

**BCAC Egress Item 32 (Also introduced to Healthcare) Man Traps / Control Vestibule – DRAFT**

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**IBC**

Proposed definition:

**Control vestibule.** A space with doors in series such that when one door is open the other door is interlocked and cannot be opened.

Insert new section as follows

**1010.2.15 Control vestibule.** *Control vestibules* shall be permitted **for security or environmental control in Groups F, H-5, and S and in Groups B, I-1, I-2, and M where the occupant load is less than 50.** Where doors in the means of egress are configured as a *control vestibule*, the *control vestibule* door locking system shall provide for egress. The *control vestibule* shall comply with all of the following:

1. On the egress side of each door of the *control vestibule*, an *approved* override shall be provided which deactivates the interlock of the door when that door is interlocked. Signage shall be provided with instructions on the use of the override.
2. Where an automatic sprinkler system or automatic fire detection system is provided, upon activation of such system the interlock function of the door locking system of the *control vestibule* shall deactivate.
3. Upon loss of power to the interlock function of the doors, the interlock function of the door locking system of the *control vestibule* shall deactivate.
4. The egress path from any point shall not pass through more than one *control vestibule*.
5. The *control vestibule* door interlocking system units shall be listed in accordance with UL 294.

**Reason:** This proposal includes a definition for “control vestibule” and offers detailed requirements for control vestibules.

Commonly referred to as a “mantrap”, control vestibules – which have doors in series which are interlocked – are being incorporated in the means of egress in a variety of occupancies. The IBC is currently silent regarding requirements and guidance for control vestibules. This proposal offers requirements (guidance) for control vestibules in the means of egress.

The significant difference between typical doors in series in the means of egress (i.e. one after the other) and doors in the means of egress configured as a control vestibule is the doors of a control vestibule are interlocked such that when one door of a control vestibule is open, the other door in series in the control vestibule is temporarily locked; and conversely, in the means of egress when all doors of a control vestibule are closed, any door may be opened.

Control vestibules are most commonly configured as a space with two doors in series. But, some control vestibules are configured with more than one inner door and / or more than one outer door. For example, where a control vestibule is required to help keep clean rooms clean, there may be inner doors from three different clean rooms opening into the control vestibule, and one outer door for leaving the control vestibule in the direction of egress.

It should be noted that control vestibules on the access (ingress) side of doors controlling access into a building or into a space within a building are more common than control vestibules on the egress side of doors controlling egress from a space or from a building. Requirements for access-side control vestibules is outside the scope of the IBC. Thus access-side control vestibules are not regulated or prohibited by the

IBC provided all requirements for egress are complied with. This proposal addresses control vestibules in the means of egress addressing egress-side requirements.

Also, it should be noted that control vestibules may be “stacked” or combined with any of the other “shall be permitted” electrical locking arrangements of the IBC (2021 IBC sections 1010.2.11 through 1010.2.14).

For example, assume both doors in the (air lock) control vestibule from an electronics manufacturing clean room are equipped with sensor release of electrically locked egress doors (IBC Section 1010.2.12) to allow no-touch exiting from the clean room through the (air-lock) control vestibule. The electrical locks on the two doors of the (air lock) control vestibule would be interlocked such that only one door is able to be open at a time. In the event of fire in the clean room, Item 2 requires the interlock function of the control vestibule to be deactivated, facilitating egress through the control vestibule with both doors open at the same time.

The proposed requirements for control vestibules are for these reasons:

Control vestibules are recommended to be permitted in the listed occupancy groups: Group B for banks and laboratories. Group F for factories. Group H for operations where contamination or atmospheric control is vital. Groups I-1 and I-2 to facilitate patient care and patient security. Group M for sales rooms for jewelry, gems, drugs, and similar highly valuable items. Group S for storage of valuables.

This proposal has no limits on occupant loads for a factory – access to factories is limited to employees, or visitors escorted by employees. Similar situation for H-5. And for storage, especially large storage areas, the calculated occupant load may be significant although the actual quantity of occupants is typically limited (i.e. employees). The other Groups – the proposed less than 50 occupant load is to be consistent with requirements for panic hardware on doors in the means of egress (occupant loads of 50 or more require panic hardware).

Control vestibules must provide for egress – which is a requirement in the charging language.

The last sentence in the charging language provides needed flexibility. For example, where casinos count money, accepted industry practices may not incorporate all of the requirements of Items 1 through 5 but may incorporate significant other security and safety provisions.

Item 1: A requirement to address the potential situation where one of the doors on the control vestibule is held open (example: a person holds the outer doorway open and other occupants need to be able to egress through the control vestibule in an emergency situation). This item requires, on the egress side of each door of the control vestibule, installation of an approved override which deactivates the interlock on that door. It is common the activation of an override would set off an alarm, and / or the activation of an override without a valid reason results in disciplinary action (i.e. employee gets fired). This item also requires signage with instruction on how to use the override.

Items 2 and 3: Requires the interlock function to be disabled in the event of fire, actuation of the fire detection system, or power loss to the interlock system renders the control vestibule equivalent to two doors in the means of egress allowing unobstructed egress.

Item 4: Requires that egressing through the control vestibule involves no more than two doors. While not common, there are situations where more than one control vestibule may be needed in the means of egress.

Item 5: Requires the units of the control vestibule locking system to be listed in accordance with UL 294, the same standard required for units for other electrical locking system units.

Together, the definition and proposed requirements provide for egress and emergency egress where control vestibules are installed.

Note: a control vestibule is different than a sallyport, which is defined in the IBC and permitted in Group I-3 occupancies. Group I-3 includes correction centers, detention centers, jails, prisons, and similar uses.

A sallyport is a security vestibule which prevents unobstructed passage. A control vestibule is intended to allow unobstructed passage, but prevents more than one door of doors in series to be open at the same time.

**Cost Impact:** May increase the cost of construction.

Control vestibules are currently not addressed in the code. Where control vestibules are constructed, these requirements may include some locking requirements and interconnectedness currently not incorporated into some control vestibules.