

# Architectural Guide for Doors and Frames



Experience a safer  
and more open world

*What began over  
100 years ago as the  
dream of a mechanical  
engineer has grown  
into the world's leading  
manufacturer of steel  
doors and frames for  
commercial, industrial  
and institutional  
construction.*



*Ceco Door Plant, Milan, TN*

## Index

Sales, Marketing and Service Support .....	2
ASSA ABLOY Service Centers and Distribution .....	3
Programs and Services .....	4
Opening Doors to a Cleaner Environment.....	5
Transparency and Sustainable Construction.....	6
Solutions .....	
Sound .....	7
Installation.....	8-9
Decorative.....	10-11
Energy Efficient.....	12
Life-Safety.....	13-16
Severe Weather .....	17
Door Details .....	
Composite Doors .....	18
Steel Stiffened Doors.....	19
Door Selection Faces.....	20
Frame Details .....	
Masonry Flush Frames.....	21
Drywall Frames.....	22
Frame Installation Details .....	23
Specialty Frames .....	24-25





In 1912, Ceco was the idea of 26 year old C. Louis Meyer, a mechanical engineering graduate of the University of Nebraska. Meyer founded what would be called the Concrete Engineering Company and its home was Omaha, Nebraska.

Meyer's company began revolutionizing the process of reinforcing concrete, which in itself was a new procedure back then. It led to the company developing reusable concrete forms, and Concrete Engineering Company entered the steel fabricating business. Ceco began manufacturing steel doors in 1953. Over the next several years building trends changed. With the arrival of air conditioning, building designs began including more doors and fewer windows. In the 1960s Ceco would introduce the design of honeycomb-core steel doors and doors in various colors. The product line has continued to grow to include standard, fire rated and specialty doors and finishes. Ceco's line also includes standard, custom and specialty frames.

Today Ceco doors and frames are produced in: Milan TN, Mason City IA, Valle Hermoso Mexico and Tijuana Mexico. More than 700 authorized distributors in 15 countries market our company's products.



# Sales, Marketing and Service Support



## ASSA ABLOY Door Security Solutions

ASSA ABLOY Door Security Solutions field sales and architectural consultants are located throughout the United States. They work closely with end-users, architects, and distributors to ensure complete life-safety and security solutions for commercial facilities are met.

Support services include architectural education, technical expertise, and assistance with code compliance.

Visit [www.assaabloydss.com](http://www.assaabloydss.com) to learn how we can help with your security and life safety needs.

Phone: 1-800-DSS-EZ4U (377-3948)  
Address: 110 Sargent Drive  
New Haven, CT 06511  
Web site: [www.assaabloydss.com](http://www.assaabloydss.com)

Find and contact your local Door Security Solutions representative via email at [www.assaabloydss.com](http://www.assaabloydss.com) and clicking on "Service & Support".

[www.cecodoor.com](http://www.cecodoor.com)

Visit [www.cecodoor.com](http://www.cecodoor.com) for complete product information and downloadable specifications for the entire Ceco product line. The site is frequently updated with news about timely industry related issues.



# ASSA ABLOY Service Centers and Distribution

Our coast to coast, network of strategically located Service Centers, is designed to bring steel doors & frames, wood doors, and popular ASSA ABLOY brands of hardware and accessories closer to the market. All Service Centers are staffed with trained professionals ready to help you and answer any questions which may arise.

These modern, fully equipped facilities, connected electronically via our wide area computer network (WAN), offer the largest and most responsive delivery system in the industry. All facilities are licensed by Underwriters Laboratories (UL) and Warnock Hersey (WH) for the conversion and labeling of fire doors, frames and windows.

## ASSA ABLOY Service Center Overview of Benefits and Capabilities

- Licensed to fire label products to meet regional building codes
- Deliveries via company trucks available at most of the locations
- Offers distributors same day pick-up or shipping of in-stock products
- Door and frame welding modifications
- Trans-ship point to reduce freight cost
- Trans-weld point - Ship from factory to service center to reduce cost of shipping welded frames across country
- Local quick ship custom frame manufacturing
- Service Centers provide deliveries via LTL, dedicated carriers, or company operated milk runs

## Network of Distributors

Their value-added services include:

- Specification writing
- Order coordination
- Jobsite walk-through
- Code interpretation
- Security Consultation
- Guidance for ADA compliance
- Door and Frame modifications

## ASSA ABLOY Service Centers

### Midwest

235 East Lies Road  
Carol Stream, IL 60188  
Phone: 630-682-8800 Fax: 630-682-8803

### Northeast

1000 Conroy Place  
Easton, PA 18040  
Phone: 610-559-2180 Fax: 610-559-2190

### Northwest

20112 72nd Ave. South  
Kent, WA 98032  
Phone: 253-872-8174 Fax: 253-872-0121

### Rocky Mountain

3650 Fraser Street, Unit D  
Aurora, CO 80011  
Phone: 303-371-0847 Fax: 303-371-3023

### South Central

1451 I-30 Frontage Rd.  
Mesquite, TX 75150  
Phone: 972-272-0271 Fax: 972-272-7829

### Grand Canyon

5858 W. Lower Buckeye Road, Suite 101  
Phoenix, AZ  
Phone: 602-732-4111

### Southeast

825 Riverside Parkway, Suite 100  
Austell, GA 30168  
Phone: 770-941-9012 Fax: 770-941-9123

### Coastal Southeast

2675 Directors Row  
Orlando, FL 32809  
Phone: 407-377-7050

### Southwest

5678 Concours Street  
Ontario, CA 91764  
Phone: (909) 593-2100 Fax: (909) 593-2500

[www.assaabloyservicecenters.us](http://www.assaabloyservicecenters.us)

# Programs and Services



## CExpress Quick Ship

The Ceco CExpress quick ship program gives you the edge to supply high quality, hollow metal doors and frames with speed and simplicity. You can count on Ceco for service and delivery to meet the needs of your customers.

### **Fast**

- Shipping of many Ceco products
- Delivered where you want it when you need it

### **Simple**

- Phone, fax or e-mail us for a quote with no order forms required

### **Reliable**

- The same Ceco quality you expect and have trusted for over 53 years.

## EDGE and OrderPro

EDGE is an easy to use web-based ordering tool that enables you to conveniently access stock and production order forms for doors, frames and parts on the same view. Direct order transfer (DOT) integration with Comsense and other project management software programs into EDGE as well.

The OrderPro web-based program enables you to create price estimates and place configured orders for doors and frames directly into Ceco manufacturing plant. Build your own personal list for quick ordering.

Enjoy opportunity for reduced lead-times with no additional cost using either of these programs.

Ceco offers software training and helpline assistance so you can get the most out of these easy-to-use tools. Please contact your Ceco Door Customer Service Professional to get your OrderPro or EDGE account set up.



# Opening Doors to a Cleaner Environment



## LEED® Certification Contribution

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design construction, and operation of high performance green buildings. LEED promotes a whole-building approach to sustainability by recognizing performance in seven key areas of human and environmental health: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation in design and regional priority credits.

Ceco manufactures doors and frames from steel, one of the most recycled materials in North America. Each door is then put through rigorous life cycle testing that allows our door solutions to qualify for tornado and hurricane certification standards for strength and durability. The sustainable thinking that goes into each door allows it a long service life with cradle-to-cradle considerations taken into account.

Ceco can help to achieve prerequisites and accumulate points in the following categories and credit areas of LEED.

Examples of the Ceco commitment to sustainable building construction and improving energy efficiency include:

### Total Recycled Content

- Steel doors and frames: up to 68.9%
- In one year alone by using 100% recycled cardboard packaging Ceco has:
  - Saved 7,973 trees
  - Reduced local landfills by 640 cubic yards
  - Reduced waste water usage by 1,160,775 gallons
  - Saved 697,872 kWh of energy
  - Saved 253 tons of CO<sub>2</sub> emissions

### Energy Efficiency

- In one year, Ceco recycled steel usage conserves 226 billion BTUs and the energy to power 7,500 homes
- Ceco thermal break frames incorporate insulating material for maximum heat retention in cold conditions

## Department of Defense Case Study

Facility Type:  
Government

Location:  
San Antonio and Ft. Bragg, NC

Solutions:  
High performance openings from ASSA ABLOY are delivering certified energy savings to Department of Defense (DoD) facilities, giving the government agency a trusted sustainable building component to comply with energy efficiency requirements for Federal facilities.

Find more case studies at [cecodoor.com](http://cecodoor.com) on the Sustainability page.

# Transparency and Sustainable Construction



## GreenCircle and ISO 14001 Certified

As today's consumers become more informed, there is an increasing demand for honesty and integrity from product suppliers like Ceco. Third-party certification of sustainability claims is essential in establishing credibility and developing consumer confidence.

GreenCircle has certified the following manufacturing claims.

- Carbon Footprint Reduction Facility - 5% (Carbon Footprint Reduction includes both Scope 1 and Scope 2 emissions)
- Energy Usage Reduction - 4%
- Waste to Landfill Reduction - 3%
- Waste Diversion from Landfill - 94% (Includes both hazardous and non-hazardous waste streams)
- ISO 14001:2004 Certified



## Declare

Declare is a voluntary self-disclosure program aiming to transform the building materials industry towards healthier and more ecological products through ingredient transparency. Participating in Declare means this product has voluntarily self-disclosed all ingredients in order to promote transparency.

## Environmental Product Declaration (EPD)

An EPD is a verified document that reports environmental data of products based on life cycle assessment (LCA) and other relevant information and in accordance with the international standard ISO 14025 (Type III Environmental Declarations).

An important aspect of EPD® is to provide the basis of a fair comparison of products and services by its environmental performance. EPDs can reflect the continuous environmental improvement of products and services over time and are able to communicate and add up relevant environmental information along a product's supply chain.

## UL GREENGUARD Certification

ASSA ABLOY Group brands offer doors and frames certified to the GREENGUARD 2818 indoor air quality standard as well as the more stringent GREENGUARD Gold Standard (formerly GREENGUARD Children & Schools), helping ensure that the air you breathe in a building will be healthy and fresh.

Our doors and frames are GREENGUARD tested to meet the VOC testing requirements of LEED, CALGreen, International Green Construction Code and ASHRAE 189.1 and Collaborative for High Performance Schools.

## Health Product Declaration (HPD)

After more than a year of development, green building industry leaders have released the Health Product Declaration (HPD) Open Standard Version 1, an open standard format for reporting contents and chemical hazards in building products.

## The Living Building Challenge (LBC)

The Living Building Challenge (LBC) is an international sustainable building certification program created by the International Living Future Institute in 2006. LBC is a certification program that promotes the most advanced measurement of sustainability in the built environment for both new construction and renovation. ASSA ABLOY Door Group supports the Living Building Challenge process and uses our Declare labels to show that we meet the LBC Red List of chemicals to avoid. ASSA ABLOY Door Group solutions are the only products in our categories that meet the needs of the LBC / Declare program, identifying and clearly disclosing product ingredients and chemicals contained in our product. ASSA ABLOY Americas fully supports avoiding the use of Red List chemicals and will continue to act responsibly to ensure that our products meet the needs of our customers, while protecting them and our environment.

ASSA ABLOY is committed to sustainability by reducing its environmental impacts through developing smarter products incorporating innovative materials, advanced designs and production methods. The results of these efforts are third-party verified to add a level of accountability to our sustainability claims and helps us tell our sustainability story while providing a benchmark for ongoing improvement.



# Sound Solutions

## Acoustical (STC)

Using the latest revolutionary technology, patented designs and utilizing light weight sound absorbing techniques, Ceco Engineers have developed acoustical assemblies to solve the noise solution for any facility.

High STC ratings are typically needed to create sound resistant rooms for the government/military, airports, school band rooms and to isolate performance halls from exterior noise. Relatively lower STC ratings will usually suffice for less demanding applications, such as solving a noise problem in a hotel or office building. Acoustical solutions covers the low to high STC range allowing them to be the solution for almost any application.

## Door Configurations

- Single flush door systems available from STC 32 to STC 66
- Single factory glazed doors available from STC 32 to STC 52
- Flush pairs available from STC 32 to STC 49
- Single embossed panel doors available from STC 32 to STC 48
- Pairs with glazing available from STC 32 to STC 47
- All doors tested in fully operable conditions
- Seals, thresholds and door bottoms (as required) will be drop shipped to designated address
- UL or WH fire labeling up to 3 hours (varies per STC rating)

## Frame Configurations

- 16 or 14 gauge cold rolled or galvaneal steel
- 4-1/8" through 14" depths
- Welded corners

## Locks

- 161 cylindrical locks (backset min. varies per STC rating)
- 86 edge mortise locks with escutcheon or sectional trims
- Surface and flush bolts on inactive leaves (STC 41-49 pair)
- Rim panic and surface mounted vertical rod exit devices
- Military/Government spindial locks (STC 50 maximum)

## Hinges

- Standard 4.5 x .134
- Heavyweight and 5" optional
- Cam-lift hinges optional



## Acoustical Advantages

Acoustical Doors have many advantages over other sound door products in the market.

- Wide range of operable STC ratings from 31 to 66
- Competitive pricing including door, frame and all sealing hardware
- All door cores are lead and asbestos free
- STC 32-54 are 1-3/4" thick instead of 2-1/4" or larger like other sound doors in the market
- Cam-lift hinges not required but optional
- Door assemblies can be pre-wired with Electrolynx snap-together connectors to make adding or upgrading electrified openings easy
- Most door assemblies are UL or WH fire rated
- Acoustical Doors can help achieve LEED requirements for sound and recycled content
- Thresholds are ADA compliant

# Installation Solutions



## Sidelight Installation Made Easy

A common problem with the installation of a sidelight opening in buildings is transporting the complete frame unit to the opening. Ceco is pleased to announce the Ceco KD SideLight. This is a drywall sidelight unit that can be assembled and installed at the opening without having to weld the frame pieces together and transport them to various levels of a building. There are no more concerns of fitting the welded frame in the elevator or through doorways of a building. The Ceco KD SideLight is designed to use common hand tools for installation in a matter of minutes in a rough opening. The complete frame bundle can be carried to the specified opening and installed in a very short time, saving both labor and transportation cost.

The Ceco KD SideLight Frame is also available in any of the Ceco factory painted prefinish colors along with any of the pantone colors.

For easy 3D instructions, download the BILT mobile app



*See how easy it is to install the Ceco KD SideLight frame, visit the Ceco Door website or the BILT App and view a quick installation video.*



## Factory Installed Glass – Save Time, Money and Problems

Ceco adds yet another option for its wide selection of commercial doors. Installation of doors at a jobsite involves coordinating many different skills and trades. Making sure everyone has the correct parts needed to complete the job within the construction schedule, is a major task. Ceco offers the option of eliminating one step in the installation process. When the glass is installed at Ceco, it eliminates the worries of coordinating the glass into the proper door at the right time. Ceco will make sure the proper rated glass and glazing material is used to conform to the newest building codes for both fire and safety. Installing a door with the glass installed saves time, and time equals money. Combining factory installed glass with factory prefinished doors, is the perfect way to help contractors achieve tight construction schedules.

Consider Ceco doors with the glass installed for your next project.



## ElectroLynx®

ElectroLynx is an ASSA ABLOY system of universal plug-in connectors and standardized color-coded wiring that makes installation of electrified openings a snap. Doors and hardware are prewired with plug-in connectors that snap together to create a fully wired opening. The plugs and wires are concealed to preserve the aesthetics of the opening and facilitate future hardware changes. For more information, visit [www.assaabloydss.com/products](http://www.assaabloydss.com/products).



# Installation Solutions



## Create Lasting Beauty and Durability

Ceco is one of the few manufacturers with the capability to deliver both custom and standard commercial grade factory ColorStyle doors and frames. With a Ceco ColorStyle product, a building's project manager has more flexibility to complete the job correctly and on schedule.

ColorStyle paint is extremely durable and is factory applied in a controlled environment to ensure consistent and high quality results. The beauty of the finish cannot be matched by application of coatings at the job-site.

## ColorStyle Doors and Frames

### Superior Coverage and Durability

The coating applied at the factory is controlled and offers uniform coverage resulting in a smoother finish free of impurities.

**Green Solution** - Compliance with LEED EQ 4.1 and 4.2 for VOC levels at the job-site. Waste and solvent disposal is controlled at the factory and meet all of the requirements of the EPA.

**Cleaner** - Less mess and clean-up at the job-site and can be installed later in the construction process.

**Lower Cost** - Factory finishing is more efficient than job-site preparation and painting.

**Faster** - Faster project completion as the painting process at the jobsite has been eliminated.

**Better** - The factory electrostatic painting process is superior to field sprayed, rolled, or brushed on applications used at the job-site.

**Test Standards** - Meets ANSI A250.3 test procedure for acceptance criteria for steel doors and frames factory applied finished coatings. HAP (Hazardous Air Pollutant) free.

# Decorative Solutions

## Madera Smooth Grain and Embossed Wood Grain Steel Door

The Madera steel door combines the beauty of wood with the durability of steel. Smooth Grain Madera doors are available with a smooth grain, tight straight grain design which is similar to maple, cherry, or birch wood, or embossed wood grain steel faces that have a .005" deep embossment pattern in the steel. Doors are factory prime painted and stained (six standard color finishes available) to produce a door face similar in appearance to wood yet with the same strength and durability of steel. Products may be fire listed according to the appropriate door series construction.

### Custom Color Matching

In house custom color match process assures consistent color stain matching of virtually any color your project might require. Hundreds of stain formulations are possible using different combinations of stain finishes and base coats.

### Six Standard Color Options

Embossed  
Wood Grain

Smooth Grain



*Printed colors are not exact, select final color from physical samples. Contact factory for color samples.*

## High Definition Embossed One and Two Panel Door

Ceco High Definition embossed door proves that a steel door does not have to be dull. The sharp panel radius along with increased shadow detail makes the Ceco HD embossed door a clear choice in adding elegance to any opening. The distinct design gives a room or entrance a look of sophistication, which is perfect for condominiums, assisted living complexes, hotels, office buildings, and dormitories.





# Decorative Solutions

## Stainless Steel - Elegant, Beautiful, and Corrosion Resistant

Stainless Steel doors and frames can add a touch of elegance to building openings. The sleek and clean look of stainless steel is perfect for Casino's, Museums, and other classic applications.

Stainless Steel doors and frames have one other significant advantage to building owners, corrosion protection. Ceco stainless steel doors and frames are the perfect solution for clean room environments and areas susceptible to moisture.

## Key features of Ceco Stainless Steel Products:

- Type 304 and 316 stainless steel with:
  - #4 brushed satin
  - #6 fine satin
  - #8 mirror
  - 2B mill (paint grade)
  - XLB XL blend
- Easy to maintain
- Long term strength and durability
- Welded seamless edges on doors are key to corrosive environments
- Up to 3 hour fire rating available
- Frames available with welded corners or Knock Down construction
- Doors available with 18 gauge seamless edge



## Decorative Door Frames

ASSA ABLOY decorative steel door frames can contribute to the look and feel of the door opening and overall aesthetic of the entire building. Custom designed steel windows, transoms, sidelights and borrowed lights can increase day lighting and style to any building.



the good design studio

The Good Design Studio is your partner in the pursuit of Good Design and the Total Aesthetic Opening; beautiful doors, frames and hardware from the ASSA ABLOY Group companies.

Visit [www.thegooddesignstudio.com](http://www.thegooddesignstudio.com) or call 877-217-0897 to learn more.

# Energy Efficient Solutions

## Strong, Energy Efficient Doorways In Any Weather Condition

Approximately 40% of all energy leakage comes from the building envelope\* this includes exterior doorways. Trio-E doors installed with Ceko Thermal Break frames and Pemko Thermal Barrier Saddles help increase thermal retention and reduce energy leakage.

Trio-E delivers superior insulated values and strength plus, provides aesthetic qualities desired in today's commercial building applications. The "E" is for energy efficiency and Trio-E has the lowest U-Factor (0.34) for a steel stiffened door in the market today. The U-Factor of 0.34 was achieved in an operable condition (ASTM1363) using the Ceko Mercury 3 Thermal Break and Pemko 273x3AFG Thermal Barrier Saddle. The Trio-E will provide years of strength and sustainable energysavings for any building.

Ceko doors do not have to sacrifice strength in order to achieve insulating performance. For example, Ceko Trio-E has been certified to a design pressure of +/-100 psf with a hurricane rated opening.

\*Tony Woods, Air Tight Buildings, 2005



Mercury 3 Energy Efficient Thermal Break Frame

## QMAX Thermally Enhanced Core

QMAX, a new thermally enhanced core for the Imperial Series doors intended for applications where polyisocyanurate and polyurethane cores are normally specified, is now available. The QMAX thermally enhanced core has a significantly improved thermal rating (0.32 U value) with Mercury 3 Thermal Break Frame and (0.37 U value) in a masonry frame over the previously published polyurethane core rating (0.46 U value) in a masonry frame.





# Life-Safety Solutions



## Attack Resistant Opening

Using standard Ceco doors and frames equipped with School Guard Glass™ SG5™ attack resistant glazing and SARGENT hardware has been third party tested to withstand a brutal physical attack from an intruder for over 4 minutes. This extra time keeps occupants safe until first responders can neutralize the threat. The combination of Ceco Door and School Guard Glass provides easy and affordable retro-fitting to tighten the security of existing fire rated and non fire rated openings. Retrofit kits including glass and glazing are also available for non fire rated applications.

5-aa10 test standard sets requirements and testing methods to certify forced entry and ballistic systems. This test standard is intended for use by schools and other public or private facilities that use commercial grade wood and hollow metal entrance doors, framing, hardware, structures and systems as well as glass, fixed sidelight framing systems, and borrowed lights.

## Attack Resistant Retrofit Kit and Glazing

Attack Resistant Retrofit Kits in standard and custom sizes replace glazing in existing hollow metal and wood doors to enhance security and to delay access from intrusion.

The Attack Resistant Retrofit Kit which includes a Ceco Type 2 (metal door) or Type 10 (wood door) light kit, SG5™ glass, plus the supplied glazing compound and tape has been third party tested to withstand a brutal physical attack from an intruder for over 4 minutes and shot 30 times in a 6"x6" area. Although bullets will penetrate the SG5 glass it will remain in place to prevent access.

This extra time helps to keep occupants safe until first responders can neutralize the threat. Replacing glazing or glazing with film in existing wood or metal doors with the Attack Resistant Retrofit Kit is an easy and affordable solution to enhance the security of any opening especially in schools.

Ceco Attack Resistant Retrofit Kits, School Guard Attack Resistant Glass and installation components are third party tested per HPW 5-aa10; however, please be aware that existing doors, frames, or hardware may not have been tested to this standard.



ASSA ABLOY and School Guard Glass  
partnering to increase security options.

# Life-Safety Solutions

## Behavioral Healthcare Patient Room Access Door

The Patient Room Access Door has the security and dependability required for healthcare facilities, yet is beautiful enough for healing environments. Intended to give caretakers or authorized person access to patient's room in case of an emergency and maintain the security needed for the facility.

The main door has the functionality of a standard in swing patient room door. The inner door can open to the corridor giving authorized personnel quick access to the patient's room. The ligature resistant design of the door is a key feature of the construction.



Corridor Side

Patient Side

## Blast Resistant Opening

Ceco has developed Blast Resistant Opening Solutions to meet US Government, Military, and Embassy safety and security objectives for blast resistance. Providing extra protection against explosions and excessive force, our blast resistant openings meet or exceed the stringent manufacturing and performance requirements up to 100 psi of the Department of Defense, Department of State, Department of Homeland Security and other regulatory groups.

Ceco is able to provide Blast Resistant doors and frames with a number of options including glazed doors, borrowed lites, transoms, and pairs with increased requirements to meet UL Government, Military, and Embassy safety and security objectives for blast resistance.



## Bullet Resistant Assembly

Ceco offers a bullet resistant door and frame assembly that can provide protection to meet stringent UL standards. The door and frame meets UL Test 752, Level 1-8.

Ceco door and frame assemblies, supplied with the appropriate hardware, will meet most job requirements for security and protection. Openings must be supplied as a complete unit with factory welded frame, door, and hardware. Contact factory for list of approved hardware.

*Other options available.*



# Life-Safety Solutions

## Flood Resistant Assembly

Factory Mutual Global studies have shown that flooding costs companies an average of billions of dollars in losses annually making it the most costly natural hazard globally.

This dry flood proofing system is intended to be used in environments where a facility is at risk for flooding. The opening is designed and tested to keep flood water depths up to 36" from entering critical buildings and limiting interior damage.

The Ceco Flood Resistant Opening has been tested to the American National Standard for Flood Abatement Equipment ANSI/FM Approvals 2510-2014 section 4.3.3. This is a passive system that can protect against flood waters at any time while closed.

Flood openings should be installed in a seated position (water pressure against the pull side of the door).

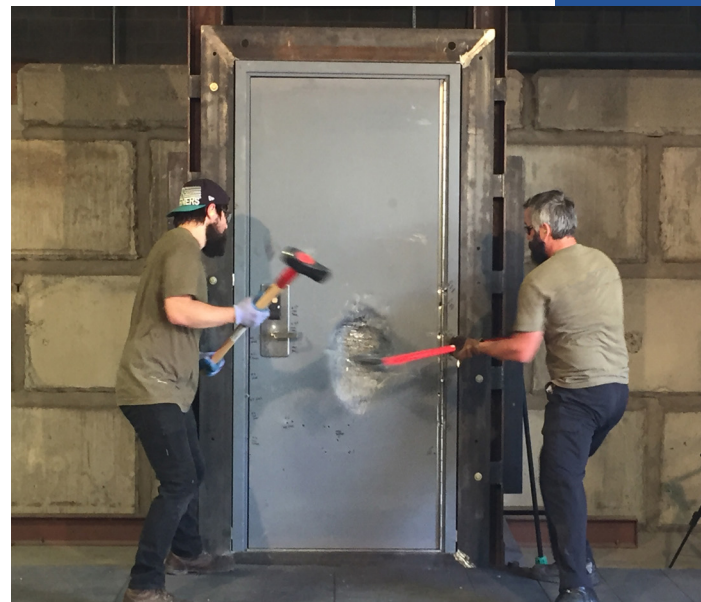


## Forced Entry Bullet Resistant Assembly

The Forced Entry Bullet Resistant Assembly (FEBR) from Ceco combines ballistic and forced-entry resistance with advanced materials to provide an elevated threat protection solution compliant and third party tested per stringent Department of State Standard SD-STD.01.01 Rev. G (Amended). The ASSA ABLOY FEBR assembly is tested to withstand 15 minutes of simulated "mob" attack and resistant to 5.56 M193, 5.56 M855 and 7.62 M80 ballistic rounds (UL752 Level 8 bullet resistant).

Forced Entry Bullet Resistant Assemblies safeguard mission critical buildings, executive offices, guard houses, control rooms, and anywhere the highest level of protection and durability are important considerations.

*Other options available.*



*Image from actual forced entry testing*

# Life-Safety Solutions



## EMI-RFI Shielded Assembly

The EMI-RFI/STC Shielding Assembly helps ensure sensitive and confidential information and communication is secure and contained.

Electromagnetic Interference (EMI) and Radio Frequency (RFI) Shielding protects the electronics of devices or sensitive equipment. The Sound Transmission Class (STC) feature prevents unwanted noise and protects sensitive communication. The Adjustable EMI-RFI/STC Shielding Assembly protects confidential communication and unwanted electromagnetic waves from interfering with circuits or devices in data centers, healthcare, commercial, or government/military applications.

Provides sound abatement up to STC 50 and EMI-RFI Shielding protection at 9 kHz-18 GHz and is third party tested per IEEE St. 299, ICD-705 (Group 3 and 4) and TEMPEST requirements.



## Multi-Solution Opening *Blast and Hurricane Resistant*

The Multi-Solution Blast and Hurricane Opening is designed to provide extra protection against explosions and hurricane force winds. The opening meets U.S. government / military safety and security objectives for blast resistance and protects against extreme wind events in the High Velocity Hurricane Zone (HVHZ).

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. The assembly is also certified by Underwriters Laboratories (UL) for compliance with hurricane resistance test standards including: ANSI A250.13, ASTM E330, ASTM E1886, ASTM E1996, TAS-201, TAS-202, TAS-203.



# Severe Weather Solutions

## Strong in the Storm®

### Hurricane Resistant

Ceco Hurricane resistant products have been tested to the wind load requirements defined in the International Building Code (IBC), the Florida Building Code (FBC), and approval by the Florida Building Commission. Products have been certified by Dade County Product Control, Intertek, and/or Underwriters Laboratories. Assemblies are tested for design pressures, impact resistance, glass and glazing materials, and specific commercial hardware applications.

#### Features:

- Design Pressure ranging from +/- 50 psf to +/- 150 psf
- Water infiltration ranging from +/- 50 psf to +/- 60 psf
- Up to 4'0" x 8'0" singles and 8'0" x 8'0" pairs with glazing options
- Sidelight and transom options available
- Missile level E (80 Feet Per Second Impact)
- Texas Department of Insurance



### Tornado Resistant

StormPro® tornado resistant assemblies help fortify shelter openings to withstand extreme wind speeds and flying debris during a tornado. Damage can be caused by flying debris (referred to as wind borne missiles). If wind speeds are high enough, missiles can be propelled at a building with enough force to penetrate windows, walls or the roof. An object such as a 2" x 4" wood stud weighing 15 pounds, when carried by a 250-mph wind, can have a horizontal speed of 100-mph. The resulting impact force will penetrate the most commonly used building materials.

#### Features:

- UL classified to ICC 500, up to 4'0" x 8'0" singles and 8'0" x 8'0" pairs
- Design pressure up to +/- 284 psf
- Field replaceable 4"x25" narrow light or 10"x10" 90 min fire rated factory installed glass
- Flush assemblies are UL Certified for up to and including 3 hour fire ratings
- Single and paired shutter options with three or four sided frames available



### Hurricane and Tornado Resistant

StormPro Hurricane and Tornado Resistant products are a combination of hurricane and tornado shelter impact protective systems designed to protect against missile penetration of wind borne debris for use in Florida and other severe weather prone areas. Building owners in hurricane and tornado-prone areas must take proper precautions to protect occupants. Damage can be caused by flying debris (referred to as wind borne missiles) that can penetrate most commonly used building materials.

#### Features:

- Underwriters Laboratories (UL) listed to ICC 500 and Approved by the Florida Building Commission (FBC) under FL# 40296
- +/- 227 PSF design pressure with 15-lb lumber 2 x 4 at 100 mph missile criteria
- Up to 4'0" x 8'0" flush singles and 8'0" x 8'0" flush pairs
- Assemblies are UL listed for up to and including 3 hour fire ratings



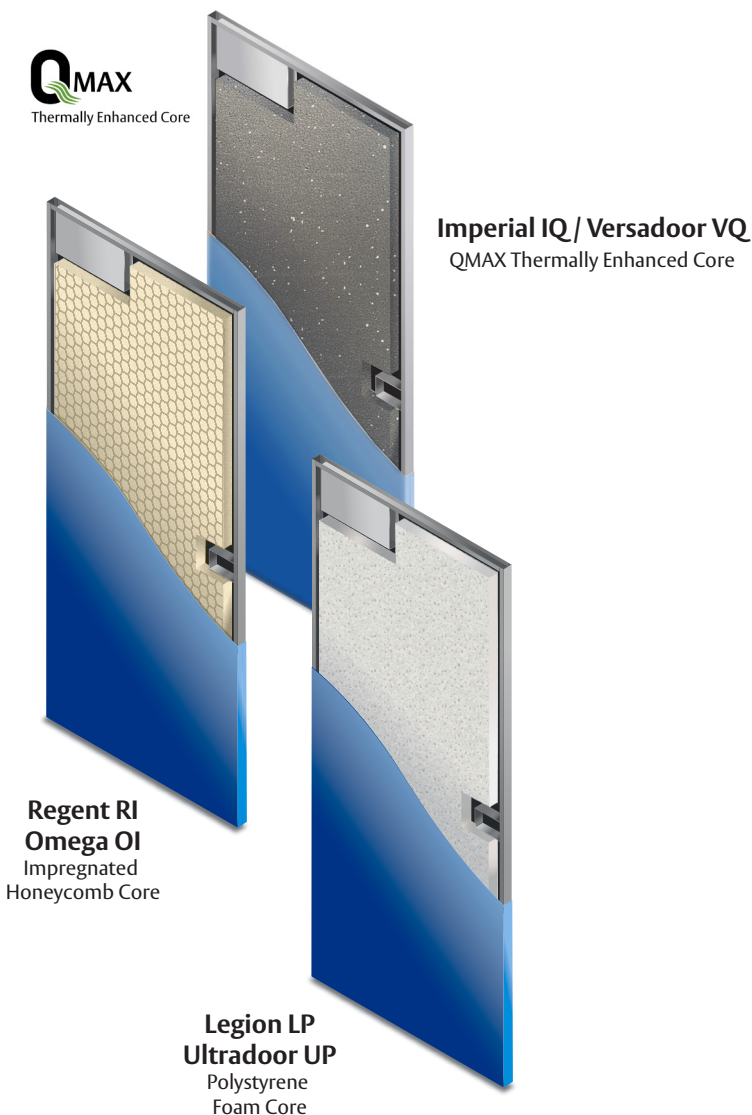
# Composite Door Details

## Composite

Ceco Door offers a complete line of composite type hollow metal doors in face sheet gauges ranging from 20 to 14. Ceco doors are insulated as standard with fully bonded, durable polystyrene (optional QMAX) cores.

Temperature Rise doors offer the maximum in fire and life safety as they feature either 250°F (121°C) or 450°F (232°C) ratings. Fire ratings are available from 20 minutes through 3 hours.

Ceco composite type doors have been tested to out-perform all test criteria available for physical endurance. The combined durability and variety of options available make these doors a popular choice for any application.



## Imperial with QMAX Thermally Enhanced Core

- 1-3/4" (44.4 mm) insulated full flush design - rated for light to maximum-duty use
- QMAX Thermally Enhance Core
- 0.32 Thermal U-Factor with Mercury 3 Thermal Break Frame
- 0.37 Thermal U-Factor with masonry or kerf frame
- Mechanically interlocked, hemmed vertical edge seams for added strength and rigidity
- Inverted end channels welded to both face sheets
- 7 gauge (4.2 mm) steel hinge reinforcement
- Electrostatically applied prime base coat

## Legion / Ultrador

- 1-3/4" (44.4 mm) insulated full flush design -rated for light to extra-heavy-duty use
- Polystyrene core provides insulation characteristics and resistance to impact
- Core is chemically bonded to face sheets providing total surface support
- Mechanically interlocked, hemmed vertical edge seams (as shown) or center edge seam for added strength and rigidity.
- 7 gauge (4.2 mm) steel hinge reinforcement
- Inverted end channels welded to both face sheets
- Rust inhibitive prime paint base coat meets ANSI A250.10

## Regent / Omega

- 1-3/4" (44.4mm) general purpose full flush design, rated for light to extra heavy-duty use
- Kraft Honeycomb core provides structural strength and exceptional flatness
- Full-coat internal contact adhesive for permanent pressure bond and rust prevention
- Mechanically interlocked, hemmed vertical edge seams (as shown) or center edge seam for added strength and rigidity
- Inverted end channels welded to both face sheets
- 7 gauge (4.2mm) steel hinge reinforcement
- Rust inhibitive prime paint base coat meets ANSI A250.10



# Steel Stiffened Door Details

## Steel Stiffened

Ceco steel stiffened doors are designed with the combination of perimeter steel channels and core stiffeners to offer the industry's largest selection and most reliable and durable construction. They are used in areas where optimum security and susceptibility to vandalism or break-in are of paramount concern.

See Ceco's website For more information about available door series, core constructions and options at [www.cecodoor.com](http://www.cecodoor.com)

## Acoustical (STC)

- Wide range of operable STC ratings from 32 to 66
- Competitive pricing including door, frame and all sealing hardware
- All door cores are lead and asbestos free
- 14 or 16 Gauge Face Skins
- Fire Rated up to 3 Hours
- Quiet Noise Doors can help achieve LEED requirements for sound and recycled content

## Trio and Trio-E

- Standard Fiberglass Insulation
- Standard Polyurethane Insulation
- 16 Gauge Top & Bottom Channels
- 1-3/4 Inches Thick
- 22 Gauge Stiffeners
- 18, 16 or 14 Gauge Face Skins
- Fire Rated up to 3 Hours
- Sizes from 2068 to 4080
- Interlock Seam Construction

## Medallion / Medallion Maxim

- 1-3/4" (44.4mm) custom construction seam/seamless design - rated for heavy duty to maximum-duty use
- Maxim 14 gauge, seamless construction with lifetime warranty when used in schools
- 22 gauge vertical steel stiffeners spaced 6" apart, welded to face sheets every 5"
- Fiberglass insulation to limit thermal and sound transmission
- Lock edge beveled 1/8" in 2" (1:16)
- Inverted end channels welded to both face sheets
- 7 gauge (4.2 mm) steel hinge reinforcement
- Rust inhibitive prime paint base coat meets ANSI A250.10

### Medallion / Medallion Maxim MS

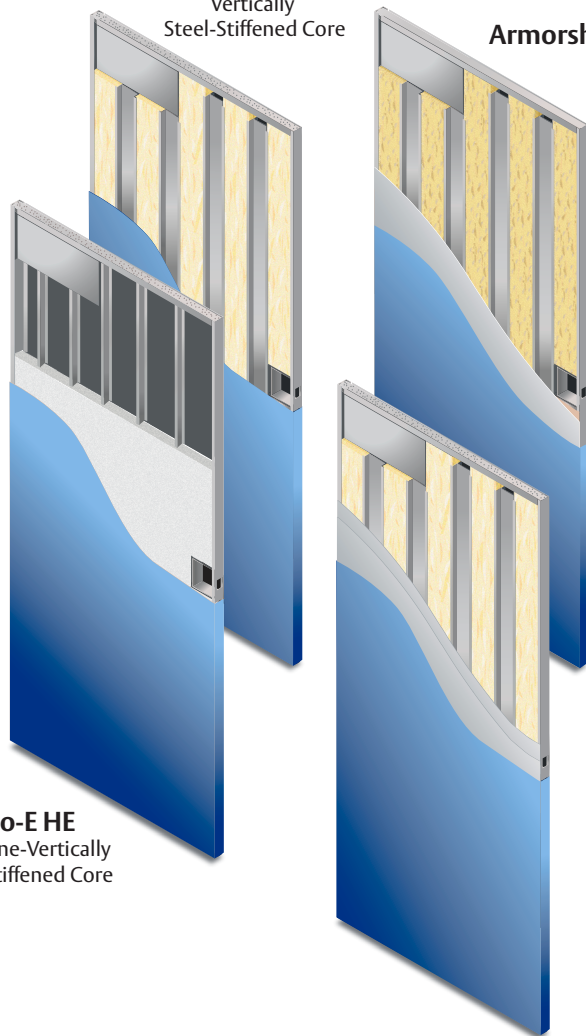
Vertically  
Steel-Stiffened Core

### Armorshield

### Acoustical

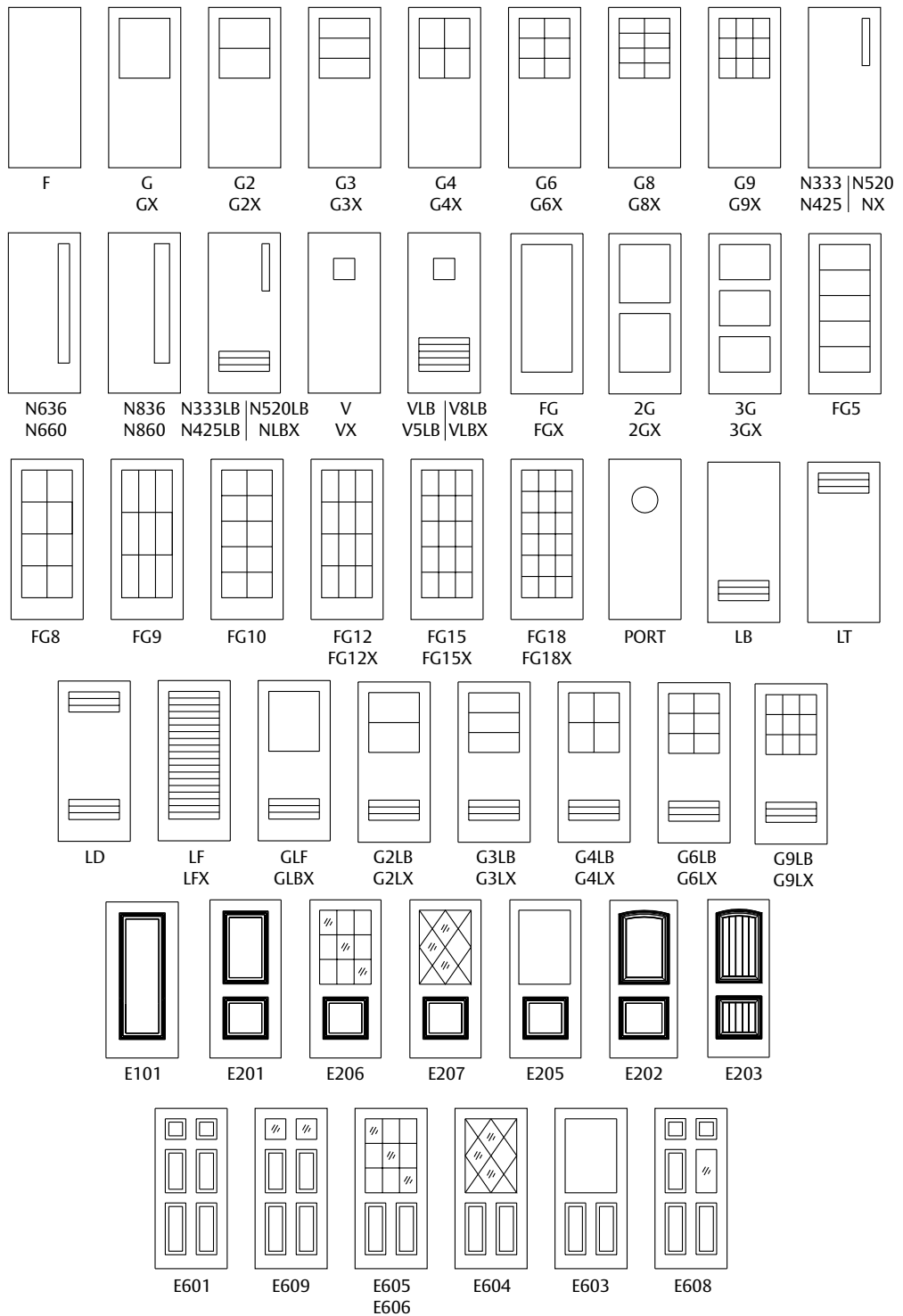
### Trio-E HE

Urethane-Vertically  
Steel-Stiffened Core



# Door Details

## Door Selection Faces





# Standard Frame Details

## Standard Frames

Design flexibility utilizing frames with made-to-order profiles and dimensions. Within tooling limits, Ceco frames can be specified in made-to-order dimensions for depth, throat, face, rabbet, soffit, or backbend to include a caulking groove, shadow box, splayed trim line, splayed top, stepped rabbet and others.

Series S frames have precision die-cut corners with positive locking tabs to assure rigid assembly connections. Available in hundreds of profiles and dimensions in either knock-down or set-up & welded.

For masonry, wood or metal studs wall, installed either to cap or butt the wall. Three or four piece door frames, Borrowed Lites, Side Lites, or Transom Frames.

SU indicates a standard frame with "unequal" frame rabbets

SQ indicates a standard frame with "equal" frame rabbets

SR indicates a standard frame with "one" frame rabbet

SC indicates a standard cased frame with no rabbet

16, 14, and 12 gauge steel Cold rolled, A60 or G90 galvanized steel.

### Fire label:

Up to three hours (UL10B and UL10C)

Underwriters Laboratories (Applied or Embossed)

Warnock Hersey (Applied or Embossed)

Factory Manual (Applied Only)

### Sizes Available:

Cased Openings

3" to 14" depth

Single Rabbet

16 and 14 gauge, 3" to 14" 12 gage, 3-3/8" to 14"

Double rabbet

16 and 14 gauge, 4-5/8" to 14"

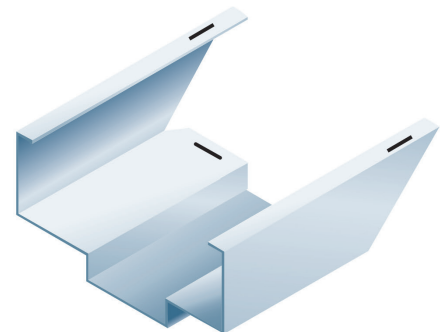
12 gauge, 5-1/4" to 14"

### Hinge preparations:

ANSI A156.7, 4-1/2".

### Strike preparations:

ANSI 4-7/8" universal A115.1 and A115.2



# Drywall Frame Details

## Drywall Frames

Ceco Drywall Frames are engineered to be installed on standard or non-standard wall sizes over prefinished or unfinished drywall board.

DU drywall frames have “unequal” rabbets and are designed to be installed AFTER the drywall board.

BU drywall frames have “unequal” rabbets and are designed to be installed BEFORE the drywall board.

DQ drywall frames have “equal” frame rabbets and are designed to be installed AFTER the drywall board.

BQ drywall frames have “equal” frame rabbets and are designed to be installed BEFORE the drywall board.

DR drywall frames have “one” frame rabbet (single rabbet).

DC drywall frames with no frame rabbet (cased opening).

### Made to Order Dimensions:

18, 16, 14 Gauge

### Fire Label:

Underwriters Laboratories (Applied or Embossed)  
Warnock Hersey (Applied or Embossed)  
Factory Mutual (Applied Only)

### Sizes Available:

Cased Opening

4-5/8" to 14" Depth

Single Rabbet

3-5/8" to 6" 16 & 14 Gauge

3-5/8" to 7-7/8" 18 Gauge

Double Rabbet

4-5/8" to 14" in 16 & 14 Gauge

4-5/8" to 7-7/8" in 18 Gauge

## Compression Type Anchor Drywall Frame - D Series

Series DU, DQ, DR, AND DC slip-on drywall frames for 1-3/4" doors are formed from commercial quality cold rolled steel conforming to ASTM A1008...or (optional) hot-dipped galvanized steel conforming to ASTM A924 and A653.

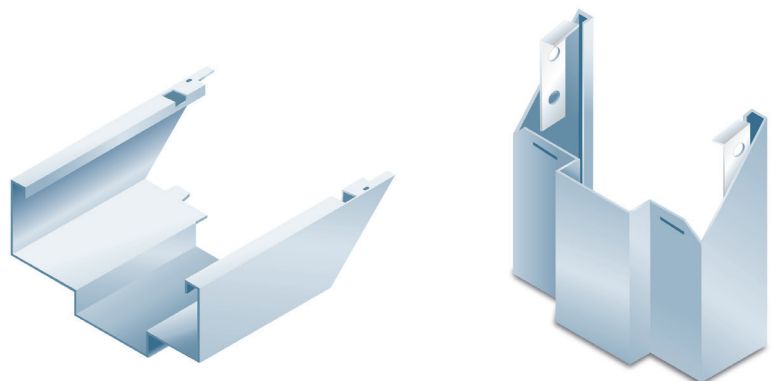
Frames are knocked down, field assembled type. Components have diecut mitered corners that interlock rigidly when field assembled. Single rabbet, double rabbet, and cased opening profiles are sized to fit popular wall thicknesses. Integral door stops are 5/8" high and frame faces are 2" except double rabbet profiles are available with 4" face heads. Adjustable, compression type anchors are welded to jambs and allow frame installation, plumbing and squaring after wallboard is applied (To adjust anchors use Phillips head screw driver). Components have backbend-returns that protect the wall surface during installation. Sill anchoring is by means of screws through dimpled holes in faces ... welded on sill strap anchors are also available (optional).

## Stud Type Anchor Drywall Frame - B Series

Series BQ, BU, BR, and BC before drywall frames for 1-3/4" doors are formed from commercial quality cold rolled steel conforming to ASTM A1008 or (optional) hot-dipped galvanized steel conforming to ASTM A924 and A653. Series BQ, BU, BR, and BC before drywall frames for 1-3/4" doors are formed from commercial quality cold rolled steel conforming to ASTM A1008 or (optional) hot-dipped galvanized steel conforming to ASTM A924 and A653.

Frames are knocked down, field assembled or welded unit type. Components have diecut mitered corners that interlock rigidly when field assembled. Single rabbet, double rabbet, and cased opening profiles are sized to fit popular wall thicknesses. Integral door stops are 5/8" high and frame faces are 2" except double rabbet profiles are available with 4" face heads.

Components have backbend-returns that facilitates installation of wall board. Twist-in or welded jamb-anchors are available for various stud wall conditions; welded floor anchors or extra jamb anchors are furnished at sill (indicate which). Frames are knocked down, field assembled or welded unit type. Components have diecut mitered corners that interlock rigidly when field assembled. Single rabbet, double rabbet, and cased opening profiles are sized to fit popular wall thicknesses. Integral door stops are 5/8" high and frame faces are 2" except double rabbet profiles are available with 4" face heads. Components have backbend-returns that facilitates installation of wall board. Twist-in or welded jamb-anchors are available for various stud wall conditions; welded floor anchors or extra jamb anchors are furnished at sill (indicate which).





# Drywall Frame Details

## Frame Installation Details

### To Determine Rough Opening:

Add 2" to Door Opening Width  
Add 1" to Door Opening Height

e.g., For a 3'0" x 6'8" door opening when frame components have a 2" face, the rough opening is: 38" x 81"

### Procedure:

#### Step 1

Begin installation by pushing the top of one jamb over the wall. Hold the top in place then push the bottom in towards and over the wall.

#### Step 2

Position frame head over the wall. Align head tabs with jamb slots then slide head towards jamb and engage tabs in slots.

#### Step 3

Push the top of the remaining jamb over wall and mate jamb slots and head tabs. Push the bottom of the this jamb in towards and over the wall then level the head.

#### Step 4

Insert screw driver into top plumb anchor screws. Alternately adjust top plumb anchors until they bear firmly against studs.

#### Step 5 - Required for labeled frames

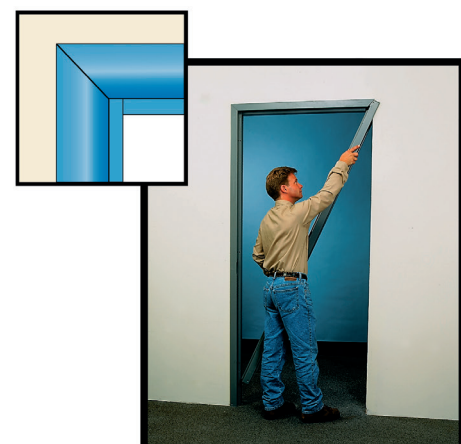
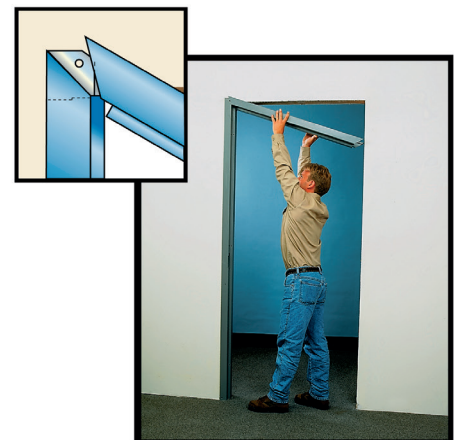
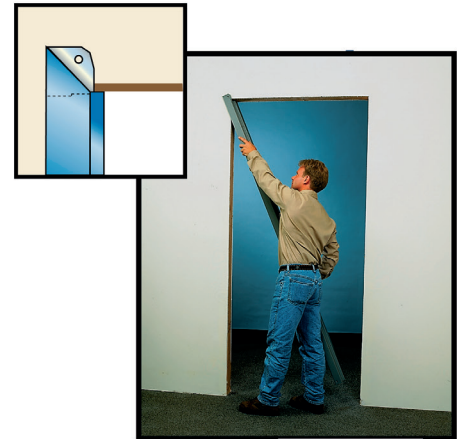
Insert (4) #8 x 1/2" Min. (Phil) PHSMS screws (by others) through holes in head backends and fasten to jamb miter guides. Verify that head is still level and shim under jambs only if necessary

#### Step 6

Plumb hinge jamb and fasten at sill. Place a temporary wood spreader (by others) between jambs at sill. Adjust strike jamb to fit firmly against spreader and fasten at the bottom of this jamb.

#### Step 7

Adjust intermediate plumb anchors (if present) until they too bear firmly against studs. Install mutes in holes provided in strike jamb or head if double door opening.



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# Weather-Stripped Frames



## Weather-Stripped Frames

Weather-Stripped frames provide best draft control available (for energy efficiency), and provides you with a high quality, functional, aesthetically pleasing opening.

- 18 and 16 gauge steel
- Kerf pocket with compression weatherstrip
- Fire label: up to three hours (UL10B and UL10C)
  - Underwriters Laboratories (Applied or Embossed)
  - Warnock Hersey (Applied or Embossed)
  - Factory Manual (Applied only)

## Series SQW and SRW Frames

Series SQW and SRW frames for 1-3/4" doors are formed from commercial quality cold rolled steel conforming to ASTM A1008 ...or (optional) hot-dipped galvanized steel conforming to ASTM A924 and A653. Frames are knocked down (K.D.) field assembled type or welded unit type. Head and jamb members of K.D. frames have diecut mitered corners that interlock rigidly when field assembled. Door stops are 5/8" high and have an integral kerf with foam filled, fire rated, compression type gasket (weatherstrip).

Single or double rabbet profile sizes are available in depths from 3-5/8" thru 14" (in 1/8" increments). Twist-in anchors are available for new masonry, wood stud, metal stud or existing opening wall conditions (indicate which). Welded floor anchors or extra jamb anchors are provided to anchor sill. Welded-in jamb anchors are also available.

## Series DQW and DRW Slip-On Drywall Frames

Series DQW and DRW slip-on drywall frames for 1-3/4" doors are formed from commercial quality cold rolled steel conforming to ASTM A1008 or (optional) hot-dipped galvanized steel conforming to ASTM A924 and A653. Frames are knocked down, field assembled type. Components have diecut mitered corners that interlock rigidly when field assembled. Single rabbet and double rabbet profiles are sized to fit wall thicknesses from 2-5/8" thru 13" (in 1/8" increments). Door stops are 5/8" high and have an integral kerf with foam filled, fire rated, compression type gasket (weatherstrip). Frame faces are 2" except double rabbet profiles are available with 4" face heads. Adjustable, compression type anchors are welded to jambs and allow frame installation, plumbing and squaring after wallboard is applied (To adjust anchors use Phillips head screw driver). Components have backbend-returns that protect the wall surface during installation. Sill anchoring is by means of screws through dimpled holes in faces. Welded on sill strap anchors are also available (optional). 18 gauge maximum size is 30x70 single & 60x70 double swing.





# Custom Frame Details

## Custom Profiles



## Custom Frames

Combinations or modifications of designs shown are available to meet job requirements. Frames are available in cold-rolled steel, galvanized, or stainless steel. Jamb depths, face dimensions, stop height, and return length can vary with the job requirements. Frames are fully saw mitered and welded. Custom frame material is welded locally by our distributors, thereby eliminating costly delays and damage in shipment.

## Double Egress Frames

These frames are designed to permit a means of egress in two directions without a vertical mullion. They are ideally suited to schools, hospitals, and nursing homes where traffic control is crucial. The unit is available either labeled or non-labeled.

## Lead-Lined Frames

Lead lining is furnished by the X-ray contractor. Frames will be provided with clips to retain lead and need to be installed by others. When used with lead-lined doors, it ensures complete X-ray protection. When specified, struts welded to the jambs and extended to the slab above provide more rigid anchorage.

## Mercury 3 Thermal Break Frames

The Ceco Door Mercury 3 thermal break frame is an energy efficient frame that incorporates a durable extruded thermal break with a Pemko S44 compression type weather-stripping.

The Mercury 3 thermal break frame has been independently tested for thermal performance with the Trio-E door U-Value of (0.34), in accordance with NFRC 102 and ASTM test methods and resistance to air infiltration (0.1 cfm sq ft), in accordance with NFRC 400 and ASTM test methods. This is **19% better thermal performance** than the prior Mercury frame!

In addition to thermal performance, frost and condensation on the interior door frame face are significantly reduced with a thermal break frame. This is accomplished with a true thermally broken frame profile and delivers maximum protection against cold penetration through conduction. Mullions used in hollow metal transom/sidelite and borrowed-lite frames feature the same thermal break design.

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