

COMPOSITE
TOTALJOIST



ACOUSTIC AND FIRESTOP GUIDE



TABLE OF CONTENTS

Introduction to Fire Ratings and Acoustic Ratings	4
Composite TotalJoist Floor/Ceiling Assemblies	6
Firestopping	14
Introduction to Firestopping	15
Firestop Details	16
CONDITION: Fire Rated Load Bearing Wall	17
CONDITION: Joists Parallel to Fire Rated Load Bearing Wall or Non-Load Bearing Wall	18
CONDITION: Joists Penetrating Fire Rated Non-Load Bearing Wall	19
CONDITION: Transition from CTJ to Composite Deck Floor	20
CONDITION: Non-Load Bearing/ Non-Fire Rated Wall Intersection with Fire Rated Floor-Ceiling Assembly	21
CONDITION: Plenum Box Parallel to Joist Span	23
CONDITION: Unprotected LED Recessed Lights	24
CONDITION: Protected LED Recessed Lights	25
CONDITION: Unprotected Duct from Exhaust Fan in Dropped Ceiling	26
CONDITION: Exhaust Fan Protected with Fire Rated Gypsum, Box	27
CONDITION: Protecting a Beam within the Listed Assembly	28
Penetration Details	29
About Bailey Metal Products Ltd	43

COMPOSITE
TOTALJOIST

INTRODUCTION

TO FIRE RATINGS AND

ACOUSTIC RATINGS

INTRODUCTION TO FIRE RATINGS

Fire resistant floor-ceiling assemblies serve as barrier to the spread of fire between separate spaces in multi-residential or multi-use buildings. Floor-ceiling assemblies are tested for their endurance in accordance with UL 263 in the United States, or to CAN-ULC S101 in Canada.

Full scale floors are built and tested by subjecting them to a standard fire up to a temperature of 1,260°C. The floor must withstand this sustained fire for the duration of the test.

Typical requirements in buildings codes are for a 1 hour or 2 hour fire resistance rating (higher ratings may be required).

Fire resistant floor-ceiling assemblies must be constructed in accordance with the tested construction as described in the UL and ULC listings.

Various options are available depending on the listing. For example, UL G555 / ULC I525 allows for the protection of structural steel beams provided that the beam is contained within the floor plenum.

Various penetrations for light fixtures or HVAC ducts are allowed as outlined in the associated listings; these options are illustrated within this guide.

INTRODUCTION TO ACOUSTIC RATINGS

Acoustic ratings provide a means to rank a floor's ability to isolate sound. **Acoustic test** are based on ASTM E90 (STC) and ASTM E492 (IIC). Sound loss and sound transmission are measured by a series of instruments from which the ratings are calculated for design.

A higher acoustic rating indicates a floor is better able to stop the transmission of sound through it. Similar to wall assemblies, floor-ceiling assemblies are a major component of the sound isolation system within a building.

TABLE 1 SIGNIFICANCE OF STC NUMBERS

STC Ratings	Speech Audibility	Effectiveness
15 to 25	Normal speech easily understood	Poor
25 to 35	Loud speech easily heard, half of normal speech understood	Marginal
35 to 45	Half of loud speech understood, normal speech heard but not understood	Good
45 to 55	Loud speech faintly heard but not understood	Very Good
55 and higher	Loud speech usually not heard	Excellent

Sound transmission class (STC) ratings describe a floor's ability to isolate airborne sounds such as speech. The significance of STC numbers is illustrated in Table 1.

In addition to airborne sound transmission, floors are also rated by IIC (Impact Insulation Class). IIC Values rate the capacity of floor assemblies to control impact noise such as a person's heel hitting the floor. The Significance of IIC ratings is illustrated in Table 2.

TABLE 2 SIGNIFICANCE OF IIC NUMBERS

IIC Ratings	Perceived Footfall/Impact Noise
25-35	Very loud impact noise. Footsteps and dropped items clearly heard; extremely poor.
36-40	Loud impact noise. Footsteps clearly audible; insufficient for multifamily.
41-50	Impact noise audible but significantly reduced. Typical concrete slab. Often not acceptable for multifamily without treatment.
51-59	Considered minimally acceptable for multifamily under IBC requirements (IIC 50, or 45 field). Footsteps audible but not intrusive
60-69	Good performance. Most impact sounds (walking, moving chairs) are faint or muffled. Meets comfort expectations
70+	Excellent. Impact sounds barely audible. High-end acoustic design and premium underlayments.

Other components can have an impact on the effectiveness of the sound isolation. For example penetrations in the assemblies can have a detrimental impact on sound isolation.

For general guidance and best practices for minimizing the impact of penetrations, refer to "Best practice guide on fire stops and fire blocks and their impact on sound transmission" published by NRC - Institute for Research in Construction.

Acoustic ratings are based on various finished floors. Finished floors can be applied to Composite TotalJoist Floor Systems in the same way that they are applied in traditional floors.

There are several methods to install wood flooring products over the Composite TotalJoist Floor Systems: For installation over concrete slabs, refer to the instructions published by The Wood Flooring Manufacturers Association at www.nofma.org.

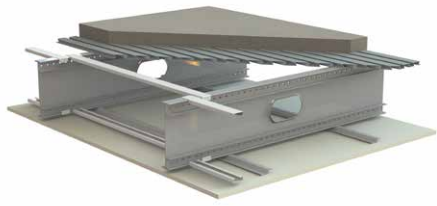
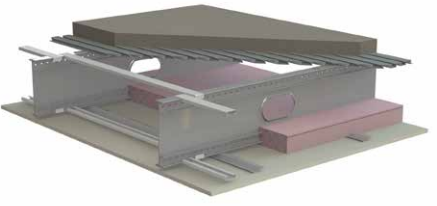
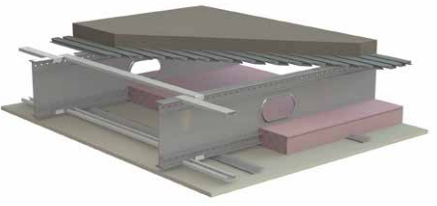
There are also several methods to install ceramic tile on Composite TotalJoist Floor Systems. For guidance, refer to the 2009 TCA Handbook for Ceramic Tile Installation published by The Tile Council of North America, Inc.

Visit their website at www.tileusa.com. Inside you will find many approved installation systems suitable for the Composite TotalJoist Floor Systems.

COMPOSITE
TOTALJOIST

FLOOR/CEILING ASSEMBLIES

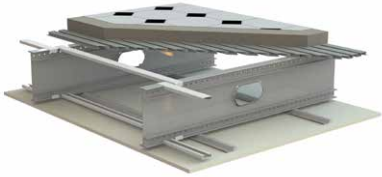
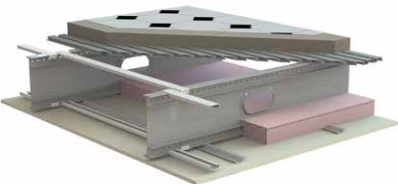
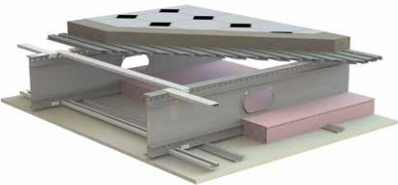
BASE ASSEMBLIES

System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
B1	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - none Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board	2 HR	50 ¹	25 ²
B2	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - none Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ¹	30 ²
B3	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - none Ceiling: 3-1/2" Fiberglass Batts - Pliteq GenieClip® RST 48" O.C. 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ²	30 ²
B4	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 4" Normal Weight Concrete, 3.0 ksi Finished Floor: - none Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		60 ²	25 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis

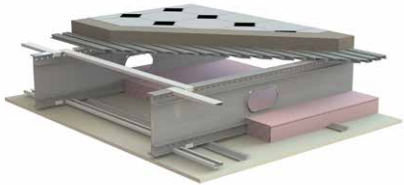
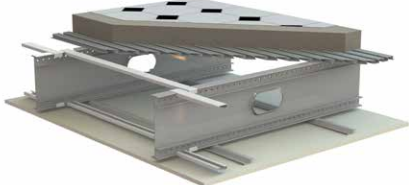
1. 'FRR' is the UL/ULC Approved Fire Resistance Rating tested as per CAN ULC S101
2. 'STC' is the Sound Transmission Class
3. 'IIC' is the Impact Insulation Class
4. See Below for ratings specific to floor finishes
5. All topping thicknesses are measured from top of deck
6. Acoustic ratings are based on modeling data used values based on lower limit of design tolerance (-3dB for STC, -5dB for IIC)

VINYL FLOOR FINISH

System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
V1	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Vinyl Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board	2 HR	50 ¹	25 ²
V2	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Vinyl Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ¹	30 ²
V3	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: 3/16" Vinyl Tile/Plank 1/16" Pliteq GenieMat® RST02 Ceiling: 3-1/2" Fiberglass Batts - Pliteq GenieClip® RST 48" O.C. 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ¹	47 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis

VINYL FLOOR FINISH

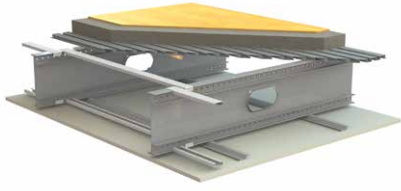
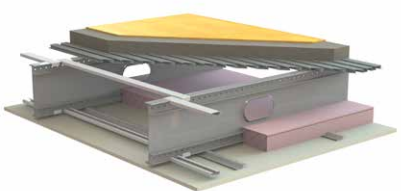
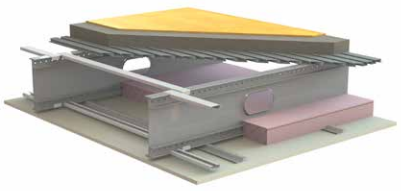
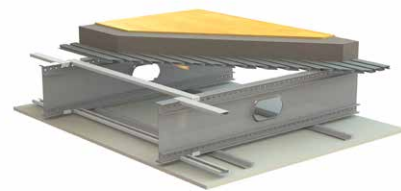
System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
V4	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Vinyl - Insono AF3-130 Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board	2 HR	58 ²	57 ²
V5	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 4" Normal Weight Concrete, 3.0 ksi Finished Floor: - Vinyl Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		61 ²	25 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis



Increasing slab thickness will increase STC & IIC ratings, Contact Bailey Metal Products Ltd.

LAMINATE FLOOR FINISH

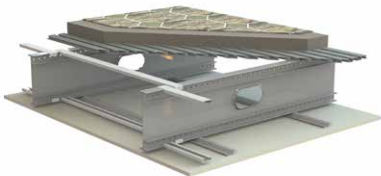
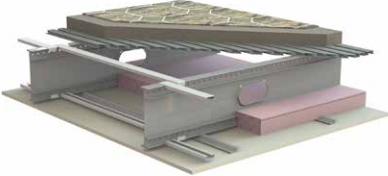
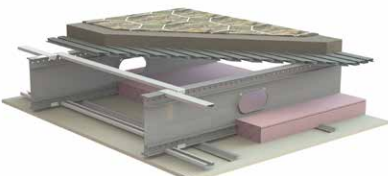
System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
L1	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Laminate Flooring 1/16" Foam Underlay Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board	2 HR	50 ¹	54 ²
L2	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Laminate Flooring 1/16" Foam Underlay Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ²	55 ²
L3	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Laminate Flooring - Insonofloor BB Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ¹	59 ²
L4	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 4" Normal Weight Concrete, 3.0 ksi Finished Floor: - Laminate Flooring 1/16" Foam Underlay Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		60 ²	57 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis



Increasing slab thickness will increase STC & IIC ratings, Contact Bailey Metal Products Ltd.

CERAMIC TILE FLOOR FINISH

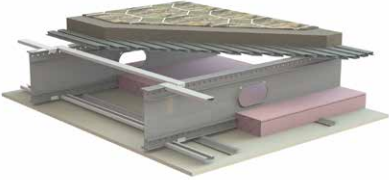
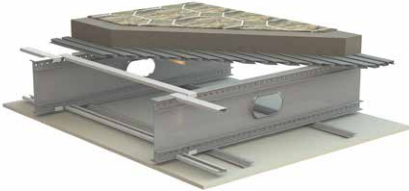
System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
C1	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Ceramic Flooring Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board	2 HR	50 ¹	31 ²
C2	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: - Ceramic Floor Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ¹	31 ²
C3	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: 5/16" Porcelain Tile 1/4" Pliteq GenieMat® RST05 Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		58 ²	52 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis



Increasing slab thickness will increase STC & IIC ratings, Contact Bailey Metal Products Ltd.

CERAMIC TILE FLOOR FINISH

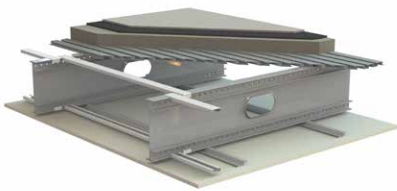
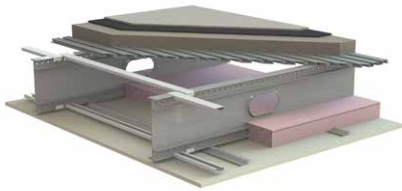
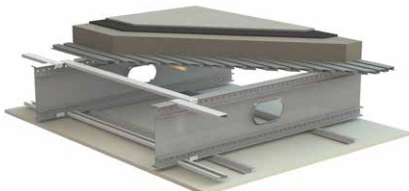
System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
C4	Unrestrained/Restrained UL G555 / ULC I525 	Structure: • Composite TotalJoist™ • Total-Deck™ Topping: • Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: • Ceramic Floor • Insono AF3-130 Ceiling: • 3-1/2" Fiberglass Batts • 7/8" Hat Channel • Certainteed 5/8" Type C Gypsum Board	2 HR	58 ²	53 ²
C5	Unrestrained/Restrained UL G555 / ULC I525 	Structure: • Composite TotalJoist™ • Total-Deck™ Topping: • Min. 4" Normal Weight Concrete, 3.0 ksi Finished Floor: • Ceramic Floor Ceiling: • 7/8" Hat Channel • Certainteed 5/8" Type C Gypsum Board		60 ²	30 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis



Increasing slab thickness will increase STC & IIC ratings, Contact Bailey Metal Products Ltd.

CARPET FLOOR FINISH

System No.	Assembly and Approval Designation	Assembly Breakdown	FRR	STC	IIC
CA1	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: 5/16" Underpad - Carpet Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board	2 HR	57 ²	56 ²
CA2	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 3" Normal Weight Concrete, 3.0 ksi Finished Floor: 5/16" Underpad - Carpet Ceiling: 3-1/2" Fiberglass Batts 7/8" Hat Channel 5/8" Certainteed 5/8" Type C Gypsum Board		58 ¹	60 ²
CA3	Unrestrained/Restrained UL G555 / ULC I525 	Structure: - Composite TotalJoist™ - Total-Deck™ Topping: - Min. 4" Normal Weight Concrete, 3.0 ksi Finished Floor: 5/16" Underpad - Carpet Ceiling: 7/8" Hat Channel - Certainteed 5/8" Type C Gypsum Board		60 ²	60 ²

¹ Denotes values based on lab tests ² Denotes estimate based on modeling / engineering analysis



Increasing slab thickness will increase STC & IIC ratings, Contact Bailey Metal Products Ltd.

COMPOSITE
TOTALJOIST

FIRESTOPPING

INTRODUCTION TO FIRESTOPPING



In addition to typical penetrations, there are common firestopping details that can be easily integrated into the Composite TotalJoist floor system in order to facilitate continuity of horizontal and vertical fire separations, while maintaining constructability and workflow.

These include: Typical requirements in buildings codes are for a 1 hour or 2 hour fire resistance rating (higher ratings may be required). Fire resistant floor-ceiling assemblies must be constructed in accordance with the tested construction as described in the UL and ULC listings.

- Head of wall firestopping at fire rated load bearing walls (**Page 16-17**)
- Joists penetrating through a fire rated wall (**Page 18**)
- Transitioning from a Composite TotalJoist floor to a composite steel deck floor (**Page 19**)
- Continuing the ceiling separation at non-load bearing walls (**Page 20-21**)
- Creating a “plenum box” (**Page 22**)
- Light penetrations (**Page 23-24**)
- Exhaust fan penetrations (**Page 25-26**)
- Protecting a beam within an assembly (**Page 27**)

Pipe, conduit, or cable penetrations in the floor-ceiling assembly can be made without the fire separation by using firestop systems that are UL/ULC Listed. There are several manufacturers of applicable firestop solutions. A complete list of all applicable firestop solutions can be found in the UL online directory.

For convenience, a range of firestop solutions are presented in this section.

For detailed installation information, see the associated UL or ULC listing. Refer to Table 1 for an index of firestop solutions by penetrant type and type of firestop.

For penetrations such as lights, ducts, and outlet boxes, see the “Allowable Penetration Details” section of the Composite TotalJoist Technical Guide.

DRYER EXHAUST CEILING

Pages 30 to 31

**BATHROOM FAN EXHAUST
CEILING PENETRATION**

Pages 30 to 31

**HEAD OF WALL
FIRESTOPPING**

Pages 16 to 21

**FLOOR/CEILING PIPE
PENETRATION**

Pages 30 to 38

**MAIN DUCT CEILING
PENETRATION**

Page 41

WIRE PENETRATIONS

Pages 39 to 40

**DOWNLIGHT CEILING
PENETRATIONS**

Pages 23 to 24

**KITCHEN EXHAUST
CEILING PENETRATIONS**

Pages 30 to 31

**GYPSUM BOARD
INSTALLED PRIOR TO
DUCT INSTALLATION**

**GYPSUM BOARD
INSTALLED OVER
TOP TRACK OF
ALL NON-LOAD
BEARING WALLS**

Pages 19 to 20

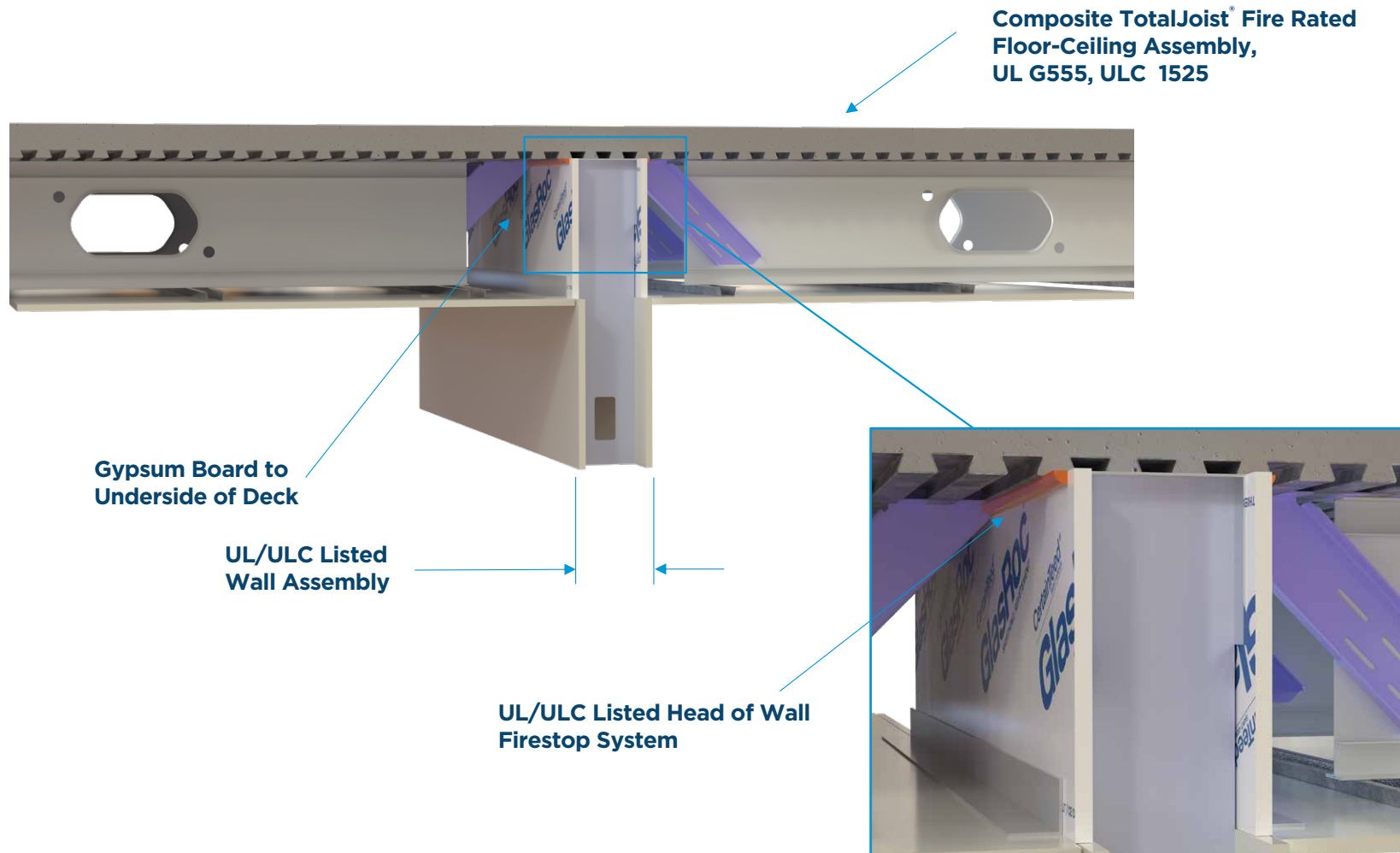
DUCT CEILING PENETRATION

Pages 41

**GYPSUM BOARD INSTALLED
PRIOR TO DUCT INSTALLATION**

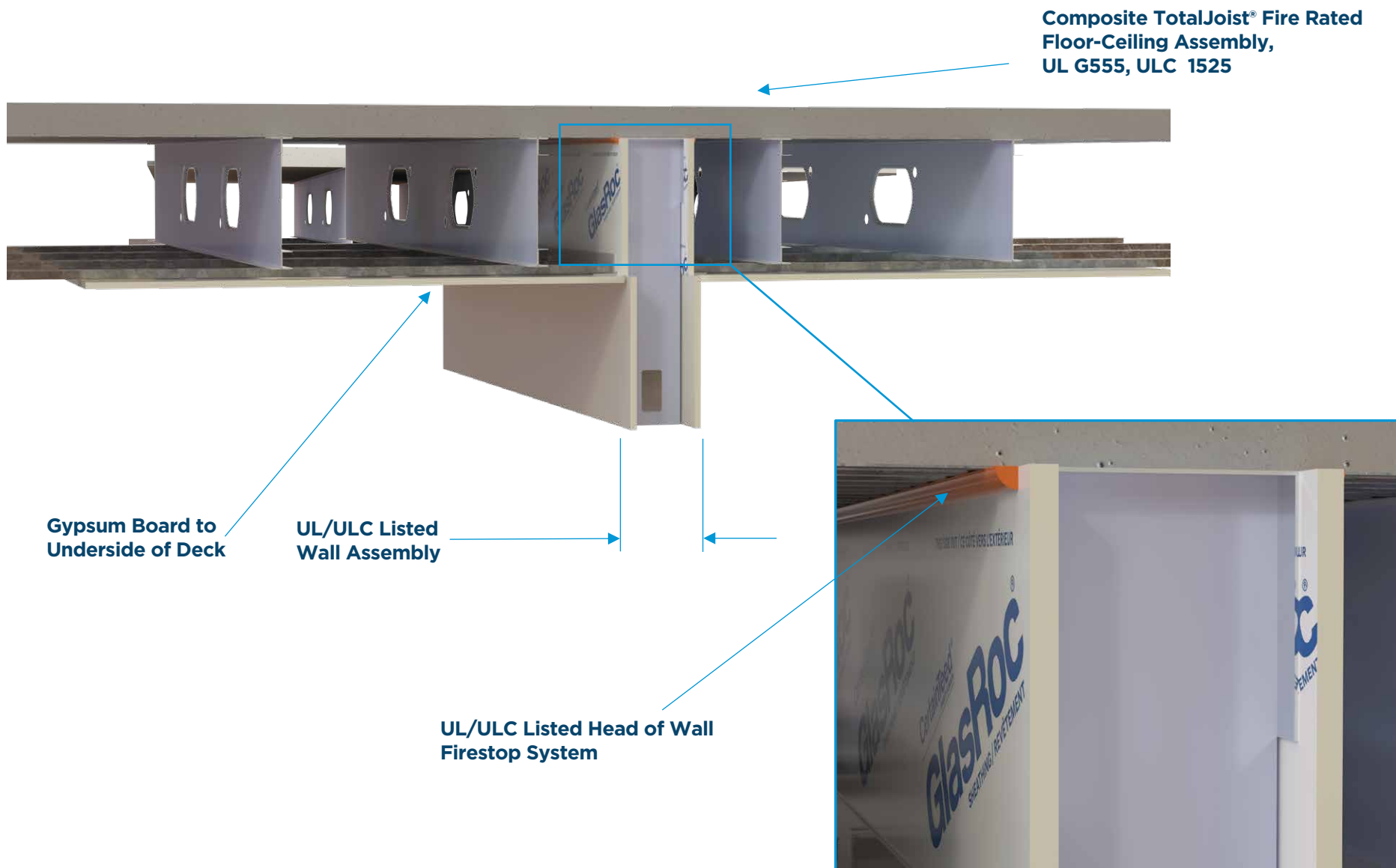
FIRESTOP DETAILS

CONDITION: FIRE RATED LOAD BEARING WALL



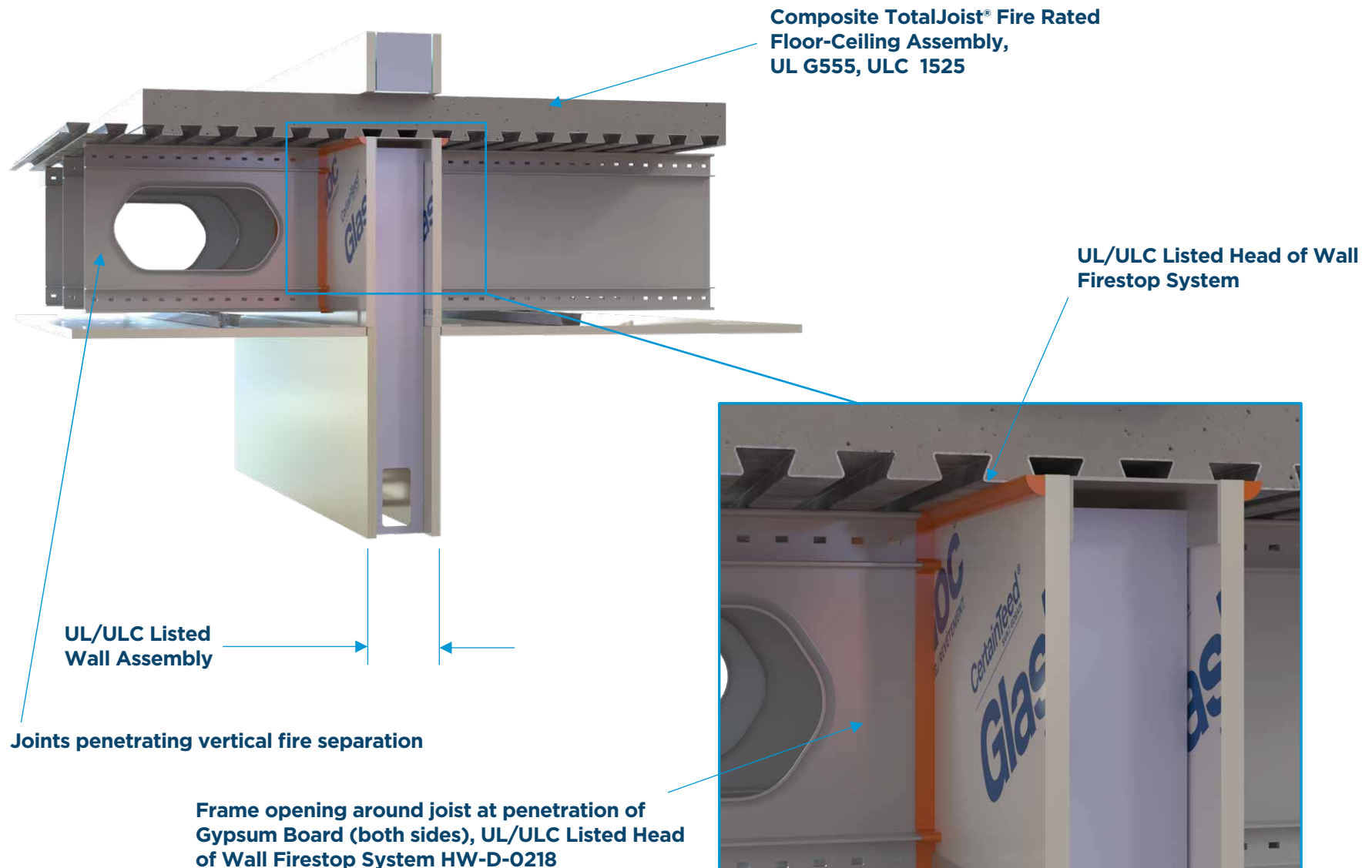
FIRESTOP DETAILS

CONDITION: JOISTS PARALLEL TO FIRE RATED LOAD BEARING WALL OR NON-LOAD BEARING WALL



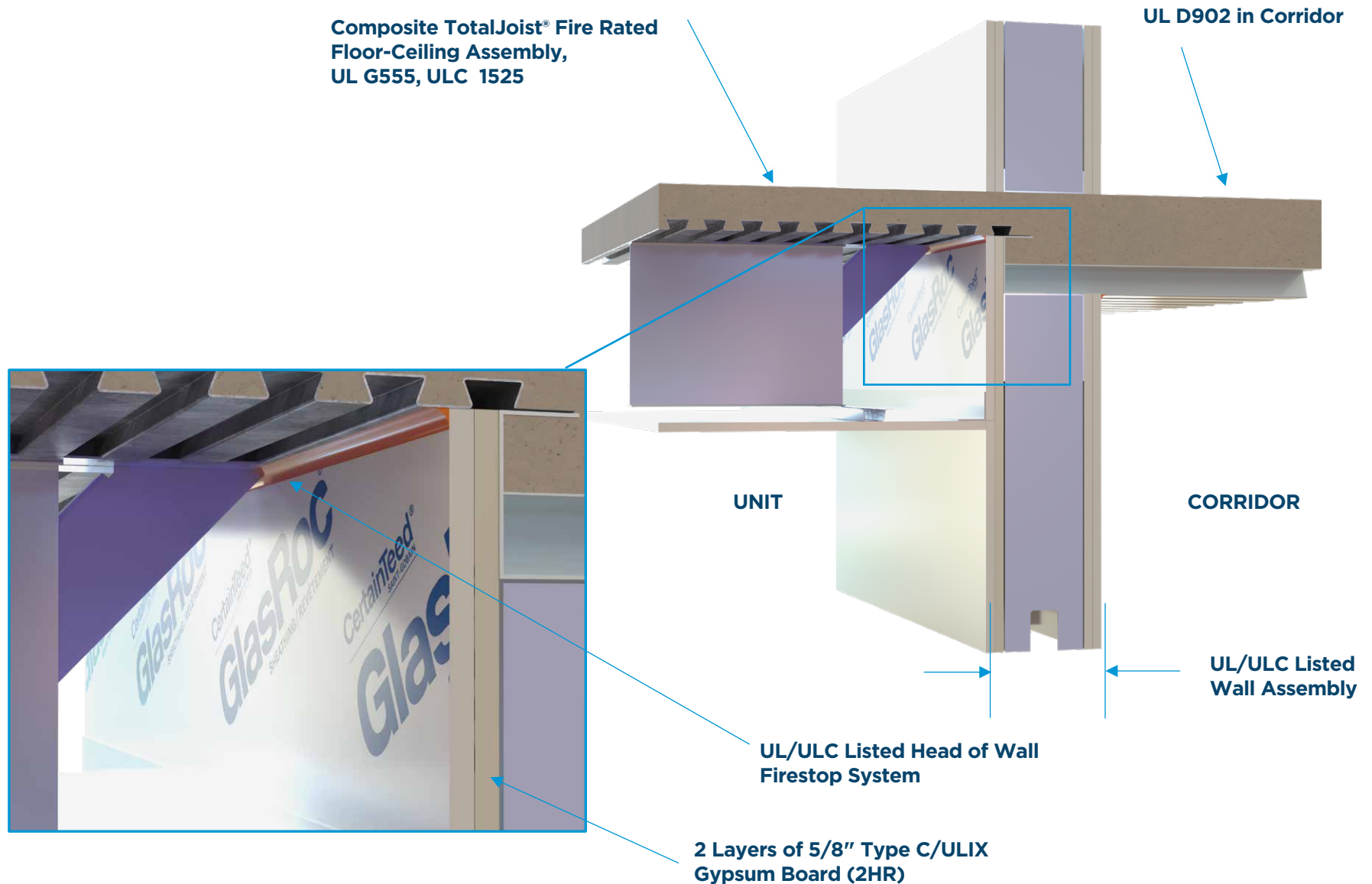
FIRESTOP DETAILS

CONDITION: JOISTS PENETRATING FIRE RATED NON-LOAD BEARING WALL



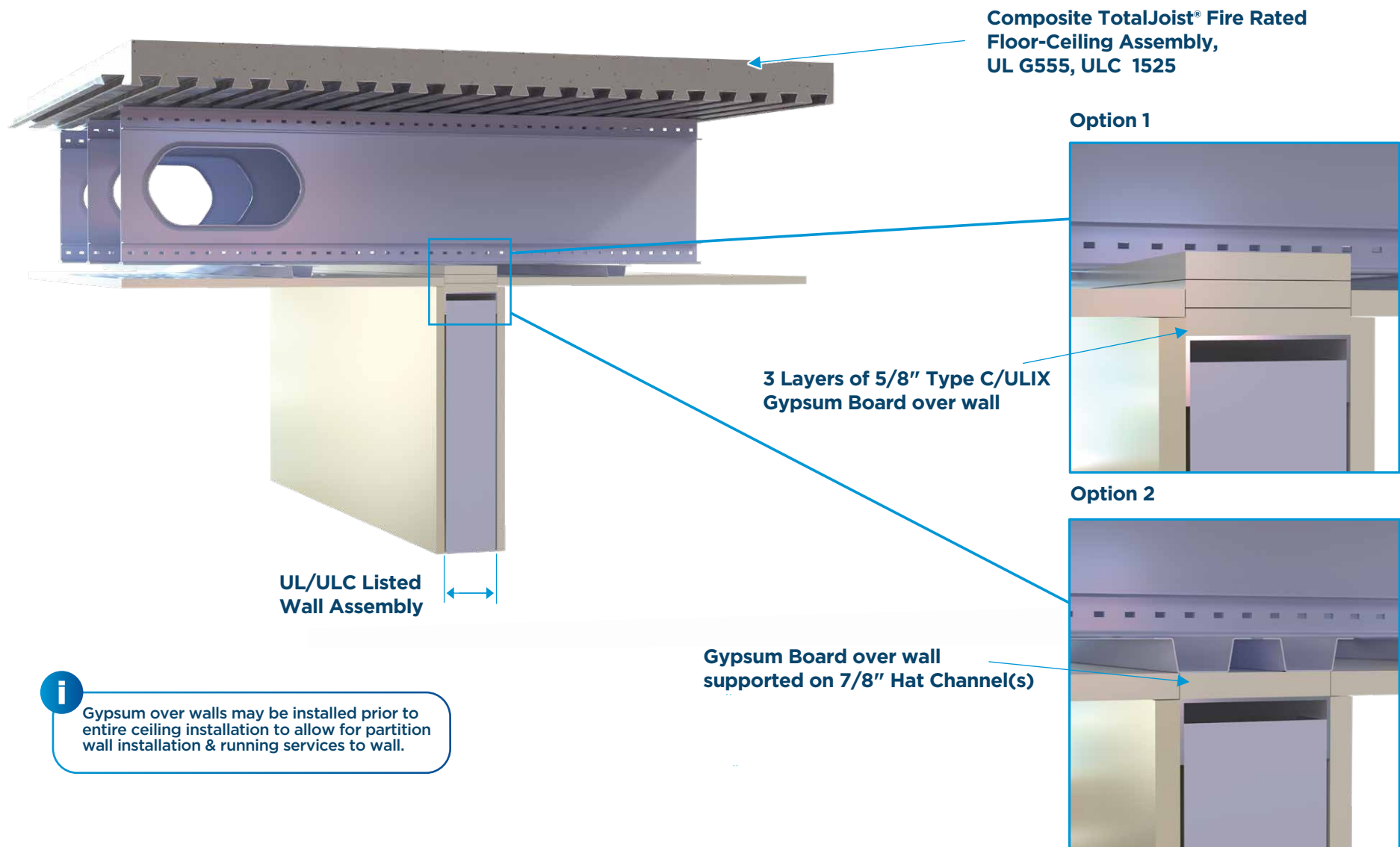
FIRESTOP DETAILS

CONDITION: TRANSITION FROM CTJ TO COMPOSITE DECK FLOOR



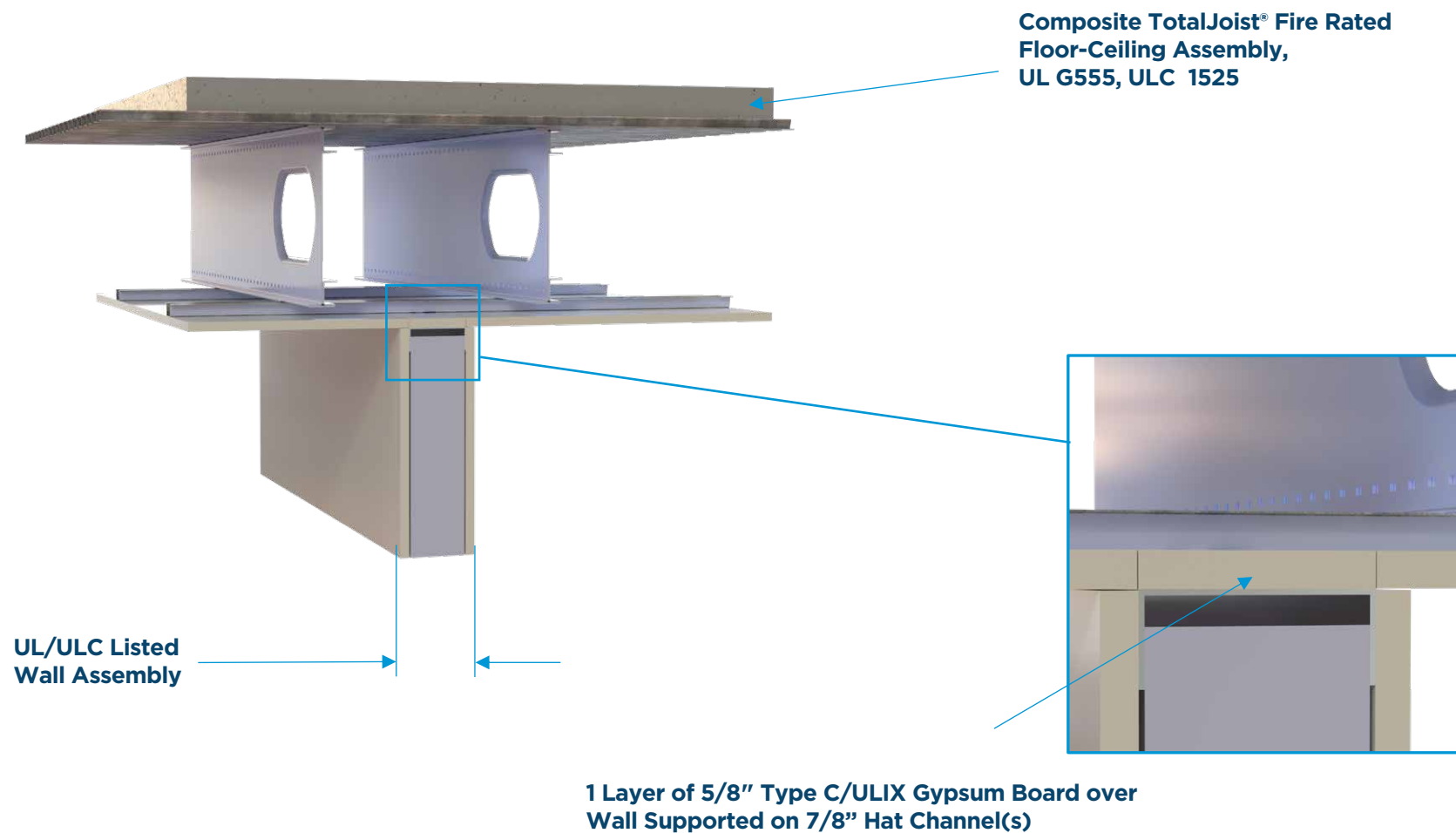
FIRESTOP DETAILS

CONDITION: NON-LOAD BEARING / NON-FIRE RATED WALL INTERSECTION WITH FIRE RATED FLOOR-CEILING ASSEMBLY



FIRESTOP DETAILS

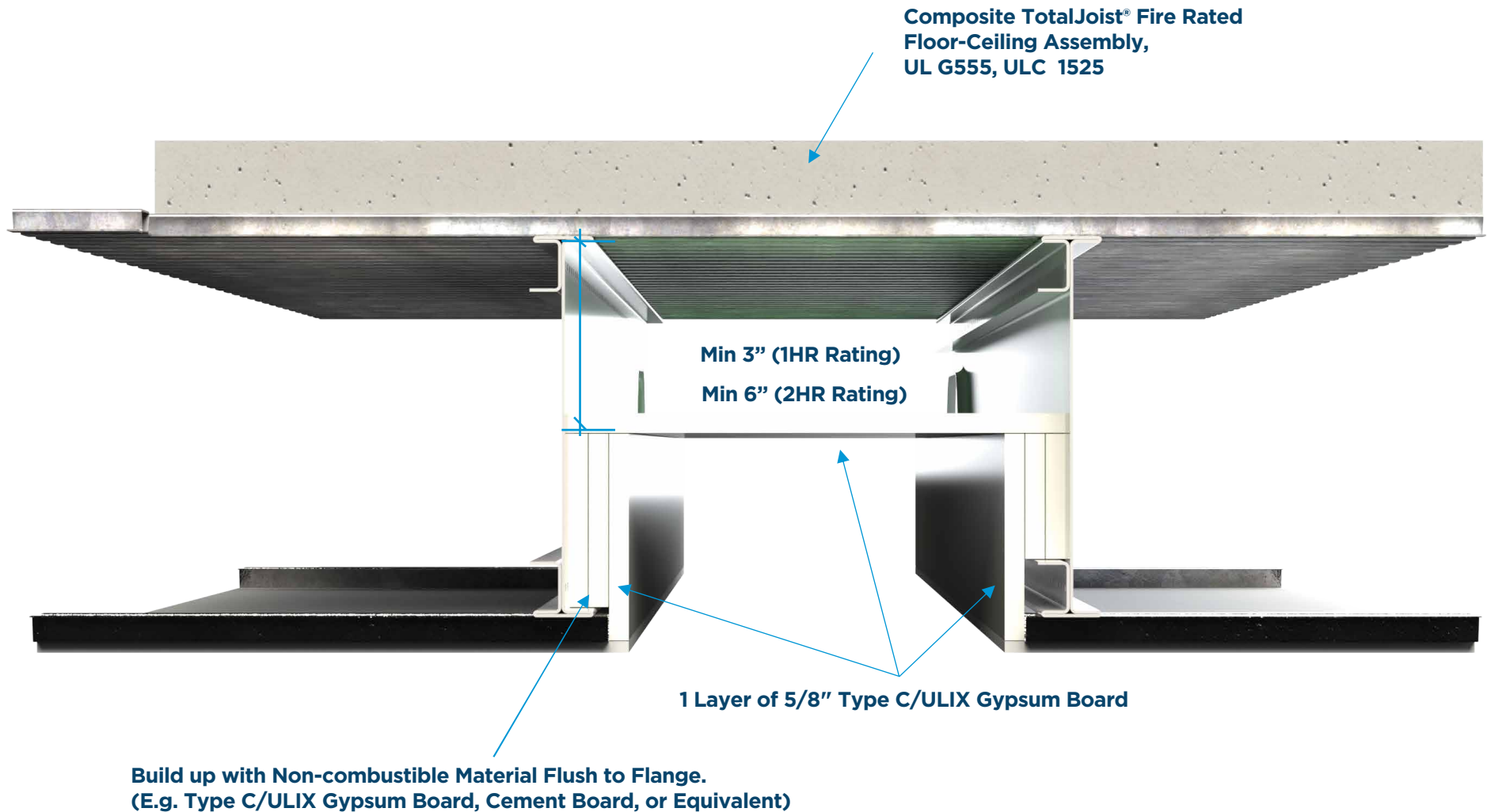
CONDITION: NON-LOAD BEARING/NON-FIRE RATED WALL INTERSECTION WITH FIRE RATED FLOOR-CEILING ASSEMBLY



Gypsum over walls may be installed prior to entire ceiling installation to allow for partition wall installation & running services to wall.

FIRESTOP DETAILS

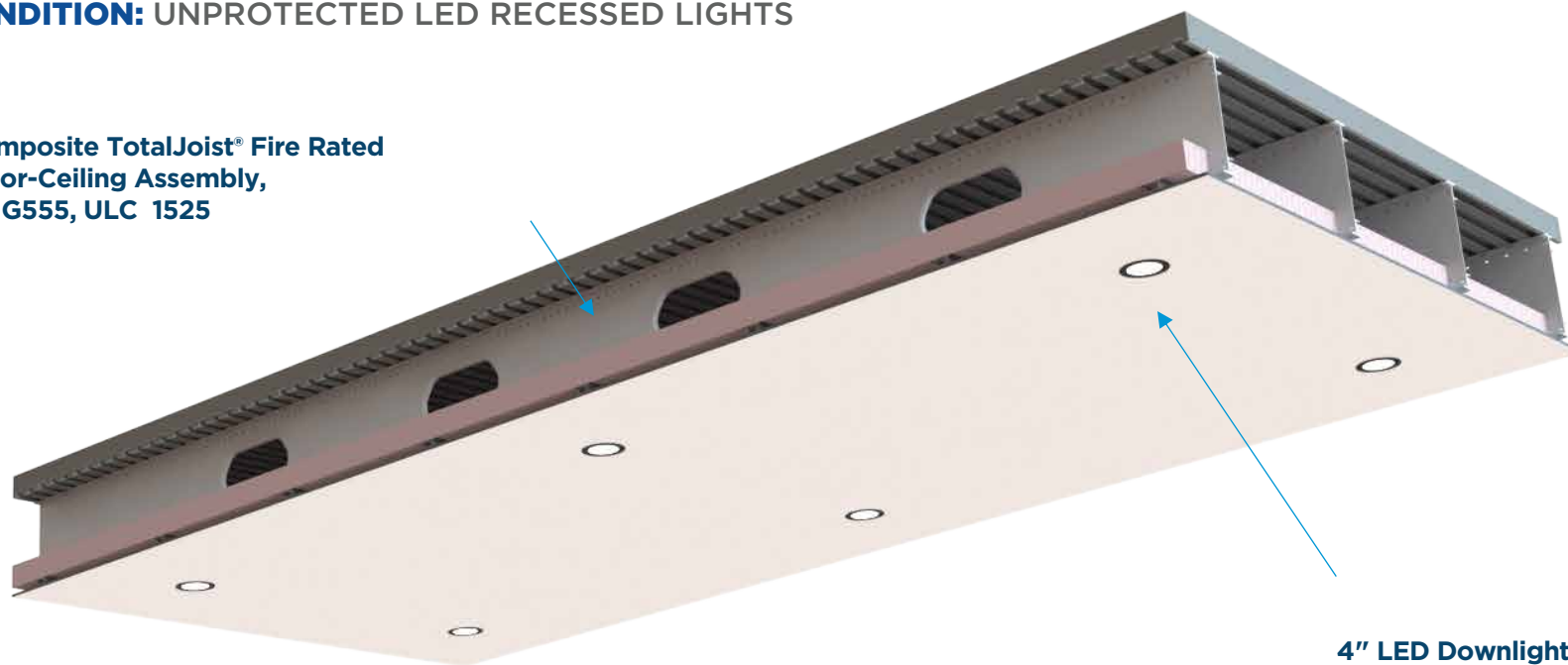
CONDITION: PLENUM BOX PARALLEL TO JOIST SPAN



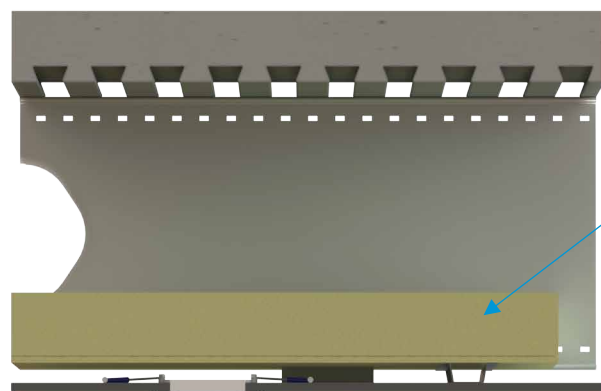
FIRESTOP DETAILS

CONDITION: UNPROTECTED LED RECESSED LIGHTS

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525



4" LED Downlight



4" LED Downlight Suspended
from Gypsum Board

24"x30"x3" Mineral Fiber Insulation
Loose Laid Above Light Fixture

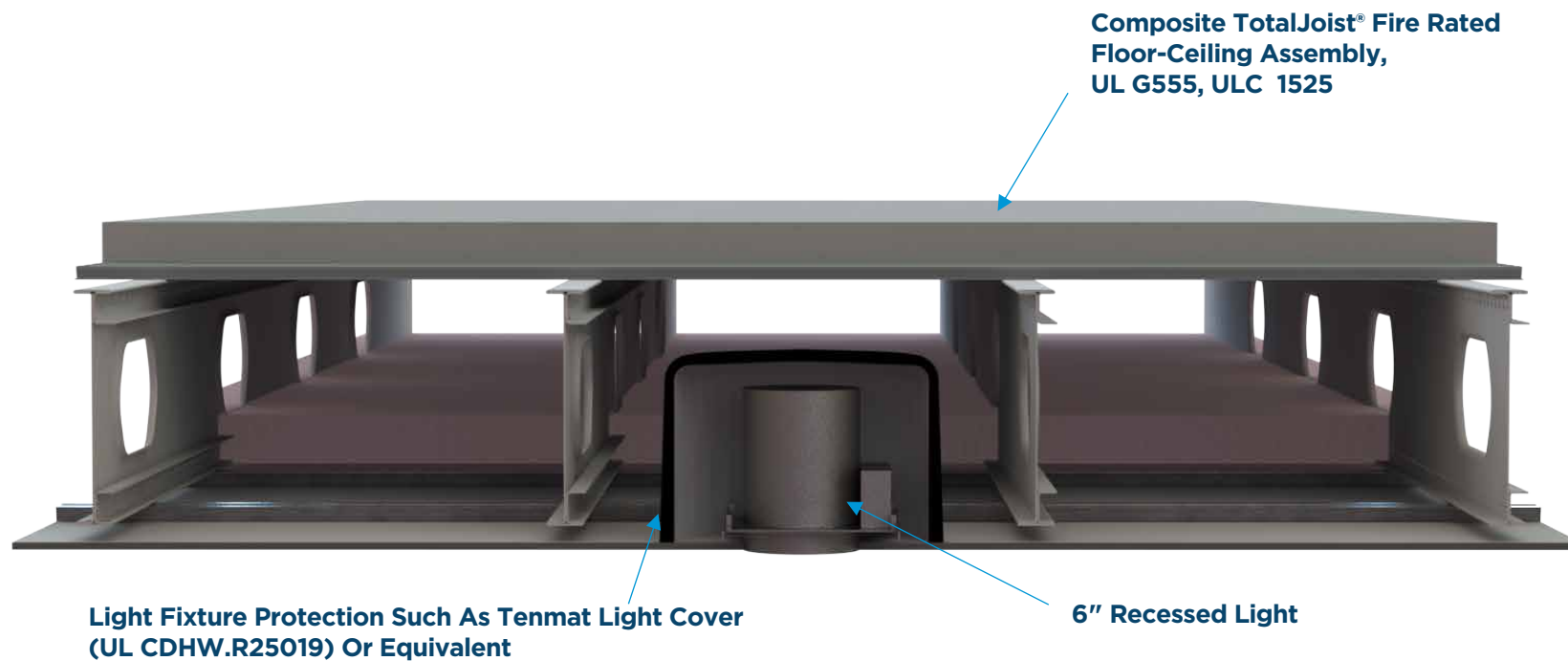


Additional Installation Notes:

- Maximum 1 hour FRR
- Up to 6 pot lights per 100ft² ceiling area permitted
- Maximum 4-1/4" diameter opening in ceiling
- See UL G555/ULC 1525 Listings for detailed information

FIRESTOP DETAILS

CONDITION: PROTECTED RECESSED LIGHT FIXTURE



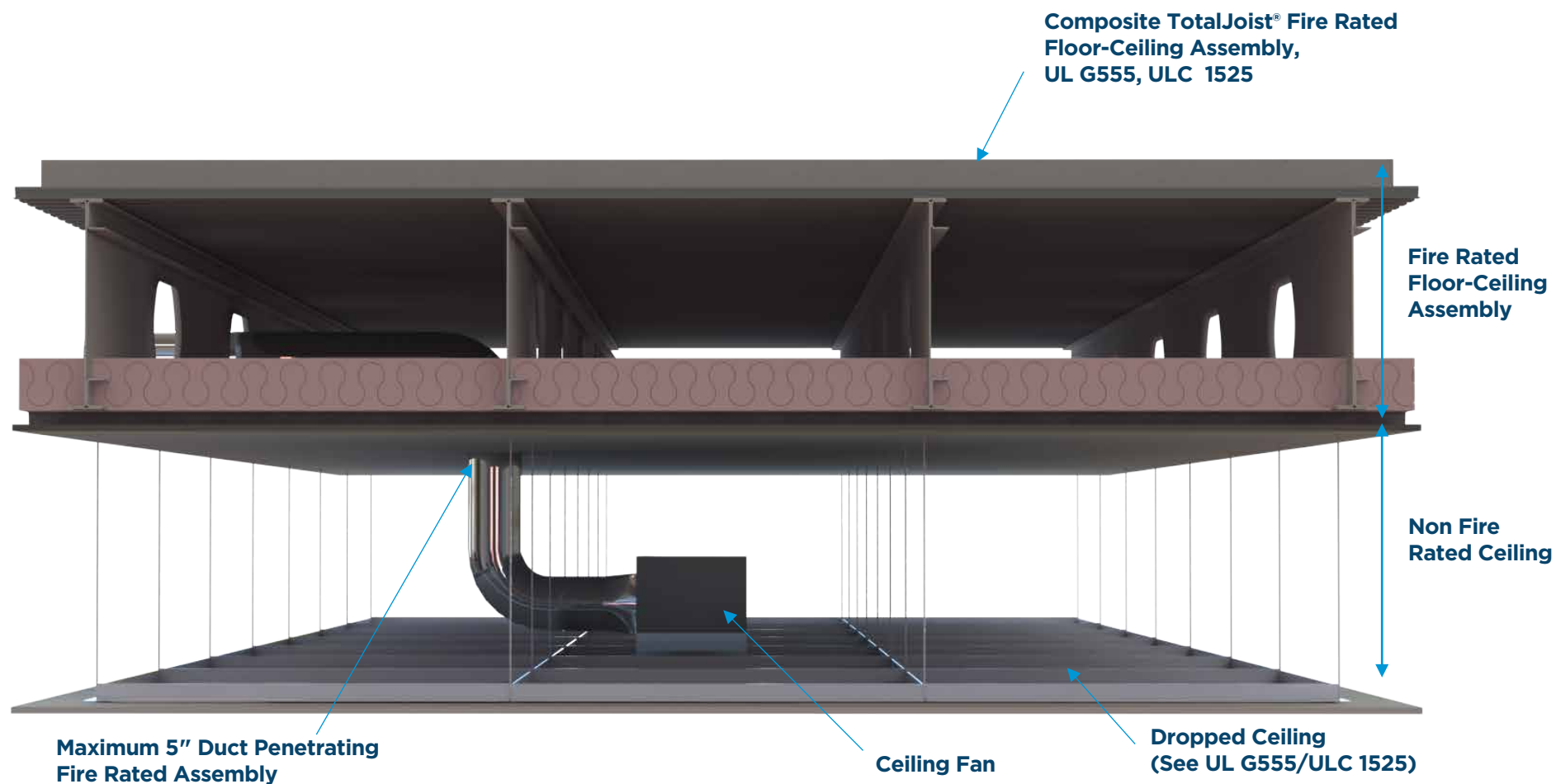
i

Additional Installation Notes:

- Up to 2 hour FRR
- See UL Listings for more detailed information

FIRESTOP DETAILS

CONDITION: UNPROTECTED DUCT FROM EXHAUST FAN IN DROPPED CEILING



Additional Installation Notes:

- Up to 2 hour FRR
- See UL Listings for more detailed information

FIRESTOP DETAILS

CONDITION: EXHAUST FAN PROTECTED WITH FIRE RATED GYPSUM

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525

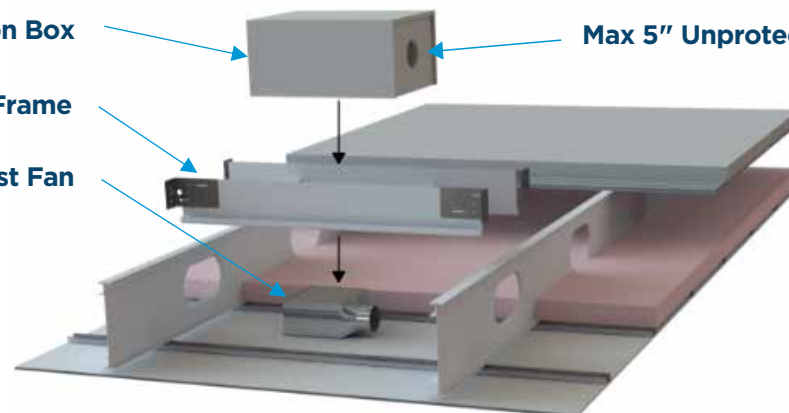


5 Sided Gypsum Protection Box

Gypsum Protection Box Frame

Exhaust Fan

Max 5" Unprotected Opening

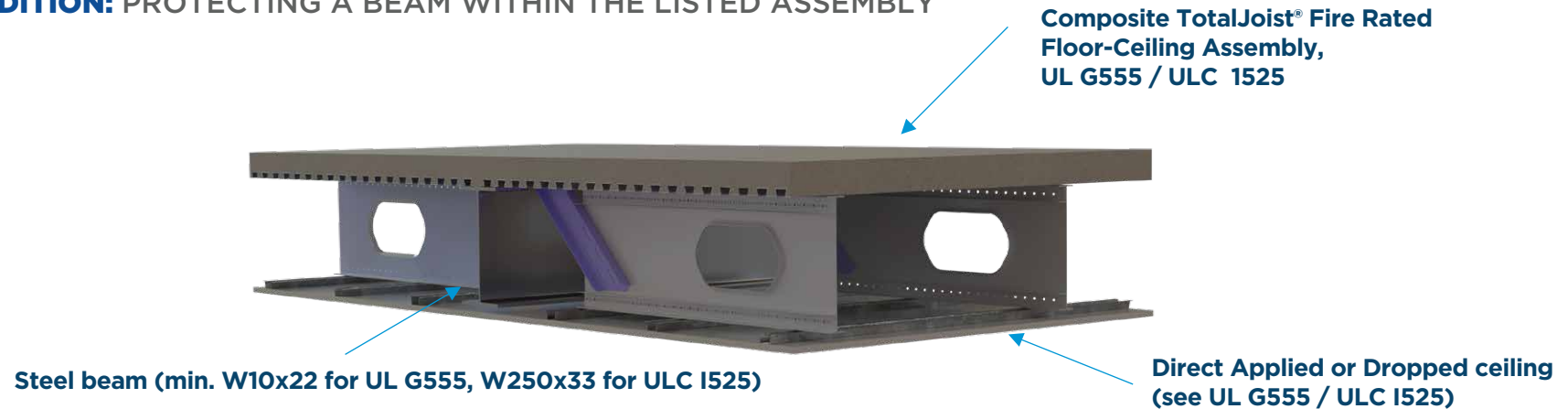


Additional Installation Notes:

- Up to 2 hour FRR
- Contact Bailey Metal Products Ltd. for supporting documentation

FIRESTOP DETAILS

CONDITION: PROTECTING A BEAM WITHIN THE LISTED ASSEMBLY



WHEN BEAM DEPTH IS LESS THAN OR EQUAL TO JOIST DEPTH

i

Beam of minimum size may be assigned the same fire resistance rating provided it is contained within the rated assembly. See UL Guide for definition of appropriate beam substitutions. Individual beam protection systems are also permitted.



WHEN BEAM IS DEEPER THAN THE JOIST

**COMPOSITE
TOTALJOIST**

PENETRATION DETAILS

TABLE 1.

COMPOSITE FIRESTOP LISTING

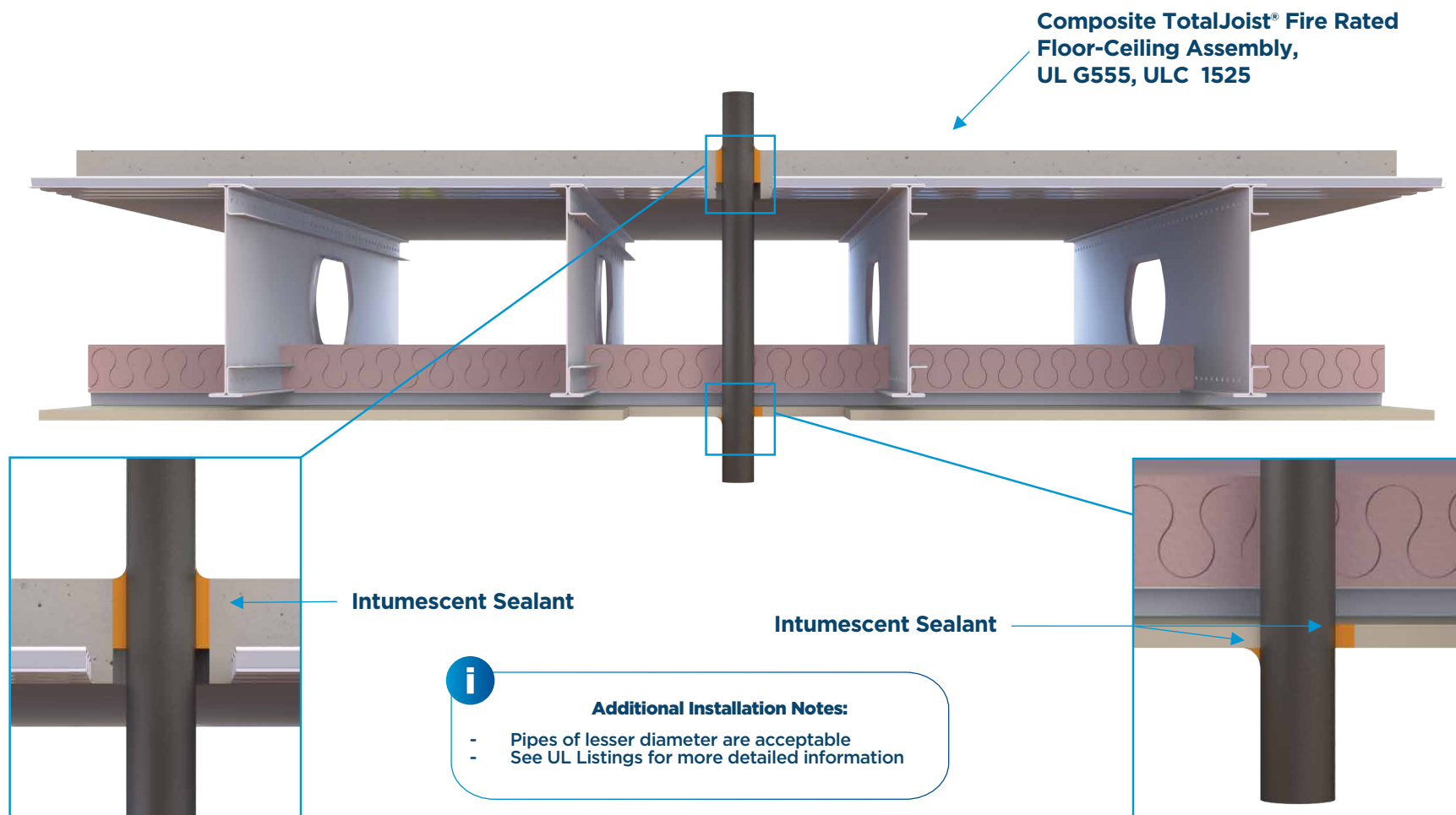
TYPE OF PENETRANT	FIRESTOP TYPE						PAGE NO.
	IS	TI	FC	PC	PM	WS	
ABS	.						30
	.						32
Cables	.						35
	.						39
Conduit	.						40
	.	.					34
Copper Pipes & Tubing	.						35
	.	.					36
	.				.		37
	.			.			39
	.						30
CPVC	.					.	31
	.		.				32
	.		.		.		33
	.	.					30
	.						41
DUCT	.						30
ENT	.						36
EMT	.				.		34
Flexible Metal Pipe	.						3 ₈
Flexible Metal Conduit	.						33
Flexible Non-metallic Conduit	.						34
Iron	.				.		30
	.					.	31
PEX	.						30
	.						32
PVC	.		.				33
	.		.		.		35
	.	.					30
Rigid Non-metallic Conduit	.						33
	.		.		.		34
Steel	.						35
	.	.					36
	.				.		37
	.			.			33
XFR	.				.		

FIRESTOP TYPES			
IS	Intumescent Sealant	PC	Pipe Collar
TI	Tube Insulation	PM	Packing Materials
FC	Firestop Collar	WS	Wrap Strips

PENETRATION DETAILS

PENETRANT TYPES: ABS, PVC, CPVC, PEX, ENT, FLEXIBLE NON-METAL CONDUIT & RIGID NON-METAL CONDUIT

FIRESTOP TYPE: INTUMESCENT SEALANT

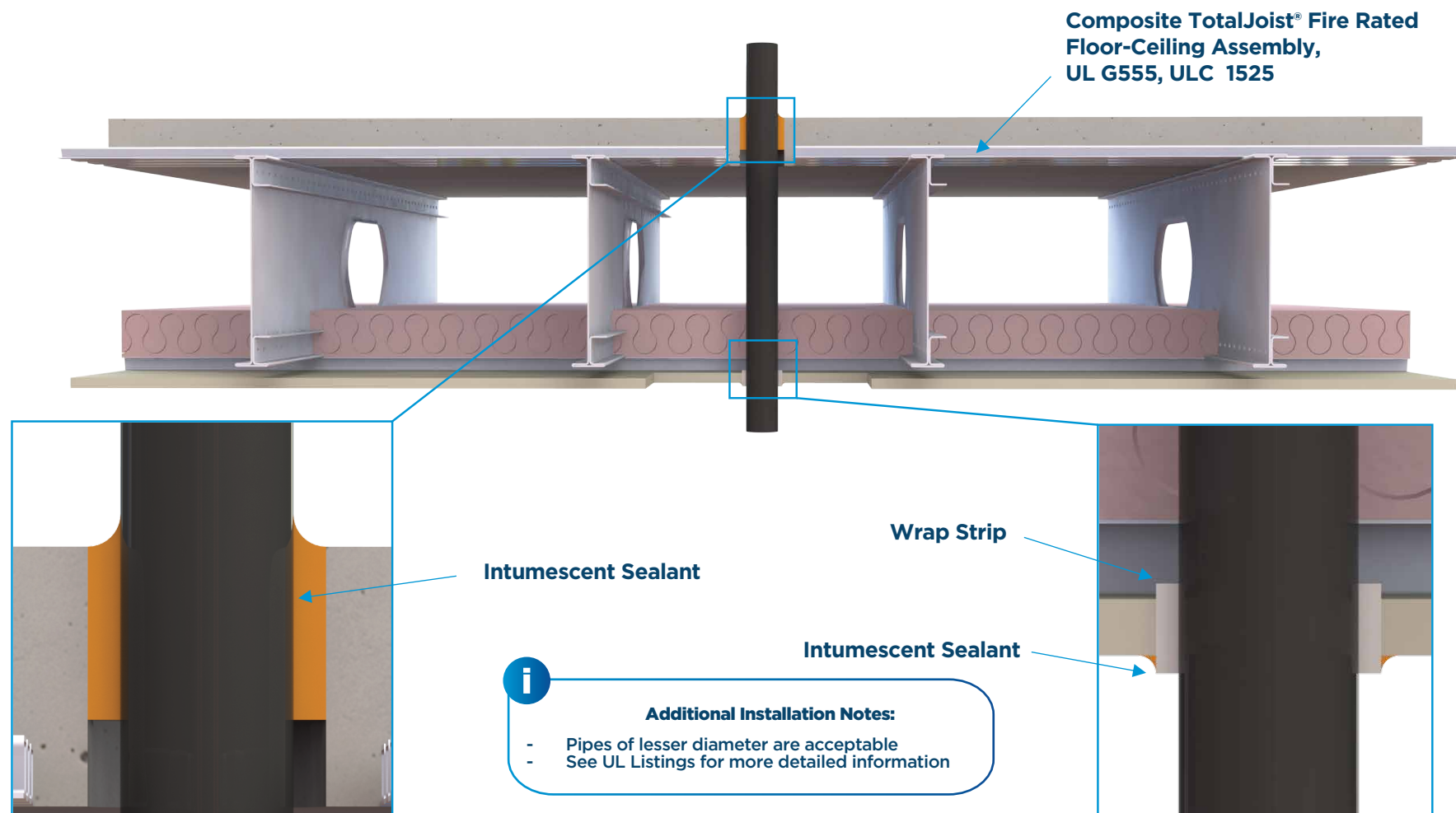


UL Listings	Supplier	Max Sizes (Ø)							Ratings (HR)				Allows Point Contact
		ABS	PVC	CPVC	PEX	ENT	FNMC	RNMC	F	FT	FH	FTH	
F-E-2044	3M	2"	2"	2"	2"	2"	2"	2"	1	0	1	0	No
F-E-2010	NUCO	-	2"	2"	2"	-	-	2"	1	0.5 & 2	0 & 2	0, 1.5 & 2	See Listing

PENETRATION DETAILS

PENETRANT TYPES: CPVC & PEX

FIRESTOP TYPE: WRAP STRIP AND INTUMESCENT SEALANT



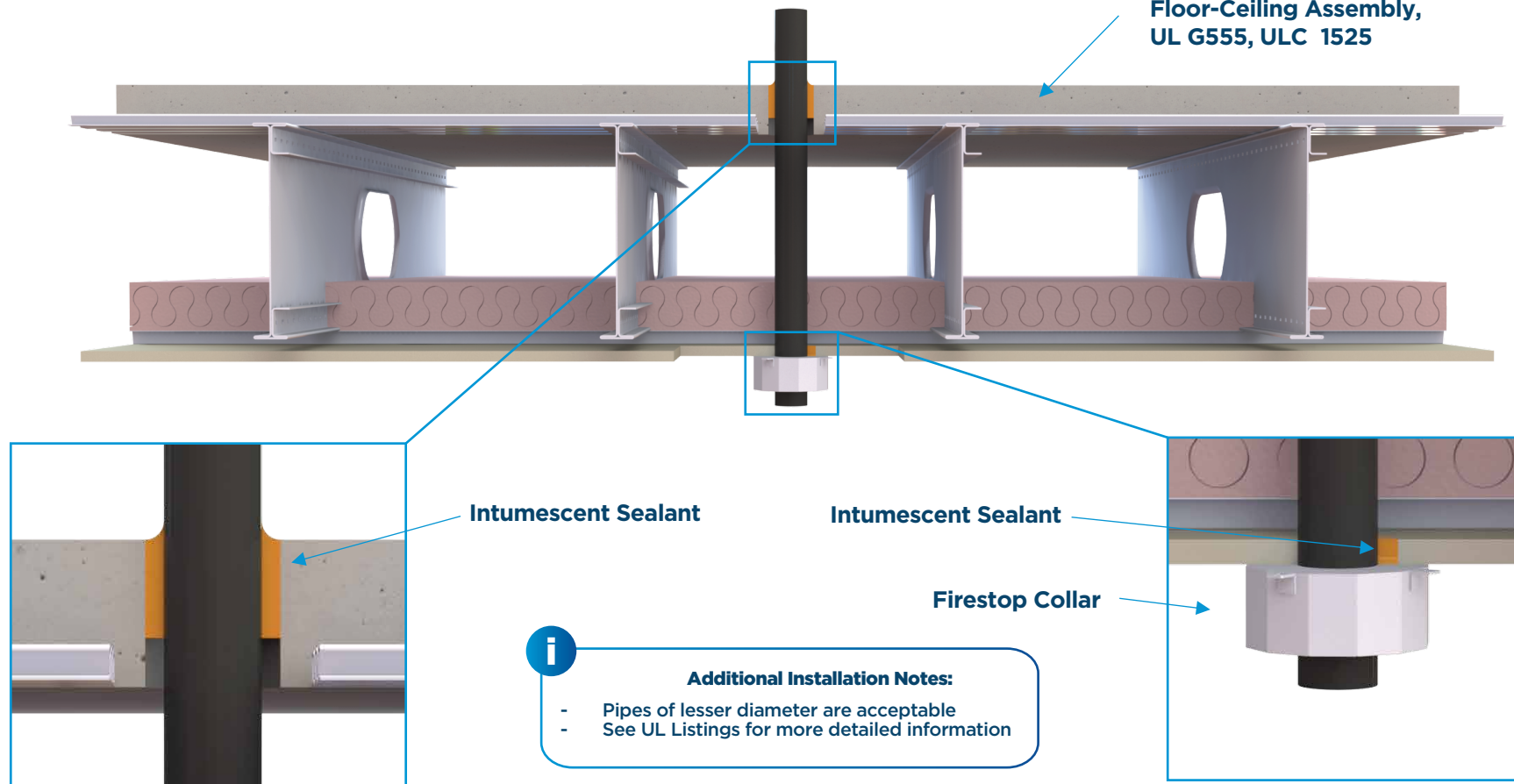
UL Listings	Supplier	Max Sizes (Ø)		Ratings (HR)				Allows Point Contact
		CPVC	PEX	F	FT	FH	FTH	
F-E-2005	HILTI	1"	1"	1	1/4	1	1/4	No

PENETRATION DETAILS

PENETRANT TYPES: ABS, PVC & CPVC

FIRESTOP TYPE: FIRESTOP COLLAR AND INTUMESCENT SEALANT

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525

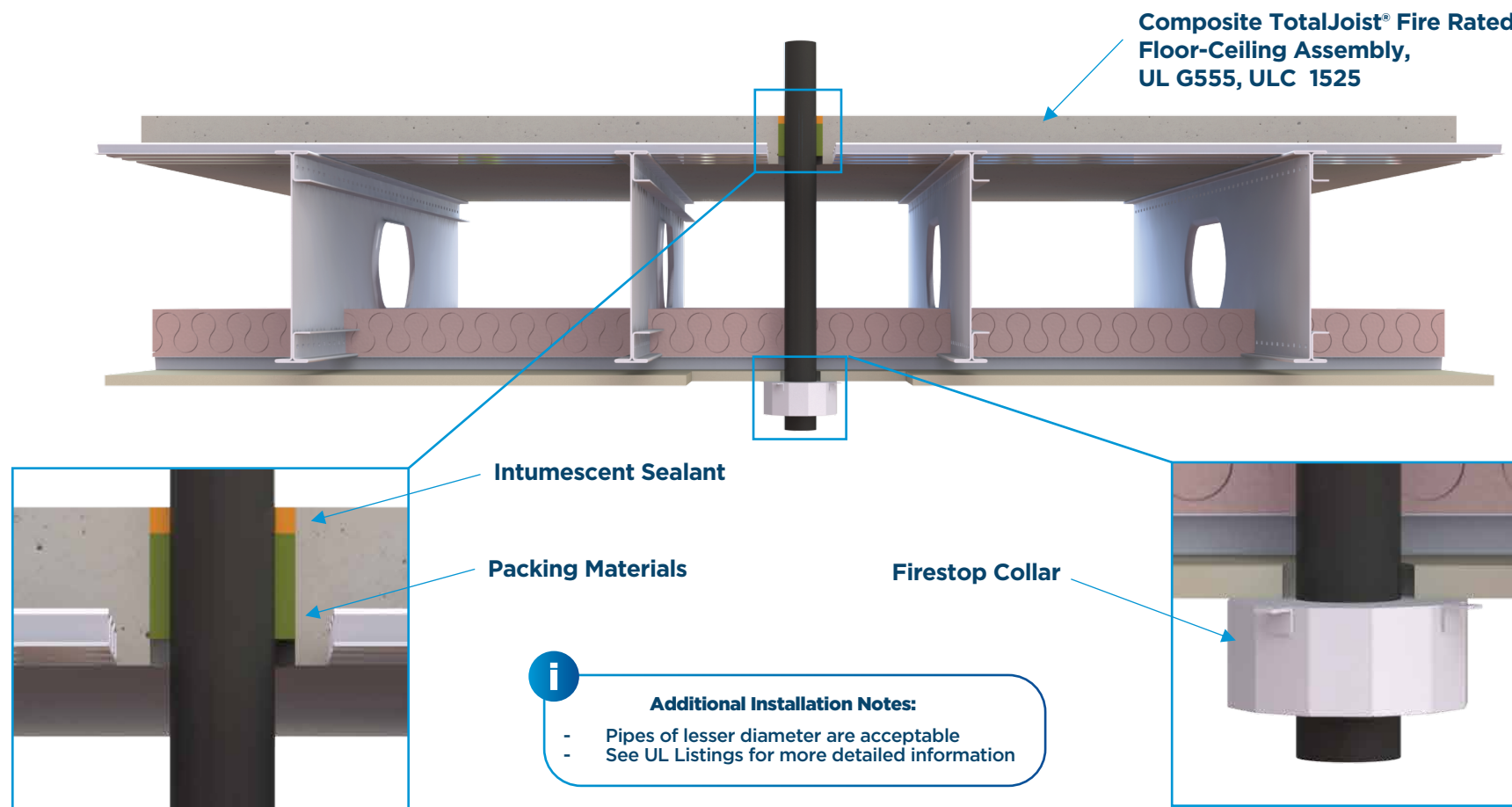


UL Listings	Supplier	Max Sizes (Ø)			Ratings (HR)				Allows Point Contact
		ABS	PVC	CPVC	F	FT	FH	FTH	
F-E-2006	HILTI	4"	4"	4"	1	1	0	0	Yes

PENETRATION DETAILS

PENETRANT TYPES: PVC, CPVC, RIGID NON-METAL CONDUIT & XFR

FIRESTOP TYPE: PACKING MATERIAL, FIRESTOP COLLAR AND INTUMESCENT SEALANT

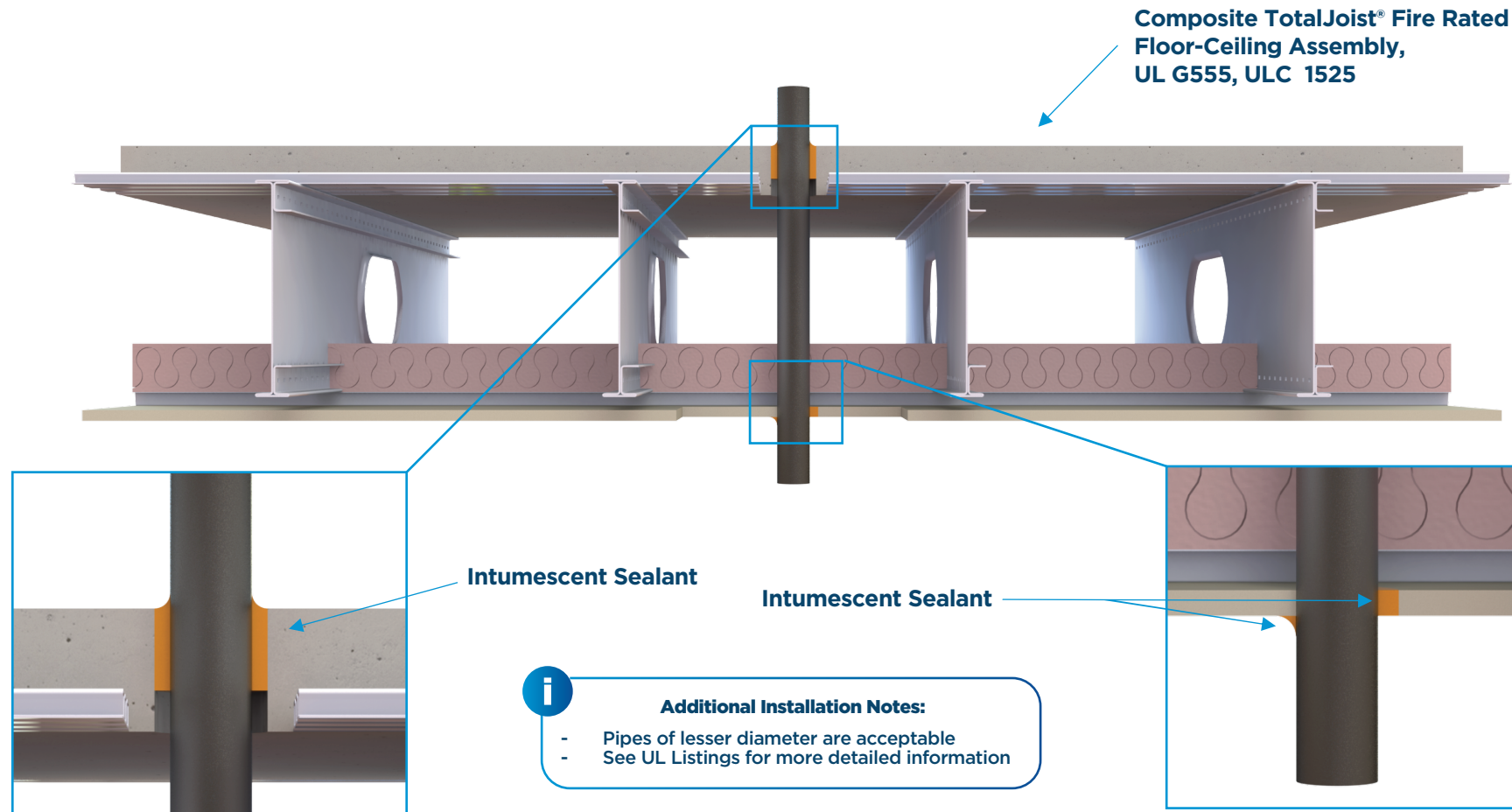


UL Listings	Supplier	Max Sizes (Ø)				Ratings (HR)				Allows Point Contact
		PVC	CPVC	RNMC	XFR	F	FT	FH	FTH	
F-E-2008	NUCO	4"	4"	4"	4"	2	1/2 & 2	2	1/2 & 2	No
F-E-2035	NUCO	4"	4"	4"	4"	2	1/2 & 2	2	1/2 & 2	No

PENETRATION DETAILS

PENETRANT TYPES: STEEL, IRON, CONDUIT, COPPER TUBING, COPPER PIPE & FLEX METAL PIPE

FIRESTOP TYPE: INTUMESCENT SEALANT

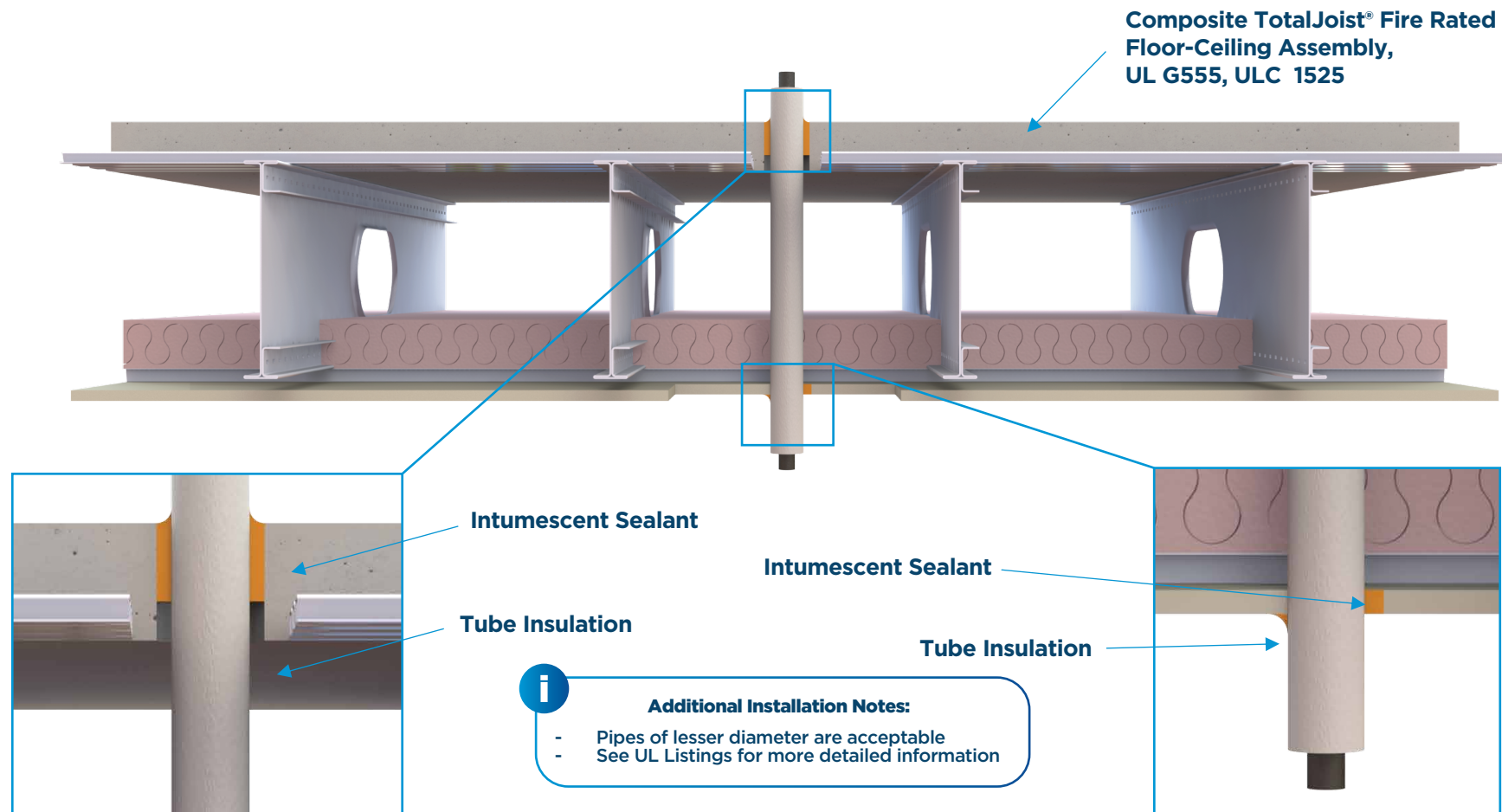


UL Listings	Supplier	Max Sizes (Ø)						Ratings (HR)					Allows Point Contact
		Steel	Iron	Conduit	Copper Tube	Copper Pipe	Copper Metal Pipe	F	T	FT	FH	FTH	
F-E-2008	HILTI	6"	6"	6"	4"	4"	-	1	0	0	1	0	No
F-E-2035	3M	4"	4"	4"	4"	4"	2"	1	3/4	-	-	-	Yes

PENETRATION DETAILS

PENETRANT TYPES: COPPER TUBE, COPPER PIPE, STEEL, PVC, CPVC, CABLES & CONDUIT

FIRESTOP TYPE: TUBE INSULATION AND INTUMESCENT SEALANT



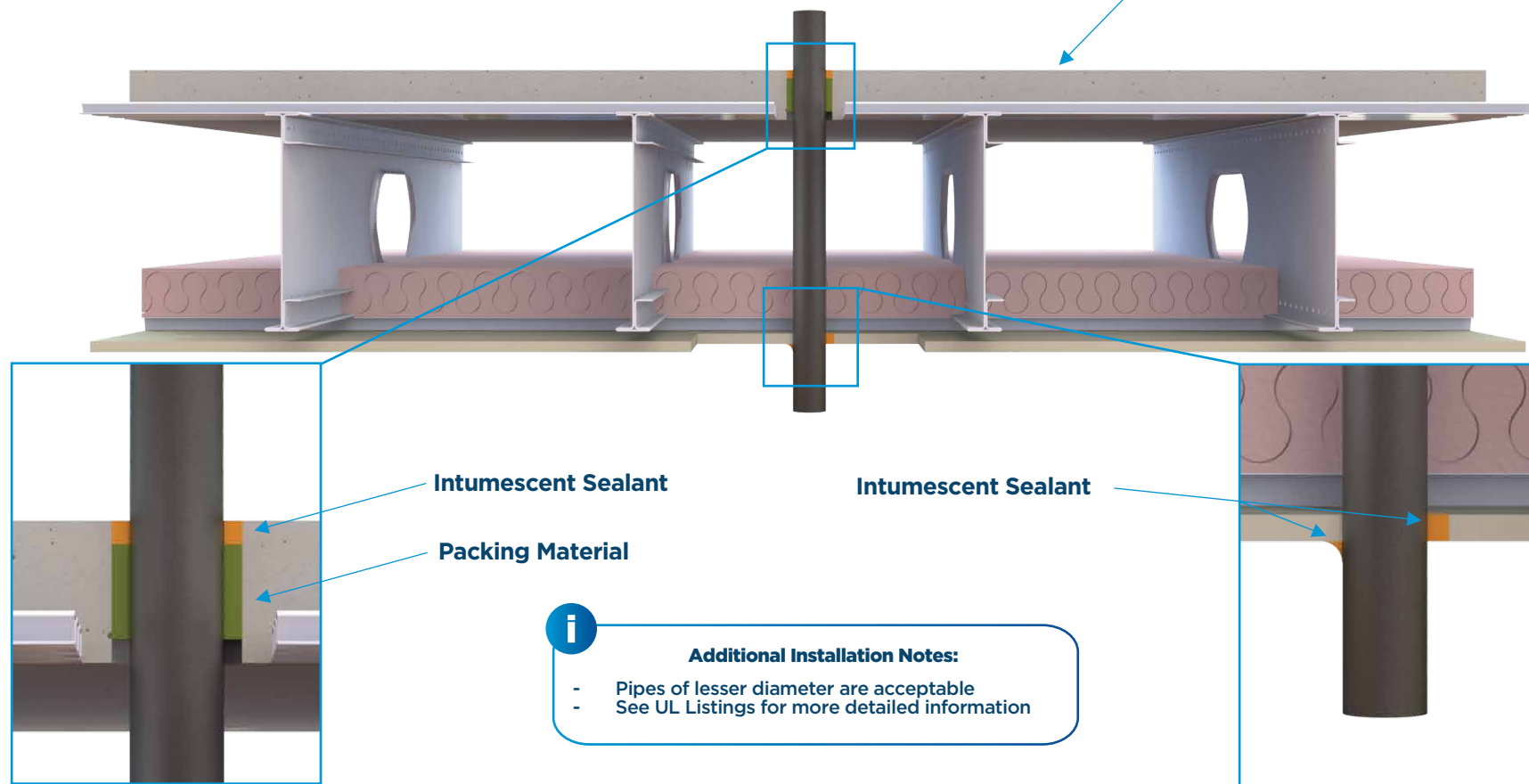
UL Listings	Supplier	Max Sizes (Ø)							Ratings (HR)					Allows Point Contact
		Copper Pipe	Copper Tube	Steel	Conduit	PVC	CPVC	Cables	F	T	FT	FH	FTH	
F-E-2008	HILTI	3/4"	3/4"	3/4"	3/4"	1-1/4"	1-1/4"	See Listing	1	1	1	1	1	Yes
F-E-2035	HILTI	2"	2"	2"	-	-	-	-	1	1/4	1/4	1	1/4	Yes

PENETRATION DETAILS

PENETRANT TYPES: COPPER PIPE, COPPER TUBE, IRON, EMT & STEEL

FIRESTOP TYPE: PACKING MATERIAL AND INTUMESCENT SEALANT

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525



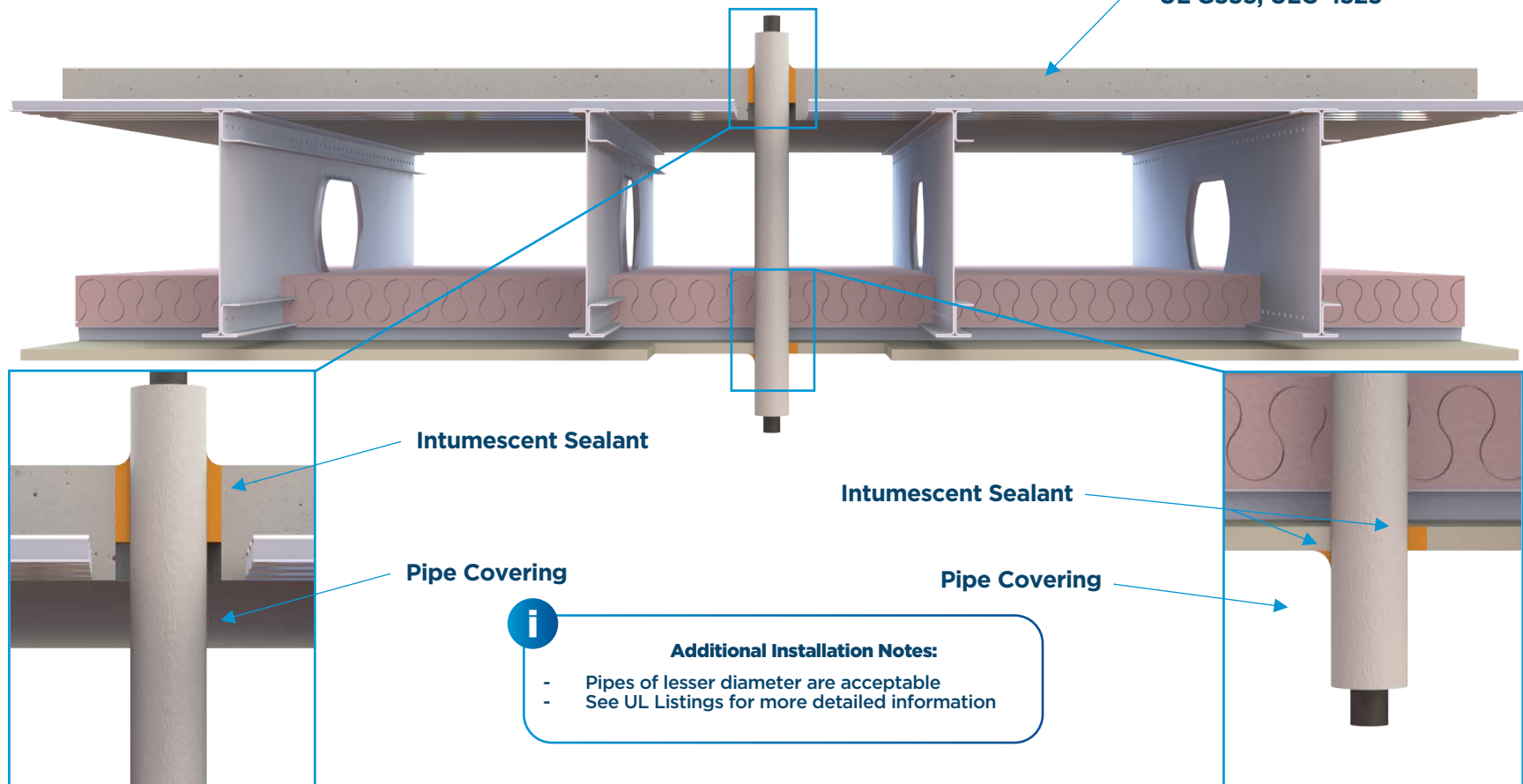
UL Listings	Supplier	Max Sizes (Ø)					Ratings (HR)				Allows Point Contact
		Copper Pipe	Copper Tube	Iron	EMT	Steel	F	FT	FH	FTH	
F-E-1027	NUCO	4"	4"	4"	4"	4"	2	2	2	2	Yes

PENETRATION DETAILS

PENETRANT TYPES: STEEL, COPPER PIPE & COPPER TUBE

FIRESTOP TYPE: PIPE COVERING AND INTUMESCENT SEALANT

Composite TotalJoist® Fire Rated Floor-Ceiling Assembly, UL G555, ULC 1525



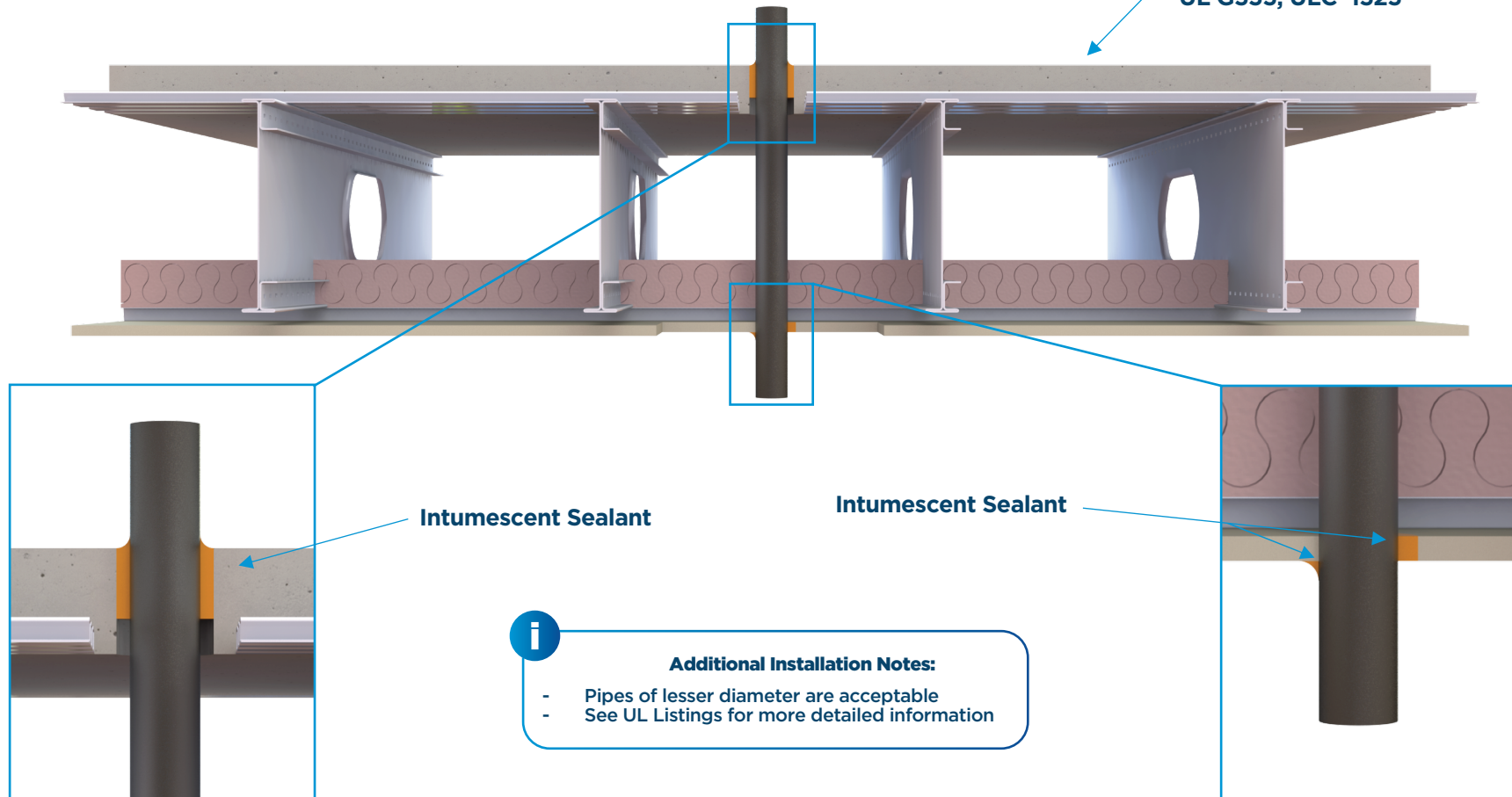
UL Listings	Supplier	Max Sizes (Ø)			Ratings (HR)					Allows Point Contact
		Steel	Copper Pipe	Copper Tube	F	T	FT	FH	FTH	
F-E-5013	HILTI	2"	2"	2"	1	1	1	1	1	Yes

PENETRATION DETAILS

PENETRANT TYPES: FLEX METAL CONDUIT & FLEX METAL PIPE

FIRESTOP TYPE: INTUMESCENT SEALANT

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525



Additional Installation Notes:

- Pipes of lesser diameter are acceptable
- See UL Listings for more detailed information

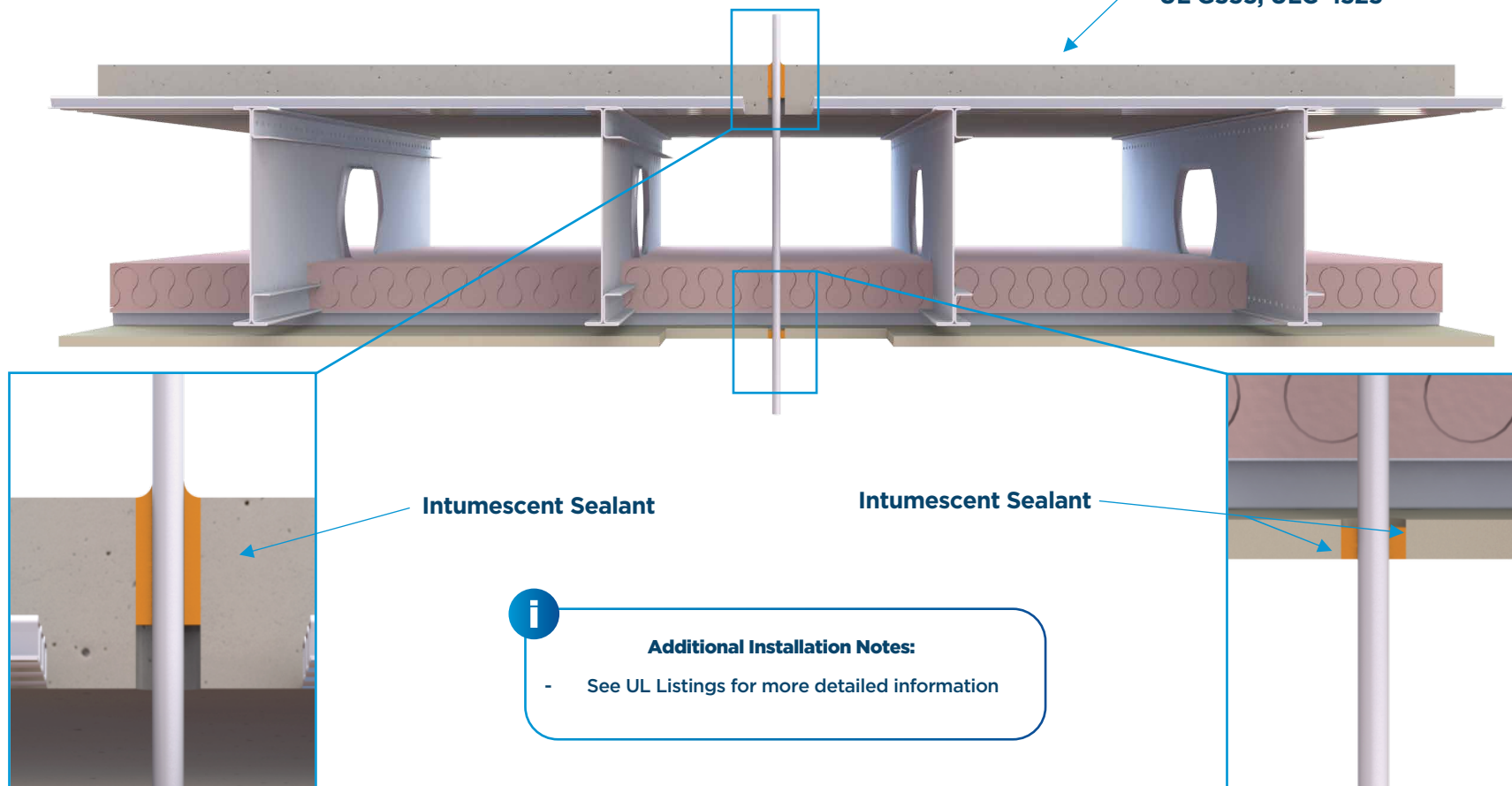
UL Listings	Supplier	Max Sizes (Ø)		Ratings (HR)					Allows Point Contact
		Flex Metal Conduit	Flex Metal Pipe	F	T	FT	FH	FTH	
F-E-1018	HILTI	1"	1"	1	1	1	1	1	Yes

PENETRATION DETAILS

PENETRANT TYPES: CABLES

FIRESTOP TYPE: INTUMESCENT SEALANT

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525



Additional Installation Notes:

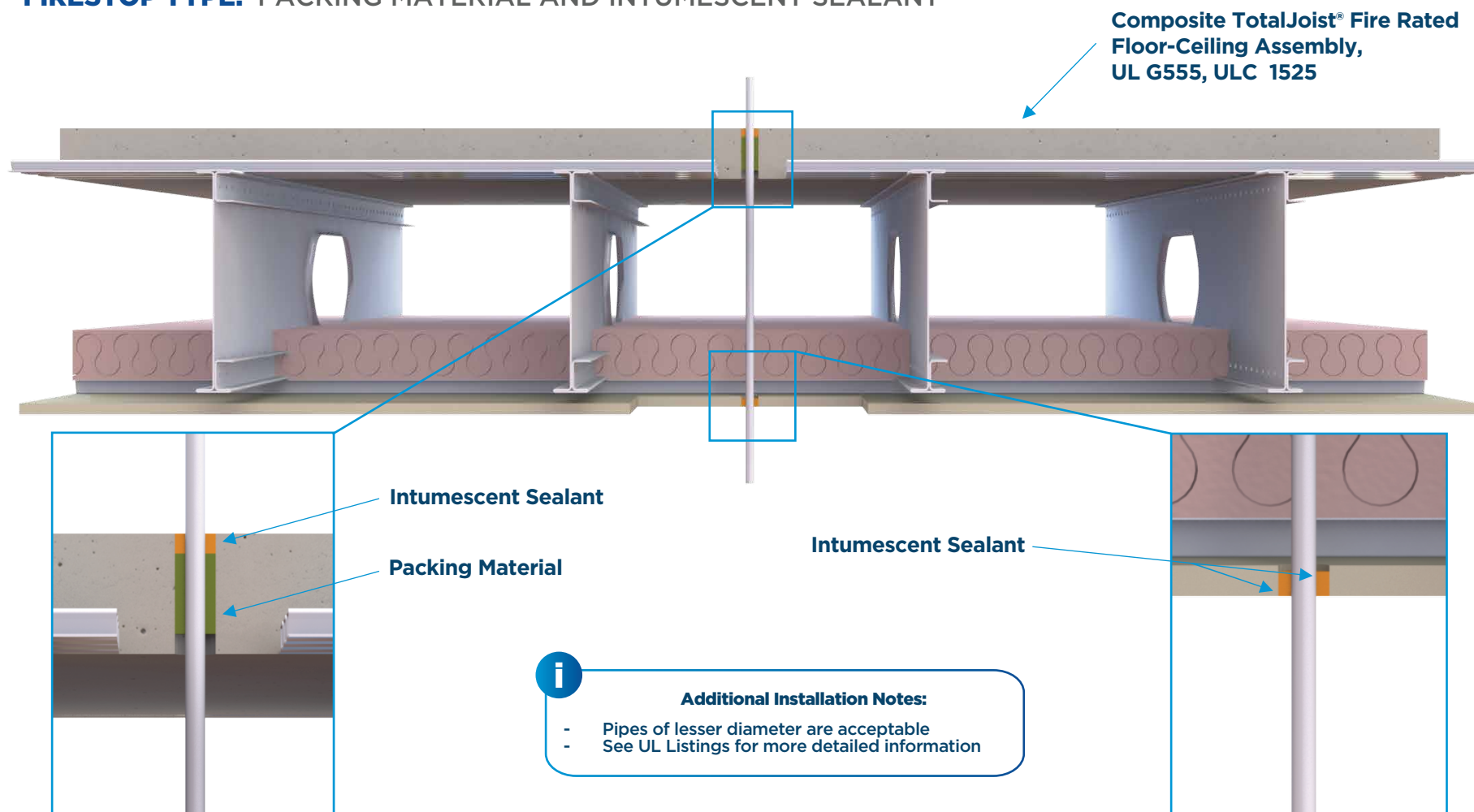
- See UL Listings for more detailed information

UL Listings	Supplier	Max Sizes (Ø)	Ratings (HR)					Allows Point Contact
		Cables	F	T	FT	FH	FTH	
F-E-3005	HILTI	See Listing	1	1	1	1	1	No
F-E-3012	HILTI	See Listing	1	1	1	1	1	Yes
F-E-3008	3M	See Listing	1	1	-	-	-	Yes

PENETRATION DETAILS

PENETRANT TYPES: CABLES

FIRESTOP TYPE: PACKING MATERIAL AND INTUMESCENT SEALANT



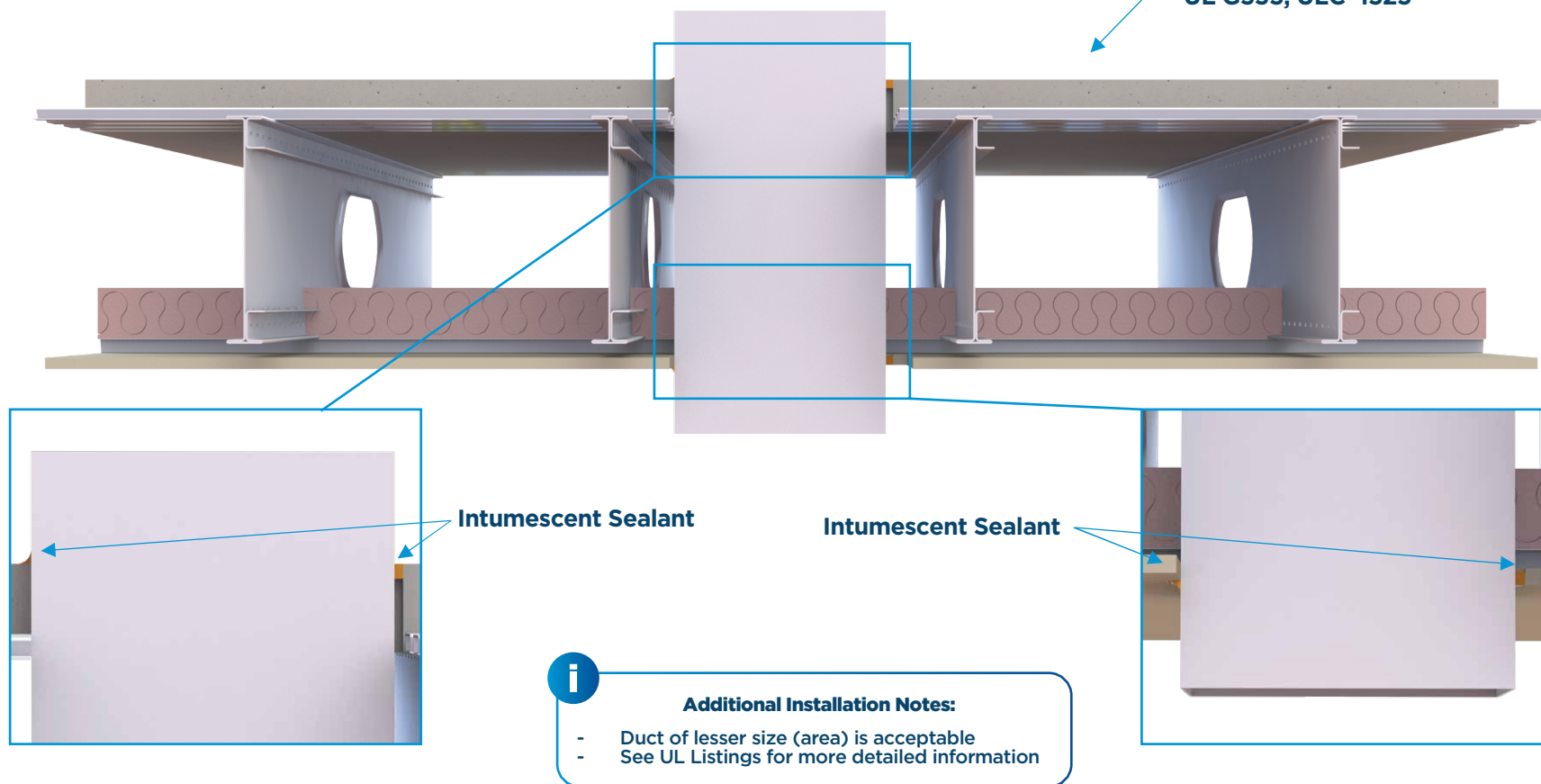
UL Listings	Supplier	Max Sizes (Ø)	Ratings (HR)					Allows Point Contact
		Cables	F	T	FT	FH	FTH	
F-E-3018	NUCO	See Listing	2	-	2	2	2	Yes

PENETRATION DETAILS

PENETRANT TYPES: DUCT WORK

FIRESTOP TYPE: INTUMESCENT SEALANT

Composite TotalJoist® Fire Rated
Floor-Ceiling Assembly,
UL G555, ULC 1525



UL Listings	Supplier	Max Sizes (Ø)	Ratings (HR)					Allows Point Contact
		Duct	F	T	FT	FH	FTH	
F-E-7008	HILTI	10" x 12"	1	1/4	1/4	1	1/4	Yes

ABOUT TOTALJOIST SYSTEMS



TotalJoist manufactures and supplies proprietary cold-formed steel framing systems that are revolutionizing the construction of mid-rise condominiums and apartments, hotels, and retirement residences.

With a deep understanding of the construction process, we engineer and manufacture all of our own patented building components in our facility in Princeton, Ontario.

Through our full-service approach – from engineering and manufacturing, to supporting installation, our involvement does not end once the products are delivered to site. We are there with you every step of the way to ensure a successful project.

With applications for many building types, our framing systems have been used by leading developers and architects on projects across North America to provide a complete solution for the supply and install of the building superstructure.

COULD COMPOSITE TOTALJOIST BE RIGHT FOR YOUR NEXT PROJECT?

We'd be happy to provide more information about our systems, answer questions, or review drawings for your upcoming project.



70 Brentwood Drive Princeton, ON

N0J 1V0 • Canada

Tel: (+1) 519 458 4222

bailey-structural.com

CTJIG/03GM26-0000

