

“Quality Assurance Form for Inspecting Guest Entry Openings”

as prepared by DHSI

This is an educational aid which provides a service to property owners and operations personnel.

Acceptable performance for Property Standards should require manufacturers of gasketing materials to voluntarily test to conditions which replicate field allowable conditions for manufacturing and installation tolerances. Consult DHSI for architectural specifications.

Save the following e-mail address for answers to questions:

Bob@DHSI-seal.com President, DHSI

This report is mostly directed at Hotel locks that have latches and deadbolts. DHSI strongly recommends the use of automatic deadbolting locks. It is extremely important to understand how "teardrop" and other types of gasketing can still:

- adversely affect the deadbolting (and/or latching) of a lockset
- severely increase the torque on a lever beyond the 15 inch pound ADA limit
- cause the STC rating to fall from 32 to 24.

The proper choice of gasketing can eliminate these problems.

**We suggest you print all pages at this time.
It will be easier to view if printed in full color.**

Page 10 should be duplicated as a form for your staff.

Patents #5,577,349, #6,058,654, #6,266,924, #6,381,905, #6,442,901, #6,244,636, #7,062,881, #7,681,372, #8,051,605, #8,186,114, #8,209,909, #8,418,426, #8,966,841, #9,388,629 and Patents Pending

Quality Assurance at Guest Entry to ensure Guest Safety and Comfort

Inspection guidelines for proper lock operation, sound control, life safety code compliance, and maintenance reduction

This literature is copyright by Door and Hardware Systems Inc. and is meant to be used for specific hotel locations. Reproduction is not authorized.

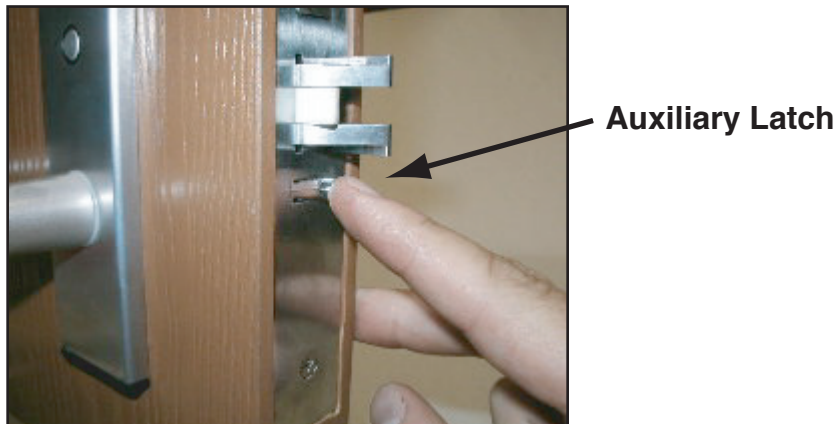
Common problems that allow easy unauthorized entry into rooms - Sometimes without an audit trail:

A. Auxiliary latch may be defective:

A common lock failure that allows one to easily “card” a lock.

1. The auxiliary latch, sometimes called the anti-pick latch, may not be working. This is the small 3/8” piece that rides on the frame and does not engage into the strike plate like the 3/4” latchbolt.

The following digital photograph shows a finger depressing the auxiliary latch. This latch is meant to ride on the strikeplate as shown with the strike plate next to the latch photo. Note: the positioning of the deadbolt, latch and auxiliary latch is different for each manufacturer; some have the deadbolt at the top and some at the bottom; the auxiliary latch may be in the middle or at the bottom. However, the function is still the same. Auto deadbolting, where the auxiliary latch is used to automatically throw the latch and the deadbolt on closing is a different consideration.



When the auxiliary latch rides on the strike plate it prevents you from depressing the latch. Open the door and look at the edge. Depress the anti pick latch and see if you can then depress the bigger 3/4” latch bolt. If you can, you have a lock defect. This allows a thief to easily card the lock. A thief would usually use a big screwdriver to open up the gap between the steel stop and the face of the door. This makes it easier to slip a flexible plastic flat material around the stop and force the latch to retract.

Recommendation: Call the lock manufacturer and request a representative visit the jobsite.

B.1 Verify that the latchbolt easily and fully extends into the strikeplate when allowing the Door to close from 70 degrees.

This is the test for ADA compliance for closing and latching. 90 degrees is for a fire test. Consult DHSI for code compliance. Do this test several times. Each time –push on the door after it closes. Does the latchbolt “click” again or do you see it jump in another 1/16” (that’s all it takes)? If so, your lock can easily be “carded”.

A latch must be 100% extended in order for the (anti pick) auxiliary latch to work:

1. If you can push on the door and you see the 3/4” latch throw or extend into the strike plate even just another 1/16” it means the anti pick is not working and you can easily card the lock. Again, you’ll usually see some face damage to the door where the thief used a screwdriver to open up the clearance in order to make it easier to “card” the lock.

The following digital photograph shows how one can depress the latch slightly, simulating the latchbolt not extending fully into the strike plate on the frame.



The next photo then shows depressing the auxiliary latch, simulating the door closed and the large 3/4” latch not fully extended into the strike plate.



The next photo shows a credit card simulating pushing against the latchbolt. The auxiliary latch should prevent this but if the latchbolt is not fully extended the card easily opens the lock.



Observations:

1. The most common cause of the latch not fully extending is pressure put on the latch by the “teardrop” seals which are self adhesive gaskets put on the stop of the frame for sound and smoke. "Teardrop seals" push the door away from the frame stop and put pressure on the latch, which then causes the latch to not fully extend into the strike plate.

See the below link for an example:

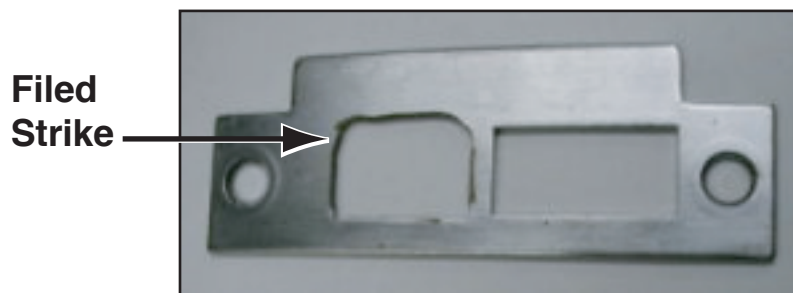
**ACTIVE
LINK**

For more info go to <http://dhsi-seal.com/pdf/CNS-105-digcomp.pdf>

2. A common ploy by a thief is to put toilet paper in the strike plate which would prevent the latch from fully extending. Inspect the opening for any foreign material filling the strike.

B.2 The strike plate is free of any material that could prevent the latch from engaging.

B.3 Inspect if the strike plate has been filed.



Filing of the strike plate to relieve pressure on the latch is an illegal modification to a fire frame opening. It also opens up the gap from the door stop to the face of the frame. This allows light to pass the frame which causes more sound transmission and more noise complaints because the frame gasketing has now failed. You also now have an illegal opening.

B.4 “Teardrop” and other Gasketing, and other causes for a latchbolt not engaging fully.

This may require consulting with DHSI but the following guidelines are both educational and are a means of identifying specific locations of problems; DHSI can then easily identify causes associated with an existing gasketing, door warp beyond industry allowable standards, depth of hinge machining, hinge backset machining, twist in the frame beyond allowable industry standards, and so on.

The DHSI Installation Checklist Forms are available online:

**ACTIVE
LINK**

For more info go to <http://www.dhsi-seal.com/inspectionforms2018.htm>

B.5 Verify that “No light can pass the frame perimeter”.

Many fire marshals are currently shining a light from the hallway: With the lights turned out in the room, can you see any light, exclusive of the door bottom?

Recommendation: If you have latch interference, if you can see light passing the frame perimeter, and if you believe you may have to order "Cush 'N' Seal" frame seals to solve the problems, you may have the following option:

You can order up to 5 sets of "Cush 'N' Seal" frame seals at the maximum discount plus UPS shipping. After you receive the product, you must fill in the installation checklist form. The forms must be completed **before** "Cush 'N' seal" is installed, and **after** the existing seals are removed. If, while performing the installation checklist test, there is any bind at any point on the door frame, on the hallway side or room side, call DHSI before proceeding. If the door now latches freely and if there is at least one credit card clearance all the way around the door and frame on both the hallway side and the room side, then DHSI states that their seals will not adversely affect the closing and latching of the door.

NOTE: you are supposed to have a minimum **two** credit cards clearance. You may only need one credit card clearance = **1/2** the minimum industry standards.

Resulting Recommendation: Replace the gasketing with “Cush ‘N’ Seal” frame gasketing. It can seal a door over 1/4” warped or out of plumb without any excess pressure on the latch. Ask DHSI for smoke test and sound reports that actually prove this with field simulated conditions that replicate all these problems. The reports actually compare competitive products in the same opening. “Cush ‘N’ Seal” can allow the latch to get almost 3/16” closer to the stop because of its patented design features. This ensures smoother latch extension. If you want a condensed version of the STC report from DHSI, contact DHSI at: info@dhsi-seal.com

C. The gap between the door and the lock edge of the frame should not be more than 2 credit cards thickness-possibly 3. (a credit card is 1/32” thick)

An excessive gap between the inside door edge and the frame defeats the anti pick:

1. The small 3/8” (approximate) auxiliary latch usually has to be depressed more than 1/2 before it prevents you from depressing the 3/4” latch. This is not the same as the problems we have discussed where the 3/4” latch is not fully extended (reference section B.1, pages 3 & 4).

The following digital photo shows a finger depressing the auxiliary latch partially.



The next photo shows a second finger depressing the 3/4" latch while the auxiliary latch is partially depressed.



If you have this condition your guest entry lock can easily be bypassed or “carded”.

2. Open your door and inspect how your lock works. The clearances can easily add up and then cause a problem. Your lock may be subject to easy entry by a thief.
3. If doors are undersized 1/16” in width, which is allowable, and the frame is twisted 1/16” out of spec which is also the allowable limit for field installation, and you have the maximum clearance of 1/8” between the door and the frame, then you have a problem. The door is beveled so that the high side is to the inside from where you are looking. This means the centerline of the anti pick is about 1/32” more away than it appears. Add up the dimensions and you have a door that appears a little bit wider but you have a door that has a lock that may easily be carded. The gap is too wide!

Recommendation: You may need to consult with DHSI on how to properly shim a door.

You may be able to shim the door to create a reveal of only 2 credit cards thickness (1/16"). Consult with DHSI for methods of shimming. You cannot expect your staff to completely know the professional requirements of a qualified carpenter for adjusting and altering tolerances. DHSI can provide illustrated forms on how to shim a door and how to adjust and compensate for doors and frames installed improperly. This is outside the parameters of the QA Assistance Program presented here.

Consult DHSI for further details. These details address considerations that can advise you how to:

- a. Pull the door away from the frame if the door is rubbing on the frame.
- b. Push the door closer to the frame and close up the gap.
- c. Tilt the door into the frame and make it latch more easily if it is hinge bound.

**D. Spread frames at the base to defeat the auxiliary latch and "card" the latchbolt.
This allows kicking out the hinge and/or strike jambs to open up the gap at the lock.**



The picture to the left purposefully exaggerates the gap for easier viewing.

Spreading the frame at the bottom opens up the gap at the auxiliary latch as shown. The frame spread is exaggerated to show the 3/8" auxiliary latch not touching the frame. The auxiliary latch could be depressed half way and still not be operating. If the auxiliary latch were to be depressed only **half** way, there would appear to be a door to frame gap of about 1/8", which might **seem** acceptable, except that it may render the auxiliary latch useless.

You also need to remember that you are looking at the **high** side of the bevel, so an apparent 1/8" gap means the gap at the centerpoint of the latch is closer to 3/16", possibly rendering the anti-pick feature useless. Hence, one could bypass the latch with a credit card.

1. Welded frames (frames welded at the top corner and appear to be smooth on the mitre) and frames anchored on the face with multiple screws (Timely and Rediframe) are not normally subject to this technique.

DHSI is not recommending any specific frame. DHSI is only discussing alternatives and some of the resulting considerations for security. DHSI recognizes the benefits of a KD frame specification. We recognize that where a specification requires welded frames it is common to substitute a non-welded frame. One needs to recognize that there are security issues which must be addressed and then a cost effective solution be found. If one chooses a KD frame, then one should consider the DHSI transition with the #FA/SB and/or a "Secur-A-Seal" security door bottom.

KD frames are less than the cost of a welded frame. If KD frames are specified, DHSI recommends the specification of a fire threshold and the “**Frame Alignment/Security Bracket**” which serves as an installation template for spreading to exact width and aligning” a frame. The common installation error of “twist” causes enormous problems with interfering with the closing and latching of the door. The use of a threshold and #FA/SB aligning bracket eliminates this problem at a cost savings over a welded frame. Even with a welded frame, we still recommend a threshold and #FA/SB because the welded spreader bars per the Steel Door Institute (SDI) are for **temporary** shipment purposes and are **not** designed to act as “spreader bars”. **This is the most common misconception in the door and hardware industry.** These welded spreaders are to be removed **prior** to installation of the frame.



The #FA/SB
"Frame Alignment /
Security Bracket"
with the DHSI
#FT 2.75 Transition

Patent #7,062,881
and patents pending



We recommend that you review the most current standards for gasketing and “Performance Standards” for your hotel. These are minimum property standards (MPS) for operating performance. These frames are normally anchored at the bottom with screws into the **face** of the frame (the flat 2” section that is parallel to the face of the wall) with exposed screws. Some use screws hidden under the drywall or base moulding. It is a common technique to remove the screws and spread the frame the additional 1/8” (approximate) in order to card the lock and/or “pop” the latch free of the frame.

Recommendation: Consult DHSI for alternatives to anchoring the frame at the base with special retrofit anchors. Also, consult DHSI for patented fire rated thresholds that also have a design feature that prevents the spreading of frames even with drywall exposed screw fasteners.

The following is the most serious and least known method for bypassing guest room entry door security, without any audit trail if the lock is interrogated for card identification:

E. With gaps under the doors one is easily able to use a “hook tool” to open the door:

1. Imagine if your arm were thin enough and long enough and you could stand in the hallway, look at the gap under the door and then reach under the door and upwards to the lever handle and pull down. This would automatically release the door. There would be no record of unauthorized entry.

Recommendation: Visit our website and link to “Secur-A-Seal” security door bottom. Then click on the link to the “Hook Tool” to understand this problem and how to provide safety and security in this environment.

**ACTIVE
LINK**

For more info link to <http://dhsi-seal.com/securaseal.htm> and see the "Hook Tool"

DHSI
DOOR AND HARDWARE SYSTEMS, INC.

Contact Person: Robert Rissone, President

17 Silver Street, Rochester, New York 14611 TEL (585) 235-8543 FAX (585) 235-0431
Website: dhsi-seal.com e-mail: info@dhsi-seal.com

Page 8 of 10

Copyright QA-8-18

General Recommendations and other product considerations:

Consult with your operations department and/or your management company, for special assistance and programs made available by DHSI.

Property Standards should include the following, which should also be included in all architectural specifications:

1. A "Performance Standard" for acceptable manufacturers of sealing systems. Request a copy of this from DHSI for architects, specifiers and operations departments.
2. Any light passing the frame perimeter is unacceptable. (Any gap allows noise and smoke to pass)
3. Filing of strike plates to reduce latch bind violates NFPA 80 and is illegal.
4. Torque on the lever shall not exceed the ADA limit of 15 inch/pounds.

Property Standards are meant as guidelines and we recognize that there are local jurisdictions that may interpret and evaluate on a local basis the National Codes and Standards.

The specifying of door and hardware products and the needs of the Operations Departments must be more closely examined. DHSI has "Sealing Systems and Security Specifications" available to architects and hardware consultants. We invite you to discuss your operations considerations and architectural design considerations with DHSI.

Other DHSI products available:

- a. The patented "Secur-A-Latch" privacy hardware which eliminates the "banging" noises of doors that use the traditional "flip over" privacy hardware to hold a door open to "get ice in the middle of the night."

**ACTIVE
LINK**

View animated demonstration online at <http://dhsi-seal.com/securelatch.htm>

- b. The patented "AMU" (Allowance and Means for Undercut) door bottoms which block light and sound but still allow the return air needed for the bathroom fans and/or AC units.

Tightly sealed doors may not close because of a lack of air return for the bathroom fans or the air makeup for through-the-wall air conditioners.

Single and double door exterior openings have unique problems. Not sealing for humidity under extreme conditions such as in Florida can result in mold on wallpaper, beds and furniture.

DHSI products are unparalleled for sealing against "thermal bow" in doors. DHSI has unique complimentary products not shown on the website for unusual conditions.

**ACTIVE
LINK**

**Go online for full color brochure at <http://dhsi-seal.com/brochure.htm>
From the cover page, quickly navigate the **ACTIVE LINKS** shown.**

DHSI
DOOR AND HARDWARE SYSTEMS, INC.

Contact Person: Robert Rissone, President

Page 9 of 10

17 Silver Street, Rochester, New York 14611 TEL (585) 235-8543 FAX (585) 235-0431
Website: dhsi-seal.com e-mail: info@dhsi-seal.com

Copyright QA-9-18

"Quality Assurance Form For Inspecting Guest Entry Openings"

DATE: _____ Fax to: _____ e-mail: _____
Hotel Name: _____ TEL: _____ FAX: _____
Location and code #: _____ Person/title submitting: _____
Floor and room numbers covered: _____ Type of frame (DW,welded,Timely): _____

A. Auxiliary latch defective.
Room numbers failing: _____

B.1 Verify that the latchbolt easily and fully extends into the strike plate when allowing the door to close from 70 degrees.
Room numbers failing: _____

B.2 The strike plate is free of any material that could prevent the latch from engaging.
Room numbers failing: _____

B.3 Inspect if the strike plate has been filed.
Room numbers failing: _____

B.4 The latchbolt is not engaging fully - evident or only when pushing on the door the latch clicks in.
Room numbers failing: _____

B.5 **List** individual room numbers where condition exists. List as "all", etc:
No gasketing on door frame: _____
"Teardrop" gasketing currently on door frame: _____
Other type of gasketing (e.g. screw on stop applied): _____
DHSI "Cush 'N' Seal" installed on frame: _____

List openings where light can pass the frame perimeter (exclusive of the door bottom):

After removing gasketing, **list** the door opening numbers that have interference with credit card:

C. Does the gap between the door and lock edge exceed 2 credit cards thickness?
Room numbers failing: _____

D. Spread frames at the base to defeat the auxiliary latch and "card" the latchbolt.
List the room numbers where there is exposure to or actual violation at the base:

E. Gaps under the door: Is there a recognizable gap between the door and the floor? Yes ____ No ____
Existing condition:
Rug to Rug: no door bottom _____ with door bottom _____
Threshold: no door bottom _____ with door bottom _____

Copyright - DHSI QA Training Manual