SafeLite® Patented Ceiling Fixture Covers

Documented Fire Protection, Sound Blocking and Thermal Insulation
Ceiling Fixtures (Lights, Speakers, etc.) Come In Varied Shapes and Sizes

Protection for Can lights, 2’ x 2’, 2’ x 4’, 1’ x 4’, end to end, etc. up to 14” tall
Applications For Both Suspended & Drywall Ceilings
(Ceiling penetrations typically make up 10 - 20% of the ceiling area)

Recessed can lights, troffers, speakers, etc. impact Floor/Ceiling and Roof/Ceiling assembly fire ratings, sound transmission and energy losses.
Every UL listing of fire rated, suspended and drywall Floor / Ceiling and Roof / Ceiling assemblies require recessed fixture protection.

Items such as recessed light fixtures & speakers must be protected with specified materials.
713.4.1.2 Membrane penetrations. Penetrations of membranes that are part of a horizontal assembly shall comply with Section 713.4.1.1.1 or 713.4.1.1.2. Where floor/ceiling assemblies are required to have a fire-resistance rating, recessed fixtures shall be installed such that the required fire resistance will not be reduced.

Ignorance to CODE does not excuse liability
As reported by inspectors and contractors, tile or drywall enclosures don’t hold up. Nails offer little holding power in the edge of ceiling tile or drywall. Considerable material and labor expense is required to cut, construct and install these fragile, non-certified covers.

**IMPORTANT:** Installers, Architects and Owners can face liability exposure for assembly failures.
Drywall Enclosure Concerns

Common practice, 2 layers 5/8” rated drywall fastened to steel framing
Joints typically taped & spackled and penetrations firestopped

* **CAUTION:** Drywall limitations state “avoid exposure to sustained temperatures of 125°F. Not a good choice for heat producing applications.” Heat dries out chemically bound water needed for material fire resistance
• Typical florescent light fixture ballasts operate at 68-70°C (155-160°F) with a typ. maximum of 135°C (275°F).
• Fixture bulbs often generate considerable heat especially in unconditioned ceiling cavity spaces
• **As shown,** field constructed drywall enclosures are subject to variations in construction quality and therefore fire performance
• Power cable and suspension wire notches present clear paths for fire if not properly sealed
• Covers are heavy and labor intensive to construct and install
Skilled labor typically constructs 1 steel framed, non-certified drywall enclosure per hour. SafeLite covers install at a rate of 10-12 per hour, for substantial labor savings!
Installing SafeLite is Quick n Easy (typically 5-6 mins.)

Tools Needed
- "V" grooved panel for quick fold and pin installation
- Main Panel
- End caps
- Spiral Anchors
- Covers are UL labeled
Installation On A Standard 2’ x 2’ Light Fixture, Step 1

Apply peel n stick pin with spacer near center of 2’ x 2’ light but away from ballast.
Main Panel Installation, Step 2

Fold down cover side panels and position on light. Mark cover to accept BX (armored) cable.
Lock washer on spacer pin keeps cover in place.
(Snip off excess pin)

SafeLite easily slits to accommodate power cable and suspension wire

Other molded troffer covers with limited fire ratings, require disconnecting the power cable to pass through a precut cover opening, a more costly installation.
Install End Caps - Step 4

End caps secured with spiral fasteners
Standard troffer covers include 6 fasteners
Contractors report installation in 5-6 minutes
Patented SafeLite®

The only UL Certified fixture enclosure with **up to 3 hour ratings**

SafeLite listings include: Can lights, 2’ x 2’, 2’ x 4’, 20” x 60” light troffers including vented fixtures and speakers
SPI fabricates **covers to fit virtually any size fixture**

Typical SafeLite Users

- Acoustical and Drywall contractors
- Electrical contractors
- General contractors
- Institutional facility maintenance depts. especially at Hospitals, Retirement Homes, Universities, Schools and Worship centers
- A/V specialty contractors
- Firestop contractors
- Modular construction factories
Substantial Contractor Savings!

- Installers report completing 1 drywall enclosure per man hour (cut parts, fit & assemble)

- SafeLite enclosures typically install at 10-12 per man hour

- One contractor documented $10,000 savings on his first SafeLite project versus “field fabricating” drywall enclosures

**Labor Example** - Using $100/hr (loaded rate) for a project with 200 light covers.

At 1 drywall cover/hr = 200 x $100 = **$20,000** labor cost ($100 per cover)

At 10 SafeLite covers/hr = **$2,000** labor cost ($10 per cover)

**Labor savings $18,000 on 200 covers = $90 labor saved per cover**

Major contractor benefits from using SafeLite

Labor savings, reduced call backs and liability exposure for non-compliance
Typical SafeLite Can Light Application

This fixture required minimum 3” clearance all around. SafeLite was fabricated to comply

SafeLite installed in a suspended ceiling system for Fire Protection and Sound Blocking
12A. **Fixture Protection** - **Luminaires, Luminaire Assemblies and Luminaire Enclosures Classified for Fire Resistance** — (Not Shown) - As an alternate to Item 12, luminaire enclosure kits consisting of pre-cut pieces of faced batts and assembly hardware may be used to form a five-sided rectangular enclosure over NEMA G recessed light fixtures. Luminaire enclosure kit to be installed in accordance with the accompanying installation instructions. When air supply light fixtures with air boots are used, fixtures and air boots shall be fully enclosed except for the opening needed to accommodate connection to air supply duct.

**SPI LLC, dba SPI – Specialty Products & Insulation** - **SafeLite®**
SafeLite UL Design Listings include:
Armstrong, USG, Saint-Gobain, Rockfon and Gypsum Assemblies
Note: Additional UL Design Listings Available for Reference
Luminaires, Luminaire Assemblies and Luminaire Enclosures Certified for Fire Resistance Certified for Canada

See General Information for Luminaires, Luminaire Assemblies and Luminaire Enclosures Certified for Fire Resistance Certified for Canada

**SPI LLC**
SPI-SPECIALTY PRODUCTS & INSULATION
C/O DUNES POINT CAPITAL
411 THEODORE FREND AVE, SUITE 125
RYE, NY 10580 USA


Last Updated on 2019-02-21

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SafeLite ULC (Canada) Listings
Note: Additional Listings Available for Reference
1, 2 & 3 hour fire rated drywall (Type X) systems include: Floor/Ceiling or Roof/Ceiling assembly materials.
  - Note: Fire rated drywall ceilings are more common than rated tile & grid systems

Non fire rated drywall mounted to steel or wood framing *(sound blocking and energy savings may be the primary concern)*

Unprotected fixtures are pathways for fire, sound transmission and energy losses

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**Design No. G523**
**July 28, 2017**
Restrained Assembly Rating — 2 and 3 Hr.

**Item 12: SafeLite**
Grid & Tile Ceiling Systems (Armstrong, USG, Saint-Gobain, Rockfon)

- 1, 2 & 3 hour fire rated tile and grid systems include: Floor/Ceiling or Roof/Ceiling assembly materials
- Non fire rated tile and grid (selected on esthetics, NRC and CAC performance)
- CAC (ceiling attenuation class) ceiling sound blocking performance
- Recessed ceiling fixtures (lights and speakers impact ceiling CAC performance)

Item 14. Fixture Protection – UL P267
Luminaires, Luminaire Assemblies and Luminaire Enclosures Classified for Fire Resistance*
SPI LLC - SafeLite®
dba SPI - Specialty Products & Insulation
Fixture Lamp Types

- Specific fixture lamps or bulb types may not be reported in Certified UL assembly details.
- UL details report fixture: housing material, type, size, vented, etc.
- Light fixture manufacturers identify if a specific fixture is **IC** or **Non-IC** rated. The application classification lists appropriate fixture lamp types and wattage.
- SafeLite fixture covers are regularly installed and approved by the AHJ for: Incandescent, Fluorescent, HID and LED lamped fixtures.
- Based on the above, SafeLite can be considered for a variety of lamped fixture types.
SafeLite Physical Properties

- Maximum service temperature: 1200F
- Melt Point: > 2000F
- Fire Performance:
  - Non-combustible per ASTM E-136
  - Flame Spread 25, Smoke 0 per ASTM E-84
  - Meets IBC Code requirements for Plenum Applications
- R Value 4.2 per inch per ASTM C-518
  - Effective **R Value 5.25 at 1 ¼” thick**
  (Steel housings readily transfers heating or cooling energy)
- SafeLite reduces heating & cooling energy costs
- Acoustical Performance per ASTM C-423, NRC 1.00 at 2” thick

Sound blocking “CAC” information follows
Sound Paths Through Ceiling Fixtures

High Degree of Airborne Sound Transmission
Ceiling Attenuation Class (CAC) Ceiling System Rating

- CAC is an important ceiling material rating as it controls sound transmission and speech privacy between closed adjacent spaces.

UL Certified SafeLite provides documented sound blocking performance.
Ceiling CAC Performance

A measure for rating the performance of a ceiling system as a barrier to airborne sound transmission through a common plenum between adjacent closed spaces such as offices or classrooms.

A CAC less than 25 is considered low performance.

Drywall or Suspended Ceiling

Penetrations through the ceiling membrane increase noise transmission to adjacent and above spaces.

SafeLite has documented sound blocking performance.
Especially important in health care and education environments for speech privacy, speech intelligibility and concentration.
Armstrong high CAC #1811 Fine Fiss. tile **without light fixtures**, CAC 44

Armstrong #1811 ceiling system w/ 2, 2’ x 4’ light fixtures, **CAC 41**

Armstrong #1811 tile ceiling w/ 2 – 2’ x 4’ fixtures & **SafeLite** covers **CAC 45** (4 db improvement is substantial)

Two unprotected light fixtures significantly increased ceiling membrane sound transmission.
More fixtures = greater sound transmission

SafeLite restored ceiling performance to as if recessed fixtures weren’t installed

*This documented performance is critical for noise control and sound proofing*
Under Section 164.502 of the Federal Register’s Department of Health and Human Services final ruling on Standards for Privacy of Individually Identifiable Health Information it states that:

“Protected Health Information includes individually identifiable information in any form, including information that is transmitted ORALLY, or in written or electronic form.

This Privacy Ruling requires that covered health care entities make reasonable efforts to limit the use or disclosure of protected health information to the minimum necessary.”
HIPAA Regulations Impact

- Hospitals
- Physician Offices
- Medical Clinics
- Pharmacies
- Public Health Authorities
- Military Medical Bases
- Life Insurers
- Billing Agencies
- Information System Vendors
- Service Organizations
- Employers
- Schools
Common SafeLite Applications (Fire & Sound Blocking and Energy Savings)

- Hospitals, Medical Facilities, Retirement Homes
- Classrooms, Music rooms
- Office, Restaurants, Mixed Function Space
- Performance Space, Religious & Gov’t Facilities

Hebron Platform - 1600 SafeLite installed on lights and speakers
Thermal Image Scan
Uninsulated **recessed fixtures** represent significant energy loss areas

- **Missing Ceiling Insulation**
- **Can light air leaks from ceiling cavity to conditioned space**

1994 Penn State Engineering Study - 1 can light $5-30$ energy loss/yr. w/ 2-10 CFM leakage

**Fixture sheetmetal housings provides no insulation**
SafeLite light covers @ 1 ¼” tk. provide an R Value of 5.25 reducing fixture energy losses during heating and cooling seasons
A commonly referenced light fixture study

- 1 conventional recessed can light fixture loses between $5 – $30 per year worth of energy (1994 energy cost)
- Can light air leakage of 2-10 cubic feet per minute (CFM) per fixture
- This dumps ~ 1/3 gallon of condensed moisture daily into unconditioned ceiling or attic space (results in mold growth, ice dams, sheathing and framing damage)

Adjusted for the current cost of electricity (1994-2020)
- According to the U.S. Bureau of Labor Statistics, prices for electricity were 67.94% higher in 2020 versus 1994
- A 2’ x 4’ fixture represents 60 times the surface area opening of a 6” can light
All recessed luminaries installed in the building envelope

- **Type IC rated** and sealed with gasket or caulk between housing and interior wall or ceiling covering
- **Type IC rated** and labeled in accordance with ASTM E 283 to allow ≤ 2.0 cfm of air movement from conditioned space to ceiling cavity
- **CODE = Minimum Requirement**
- SafeLite provides enhanced energy savings, reduces greenhouse gas emissions and can qualify for LEED Credits

Note: State Code / Project Spec may allow Non-IC fixtures

Alternate Ref. ASHRAE 90.1

Renovation and new projects can include Non-IC fixtures
SafeLite Environmental Benefits

- Sustainable, made from natural materials with a minimum of 70% post-industrial recycled content (and available with up to 90%)
- An effective R value of 5.25 reduces energy losses, greenhouse gas and carbon emissions for cost savings
- Can contribute to LEED credits
Summary SafeLite Advantages

- Maintains or restores assembly life safety fire ratings
- Complies with CODE and UL/ULC designs
- Produced to fit small LED thin lights to large fixtures up to 60” long equals all project requirements from one source
- ¾, 1, 2 & 3 hour ratings for grid, tile and drywall assemblies
- No need to disconnect power cables or shut off power to install on existing fixtures, reduces installation cost and business interruptions
- UL Certified design coverage includes vented fixtures
- Documented sound blocking (CAC): quiets space, speech privacy per HIPAA, creates a better learning environment
- Reduces heating and cooling seasonal energy losses for life cycle cost savings, reduced greenhouse gas and carbon emissions
- Quick and easy installation (5-6 mins.) on new or existing project applications
- Made in the USA
(Fire, sound blocking and energy savings performance)

Fire - Maintains fire rated ceiling assembly integrity, as shown in UL suspended and drywall ceilings listings. Penetrations such as recessed light fixtures and speakers must be protected. As shown in UL Listings, SafeLite offers proven fire protection with up to 3 hour fire ratings for a variety of construction assemblies.

Sound Blocking - UL Listed SafeLite enclosures offer documented acoustical performance greatly improving speech privacy and reducing unwanted sound transmission. This performance is critical for sound proofing efforts. Applications include: education, apartments, condominiums, retail etc.

Energy Savings - SafeLite has an effective R value of 5.25 at 75°F that conserves energy during heating and cooling seasons thereby reducing green house gas and carbon emissions.

Marine - SafeLite has US Coast Guard approval for thermal and acoustical application under certifications 164.109/11, 164.112/144 and 145.

SafeLite is available to accommodate a variety of fluorescent light fixture sizes: 24” x 24”, 12” x 48”, 24” x 48”, 20” x 60” as well as recessed can or high hat style fixtures to satisfy ceiling assembly designs specified in UL listings and required by Building Code.

SafeLite is fabricated from high temperature, noncombustible, rigid mineral fiber board (Covers are supplied at 1-1/4” thick foil faced on one side for enhanced durability. Panels are custom cut and grooved to effortlessly fold into a standard box enclosure to accommodate specific light fixture dimensions and maintain a fixture air space (custom cut enclosures are also available). Florescent light covers are supplied with insulation pins and locking washer to maintain clearance and secure the cover to the fixture. Pre cut end caps are provided with new improved securing pins.

Additional SafeLite Benefits Include:

- The lightweight (~7 pounds for a 2’ x 2’ light fixture) construction is a quick and easy to install saving considerable labor time and expense.
- The use of fixture securing and enclosure fasteners provides a durable system that stays in place.
- The rigid board enclosure and new fasteners offer improved durability compared to traditional field constructed enclosures.
- Covers slit easily to accommodate light fixture power cable and fixture or ceiling suspension wires, reducing labor costs for installation.
- Standoff insulation pins maintain air space requirements.
- SafeLite insulation board is made from natural materials having a recycled content of up to 90% and contributes to LEED credits.
**Quantity**

<table>
<thead>
<tr>
<th>Description</th>
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<tr>
<td>2 x 4 Standard fluorescent cover</td>
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<tr>
<td>2 x 2 Standard fluorescent cover</td>
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**Custom Covers:**

Fluorescent, Can Lights, Speakers, etc. (inside cover dimensions)

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<th>Length</th>
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<th>Height</th>
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**SafeLite Packaging Label**


*SPI*

*SafeLite®*

*Fixture Enclosures for Ceiling Assembly Fire, Acoustic and Thermal Performance*

*Phone: (717) 581-0650 • Fax: (717) 581-0655 • www.spi-co.com*
Quote/Order Form

1) Std. Cover sizes

2) Custom Covers

3) Important Info

4) Product properties
   1) Service temp
   2) Melt point
   3) R Value
   4) ASTM E136
   5) ASTM E84

5) Acoustic Test Data

6) UL Design Listings

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**SafeLite® ORDER FORM**

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**STANDARD FLUORESCENT LIGHT FIXTURE QUANTITY**

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<th>2'x4'</th>
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**CANS AND NON STANDARD FLUORESCENT FIXTURE**

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<th>Required Inside Cover Dimensions</th>
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**Note**

- When ordering can light or non standard fluorescent covers provide accurate fixture dimensions. Include specific manufacturer required air space clearance for non IC rated lights to ensure correct SafeLite sizing.
- All covers are produced in 5 sided unless specified otherwise.
- Typical lead time 7-10 days ARO.
- It is the installer’s responsibility to review specific U.L. ceiling design and prepare any vent openings.

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**SafeLite (mineral wool board, faced) Physical Properties:**

- Maximum service temperature: 1200°F
- Melt point: > 2000°F

**Thermal Resistance:**

- ASTM C 518 (C577) R value/inch @ 75°F
- 4.2 (R value 5.15 @ 1-1/4" thick)

**Fire Performance:**

- ASTM E 136 Behavior of Material at 750°F (1382°F)
  - Non-Combustible
- ASTM I 44: Surface Burning Characteristics
  - Flammable Spread 25
  - Smoke Developed 0

**SafeLite covers are fabricated from material which is approved for use by the New York City Dept. of Building. Report of Materials and Equipment Acceptance Division under M&H 384-2-M Vol. 2.**

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**Acoustical Performance:**

- ASTM C 435
- NRC = 1.00 @ 2" thick
- ASTM I 1414 CAC-Two Room Transmission Loss, AL 20 (TM 418)
  - A high performance ceiling no light fixtures, CAC 45
  - (The same ceiling with 2-2'x8' light fixtures, CAC 61)
  - The same ceiling with 2-2'x4' light fixtures, CAC 65

**SafeLite is classified by Underwriters Laboratories, Inc. for use in the fire rated floor and roof-ceiling designs listed below:**

**Floor-Ceiling Designs:**
- Design Nos. D010, D1218, D216, G230, G234, G246, G52, G56, J025 and J206

**Roof-Ceiling Designs:**
- Design Nos. P207, P218, P230, P337 and P267

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**Disclaimers and Limitations of Warranty:**

The purchaser/user is advised to consult with the appropriate professionals and to read the manufacturer’s product information to determine the adequacy or appropriateness of the products for the use intended. SPI makes no claim or representation regarding the use or applicability of the products. Further, SPI makes no warranty, expressed or implied, and disclaims all warranties including, without limitation of marketability and fitness for a particular purpose.

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For additional information please visit
http://spicorporation.com

Please ask your SPI representative about our other fabrication products and services.
Learn more at www.spi-co.com

Find SafeLite in MasterSpec & BSD SpecLink
Questions
Contact: Fabteam@spi-co.com
Or call (855) 519-4044