

DHSI
Door and Hardware Systems, Inc.

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SECTION 08730 SUBMITTAL
GASKETING OF DOORS AND FRAMES

2-27-06

DATE:

LOCATION:

ARCHITECT:

Project Architect:

Tel:

Fax:

CONTRACTOR:

Project Manager:

Tel:

Fax:

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.

PART 1 GENERAL

1.01 SUMMARY:

- A. Furnish and deliver all gasketing, thresholds and other hardware as listed, specified and required. Consult with the local County Design and Construction Department for current STC requirements and other fire code standards in the applicable building code.
- B. Related work specified elsewhere
 - 1. Hollow metal doors and frames
 - 2. Wood doors
 - 3. Finish hardware
 - 4. Guest Room Locking Systems

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.

1.03 SUBMITTALS:

- A. Comply with pertinent provisions of Section 01300.
- B. Hardware Schedule: Final hardware schedule shall be submitted in the manner indicated below. Coordinate hardware to insure proper size, thickness, hand, function and finish of hardware. The schedule is to be in a vertical form, organized into "hardware sets" mirror imaging the corresponding sets in the Finish Hardware Schedule and indicating complete designations of every item required for each door or opening. Include the following information:
 - 1. Type, style, function, size and finish of each hardware item.
 - 2. Name and manufacturer of each item.
 - 3. Fastenings and other pertinent information.
 - 4. Location of hardware set cross-referenced to indications on drawings both on floor plans and in door and frame schedules.
 - 5. Explanation of all abbreviations, symbols and codes contained in schedules.
 - 6. Mounting locations for hardware.
 - 7. Door and frame sizes and materials.
- C. Product Data: Product data shall be provided, in the form of, manufacturer's technical product fact sheets for each item of hardware. Include whatever information may be necessary to show compliance with requirements, including instructions for installation and for maintenance of operating parts and finish.

- D. Samples: Samples shall be provided as requested by owner or architect. All samples shall be returned to the finish hardware supplier when construction is completed.
- E. Templates: Templates of items to be supplied are to be furnished to each fabricator of doors, frames and other work to be factory-prepared for the installation of hardware. Fabrication shall not proceed by related manufacturers unless appropriate templates, including options selected, have been approved on the forms provided.
- F. Operations and maintenance data: This section may refer to 3.05 and indicate a choice of Option A or B. If it is not selected and referenced then the supplier of material listed in this Section shall furnish to the owner two copies of an owners operation and maintenance manual. The manual shall consist of a labeled hardcover three ring binder with the following technical information:
 - 1. Maintenance instructions for each item of hardware.
 - 2. Catalog pages for each product.
 - 3. Parts list for each product.
- G. The contractor shall provide DHSI, or the licensed DHSI distributor, or licensed consultant a copy of the Finish Hardware Schedule, Wood and Hollow Metal Door Schedules, along with the manufacturer's address, telephone and e-mail addresses. This shall be done in a timely manner so as not to adversely affect scheduling.

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.
- B. Supplier Qualifications: Suppliers shall be recognized architectural finish hardware suppliers, with warehousing facilities, who have been furnishing hardware in the projects vicinity for a period of not less than 2 years and who is or employs a DHI Certified A.H.C., who is available at reasonable times during the course of the work for consultation about products hardware requirements, to owner, architect and contractor.
- 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, where applicable.
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.

1.05 DELIVERY, STORAGE AND HANDLING:

- A. Marking and Packaging: Mark each item or package separately, with identification related to hardware set number.
- B. Delivery:
 - 1. Deliver individually packaged and properly marked at the proper time and location to avoid any delays in construction or installation.
 - 2. Where option A or B is selected in 3.05: At time of delivery, inventory hardware jointly with Hardware Consultant and hardware installer until each is satisfied that count is correct. If not specified, general contractor shall inspect or assign inspection.
- C. Storage:
 - 1. Store DHSI products in a flat, not upright condition

1.06 WARRANTY:

- A. All hardware products shall be covered by a 1-year factory warranty against defects in material and workmanship from the date of substantial completion of the project.

1.07 MAINTENANCE:

- A. Provide all adjustment and maintenance tools recommended by the manufacturer, and as supplied in the hardware sets. Deliver complete to the owner, with installation instructions.
- B. The Contractor shall coordinate the adjustment of hardware in this section with the general review and adjustment as provided for in Section 08710.

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:

1. Aluminum Thresholds: All thresholds shall conform to state and local handicap codes. The floor closer manufacturer shall supply floor closer thresholds. Supply from the following list of manufacturers:
 - a. Door and Hardware Systems Inc. (DHSI)
 - b. Pemko.
 - c. National Guard Products
 - d. Rixson. (Floor closers)
 - e. Zero International.
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. A manufacturer's standard threshold may be deemed compliant if the surface material to height of threshold is accomplished by the incorporation of a shim material for raising height and/or a floor levelling surface material equal to the Johnsonite-
http://johnsonite.com/products/subfloor_leveler.htm
 - 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 "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, #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 on pairs active. Provide DHSI #105 astragal when one door is active. Where a mortise astragal is listed provide a DHSI #A-MA adjustable mortise astragal as listed in the hardware sets.
 - 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.
 - 8. When the consultant is serving in a Strategic Alliance, the consultant shall coordinate all change orders for sealing systems materials with the Licensed DHSI distributor.

3.04 CONSULTANT'S FIELD SERVICES (Optional):

This is a fee-based option that combines the services of DHSI and those of the spec writer. It offers a greater degree of coordination to the site supervisor, architect and owner.

OPTION A. On site service by the spec writer:

Where the spec writer coordinates the distribution of a 3 ring binder that includes the installation instructions and cut sheets for all hardware including closers, panic exit devices etc. and responds to all requests by the site supervisor in regard to problems and/or questions on all hardware supplied.

OPTION B. Off site coordination by the spec writer:

The same as A except that requests for service and field visits are handled by e-mail and telephone.

For a complete explanation of the benefits in considering these options please refer to the introduction page of the specification and the DHSI website link <http://dhsi-seal.com/strategicalliance.cfm>

3.05 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.

HW-Set # to match 08710**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 leaves.

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	OW	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.

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