



Knock Down Doors - Table of Contents

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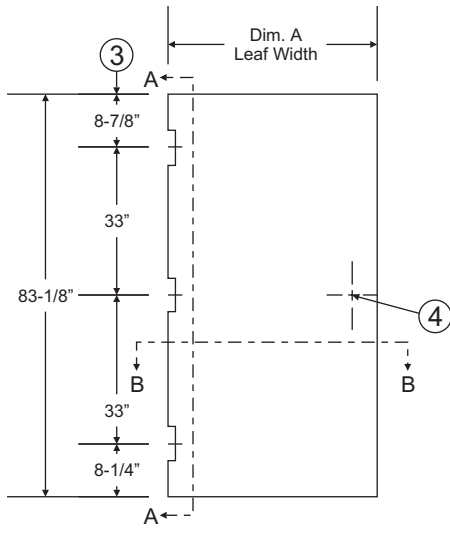
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Insulated Door Leaf; Polyurethane Core

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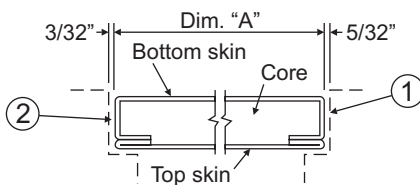


ELEVATION "F" DESIGN

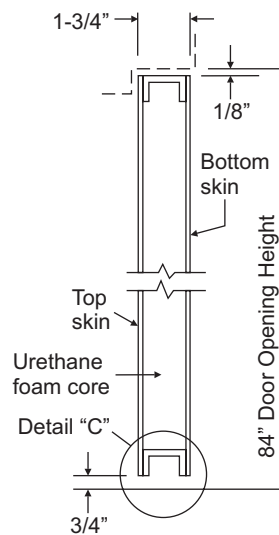
- ① Vertical edge seams mechanically interlocked
- ② Square hinge and lock edges
- ③ 4-1/2" x .134" full mortise hinge prep
- ④ Gov. 160/161 cyl lock prep ...prefix VCR

**MATERIAL:** Face sheets -- 20 gage, galvanized, smooth steel. 16 gage steel flush top channel and inverted bottom channel. 7 gage steel hinge reinforcements. Core is a rigid cell, foamed-in-place polyurethane with a 1.8 lbs./ft<sup>3</sup> density conforming to ASTM D-1622. Insulating core is chemically bonded to all interior surfaces, completely seals unit, and provides total surface support.

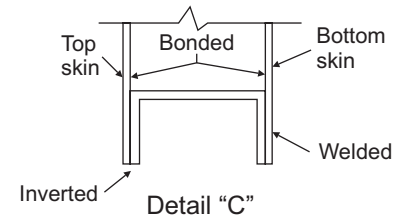
**FINISH:** BRONZE OR WHITE



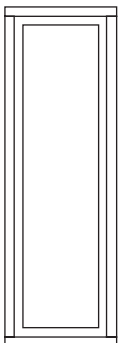
SECTION BB



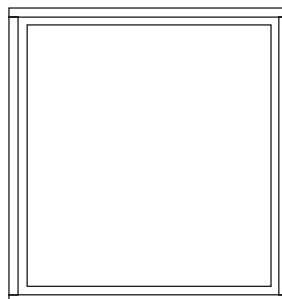
SECTION AA



Lite Kits



Narrow Lite  
6-5/8" x 36-5/8"

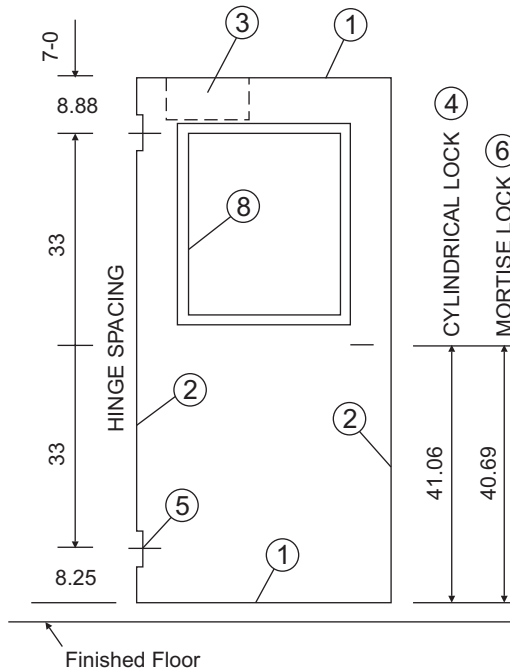


Half-Glass  
23-3/4" x 29-7/16"

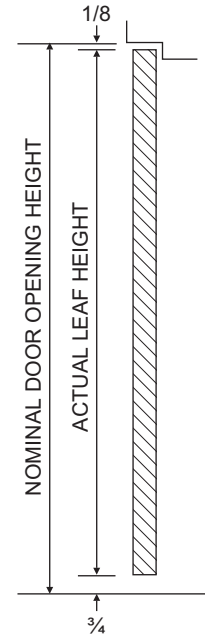


Insulated Door Leaf; Polyurethane Core

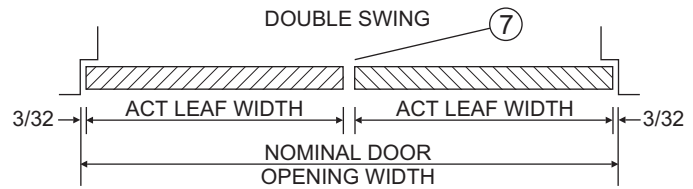
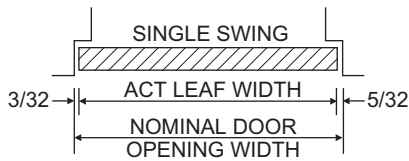
8-1-99



DOOR ELEVATION



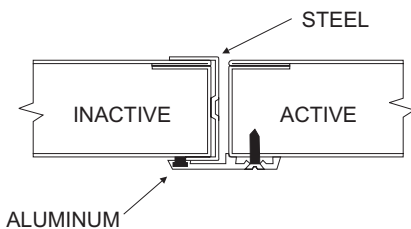
VERTICAL SECTION



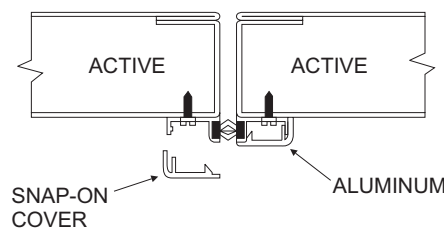
HORIZONTAL SECTIONS

(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)

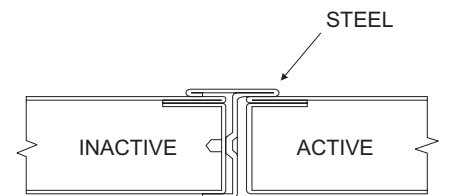
OVERLAPPING ASTRAGAL  
4451  
FOR 1-3/4" THICK  
DOORS WITH OPTIONAL  
POLY-PILE INSERT



SPLIT ASTRAGAL  
4461  
WITH WOOL-PILE  
INSERT



OVERLAPPING ASTRAGAL  
4461  
FOR 1-3/4" THICK  
DOORS



LISTED



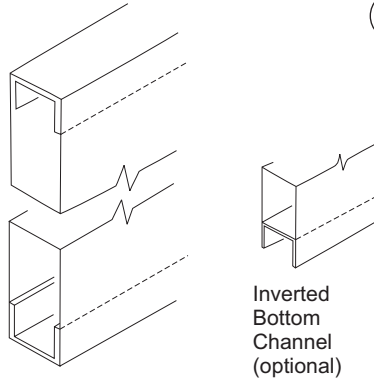
Insulated Door Leaf; Polyurethane Core

8-1-99

16 GAGE STEEL  
END CHANNELS

WELDED  
TO DOOR

FLUSH  
TOP AND  
BOTTOM  
CHANNELS



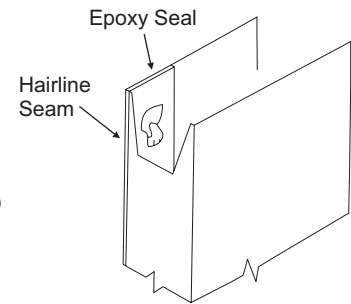
Inverted  
Bottom  
Channel  
(optional)

1

VERTICAL EDGES

MECHANICALLY  
INTERLOCKED  
HEMMED EDGES

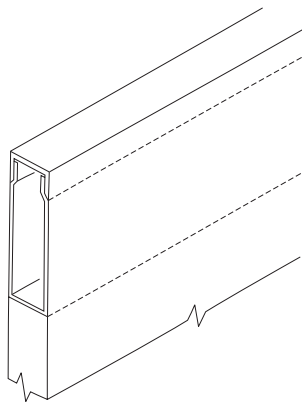
ALSO AVAILABLE  
SEAMLESS (WELDED  
OR BODY FILLER)



2

CLOSER  
REINFORCEMENT  
(OPTIONAL)

12 GAGE  
STEEL  
CHANNEL  
16" LONG

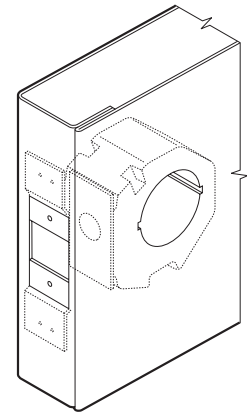


3

LOCK PREPARATION  
GOV. 160/161  
CYLINDRICAL TYPE

(C)

(ANSI A115.2)  
2-3/4"  
BACKSET



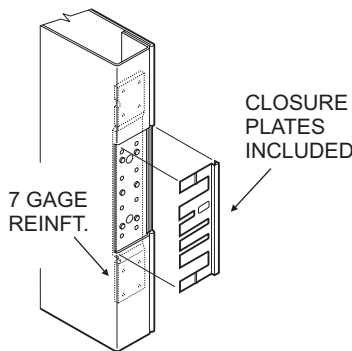
4

HINGE  
PREPARATION

4-1/2" X .134"  
HIGH, STANDARD  
OR HEAVY WT.  
FULL MORTISE  
HINGE  
PREPS

ANSI A156.7  
TEMPLATE

NON-HANDED



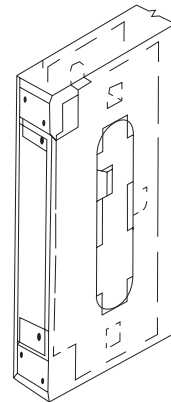
5

LOCK  
PREPARATION  
GOV. 86-4  
MORTISE TYPE

(M) (ANSI a115.1)  
2-3/4" BACKSET

(B) SIMILAR TO DETAIL  
LESS FACE CUTOUT

(P) SIMILAR TO DETAIL  
LESS ALL CUTOUT  
AND REINFORCEMENT



6

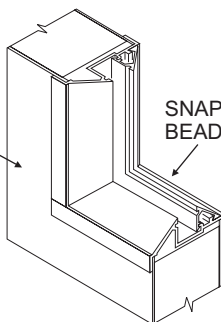
GLAZING TRIM  
4831 (APPLIED)

FOR STANDARD  
FLUSH DOORS

ALUMINUM

SNAP-IN  
BEAD

3/8" WIDE  
GLAZING  
POCKET



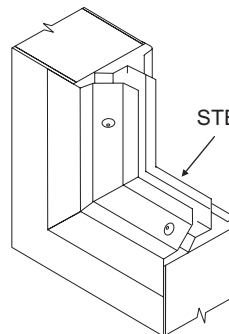
8

GLAZING TRIM  
4841 (APPLIED)

FOR ALL  
FIRE DOORS

3/8" WIDE  
GLAZING  
POCKET

LISTED



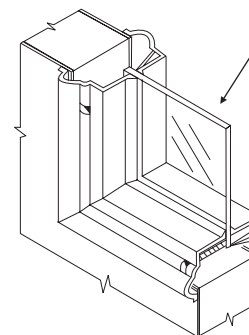
8

GLAZING TRIM

FOR STANDARD  
EMBOSSED  
PANEL DOORS

1/8" TEMPERED  
SAFETY GLASS

HIGH-IMPACT  
MOULDED  
POLYSTYRENE  
TRIM



8



Insulated Door Leaf; Polyurethane Core

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STANDARD SIZES  
NOMINAL DOOR OPENING

WIDTH		HEIGHT	
SINGLE	DOUBLE		
2'-0"	4'-0"	6'-8"	
2'-4"	4'-8"		
2'-6"	5'-0"		
2'-8"	5'-4"		
2'-10"	5'-8"		
3'-0"	6'-0"		
3'-4"	6'-8"		
3'-6"	7'-0"		
3'-8"	7'-4"		
3'-10"	7'-8"		
4'-0"	8'-0"		
			7'-0"
			7'-2"
			7'-10"
			8'-0"
			9'-0"

PRODUCT SPECIFICATIONS:

1-3/4" thick steel doors shall be as manufactured by Ceco Door Products, Milan, TN USA. Doors shall conform to the Steel Door Institute guide specification, ANSI/SDI 100-91; see chart below for performance classifications.

**VERSADOORS** are made full-flush or (optional) seamless style. Faces sheets are commercial quality cold rolled steel conforming to ASTM A366 or A620 & A568...or (optional) hot-dipped galvanized steel conforming to ASTM A526 or A642 & A525 -- see chart below.

**Versadoor full-flush doors** have mechanically interlocked, hemmed, hairline seams on vertical edges and have no visible seams on faces. Doors specified "seamless" have no visible seams on faces or vertical edges. Face sheets are totally supported by a foamed-in-place polyurethane core. The core fills the entire door cavity and is chemically bonded to all interior surfaces. Density of foam exceeds 1.8 pcf and it has a crush strength of 3600 psf. The top and bottom door edges are closed flush by 16 gage steel channels welded in place. The bottom edge channel can also be installed inverted (optional).

SIZE LIMITS - DESIGNS

	FLUSH DESIGN	6 PANEL	8 PANEL	CROSS BUCK & LITES
MAX.	4090	4070	3070	3070
MIN.	2068	2668	2868	2868

E6 and E8 designs: mortise lock preparation limited to 3'-0" width, minimum.

**Hardware Provisions:** Hinge preparations are non-handed. Hinge edges are mortised for 4-1/2" high, standard and heavy weight hinges. 7 gage steel hinge reinforcements are welded inside the door edge and are drilled and tapped for fasteners in accordance with ANSI A156.7. Hinge closing plates are included. The lock edge is square and is prepared for Gov. Series 86 or 169/161 locks in accordance with ANSI A115 (specify which). Optional closer reinforcement is a 12 gage steel channel.

FIRE DOORS

LABELING AGENCY: WARNOCK HERSEY
TEST: ASTM E-152, UL10B, UBC 43-2
• DESIGNS: F, G, N, V, E6, OR E8
• RATING: (20 GAGE) ¾ HR, OR 1-1/2 HR. MAX. SIZE: 40 x 80 SINGLE 80 x 80 PAIR
• RATING: (18 & 16 GAGE) ¾ HR, 1-1/2 HR., OR 3 HR. MAX. SIZE: 40 x 90 SINGLE 80 x 90 PAIR

**Paint:** 1-3/4" steel doors shall be provided with one coat of oven-cured neutral color primer paint. Primer coat shall conform with ANSI A224.1-1990 with the thickness of primer coat not being less than 0.7 mils. The primer coat is a preparatory base for necessary finish painting. "Colorstyle" finish coat is also available from a selection of standard colors (optional). Colorstyle finish is electrostatically applied, oven-cured urethane enamel. For accurate color selectors ask for a Ceco Colorstyle chart.

MATERIAL

DOOR FACE SHEETS	GRADE	C.R.	GALV		RECOMMENDED DOOR FRAME MATERIAL
			A60	G90	
20 Gage Steel (4080 max.)	Standard Duty	STD	OPT	-	16 Gage Steel
18 Gage Steel	Heavy Duty	STD	OPT	OPT	16 Gage Steel
16 Gage Steel	Extra Heavy Duty	STD	OPT	OPT	16 or 14 Gage Steel

PERFORMANCE

Core Thermal Characters:	U Factor: 0.067 R Factor: 14.97
Sound Transmission Class:	STC 26 (F Design, 18 Gage Face Sheets, ASTM E90-81 & E413-73 [Fully Operable])
Physical Endurance Level:	Meets ANSI A 151.1 Performance Test, 20 GAGE: Level B (500,000 Cycles); 18 and 16: Level A (1,000,000 Cycles)



Insulated Door Leaf; Polyurethane Core

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WALK DOOR SYSTEM  
POLYURETHANE FOAM CORE

PERFORMANCE TESTS

<u>Description</u>	<u>Test Method</u>	<u>Results</u>
1. Slam Test	ANSI A151.1-81	250,000 Cycles. Grade 1 without failure
2. Twist or torque test	ANSI A151.1-81	Max. defl. At 300# = .800" max. Permanent set = .029".
3. Acoustical properties	ASTM E90-61T	STC rating of 26.
4. Insulation properties	ASTM C236 Mod.	"U" factor = 0.067. "R" factor = 14.97.
5. Standard fire rating * Must be installed in fire rated frame.	ASTM E152	Door is rated at 1-1/2" hours. (class "B" label)
6. Paint performance	ASTM B117 ASTM D2247 Weatherometer	200 hrs. salt spray. 500 hrs. humidity. 1000 hrs.

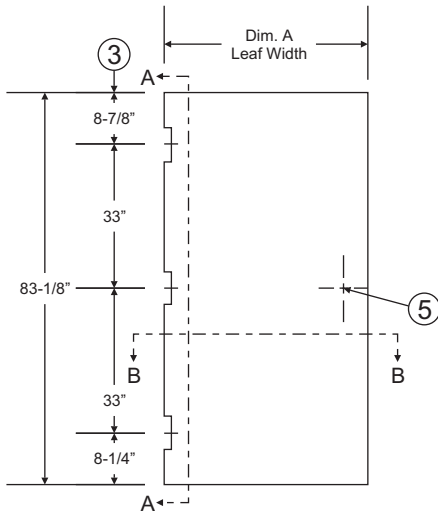
CONFORMANCE TO NATIONALLY ACCEPTED SPECIFICATIONS AND STANDARDS

<u>Requirements</u>	<u>Complies</u>
1. ANSI/SDI 100	YES
2. RR-D-575B	YES
3. PBS 4-0810	YES
4. CS 242-62	YES
5. CEGS-08110	YES
6. NFGS-08110	YES
7. H-08-1, 08110	YES
8. ASTM D1621	YES
9. ASTM D1622	YES
10. ASTM D1623	YES
11. UL 10B/ANSI A2.2	YES
12. ANSI A115	YES
13. ANSI A156.7	YES
14. NFPA 80	YES
15. ASHRAE 90	YES (if weatherstripped)
16. ASTM D-2247	500 hrs.
17. ASTM B-117	200 hrs.
18. ASTM A-525	A-60 Coating Designation
19. ASTM A-366	Uncoated
20. PS-4-66	YES
21. CS-9-65	YES
22. ANSI A224.1-80	YES
23. ASTM C236 Mod.	YES



# Honeycomb Door Leaf

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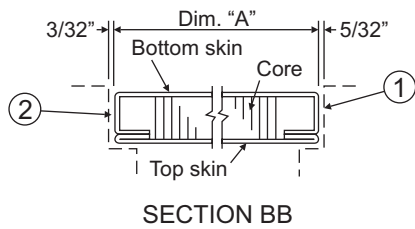


ELEVATION "F" DESIGN

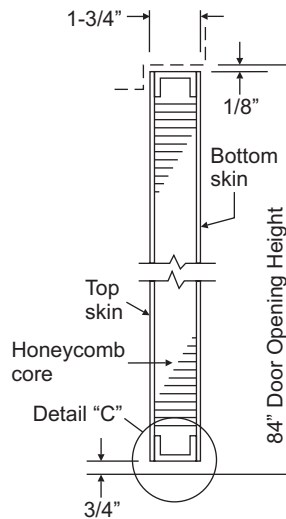
- ① Vertical edge seams mechanically interlocked
- ② Square hinge and lock edges
- ③ 4-1/2" x .134" full mortise hinge prep
- ⑤ Gov. 160/161 cyl lock prep ...prefix VCR

**MATERIAL:** Face sheets -- 20 gage, textured - galvanized steel. 16 gage steel flush-mounted top and bottom channels. 7 gage steel hinge reinforcements. Core -- resin impregnated, sanded edge, kraft fiber honeycomb with a nominal one inch cell size. Core is laminated to top and bottom face sheets by means of moisture resistant, contact type adhesive.

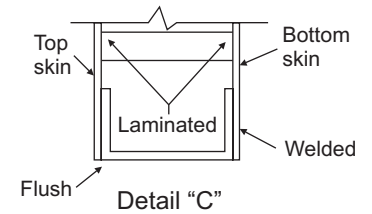
**FINISH:** BRONZE OR WHITE



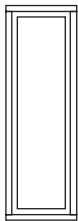
SECTION BB



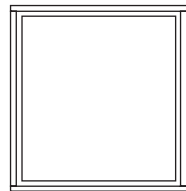
SECTION AA



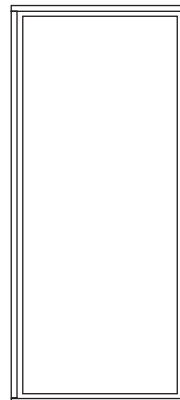
## Lite Kits



**Narrow Lite**  
6-5/8" x 36-5/8"



**Half-Glass**  
23-3/4" x 29-7/16"  
35-3/4" x 29-7/16"

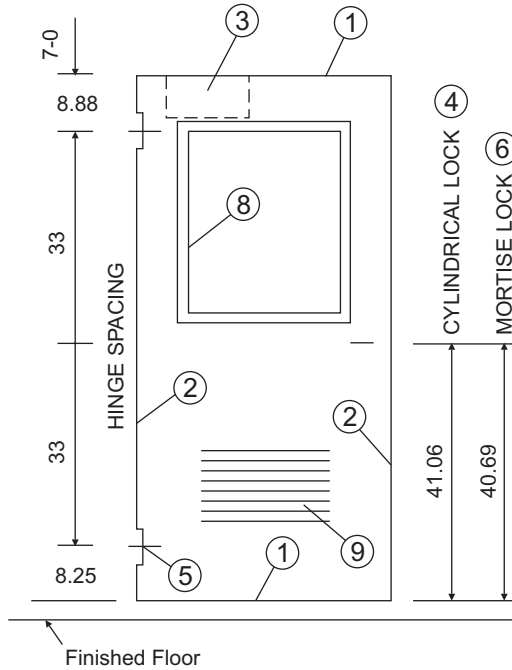


**Full-Glass**  
23-3/4" x 63-1/2"

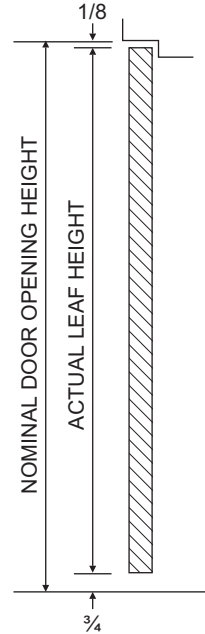


Honeycomb Door Leaf

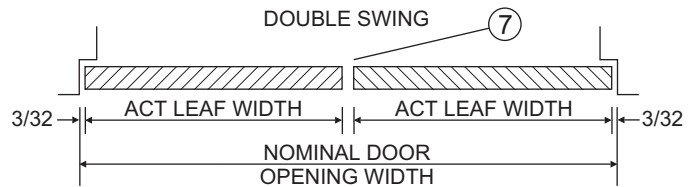
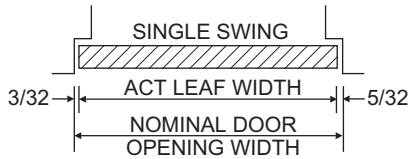
8-1-99



DOOR ELEVATION



VERTICAL SECTION

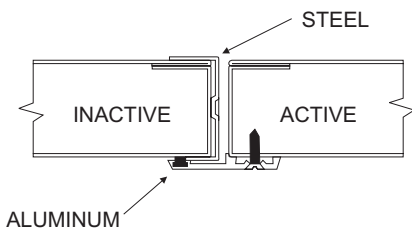


HORIZONTAL SECTIONS

(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)

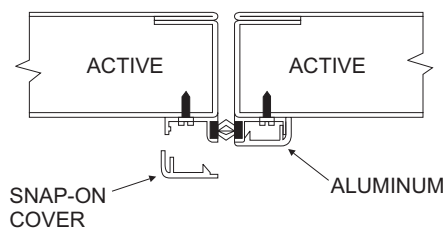
OVERLAPPING ASTRAGAL  
4451  
FOR 1-3/4" THICK  
DOORS WITH OPTIONAL  
POLY-PILE INSERT

7



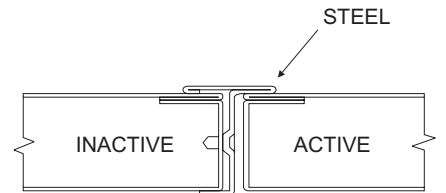
SPLIT ASTRAGAL  
4461  
WITH WOOL-PILE  
INSERT

7



OVERLAPPING ASTRAGAL  
4461  
FOR 1-3/4" THICK  
DOORS

7



LISTED



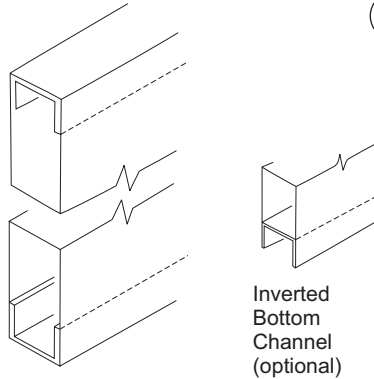
Honeycomb Door Leaf

8-1-99

16 GAGE STEEL  
END CHANNELS

WELDED  
TO DOOR

FLUSH  
TOP AND  
BOTTOM  
CHANNELS



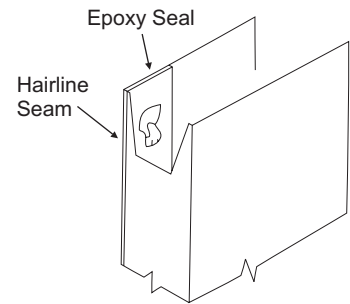
Inverted  
Bottom  
Channel  
(optional)

1

VERTICAL EDGES

MECHANICALLY  
INTERLOCKED  
HEMMED EDGES

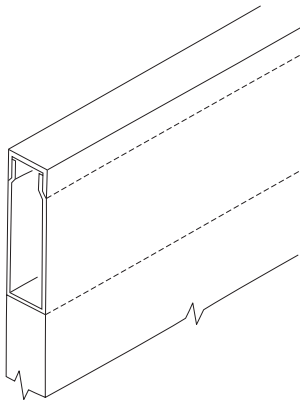
ALSO AVAILABLE  
SEAMLESS (WELDED  
OR BODY FILLER)



2

CLOSER  
REINFORCEMENT  
(OPTIONAL)

12 GAGE  
STEEL  
CHANNEL  
16" LONG

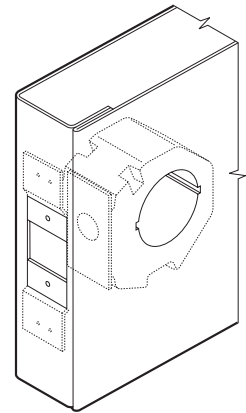


3

LOCK PREPARATION  
GOV. 160/161  
CYLINDRICAL TYPE

(C)

(ANSI A115.2)  
2-3/4"  
BACKSET



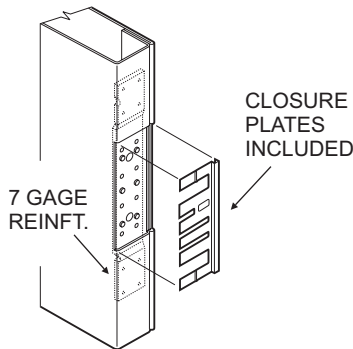
4

HINGE  
PREPARATION

4-1/2" X .134"  
HIGH, STANDARD  
OR HEAVY WT.  
FULL MORTISE  
HINGE  
PREPS

ANSI A156.7  
TEMPLATE

NON-HANDED



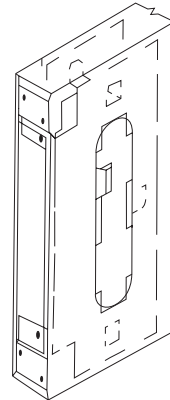
5

LOCK  
PREPARATION  
GOV. 86-4  
MORTISE TYPE

(M) (ANSI a115.1)  
2-3/4" BACKSET

(B) SIMILAR TO DETAIL  
LESS FACE CUTOUT

(P) SIMILAR TO DETAIL  
LESS ALL CUTOUT  
AND REINFORCEMENT



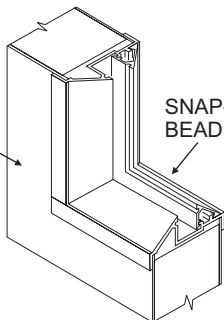
6

GLAZING TRIM  
4831 (APPLIED)  
FOR STANDARD  
FLUSH DOORS

ALUMINUM

SNAP-IN  
BEAD

3/8" WIDE  
GLAZING  
POCKET



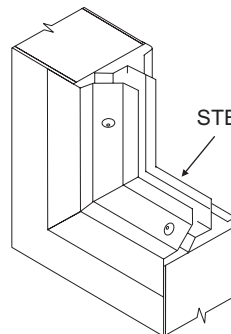
8

GLAZING TRIM  
4841 (APPLIED)  
FOR ALL  
FIRE DOORS

LISTED

STEEL

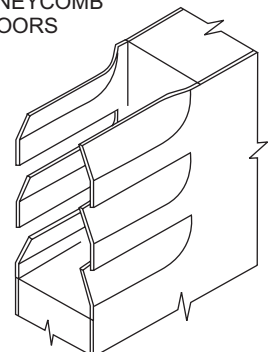
3/8" WIDE  
GLAZING  
POCKET



8

PIERCED LOUVER  
FOR HONEYCOMB  
CORE DOORS

"L" DESIGN



9



Honeycomb Door Leaf

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STANDARD SIZES  
NOMINAL DOOR OPENING

WIDTH		HEIGHT
SINGLE	DOUBLE	
2'-0"	4'-0"	6'-8"
2'-4"	4'-8"	
2'-6"	5'-0"	
2'-8"	5'-4"	
2'-10"	5'-8"	
3'-0"	6'-0"	
3'-4"	6'-8"	
3'-6"	7'-0"	
3'-8"	7'-4"	
3'-10"	7'-8"	
4'-0"	8'-0"	9'-0"

PRODUCT SPECIFICATIONS:

1-3/4" thick steel doors shall be as manufactured by Ceco Door Products, Milan, TN USA. Doors shall conform to the Steel Door Institute guide specification ANSI/SDI 100-91; see chart below for performance classifications.

**OMEGA** doors are made full-flush or (optional) seamless style. Faces sheets are commercial quality cold rolled steel conforming to ASTM A366 or A620 & A568...or (optional) hot-dipped galvanized steel (conforming to ASTM A526 or A642 & A525) - see chart below.

**Omega full-flush doors** have mechanically interlocked, hemmed, hairline seams on vertical edges and have no visible seams on faces. Doors specified "seamless" have no visible seams on faces or vertical edges. A one piece, chemically-treated, 99 lb., One inch cell, kraft-fibre honeycomb slab is securely bonded to both face sheets under pressure with contact adhesive. The top and bottom door edges are closed flush by 16 gage steel channels welded in place. The bottom edge channel can also be installed inverted (optional).

FIRE DOORS

LABELING AGENCIES:

- UNDERWRITERS LABORATORY
- WARNOCK HERSEY
- FACTORY MUTUAL

TEST: ASTM E-152, UL10B, UBC 43-2

- RATING: 20 MIN, ¾ HR, 1-1/2 HR, OR 3 HR
- MAX. SIZE: 40 x 90 SINGLE  
80 x 90 PAIR
- DESIGNS: F, G, N, & V

Not all ratings are available in all sizes, designs and materials.

**Hardware Provisions:** Hinge preparations are non-handed. Hinge edges are mortised for 4-1/2" standard and heavy weight hinges. 7 gage steel reinforcements are welded inside the door edge and are drilled and tapped for fasteners in accordance with ANSI A156.7. Hinge closing plates are included. The lock edge is square and is prepared for Gov. Series 86, or 160-161 locks in accordance with ANSI A115 (specify which). Optional closer reinforcement is a 12 gage steel channel.

**Paint:** 1-3/4" steel doors shall be provided with one coat of oven-cured neutral color primer paint. Primer coat shall conform with ANSI A224.1-1990 with the thickness of primer coat not being less than 0.7 mils. The primer coat is a preparatory base for necessary finish painting. "Colorstyle" finish coat is also available from a selection of standard colors (optional). Colorstyle finish is electrostatically applied, oven-cured urethane enamel. For accurate color selectors ask for a Ceco Colorstyle chart.

MATERIAL

DOOR FACE SHEETS	GRADE	C.R.	GALV		RECOMMENDED DOOR FRAME MATERIAL
			A60	G90	
20 Gage Textured Steel (4080 max.)	Standard Duty	STD	OPT	-	16 Gage Steel
20 Gage Steel (4080 max.)	Standard Duty	STD	OPT	-	16 Gage Steel
18 Gage Steel	Heavy Duty	STD	OPT	OPT	16 Gage Steel
16 Gage Steel	Extra Heavy Duty	STD	OPT	OPT	16 or 14 Gage Steel

PERFORMANCE

Core Thermal Characters:	U Factor: 0.067 R Factor: 14.97
Sound Transmission Class:	STC 26 (F Design, 18 Gage Face Sheets, ASTM E90-81 & E413-73 [Fully Operable])
Physical Endurance Level:	Meets ANSI A 151.1 Performance Test, 20 GAGE: Level B (500,000 Cycles); 18 and 16: Level A (1,000,000 Cycles)



Honeycomb Door Leaf

8-1-99

WALK DOOR SYSTEM  
HONEYCOMB CORE

PERFORMANCE TESTS

<u>Description</u>	<u>Test Method</u>	<u>Results</u>
1. Slam Test	ANSI A151.1-81	1,000,000 Cycles. Grade 1 without failure
2. Twist or torque test	ANSI A151.1-81	Max. defl. At 300# = .800" max. Permanent set = .029".
3. Acoustical properties	ASTM E90-61T	STC rating of 32.
4. Insulation properties	ASTM C236 Mod.	"U" factor = 0.041. "R" factor = 2.44.
5. Standard fire rating * Must be installed in fire rated frame.	ASTM E152	Door is rated at 1-1/2" hours. (class "B" label)
6. Paint performance	ASTM B117 ASTM D2247 Weatherometer	200 hrs. salt spray. 500 hrs. humidity. 1000 hrs.

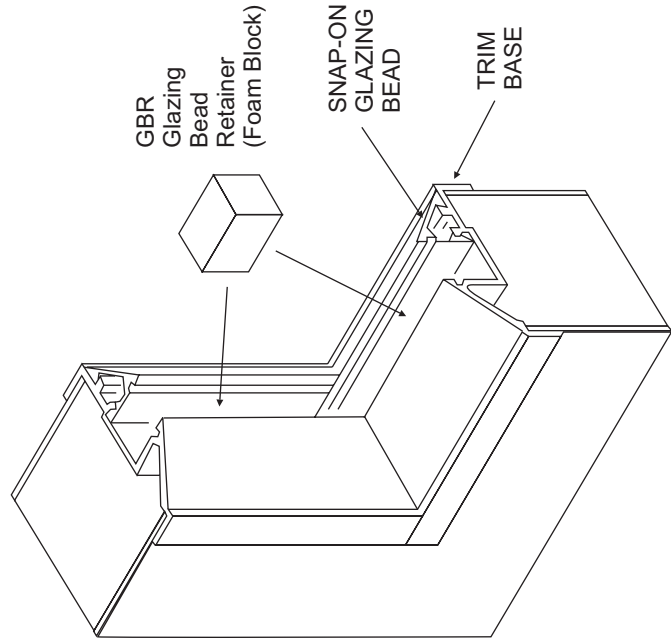
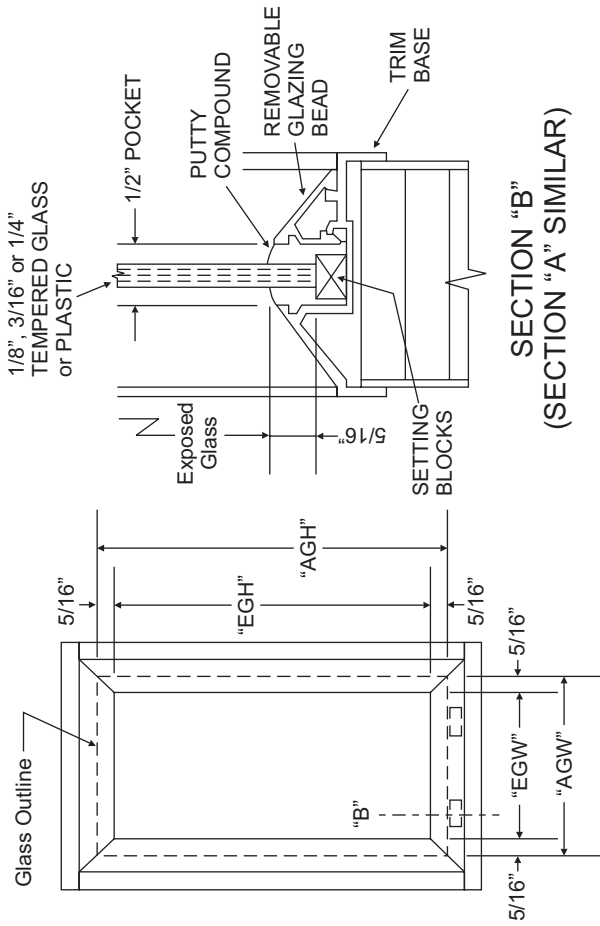
CONFORMANCE TO NATIONALLY ACCEPTED SPECIFICATIONS AND STANDARDS

<u>Requirements</u>	<u>Complies</u>
1. ANSI/SDI 100	YES
2. RR-D-575B	YES
3. PBS 4-0810	YES
4. CS 242-62	YES
5. CEGS-08110	YES
6. NFGS-08110	YES
7. H-08-1, 08110	YES
8. UL 10B/ANSI A2.2	YES
9. ANSI A115	YES
10. ANSI A156.7	YES
11. NFPA 80	YES
12. ASHRAE 90	YES (if weatherstripped)
13. ASTM D-2247	500 hrs.
14. ASTM B-117	200 hrs.
15. ASTM A-525	A-60 Coating Designation
16. ASTM A-366	Uncoated
17. PS-4-66	YES
18. CS-9-65	YES
19. ANSI A224.1-80	YES
20. ASTM C236 Mod.	YES

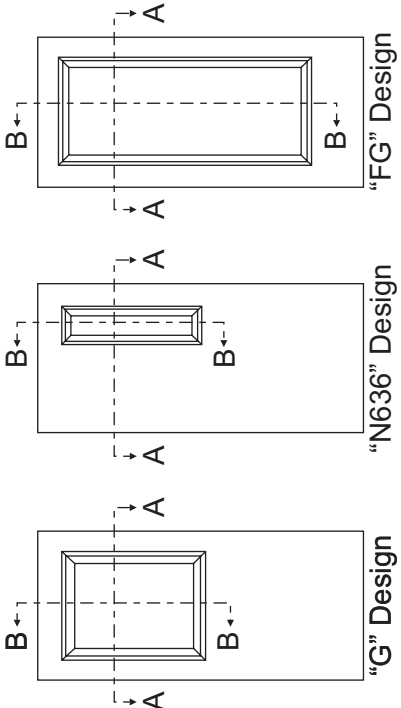


Wet Glazing System Field Glazing Guidelines

8-1-99



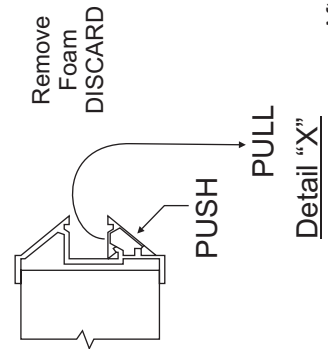
SECTION THROUGH GLASS TRIM  
After removal for glazing, GBR may be discarded. However, some glazers find it convenient to fashion glass blocking and glazing wedges from GBR material.



WET GLAZING SEQUENCE

1. Work from side of door where removable glazing beads are located.
2. Remove and discard foam blocks from trim pocket.
3. Snap-off (see detail "X") and separate beads from trim base: vertical, mitered beads first, then horizontal square ended beads.
4. Position setting blocks at quarter points in the trim pocket at the sill (see vert. Sect. "B").
5. Apply a bead of 1/4" thick glazing compound (DAP 33 or equal) to pocket wall of base at four sides.
6. Position glass against applied compound. Center glass within aluminum frame. Press glass against putty.
7. Snap-on glazing beads. Reverse operation of step 3: apply horizontal beads first, then vertical beads.
8. Pack glazing compound in the space (about 1/8") between glass and beads of four sides. Use putty knife.
9. Clean up excess of compound on both faces of vision lite.

GLAZING BEAD REMOVAL



**LEGEND**  
 EGW = Exposed Glass Within  
 EGH = Exposed Glass Height  
 AGW = Actual Glass Width  
 AGH = Actual Glass Height

**RECOMMENDED GLASS SIZE**  
 EGW + 5/8" x EGH + 5/8"  
 (Width x Height)

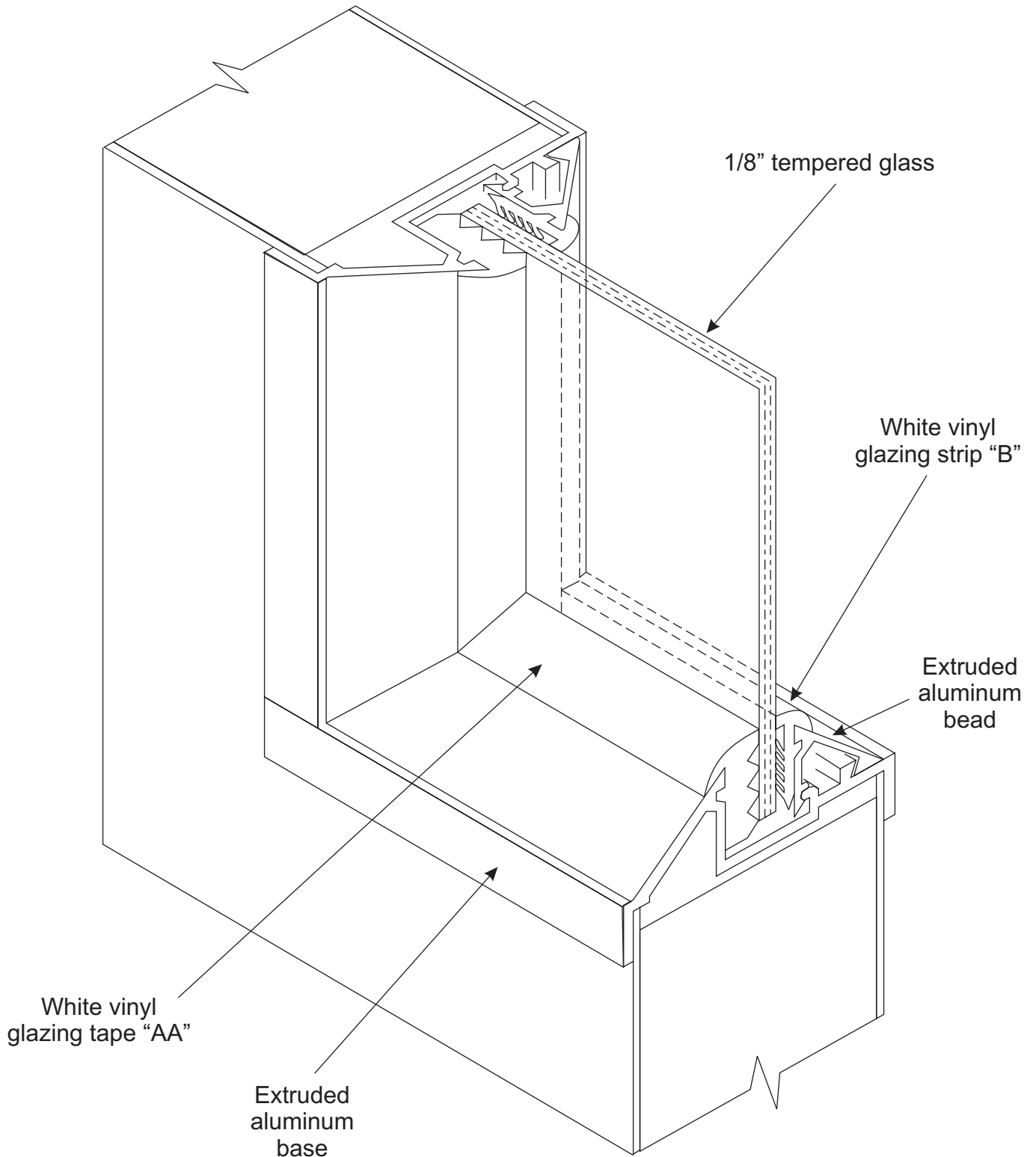
Glass and Glazing are not provided by Ceco or Star.



Dry Glazing System 1/8" Tempered Glass

8-1-99

Aluminum glass trim kit is painted to match door.



6" x 36" size NARROW LITE design doors are furnished FACTORY GLAZED.