



- CODES
- FIRE
- LIFE SAFETY

January 3, 2006

Mr. Curtis Hansen
Clean Door Systems
11475 Carriage Court
Eden Prairie, MN 55344

RE: COMPLIANCE ISSUES OF THE "CDS 4000" WITH THE 2003 MINNESOTA
STATE BUILDING CODE

Dear Curtis,

This letter is in response to our recent conversations. The purpose of this letter is to outline the code provisions of the 2003 Minnesota State Building Code¹ (MSBC) that apply to the CDS 4000, which is distributed by Clean Door Systems. If the CDS 4000 complies with the provisions summarized by this letter, then it is generally understood that it complies with the MSBC and can therefore be utilized in a building or structure that is under the jurisdiction of the MSBC.

SYSTEM INFORMATION

The CDS 4000 is a power-operated door assembly used for indoor occupant use. You have indicated that the generally-intended use of the CDS 4000 is in a typical medical/office building. Further, you have indicated that the CDS 4000 is not intended to meet the requirements or provisions of the Minnesota Accessibility Code as a power-operated system for disabled occupants to enter a room (such as a restroom). In other words, the CDS 4000 is intended for use by an occupant as he/she exits such a room, under the presumption that the occupant entered the room manually via a typical or traditional door assembly.

The CDS 4000 is comprised of the following four (4) components:

1. Header
2. Lock switch
3. Electric strike
4. Pedal operator

Aside from the pedal operator, the CDS 4000 resembles (visually) a typical door-opening assembly. Please note that the system, as provided by Clean Door Systems, does not include the door or door frame; rather, the system only includes those components necessary to open and close the door. It is Summit Consulting's understanding that the CDS 4000 is used in conjunction with door-closers compliant with the MSBC, such as those provided by Ingersoll-Rand, etc.

¹ The 2003 Minnesota State Building Code includes the 2000 International Building Code (IBC) with Minnesota amendments.

ASSUMPTIONS OF PRIOR COMPLIANCE

In providing the code analysis found herein, Summit Consulting assumes that the CDS 4000, which only includes the four (4) components noted above that are necessary for opening and closing the door, is used in conjunction with door and door frame systems that meet all applicable MSBC provisions. Such provisions include the following—this is not necessarily an exhaustive list.

- Minimum and maximum clear door width [MSBC 1003.3.1.1]
- Minimum clear door height [MSBC 1003.3.1.1]
- Direction of door swing for means of egress [MSBC 1003.3.1.2]
- Door encroachment in means of egress [MSBC 1003.2.3]
- Floor elevation at doors [MSBC 1003.3.1.4]
- Landings at doors [MSBC 1003.3.1.5]
- Threshold requirements at bottom of door frame/floor [MSBC 1003.3.1.6]
- Door arrangement [MSBC 1003.3.1.7]
- Signage and illumination requirements [MSBC 1003.2.10 and MSBC 1003.2.11]

All provisions of MSBC Chapter 10 that are not applicable to the CDS 4000, but are applicable to the door assembly as a whole, are assumed compliant.

REVIEW OF APPLICABLE PROVISIONS FROM THE MSBC

Upon reviewing the means of egress requirements of the MSBC, contained in MSBC Chapter 10, Summit Consulting has determined that the following specific provisions apply to the CDS 4000. Please see Table 1.

Table 1: Applicable MSBC Provisions

<i>MSBC SECTION</i>	<i>REQUIREMENT</i>	<i>COMMENT</i>
1003.3.1.8 Locks and latches	<ul style="list-style-type: none"> ○ Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort ○ Door must unlatch upon depression of the pedal operator AND/OR a compliant handle (see below) 	<ul style="list-style-type: none"> ○ Door cannot lock, such that a key or code is required to open the door in the direction of egress—i.e. from the room to the corridor, etc.
1003.3.1.3.2 Power-operated doors	<ul style="list-style-type: none"> ○ Upon failure of power... <ul style="list-style-type: none"> ▪ Door must be openable manually in a compliant manner ▪ Door must close where necessary to safeguard a means of egress ▪ Maximum force required to release the door latch: 15 lb ▪ After release of the door latch, maximum force required to set the door in motion: 50 lb ▪ After setting the door in motion, maximum force required to swing the door to the fully-open position: 15 lb 	<ul style="list-style-type: none"> ○ “Safeguarding a means of egress” may include a door that separates a restroom from a corridor or other rated wall, partition, etc. ○ All maximum forces noted are applied to the latch side
1003.3.1.8.3 Hardware height	<ul style="list-style-type: none"> ○ Handle used to open the door shall be installed 34-48 in. above the floor 	<ul style="list-style-type: none"> ○ For use in a “manual condition,” as in the event of a power failure

If the CDS 4000 meets the requirements noted above, then it is generally understood that it can be used as a means of egress component in a building or structure that is under the jurisdiction of the MSBC.

ACCESSIBILITY REQUIREMENTS FOR COMPLIANT RESTROOMS

It is Summit Consulting's understanding that, upon inclusion of the CDS 4000 in a fully-compliant restroom (in terms of both MSBC requirements as well as the appropriate accessibility requirements), the CDS 4000 would not bring the restroom out of compliance with the ADA Accessibility Guidelines for Buildings and Facilities (ADAAG). [Further, as noted above, the CDS 4000 would not bring the restroom out of compliance with the MSBC either.] In particular, it is Summit Consulting's understanding that the CDS 4000 meets requirements from the ADAAG for both door-opening force and "changes in level" for ground/floor surfaces. The "changes in level" provisions apply to the pedal operator for the CDS 4000 located on the floor. Please see the following two (2) excerpts from the ADAAG.

4.13.11* Door Opening Force. The maximum force for pushing or pulling open a door shall be as follows:

- (1) Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.
- (2) Other doors.
 - (a) exterior hinged doors: (Reserved).
 - (b) interior hinged doors: 5 lbf (22.2N)
 - (c) sliding or folding doors: 5 lbf (22.2N)

These forces do not apply to the force required to retract latch bolts or disengage other devices that may hold the door in a closed position.
Appendix Note

4.5.2 Changes in Level. Changes in level up to 1/4 in (6 mm) may be vertical and without edge treatment (see Fig. 7(c)). Changes in level between 1/4 in and 1/2 in (6 mm and 13 mm) shall be beveled with a slope no greater than 1:2 (see Fig. 7(d)). Changes in level greater than 1/2 in (13 mm) shall be accomplished by means of a ramp that complies with 4.7 or 4.8.

EXCEPTIONS AND ASSUMPTIONS

It should be noted that Summit Consulting's review includes the following exceptions and assumptions.

1. Compliance with the Minnesota Accessibility Code was not reviewed.
2. The CDS 4000 is not intended for use as an access-controlled egress door, subject to MSBC 1003.3.1.3.4. [Such doors include those in an assembly, business, educational, retail, or residential occupancy that are used as main entry doors to a primary use of the occupancy, such as the main entry from a public domain to a retail occupancy. Such doors are typically locked for security purposes.]
3. The CDS 4000 is not intended for use as a component in a delayed-egress locking condition, subject to MSBC 1003.3.1.8.2. [Such doors include those that are normally locked from the outside and have signs stating "EMERGENCY EXIT ONLY - UPON EXIT ALARM WILL SOUND." Such designs are typical of a

school or assembly area for a door that is necessary for means of egress in an emergency situation, but normally locked for security purposes.]

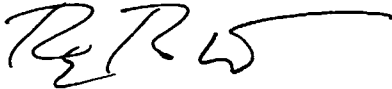
4. The CDS 4000 will not be utilized in a condition where panic and fire exit hardware is required by the MSBC. [Such a condition typically occurs for doors in assembly or educational occupancies that serve more than 100 occupants in a means of egress system.]
5. The CDS 4000 will not be utilized for a means of egress directly into an exit stairwell.

CONCLUSION

This letter documents Summit Consulting's review of the MSBC in regards to the applicable code provisions for the CDS 4000, which is distributed by Clean Door Systems. General system information, assumptions of prior compliance, review of applicable provisions from the MSBC, accessibility requirements for compliant restrooms, and exceptions and assumptions are all addressed.

Please contact our office if you have any questions.

Prepared by:
SUMMIT CONSULTING



Ryan J. Bierwerth, PE, CFPS
Fire Protection Engineer

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Date: 1-3-06 License #43114