Multi-Solution Opening: Blast and Hurricane Resistant

**Blast and Hurricane Resistant:**

- Blast Up To 6.16 psi Category I (12 gage door and frame construction)
- Blast Up To 9.74 psi Category II (14 gage door and frame construction)

The 3rd party tested Multi-Solution Opening meets UFC 4-010-01 DoD Minimum Anti-terrorism standards and ASTM 2927-12 Response Categories 1 (no damage) and 2 (damaged but operable) following a blast.

UL wind resistant building assemblies and components tested to the following windstorm or severe weather performance standards:

1. ASTM E330/E1886/E1996
2. TAS201, TAS202, TAS203
3. ANSI A250.13

Doors may also be classified as fire doors tested in accordance with UL10B or UL10C. Doors may be fire rated up to and including three hours, except as noted and may also be limited by gage, size, hardware, construction, etc. All doors are impact resistant, passed large missile impact for missile level D. Only ASSA ABLOY prescriptive Corbin Russwin BL6600 series or Sargent BL7300 series +/-150 PSF multi-point locking hardware may be used.

**Door Opening Sizes:** All doors shall be 1 3/4" [44.5 mm] thick. The door opening width and height shall be as defined on the pages and illustrations that follow.

**Construction:** Special vertical lock edge stiffener and special lock reinforcements are required for the prescriptive +/-150 PSF doors. Special frame head reinforcements are required for multi-point lock head latching. Doors are 14 gage A60 face sheets or 12 gage A60 face sheets depending on what blast psi and category level is required.

**Glass Lights, Viewer or Louvers:** Not available.

**Windstorm Classification Label:** Each wind-resistant building assembly shall bear a classification mark of Underwriters Laboratories, LLC.

Frames may also be eligible to be listed as fire door frames tested in accordance with UL10B or UL10C. Frames may be eligible to be fire rated up to and including three hours where special reinforcements are installed. All frames are impact resistant, passed large missile impact for missile level D.

**Frame Sizes:** Listed sizes are defined in the pages that follow.

**Construction:** Each wind resistant building product shall be constructed as detailed in the pages that follow. Special head reinforcing channel and special hardware reinforcements required to be installed during manufacturing for the prescriptive +/- 150 PSF frame with concealed multi-point devices. Frames are constructed of 14 gage A60 standard and 12 gage A60 is optional, depending on what blast psi and category level is required. Frames must be factory welded.

**Frame Installation Instructions:** See Ceco's public website and ANSI A250.11 frame installation instructions. www.cecodoor.com

For Further information: Call 218-828-6256
SUGGESTED USE
FOR COMBINATION
HURRICANE & BLAST
PRODUCTS:
CRITICAL INFRASTRUCTURE,
GOVERNMENT/MILITARY,
PETO CHEMICAL PLANTS,
MUSEUMS, HURRICANE
ENVIRONMENTS

OPTIONAL FIRE RATING:
UP TO AND INCLUDING 3 HRS
IN ACCORDANCE WITH UL 10B,
UL 10C, UL 1784, & NFPA 252.

LOCK:
• Corbin Russwin BL6600 & Sargent BL7300
concealed vertical rods, top & bottom bolts, &
mortise lock body casette must be factory installed
in a CECO Multi-Solution door. All other hardware
components are shipped directly from Sargent or
Corbin Russwin & must be installed by a factory
trained installer.
• IMPORTANT: DO NOT REMOVE ANY
HARDWARE BLOCKING OR FILLER PLATES IN
DOOR & THE FRAME UNTIL THE MORTISE
LOCK IS READY TO BE INSTALLED.

HORIZONTAL SECTION

SWING: THE COMBINATION OF BLAST AND HURRICANE RATED ASSEMBLIES MUST BE SEATED.
SEATED IS DEFINED AS THE BLAST PRESSURE ACTING TO PUSH THE DOOR AGAINST THE
STOPS OF THE FRAME.

For Further information: Call 218-828-6256

(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)
TECH-DATA
Multi-Solution Opening: Blast and Hurricane Resistant

14 GAGE STEEL END CHANNELS

18 GAGE WELDED TOP CAP REQUIRED

VERTICAL EDGES

WELDED TO BOTH FACE SHEETS

INVERTED TOP AND BOTTOM

CLOSER REINFORCEMENT (OPTIONAL)

14 GAGE STEEL REINFORCEMENT

(THRU–BOLT MOUNTING OF BODY TO DOOR ONLY)

OPTIONAL WIRING HARNESS

ELECTROLYNX CABLE PROVIDED IN DOOR FOR PLUG & PLAY APPLICATION

HINGE PREPARATION

HINGE EDGE IS HANDED AND SQUARE

7’0” HEIGHTS & ABOVE (4) HINGES ARE REQUIRED WHEN USING BUTT HINGES.
BELOW 7’0” HEIGHTS (3) HINGES ARE REQUIRED WHEN USING BUTT HINGES.

OPTIONAL CONTINUOUS HINGE PREPARATION

NOTE: A CONTINUOUS HINGE REQUIRES A CONTINUOUS HINGE REINFORCEMENT IN DOOR AND FRAME.

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

D20-03
04/02/20
FRAME DEPTHS AVAILABLE IN 1/8" INCREMENTS

**BACKENDS FOR 5-3/4" DEPTH MAY BE 7/16". WHICH MEANS THE THROAT WOULD BE 4-7/8".**

FRAMES REQUIRE FACTORY WELDED CORNERS.

FRAMES ARE CONSTRUCTED OF 14 GAGE A60 FOR BLAST Up To 9.74 PSI Category II.
FRAMES ARE CONSTRUCTED OF 12 GAGE A60 FOR BLAST Up To 6.16 CATEGORY I.

7'0" HEIGHTS & ABOVE (4) HINGES ARE REQUIRED WHEN USING BUTT HINGES.
BELOW 7'0" HEIGHTS REQUIRE (3) HINGES WHEN USING BUTT HINGES.

RIGHT HAND OR LEFT HAND REVERSE SHOWN
LEFT HAND OR RIGHT HAND REVERSE OPPOSITE

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

ANCHORING BY WELDING TO BUILDING STRUCTURE

18 ga. min. –1/4" max. thick A-36 steel shims centered under frame. Weld perimeter of 5/8" x 2" x 5/8" ends of shims to structural building member with fillet welds sized as follows using E6018 electrodes. Fillet weld size same as shim thickness for 0.053" to 0.125" shim thickness. Weld size 1/8" for 0.125" to 1/4" shim thickness.

<table>
<thead>
<tr>
<th>Frame Head Anchor Locations</th>
<th>Anchor Location</th>
<th>Anchor Type</th>
<th>Anchor Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single opening 2&quot; x 6&quot; thru 4&quot; x 6&quot;</td>
<td>Welded to the Building Structure</td>
<td>Minimum of 2 weld locations required. Locations are 8&quot; from each door jamb radius. Must weld on both faces of the frame head &amp; all at each location.</td>
<td></td>
</tr>
<tr>
<td>2&quot; x Jambs Width x 1-1/4&quot;</td>
<td>Welded to the 1&quot; Long Both Sides of Frame</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Frames are not required to be grouted when welded to building structure.

4" Face Frame Head Anchoring

3/8" Expansion Bolt

1/4" Min. Steel (A36) Embedment Plate

1/4" Max. Shim Space

1/4" Min. Plate Edge Distance

9 Screw Pitch Min. Projection

1/4" Min. Head & Jambs Anchoring

1/4" Min. 4" Min.

3/8" Min. 6" Min.

3/8" Cap Plug (Bag of 10) Part # 6111049

3/8" Cap Plug (Bag of 100) Part # 6111050

(Ships loose for field installation)

Existing opening – pipe & plate

Frame not required to be grouted

Alternate profile

Masonry – Wire Anchors

Masonry T Anchors

The throat of the frame jambs must be fully grouted with min. 1800 PSI grout.

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

D20-05
04/02/20

Experience a safer and more open world
HEAD ANCHOR LOCATIONS

<table>
<thead>
<tr>
<th>Opening Size</th>
<th>Anchor Type</th>
<th>Anchor Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Wall Anchors Powers 3/8&quot; Lock-Bolt AS Sleeve Expansion Bolt or 3/8&quot; SMS/Self Drilling Screw/UNC Bolt</td>
<td>Minimum of 2 anchors required. Locations are 6&quot; from each door jamb rabbet. When anchors are located in the door rabbet, the anchor at the lock jamb side will be located at 9&quot;.</td>
<td></td>
</tr>
</tbody>
</table>

ANCHORS MAY BE INSTALLED THROUGH EXISTING EMBEDMENT PLATES, PROVIDED THAT DRILLING THROUGH EXISTING EMBEDMENT PLATES IS PERMISSIBLE AS VERIFIED BY OTHERS. ANY EXISTING EMBEDMENT PLATES SHALL BE DESIGNED AND VERIFIED BY OTHERS.

JAMB ANCHOR LOCATIONS

<table>
<thead>
<tr>
<th>Opening Size</th>
<th>Anchor Type</th>
<th>Anchor Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; x 6&quot; x 8&quot; up to and including 4&quot; x 7&quot; x 7&quot;</td>
<td>Existing Wall Anchors Powers 3/8&quot; Lock-Bolt AS Sleeve Expansion Bolt or 3/8&quot; SMS/Self Drilling Screw/UNC Bolt</td>
<td>Maximum of 8&quot; from the sill, maximum of 4&quot; from the head rabbet, and 21&quot; maximum on center.</td>
</tr>
<tr>
<td>Greater than 3&quot; x 7&quot; x 7&quot; up to and including 4&quot; x 8&quot;</td>
<td>Existing Wall Anchors Powers 3/8&quot; Lock-Bolt AS Sleeve Expansion Bolt or 3/8&quot; SMS/Self Drilling Screw/UNC Bolt</td>
<td>Maximum of 8&quot; from the sill, maximum of 4&quot; from the head rabbet, and 18&quot; maximum on center.</td>
</tr>
</tbody>
</table>

FRAMES ARE NOT REQUIRED TO BE GROUTED WHEN USING EXISTING WALL JAMB ANCHORS.

<table>
<thead>
<tr>
<th>Opening Size</th>
<th>Anchor Type</th>
<th>Anchor Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; x 6&quot; x 8&quot; up to and including 4&quot; x 7&quot; x 7&quot;</td>
<td>12 Ga. Masonry T Anchor</td>
<td>Max. of 8&quot; from the sill, max. 6&quot; from the head rabbet, and 24&quot; on center max.</td>
</tr>
</tbody>
</table>

FRAMES ARE REQUIRED TO BE GROUTED WHEN USING MASONRY T OR WIRE MASONRY WALL JAMB ANCHORS.

<table>
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<th>Anchor Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>2&quot; x 6&quot; x 8&quot; up to and including 4&quot; x 7&quot; x 7&quot;</td>
<td>Wire Masonry Anchors</td>
<td>Max. of 12&quot; from the sill, max. 10&quot; from the head rabbet, and 18&quot; on center max.</td>
</tr>
<tr>
<td>Greater than 3&quot; x 7&quot; x 7&quot; up to and including 4&quot; x 8&quot;</td>
<td>Wire Masonry Anchor</td>
<td>Max. of 12&quot; from the sill, max. 10&quot; from the head rabbet, and 12&quot; on center max.</td>
</tr>
</tbody>
</table>

(Conversion: 1" = 25.4 mm, e.g., 1-3/4" = 44.45 mm)
CONTINUOUS HINGES
- MARKAR HC305 CONTINUOUS HINGE
- MARKAR FM300 CONTINUOUS HINGE (OUTSWING SEATED ONLY)
- CONTINUOUS HINGES WITH OR WITHOUT EL OPTION
NOTE: A CONTINUOUS HINGE REQUIRES A CONTINUOUS HINGE REINFORCEMENT IN DOOR AND FRAME

WIDE THROW CONTINUOUS HINGES
- MARKAR HC305WT10 WIDE THROW HINGE WITH OR WITHOUT EL OPTION
- MARKAR FM300WT WIDE THROW HINGE (WT10 THRU WT50) OUTFLOW SEATED ONLY WITH OR WITHOUT EL OPTION
NOTE: A CONTINUOUS HINGE REQUIRES A CONTINUOUS HINGE REINFORCEMENT IN DOOR AND FRAME

HEAVY WEIGHT STANDARD AND WIDE THROW FULL MORTISE BUTT HINGES
- MCKINNEY SP33786 (4-1/2" x 4-1/2" x 180 OR 5" x 4-1/2" x 190)
- MCKINNEY SP33886 (4-1/2" x 4-1/2" x 180 OR 5" x 4-1/2" x 190)
- MCKINNEY SP3386 & SP3786 (4-1/2" x 5", 4-1/2" x 6", 4-1/2" x 7")
- MCKINNEY SP3386 & SP3786 WITH OR WITHOUT QC OPTION
- MCKINNEY SP3386 & SP3786 WITH OR WITHOUT NRP

DOOR CLOSERS
- CORBIN RUSWIN DC8000 SERIES DOOR CLOSER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)
- NORTON 7500 SERIES DOOR CLOSER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)
- SARGENT 249 SERIES DOOR CLOSER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)
- YALE 4400 SERIES DOOR CLOSER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)

DOOR CLOSERS/HOLDERS
- SARGENT 2409 CLOSER/HOLDER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)
- SARGENT 351 EHT CLOSER/HOLDER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)
- NORTON 7700P ELECTRIC DOOR CLOSER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)

OVERHEAD STOP/HOLDERS
- RIXSON 9 SERIES OVERHEAD STOP/HOLDER (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)

MECHANICAL HOLDERS
- ROCKWOOD 491S OR 494S MECHANICAL HOLDERS (THRU-BOLT MOUNTING OF BODY TO DOOR ONLY)

ELECTROMECHANICAL HOLDERS
- RIXSON 998, 998M, 999M, 980M, 990M, 991M, 996M OR 997M
- ELECTROMECHANICAL HOLDERS (THRU-BOLT MOUNTING OF DOOR ARMATURE TO DOOR ONLY)
- SARGENT 1560, 1561 OR 1562 ELECTROMECHANICAL HOLDERS
  (THRU-BOLT MOUNTING OF CONTACT PLATE TO DOOR ONLY)
PEMKO PERIMETER SEALS:
S773 OR 305 PERIMETER SEAL
345 RAIN DRIP (THREAT SIDE MOUNTING ONLY)
345 DOOR BOTTOM (THREAT SIDE MOUNTING ONLY)
S771 OR S772 ASTRAGALS
2715 THRESHOLD

ELECTRONIC POWER TRANSFER:
CEPT, HANCHETT ENTRY SYSTEMS, DBA SECURITRON MAGNALOCK CORP.

DOOR POSITION SWITCH:
DPS-M, SECURITRON MAGNALOCK CORP.

KICK PLATE:
ROCKWOOD K1050 (MUST BE SCREW APPLIED FOR FIRE RATED ASSEMBLIES)
NOTE: KICK PLATES MUST BE INSTALLED ON THE THREAT SIDE OF THE OPENING.

WIRE HARNESS:
QC-CT500P ELECTROLYNX WIRE HARNESS

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and more open world