". If a "Solid Wood Lock Edge" is desired on a mortise door bottom, suffix part # with "SWE".
6. Meeting Stile Gasket: When an 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.
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. Forms shall be furnished by the gasketing manufacturer 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 shall include industry guidelines and recommendations for inspecting and maintaining the requirements required in NFPA 80, NFPA 101, ADA and any other applicable codes. The DHSI forms must be acknowledged by the site supervisor:
 1. "Industry standards and recommended guidelines for installation".
 2. "Installation Checklist"

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.
- 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 (as per UL 1784 smoke test procedure).
 2. Door shall close from 70 degrees and latch freely without latch or hinge bind.
 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 (taken from 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. The "Industry Standards and Recommended Guidelines For Installation" shall govern field inspection.
 6. Field inspection and acceptance of product will be based upon the criteria of "Nationally Referenced Standards."

7. If problems with the operation of doors and hardware occur the consultant and DHSI shall attempt to provide suggestions to identify the cause and suggest a remedy. If a site visit is requested, the contractor shall notify the consultant in writing, including a description of the problem and what was done to solve the problem, and request a site visit. The consultant will determine the cause of the problem and determine to what extent it is product and / or installation error. If the cause is installation error, the consultant shall advise the architect what training is necessary and may elect to provide a written quotation for the training or refer the cost estimate to the appropriate manufacturer's local representative.

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: 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 and determine need for "AMU" suffix:

- | | | | |
|-------------------|----------------------|----|-----|
| 1 EA. DOOR BOTTOM | #AMDB3-2 X SWE X AMU | | DHS |
| 1 EA. DOOR SWEEP | #CS-36 X AMU | DB | DHS |
| 1 EA. DOOR SWEEP | #SSDB3-2 X AMU | OW | DHS |
| 1 EA. DOOR SWEEP | #SAS 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 |
| 2 SET DUST PLUGS | #DP .250 | | DHS |

The architect shall choose one of the following door bottoms:

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

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 13 1/2") and list depth of frame. If a full threshold is not supplied, flooring installer shall install double padding under the entire connecting room opening to provide a carpet threshold OR 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 and thresholds:

- 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 #A-MA3-2 for non-rated DHS

The architect shall choose one of the following door bottoms:

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

- 1 EA. DOOR BOTTOM #AMDB3-3 DHS
- 1 EA. DOOR SWEEP #CS-36 DB 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 DHSI
- 1 SET DUST PLUGS #DP .250 DHS

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

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

Most codes are now requiring gasketing on all fire doors and all corridor doors.
 CONTACT DHSI FOR A FULL LIST OF TYPICAL OPENINGS AND DETAILS.

END OF SECTION.

08710 GEN-08 2-27-06

PROJECT NAME 08710 (2-27-06) - 6 DOOR GASKETING, SEALS, AND THRESHOLDS