

**TECHNICAL SERVICES:**

Owens Corning offers full consultation services to assist with the preparation of details, specifications and pricing.

**AVAILABILITY AND COST:**

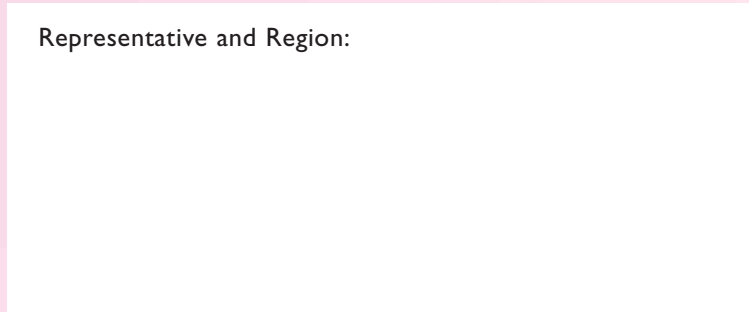
QuietZone® Acoustical Batts are available at commercial resellers across Canada. For any additional information on availability or cost please contact the regional technical sales representative.

**RELATED REFERENCES:**

Owens Corning technical services distributes a number of technical bulletins to assist with the preparation of details, specifications and product selection.

# WE'VE BEEN QUIET ABOUT BEING QUIET TOO LONG!

Representative and Region:



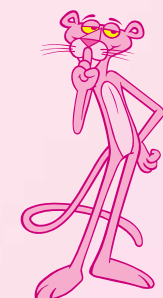
For more information call  
**I-800-GET-PINK®**  
or visit [www.owenscorning.com](http://www.owenscorning.com)



Owens Corning Canada Inc., 3450 McNicoll Avenue, Toronto, Ontario, Canada M1V 1Z5

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**QUIETZONE® ACOUSTICAL BATTS**



**INNOVATIONS FOR LIVING™**

# PRODUCT DESCRIPTION

## Performance Advantage:

QuietZone® Acoustical Batt insulation offer:

- Superior STC acoustic properties in comparison to higher density materials like rock/slag wool and other mineral fibre insulations in walls
- High moisture resistance, water repellent and vapour permeable
- Non-combustible
- ULC/UL Labelled  US LISTED
- Certified for carrying the ECOLOGO<sup>1</sup> 
- Chemically inert
- Non-corrosive
- Non-deteriorating
- Vermin proof
- Manufactured across Canada 



## BASIC USE:

Noise control and noise reduction are critical to the success of every Industrial, Commercial and Institutional (ICI) project.<sup>2</sup>

QuietZone® Acoustical Batt Insulation is the most effective and widely specified mineral fiber glass batt insulation for ICI and commercial multi-family acoustic applications.

The information provided in this literature is for Canadian architects, engineers, specification authorities and professional acoustic contractors who must meet The Building Code sentences, 9.11.2.1 and 3.3.4.6 requirements for sound insulation between occupancies.

STC 50 Canadian Code requirements may be exceeded by specifying and installing QuietZone® Acoustical Batt Insulation using assembly details and correct tested STC values from National Research Council Canada (NRC) Report IRC-IR-693.<sup>3</sup> QuietZone® Acoustic Batts are ideally suited for lightweight steel framing (LSF) applications and wood stud party wall applications.

The NRC•CNRC Summary Reports for Consortium (walls & floors) should be consulted for accurate and up-to-date documentation of the performance of assemblies: including spacing of studs, fasteners, insulation selection, fire and sound resistance of gypsum board systems and sound transmission results. The report states, "some published STC data are obsolete or suspect: Building products and test methods have changed, so old tests and estimates are potentially misleading."<sup>4</sup> The NRC•CNRC Consortium Reports: IRC-IR-693 (with over 250 wall assemblies) and IRC-IR-766 (with over 100 floor assemblies) replaced this obsolete data. "The increased sound insulation required in the 1990 National Building Code highlighted the shortage of reliable acoustical data for walls with STC over 50."<sup>5</sup>

Internationally recognized acoustical laboratories in the USA publish acoustic test data for Owens Corning and other companies, but it should be noted that Riverbank (RAL) and Granville Acoustic Laboratory (W & OC) STC data testing represent individual assembly tests. The individual assembly tests are not necessarily as representative and consistent as the comprehensive integrated NRC consortium test program carried out in National Research Council Canada's laboratory.<sup>6</sup>

<sup>1</sup>Owens Corning PINK® Fiber Glass Batts are "Green" because their ECOLOGO certified recycled content (>35%) uses materials which would otherwise be filling garbage dumps and they contribute to sustainability by decreasing proportionally the quantity of new batch materials which need to be melt refined into glass.

<sup>2</sup>Noise must be controlled in buildings because it is recognized as one of the primary causes of productivity loss. Associated health problems identified by independent researchers requires effective acoustical treatment according to Public Works And Government Service Canada Technology Directorate (PWGSC). The Technology Directorate states on their web site www.pwgsc.ca, "Sound control and noise reduction are integral parts of a productive work environment. In fact, failure to maintain acoustical requirements can lead to potential health hazards." Expensive repairs to occupied buildings can be avoided with acceptable acoustical criteria established at the design stage.

<sup>3</sup>NBC-1995, Part 9 and Part 3 requirements for STC 50 and 55 based on NRC research NBC- 9.11.2.1.(1) requires that "every dwelling unit shall be separated from every other space in a building in which noise may be generated by a construction providing a sound transmission class rating of at least 50." NBC-3.3.4.6. (2) requires "a dwelling unit shall be separated from every other space in a building in which noise may be generated by construction providing a sound transmission class rating not less than 50." The findings of the NRC•CNRC test report have been adopted by both the National and Provincial Building Codes.

<sup>4</sup>The Introduction to NRC•CNRC IRC Acoustics Laboratory Summary Report for consortium on Gypsum Board Walls, by J.D.Quirt, A.C.C.Warnock, J.A.Birta.

<sup>5</sup>Specimen Installation Details in NRC•CNRC IRC Acoustics Laboratory Summary Report for consortium on Gypsum Board Walls represents the STC data for a larger series of walls and ensures, "results were constructed with screw type and placement conforming to the pertinent applicable Canadian standard CAN/CSA-A82.31-M91 Gypsum Board Application."

<sup>6</sup>RAL or W&OC laboratory results may be compared to the NRC•CNRC test results by referring to the Owens Corning Acoustical Wall Insulation Guide (Canadian) or Noise Control Design Guide (USA).

# PRODUCT DESCRIPTION

## COMPOSITION AND MATERIALS:

Codes require an STC rating of 50 as a minimum acceptable value and STC 55 in specific areas. QuietZone® unfaced, friction fit, PINK® Fiber Glass mineral fibre batts provide designers and acoustic contractors with the best absorptive materials available for acoustic applications. QuietZone® Acoustical Batt insulation, for combustible and non-combustible construction, are composed of preformed inorganic fibres and bonded with thermosetting resin to controlled density and thickness, conforming to the requirements (except thermal performance and marking) of CAN/ULC-S702-97, Standard For Mineral Fibre Thermal Insulation For Buildings, Type 1 (issued September 1997 and supersedes CSA A101-M1983), properties. Independent laboratory tests show improved Sound Transmission Coefficient (STC) properties with PINK® Fiber Glass batts over, 265% higher density, rock wool batts. QuietZone® Acoustical Batts are specially designed to provide the best reduction of the travel of sound through assemblies while providing economy.

QuietZone® Acoustical Batts enhance the sound attenuation performance of wood and steel stud wall assemblies alike. "The greater the fraction of the cavity filled with absorption, the higher the sound transmission loss."<sup>7</sup> The sound transmission loss of a wall is increased by filling the wall cavity with QuietZone® Acoustical Batts.

The sound transmission loss of a wall can be improved by increasing mass, breaking the sound vibration path, providing cavity absorption with QuietZone® Acoustical Batt Insulation and by adding sound absorbing materials to a room. Mass can be increased by adding

another layer of gypsum wallboard however, heavier walls and more dense materials add cost. Breaking the sound vibration path can be accomplished with staggered framing studs or the use of resilient metal channels.

The use of QuietZone® Acoustical Batts in a typical metal stud wall, can increase sound transmission loss by approximately 10dB – an improvement that is readily noticeable.

Although higher density mineral wool batts in open testing have higher Noise Reduction Coefficients and Rayles sound absorption values, on average lighter density QuietZone® Acoustical Batts have equivalent STC, sound transmission class ratings in gypsum board finished steel and wood stud walls and floor systems in building code tables.<sup>8</sup>

## LIMITATIONS:

QuietZone® Acoustical Batt Insulation perform a sound absorption function and are not used to address thermal requirements.

## CONCRETE BLOCK WALLS:

Due to the changing life styles i.e. condominium living, designers prefer to design for STC 55 or more as end users demand higher quality living environments.

Typically 38 mm thick QuietZone® Acoustical Batts are used for noise control with masonry/block party walls with 38 mm x 38 mm (2" x 2") wood strapping or 40 mm steel Z furring or in 40 mm steel stud partitions.

203 mm (8") block wall (LW) Light Weight (NW) Normal Weight	Gypsum Bd. each side	Furring each side 610 mm o.c.	Cavity between Furring on sides:	NBC: Fire Resistance Rating	STC
190 mm (NW)	5/8" 1 layer	38 mm x 38 mm wood strapping	Empty-Empty		54
190 mm (NW)	5/8" 1 layer	38 mm x 38 mm wood strapping	Empty-38 mm batts		58
190 mm (LW)	5/8" 1 layer	38 mm x 38 mm wood strapping	38 mm batts-38 mm batts	3 h (B6c)	60
190 mm (LW)	1/2" 1 layer	40 mm LSF	Empty-Empty		47
190 mm (LW)	1/2" 1 layer	40 mm LSF	Empty-38 mm batts		53
190 mm (LW)	1/2" 1 layer	40 mm LSF	38 mm batts-38 mm batts-		56

<sup>7</sup>Summary Appendix C: NRC•CNRC Summary Report for Consortium on Gypsum Board Walls IRC-IR-693.

<sup>8</sup>On average the PINK® Fiber Glass Batts are 1-2 STC units better than the mineral wool batts in walls and the mineral wool batts are 1-2 STC units better than the glass in floor systems but the human ear requires a difference of 3 STC or decibel units to perceive any difference. See Owens Corning Technical Bulletins on Noise Reduction Coefficients.

# TECHNICAL DATA

## IMPROVING THE EFFECTIVE SOUND TRANSMISSION LOSS OF WALL CONSTRUCTIONS:

The sound transmission loss of a wall is increased by adding **QuietZone®** low-density **PINK®** Fiber Glass as cavity fill. **QuietZone®** Acoustical Batt insulation is an especially economical insulation, offering equivalent or higher STC values compared to the more difficult to install higher density rock wool batts. Independent test show adding unnecessary density to the sound absorbing material in the cavity has no value or effect on the STC values of walls. The National Research Council of Canada, *Summary Report for Consortium on Gypsum Board Walls: Sound Transmission Results*, IRC-IR-693 shows that the thickness of the sound absorbing material is the most important consideration in raising the acoustical effectiveness of the wall assembly.<sup>9</sup>



STC values greater than > 50, as required by the National Building Code of Canada (NBC), are achieved by specifying the correct thickness of **QuietZone®** Acoustical Batt Insulation. Additional information on specific rated wall assemblies, may be found in

Owens Corning *Acoustical Wall Insulation Design Guide*. Canadian Designers should use and specify STC results based on NRC Report IRC-IR-693, April 1995 or as adopted in the provincial and National Building Code of Canada.

Good building practice recommendations<sup>10</sup> encourage STC 55 values and higher as end users have demonstrated a willingness to pay for performance and higher quality wall assemblies.

## SIZE & AVAILABILITY:

\*Acoustical Batts available across Canada. More than 4x per truckload.

Thickness.				Area per truckload.			
Width				Length			
mm	inch	inch	square m	mm	inch	square ft.	mm
<b>Lightweight Steel Framing</b>							
38**	1.5	406	16	1219	48	18.81	(202.50)
38**	1.5	610	24	1219	48	28.26	(304.00)
65	2.5	406	16	1219	48	15.84	(170.00)
65	2.5	610	24	1219	48	23.79	(256.00)
89	3.5	406	16	1219	48	11.89	(128.00)
89	3.5	610	24	1219	48	17.84	(192.00)
<b>Wood Framing</b>							
65	3.5	381	15	1219	48	10.22	(110.00)

<sup>9</sup>QuietZone® Acoustical Batts are especially manufactured for noise control and recover to their designed thickness after installation, providing the best possible reduction of the travel of sound through walls. Insulation within a range of densities from 9.6 kg/m<sup>3</sup> to 96 kg/m<sup>3</sup> (0.60 lb/ft<sup>3</sup> to 6.00 lb/ft<sup>3</sup>) for cavity insulation; show there is no difference in the sound transmission properties.

\*\*38mm thick acoustic batts are typically installed for noise control with masonry party walls and 40mm steel stud partitions. 38mm acoustic batts are available in the provinces of Ontario and Quebec.

<sup>9</sup>Does Density Matter in Comparing Glass Fibre And Mineral Fibre Batt Acoustic Performance, BMTL B-1-2. Also ASTM E90/E413 tests conducted by independent laboratories.

<sup>10</sup>See BMTS Technical Bulletin B-1-18 "Party Wall Designs to Ensure Privacy Between Units" and National Research Council of Canada paper "Aggregate Subjective Ratings of Airborne Sound Insulation" by Dr. John S. Bradley, Canadian Acoustics Vol. 27, No. 4 (1999).

# COMPLIANCE & PERFORMANCE

CAN/ULC-S702-97 supercedes CSA A101-M 1983	Mineral Fibre Thermal Insulation for Buildings (Type I - unfaced)
CAN/ULC-SI14-M80 ASTM E 136	Determination of Non-Combustibility (non-combustible)
ASTM E 413, E 492	Sound Transmission Classification Method (STC for assemblies)
CAN/ULC-SI02-M88	Surface Burning Characteristics Method [flame spread (FS), smoke developed (SD)]
ASTM E 84	Surface Burning Characteristics Method [flame spread (FS), smoke developed (SD)]
ASTM E 90	Airborne Sound Transmission Loss Method (TL at frequencies for assemblies)
ASTM E 492	Impact Sound Transmission Method (IIC for floor assemblies)
ULC Listing	List of Equipment & Materials, Building Materials (40 U8.3) (SI02 FS – 20, SD – 20)
C-UL-US Listing	UL Building Materials Directory (BKNV7.R3576) (FHC 25/50)
CAN/ULC SI29-M86	Smoulder Resistance Method (complies)
NBC	National Building Code of Canada, Tables A-9.10.3.1.A & B (suitable component)
ASTM C 1104	Water Vapor Sorption Method (less than 5% by weight)
Dimensional Stability	Will not shrink or warp (less than 0.1%)
CAN/ULC-SI01-M82	Fire Rated Assemblies Method (acceptable component)*
NBCC	National Building Code of Canada

\*Ratings are obtained by testing assemblies. In Canada, fire-rated partition assemblies are tested to CAN/ULC-SI01-M82 and USA to ASTM E-119. QuietZone® Acoustic Batt Insulation may be installed without affecting the hourly rating in a number of ULC wall designs. See Owens Corning technical bulletin, *Fire Rated Wall Design Guide B-10-3*.

## WHY QUIETZONE® ACOUSTICAL BATT:

- ▶ Recommended wherever optimum acoustic efficiency is critical, to meet building code STC requirements in retrofit and new construction applications.
- ▶ Underwriters' Laboratories labelled, suitable for non-combustible construction.
- ▶ The Specified Fire Resistance Rating. Technical support available across Canada.
- ▶ Water repellent and does not permit horizontal capillary transmission in wall assemblies.
- ▶ Manufactured across Canada. Available in the dimensions required for quick installation.
- ▶ Cost advantages compared to other materials used to control and absorb unwanted noise.
- ▶ Preferred by professional contractors across North America – lightweight, unfaced, resilient, friction fit glass fibre batts, for ease of installation and cutting.
- ▶ High tensile strength, friction-fit batts resisting settling, displacement and vibration forces.
- ▶ Will not cause corrosion of metal studs and unaffected by temperature/humidity changes.
- ▶ High strength bonded glass fibre batts do not require fasteners to prevent sagging.
- ▶ Dimensionally stable, will not shrink or expand when subjected to temperature changes.
- ▶ Easier installation compared to even the lowest density rock/slag mineral wool insulation for improved workmanship and acoustical performance.
- ▶ Universal and proven application methods for the control of sound on commercial projects.
- ▶ Extensively tested by many independent accredited laboratories with documented product history.
- ▶ Products may be installed to meet Canadian Code requirements and "Best Practice."
- ▶ Tear resistant compression packaged, plus Multi-Packs for ease of handling, transport and storage.
- ▶ Available in appropriate thickness across North America for optimized acoustical performance in all frequencies including the mid range and low frequencies.

# COMPLIANCE & PERFORMANCE



## FIRE RESISTANCE WITH QUIETZONE® BATTS:

Owens Corning Canada's ULC listing on page 35 of *ULC List of Equipment and Materials, Building Materials (March 2000)*, Owens Corning **QuietZone® Batt Insulation\*** ULC labelling permit glass fibre insulation batts to be installed in ULC Design assemblies\*\* where no insulation was tested or required to obtain the specified assembly rating. (See Figure 1.)

### FIRE RESISTANCE WITH QUIETZONE® BATTS: - Figure 1

Interior Finishes	Cross Furring	Cavity Filling	25 Gauge S.S. Spacing	STC Value	Assembly ID	Fire Rating	Assembly ID (ULC-W#)
(I-1) 5/8" TypX Gyp	None	None	16" or 24"	38	TL-92-418	1 h NLB	W407**,W415**
(I-1) 1/2" Std Gyp	None	3-1/2" FG Batt	16" o.c.	40	TL-93-365	N.A.	N.A.
(I-1) 1/2" TypX Gyp	None	3-1/2" FG Batt	16" o.c.	46	TL-93-344	45 min NLB	W413
(I-1) 5/8" TypX Gyp	None	3-1/2" FG Batt	16" o.c.	49	TL-93-325	1 h NLB	W407**,W415**
(I-1) 1/2" Std Gyp	None	3-1/2" FG Batt	24" o.c.	47	TL-92-413	N.A.	N.A.
(I-1) 1/2" TypX Gyp	None	3-1/2" FG Batt	24" o.c.	48	TL-92-410	45 min NLB	W413
(I-1) 5/8" TypX Gyp	None	3-1/2" FG Batt	24" o.c.	49	TL-92-349	1 h NLB	W407**,W415**
(I-2) 1/2" Std Gyp	None	3-1/2" FG Batt	16" o.c.	46	TL-93-366	N.A.	N.A.
(I-2) 1/2" TypX Gyp	None	3-1/2" FG Batt	16" o.c.	50	TL-92-426	1 h NLB	NBC-S5d
(I-2) 5/8" TypX Gyp	None	3-1/2" FG Batt	16" o.c.	52	TL-92-420	1 h NLB	W407**,W415**
(I-2) 1/2" Std Gyp	None	3-1/2" FG Batt	24" o.c.	51	TL-92-415	N.A.	N.A.
(I-2) 1/2" TypX Gyp	None	3-1/2" FG Batt	24" o.c.	52	TL-92-411	1 h NLB	NBC-S5c
(I-2) 5/8" TypX Gyp	None	3-1/2" FG Batt	24" o.c.	54	TL-92-368	1 h NLB	W407**,W415**
(2-2) 1/2" TypX Gyp	None	3-1/2" FG Batt	16" o.c.	55	TL-92-424	2 h NLB	W414**
(2-2) 5/8" TypX Gyp	None	3-1/2" FG Batt	16" o.c.	56	TL-93-351	2 h NLB	NBC-S6b
(I-1) 5/8" TypX Gyp	RC @ 24" o.c.	3-1/2" FG Batt	16" o.c.***	50	TL-93-354	1 h NLB	UL - U465
(I-2) 5/8" TypX Gyp	RC @ 24" o.c.	3-1/2" FG Batt	16" o.c.****	54	TL-94-019	1 h NLB	UL - U465
(I-1) 5/8" TypX Gyp	None	6" FG Batt	16"/ 24"	51	NBC-S7a/ TL-93-298	1 h NLB	W407**,W415**

(I-1) describes a single layer of gypsum board on each side of stud wall.  
 (I-2) describes a single layer of gypsum board on one side of a stud wall with two layers of gypsum board on the other side of the same stud wall.  
 (2-2) describes two layers of gypsum board on each side of a stud wall.

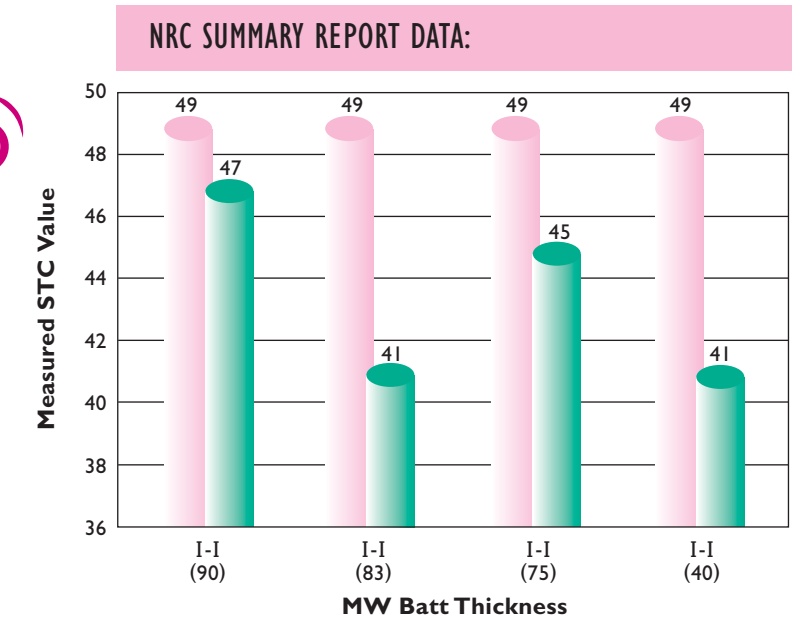
\*ULC listing on page 35 of ULC List of Equipment and Materials, Building Materials (March 2000), Owens Corning **PINK® Fiber Glass Insulation** for **Steel Stud Walls** are also listed.  
 \*\*Permission documentation is in third sentence of Walls and Partitions section on Page 18 of ULC List of Equipment and Materials, Fire Resistance (March 2000).  
 \*\*\*STC tested with 18 Gauge loadbearing steel stud framing.  
 \*\*\*\*STC tested with 20 Gauge loadbearing steel stud framing.

# COMPLIANCE & PERFORMANCE

## \*NRC RESEARCH COMPARED FIBER GLASS BATT PERFORMANCE TO ROCKWOOL:

All thickness combinations of Mineral Wool (MW) batts with 89mm Fiber Glass (FG) batts (with I-I single layer gypsum each side) gave lower STC assembly performance for MW batts. The greatest lowering (2 to 8 STC units) was for assemblies with a single layer of 5/8" Type X gypsum board on each side of the steel stud assembly. Be sure to specify full thickness **FG, QuietZone® Acoustical Batt Insulation**.

- (I-1) single layers of type X gypsum
- (FG) Fiber Glass batts
- (MW) Rockwool batts



### SPECIFICATION NOTE:

Specify full thickness 3-1/2" (89mm) QuietZone® Batt with STC value and Assembly ID from Figure 1 or generically the appropriate Wall Number in the National Building Code of Canada – 1995, Appendix A, Table A.9.10.3.1.A.

Table A.9.10.3.1.A, Footnote (4) permits a generic range of fibrous sound absorptive materials (including glass fibre) but clearly requires filling of at least 90% of the cavity thickness for the walls to have the listed STC value.

\*NRC research compared various thickness of Rockwool batts (MW) with 89mm Fiber Glass batts in 406mm o.c., 92mm Steel Stud Wall Assemblies with 5/8" Type x gypsum. National Research Council of Canada, Summary Report, for Consortium on Gypsum Walls: Sound Transmission Results, Internal report IRC-IR-693.

# COMPLIANCE & PERFORMANCE

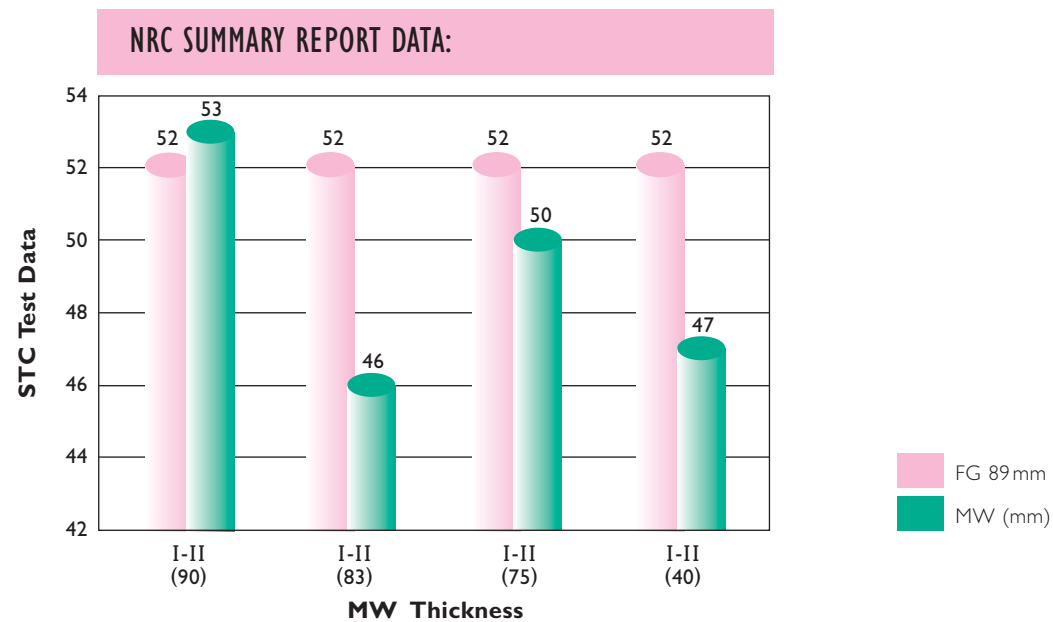
## \*NRC RESEARCH COMPARED FIBER GLASS BATT PERFORMANCE TO ROCKWOOL:

All thickness combinations of Mineral Wool batts gave lower STC assembly performances than 89mm fiber glass batts with only one exception. This chart investigates assemblies with I-II (two layers one side, one the other) of 5/8" Type X gypsum board.

[The greatest lowering (2-8 STC) was for assemblies with a single layer of 5/8" Type X gypsum board on each side of the steel stud assembly.]

Be sure to specify full thickness FG, QuietZone® Acoustical Batt Insulation.

- (I-II) two layers of type X gypsum
- (FG) Fiber Glass batts
- (MW) Rockwool batts

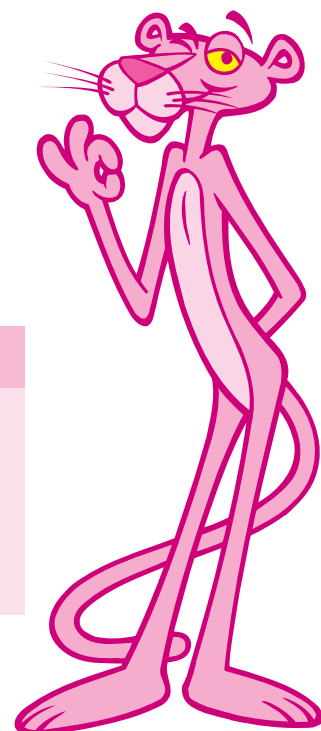


### SPECIFICATION NOTE:

Specify full thickness 3-1/2" (89mm) QuietZone® Batts with STC value and Assembly ID from Figure 1 or generically the appropriate Wall Number in the National Building Code of Canada – 1995, Appendix A, Table A.9.10.3.1.A.

Table A.9.10.3.1.A, Footnote (4) permits a generic range of fibrous sound absorptive materials (including glass fibre) but clearly requires filling of at least 90% of the cavity thickness for the walls to have the listed STC value.

\*NRC Research compared various Thickness of Mineral Wool Batts with 89mm Fiber Glass Batts in 406mm o.c., 92mm Steel Stud Wall Assemblies with 5/8" Type x (I-II). National Research Council of Canada, Summary Report, for Consortium on Gypsum Walls: Sound Transmission Results, Internal report IRC-IR-693.



# COMPLIANCE & PERFORMANCE

## \*NRC RESEARCH COMPARED FIBER GLASS BATT PERFORMANCE TO ROCKWOOL:

On average QuietZone™ Fiber Glass Batts have equivalent or better STC acoustical performance than nominal equivalent thickness, approximately 265% higher density mineral fibre (rock/slag wool) batts in gypsum board faced steel and wood stud assemblies.<sup>11</sup>

### NRC SUMMARY REPORT DATA: - Figure 11

NRC Research compared 65mm rock wool batts with 65mm Fiber Glass batts in 65mm depth steel stud assembly.

Material	Thickness		Average Density		STC	Assembly ID	Gypsum layers	Gypsum thickness	LSF Stud Space	
	mm	inch	kg/m <sup>3</sup>	(lb/ft <sup>3</sup> )					mm	inch
<b>Fiber Glass</b>	<b>65</b>	<b>2.5</b>	<b>&gt;10.5</b>	<b>&gt;0.65</b>	<b>39</b>	<b>TL-93-058</b>	<b>I-I</b>	<b>15.9 mm (5/8")</b>	<b>400</b>	<b>16</b>
Rockwool	65	2.5	36.7	2.3	37	TL-93-061/059	I-I	15.9 mm (5/8")	400	16
<b>Fiber Glass</b>	<b>65</b>	<b>2.5</b>	<b>&gt;10.5</b>	<b>&gt;0.65</b>	<b>44</b>	<b>TL-93-033</b>	<b>I-I</b>	<b>15.9 mm (5/8")</b>	<b>600</b>	<b>24</b>
Rockwool	65	2.5	36.7	2.3	42	TL-93-034	I-I	15.9 mm (5/8")	600	24
<b>Fiber Glass</b>	<b>65</b>	<b>2.5</b>	<b>&gt;10.5</b>	<b>&gt;0.65</b>	<b>45</b>	<b>TL-93-038</b>	<b>I-I</b>	<b>12.7 mm (1/2")</b>	<b>600</b>	<b>24</b>
Rockwool	65	2.5	36.7	2.3	43	TL-93-047	I-I	12.7 mm (1/2")	600	24
<b>Fiber Glass</b>	<b>65</b>	<b>2.5</b>	<b>&gt;10.5</b>	<b>&gt;0.65</b>	<b>51</b>	<b>TL-93-039</b>	<b>I-II</b>	<b>12.7mm (1/2")</b>	<b>600</b>	<b>24</b>
Rockwool	65	2.5	36.7	2.3	49	TL-93-055	I-II	12.7mm (1/2")	600	24
<b>Fiber Glass</b>	<b>65</b>	<b>2.5</b>	<b>&gt;10.5</b>	<b>&gt;0.65</b>	<b>55</b>	<b>TL-93-040</b>	<b>I-II</b>	<b>12.7mm (1/2")</b>	<b>600</b>	<b>24</b>
Rockwool	65	2.5	36.7	2.3	54	TL-93-056	I-II	12.7mm (1/2")	600	24

### SPECIFICATION NOTE:

Specify full thickness 2-1/2" (65mm) QuietZone® Batts with STC value and Assembly ID from Figure 11 or generically the appropriate Wall Number in the National Building Code of Canada – 1995, Appendix A, Table A.9.10.3.1.A.

Table A.9.10.3.1.A, Footnote (4) permits a generic range of fibrous sound absorptive materials (including glass fibre) but clearly requires filling of at least 90% of the cavity thickness for the walls to have the listed STC value.

<sup>11</sup>NRC Research compared 65mm Rockwool Batts with 65mm Fiber Glass Batts in 65mm depth Steel Stud Assembly, National Research Council of Canada, Summary Report, for Consortium on Gypsum Walls: Sound Transmission Results, Internal report IRC-IR-693.

<sup>11</sup>NRC report by J.D. Quirt, A.C.C. Warnock & J.A. Birta.



# INSTALLATION

## STORAGE:

Store your insulating materials based on current construction practices in a manner designed to prevent damage. Cover stored materials with protective enclosure if exposed to weather.

If the material becomes wet it should be allowed to dry without becoming compressed. When the insulation dries without becoming compressed the original properties return. Vertically installed **PINK® Fiber Glass** naturally repels water and resists horizontal wicking.

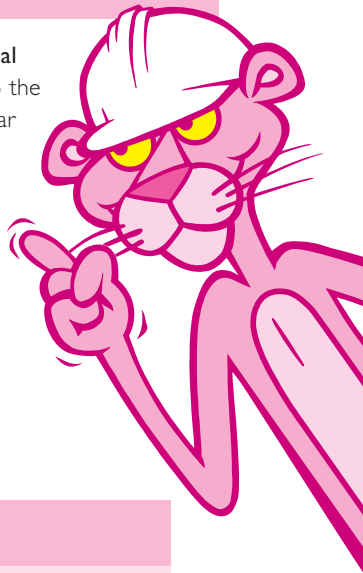
## HANDLING:

Insulating materials can be dusty and may cause temporary skin irritation after contact.

Always wear goggles and a high quality paper-breathing mask. We suggest you use a double strap (WHMIS specification) dust/mist respirator. Wear loose clothing with long sleeves buttoned around your wrists, snug work gloves. Wash or shower with soap and cool water; then follow with warm water to remove the dust. Launder these work cloths separately.

## DELIVERY:

**QuietZone® Acoustical Batts** are delivered to the site in a protective tear resistant compression package, plus multi unitized packs for ease of handling and storage.



## PREPARATORY WORK:

**QuietZone® Acoustical Batt Insulation** is not difficult to install.

Identify interior wall, floor and ceiling areas to receive acoustic treatment with **QuietZone®**

## INSTALLATION:

**QuietZone® Acoustical Batts** significantly improves the Sound Transmission Coefficient (STC) properties of wall and floor assemblies. The actual performance increase is dependent on the total wall assembly construction. See The Owens Corning *Acoustic Wall Design Guide* for examples of these assemblies and proper installation.

Acoustic tests measure sound transmission loss through wall or ceiling assemblies at a broad range of sound frequencies. The results are processed according to ASTM E 413 rules and sound profiles to provide a single absolute value number. This rating system is necessary to compare wall systems. This absolute value is the Sound Transmission Class (STC).

Owens Corning **QuietZone® Acoustical Batts** are manufactured with extra width to friction fit into steel stud wall assemblies and stay in place without settlement or moving away from the back or the front of studs which may be deeper than the thickness of the insulation batts.<sup>12</sup>

The batts shall be installed starting at the bottom of framing heights and each following batt is required to be installed firmly above the lower batt. It is standard practice to have a batt splice at each

horizontal cross or stiffening brace, which are frequently installed on steel stud framing. The batts are placed between framing members without compressing the insulation significantly. Simply split the batt to install around wiring and utility requirements. Cover the entire wall area without cracks and completely fill the entire cavity space.

Install **QuietZone® Acoustical Batts** in accordance with written specifications and Canadian Standard CAN/CSA-A82.31-M91 Gypsum Board Application.

The room-to-room sound transmission loss where partitions extend to just below suspended ceiling systems can be improved by placing **QuietZone® Acoustic Batts** on the back of ceiling panels.<sup>13</sup> Although **QuietZone® Acoustical Batts** are noncombustible according to CAN/ULC-S114, maintain building, electrical, gas and oil safety code required clearances between the insulation and heat emitting devices, such as fuel burning appliances, chimneys, ducts and vents (at least 50mm) and recessed light fixtures (at least 75mm).

<sup>12</sup>Owens Corning technical bulletin B-2-11, *Settlement Resistance of Friction Fit Batts in Steel Stud Wall Assemblies*.

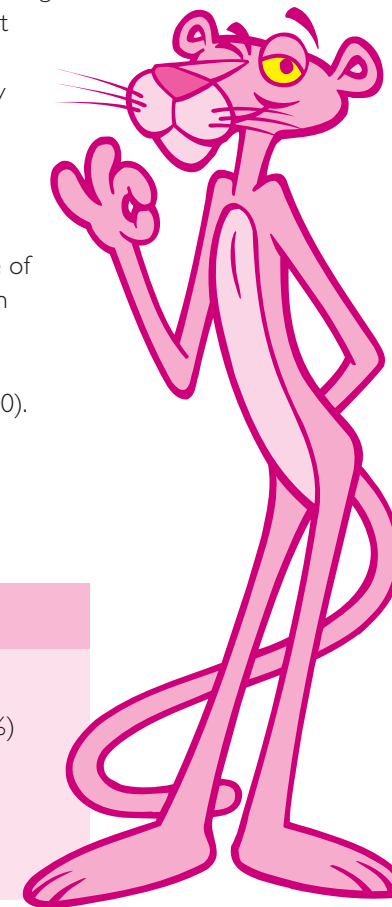
<sup>13</sup>Owens Corning technical bulletin B-1-20, *Use of Glass Fibre Batts Above Suspended Ceiling Systems*.

# REFERENCES

## REFERENCES FOR FIRE RATING:

- See Owens Corning ULC Batts and Blankets Listing in Underwriters Laboratories of Canada List of Equipment and Materials, Volume II (40 U8.3).
- **QuietZone® Acoustical Batt Insulation**, conform to the non-combustibility requirements of CAN/ULC-S114-M180.<sup>14</sup>
- Underwriters Laboratories of Canada, List of Equipment and Materials, Volume III, Fire Resistance Ratings.
- Underwriters Laboratories Inc., Fire Resistance Directory, Volume I.
- National Building Code of Canada, 1995, Appendix A, Table A-9.10.3.1.A.

- Gypsum Association, Fire Resistance Design Manual, GA-600-97, 15th Edition.
- The Ohio State University Engineering Experiment Station.
- **PINK® Fiber Glass** batt products may be used in certain ULC fire rated wall assemblies (examples Figure I), without detracting from the ratings assigned to these assemblies without any cavity insulation. Fire performance is provided by the gypsum board in these assemblies. Permission documentation for specific component changes are described in third sentence of Walls and Partitions section on Page 18 of ULC List of Equipment and Materials, Fire Resistance (March 2000).



## RECYCLED CONTENT:

Owens Corning uses more recycled glass than any competitor. Owens Corning **PINK® Fiber Glass** products comply with the (minimum 35%) recycled content requirements of the Environmental Choice Program and are certified for carrying the ECOLOGO labelling.

**PINK® Fiber Glass Batts** are mainly made from naturally occurring minerals (such as sand) and recycled glass materials.



<sup>14</sup>**QuietZone® Acoustical Batts** are non-combustible. Maintain building, electrical, gas and oil safety code required clearances between the insulation and heat emitting devices, such as fuel burning appliances, chimneys, ducts and vents to these appliances (at least 50mm) and recessed light fixtures (at least 75mm).

# OUTLINE SPECIFICATION

## PART 1 – GENERAL:

### 1.1 Related Work

1. Section 7213 Batt and Blanket Insulation
2. Section 9100 Metal Support Assemblies
3. Sheet vapour barrier: Section [07190] [Sheet Vapour Barriers]
4. Insulation for mechanical work: – Section [15200]
5. Heating, Ventilating and Air Conditioning Equipment – Section [15700]
6. Air Distribution – Section [15800]

### 1.2 References

1. CAN/ULC-S702-97 Thermal Insulation, Mineral Fibre, for Buildings
2. CAN/ULC-S102-88 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
3. Underwriters' Laboratories of Canada, List of Equipment & Materials, Fire Resistance, March 2000

4. Underwriters Laboratories Inc., Fire Resistance Directory, Volume I 2000
5. National Building Code of Canada, 1995, Appendix A, Tables A-9.10.3.1.A and A-9.10.3.1.B
6. National Research Council of Canada, Summary Report for Consortium on Gypsum Walls: Sound Transmission Results, Internal Report IRC-IR-693
7. National Research Council Canada, Summary Report for Consortium on Floors: Sound Transmission Class and Impact Insulation Class Results, Internal Report IRC-IR-766
8. (RAL) Riverbank Acoustical Laboratories
9. (W & OC) Owens Corning Fiberglas acoustical Laboratory, Granville, Ohio & Acculab Consultants in Acoustics, Columbus, Ohio

## PART 2 – PRODUCTS:

### 2.1 Acoustical Insulation

1. Owens Corning **QuietZone® Acoustical Batts**, mineral (glass) fibre: thickness [38mm][65mm][89mm], to CAN/ULC-S702-97, Type [1], for all properties other than thermal performance. Flame spread 20, smoke developed 20, according to CAN/ULC-S102. Non-combustible according to CAN/ULC-S114.
2. Owens Corning **Steel Stud Thermal Insulation**, mineral (glass) fibre to CAN/ULC-S702-97, Type [1], thickness [152mm].

### 2.2 Steel Studs

1. [[25 Gauge] [64mm (2-1/2")] [92mm (3-5/8")] [152mm (6")] Steel Studs conforming to CAN/CGSB-7.1, ASTM C 645.
2. [[25 Gauge] [64mm (2-1/2")] [92mm (3-5/8")] [152mm (6")] Steel Track conforming to CAN/CGSB-7.1, ASTM C 645.

### 2.3 Gypsum Wallboard

1. [12.7mm] [15.9mm], Type [X], Gypsum Wallboard as manufactured by [...].

### 2.4 Steel Resilient Furring Channels

1. Steel Resilient Furring Channels conforming to CAN/CGSB-7.1, ASTM C 645.

### 2.5 Acoustical Sealant

1. Owens Corning **QuietZone® Acoustic Caulk** meeting ASTM C 834 and exceeding performance requirements of ASTM C 920, Class 12.5.

### 2.6 Accessories

1. **Corner Bead, Casing Bead "L" Type:** 55mm G90 galvanized sheet metal with perforated flanges
2. **Drywall Screws:** self-drilling, self-threading Type S, case hardened steel meeting ASTM C 1002. Length recommended by board manufacturer or [ULC] [UL] for each application.
3. **Joint Filler:** Setting-type joint compound, as recommended by board manufacturer.
4. **Joint Tape:** 50mm wide perforated paper as recommended by board manufacturer.

# OUTLINE SPECIFICATION

## PART 3 – EXECUTION:

### 3.1 Steel Stud Partition Installation

1. The allowable height, gauge and anchoring of steel stud partitions shall be in accordance with engineering shop drawings.
2. Layout partition lines accurately in accordance with drawings, datums, lines and levels.
3. Install floor and ceiling tracks according to partition layout using shield screws, power driven fasteners, or other suitable fasteners at [600mm (24")] o.c. maximum.
4. Install studs vertically at maximum [400mm (16")] [600mm (24")] o.c. and not more than (50mm) from abutting walls, openings and each side of corners.
5. Extend studs to underside of structure where scheduled. Drywall bulkheads unrestrained at bottom shall be braced back to construction over at (1200mm) o.c.
6. Set ceiling and floor tracks on acoustical sealant in sound insulated partitions. Where sealant is used in double layer applications, install a bead of sealant under each layer. Ensure continuity of acoustic seal over entire wall including joints between vertical studs, horizontal tracks, surrounding construction and around penetrations.
7. Seal around penetrations in sound-rated walls including joints between dissimilar construction. Use acoustic sealant and/or fire stop system to meet sound and/or fire rating requirements.
8. Install acoustic insulation full width and length between studs to fit snugly without buckling, creasing or gaps. Install lower batt first; upper batt installed to butt with the lower batt and any extra length of insulation trimmed.
9. Install steel resilient furring channels at right angles to steel studs at [400mm(16")][600mm(24")] o.c.

Note: Ensure manufacturer of ceiling tiles permits backloading of tiles for the environmental conditions of this installation. Acoustic batt manufacturer will provide typical mass per unit area information when requested.

### 3.2 Ceiling Installation

1. Install acoustic insulation of [89mm(3-1/2")] thickness, in [single][double][triple] layer, to full width and length between floor joists to fit snugly without buckling or gaps.
2. Install steel resilient furring channels at right angles to floor joists at [400mm(16")][600mm(24")] o.c. or
3. Install acoustic batts over ceiling tiles of suspended ceiling systems over office rooms and adjacent open office areas extending [2440mm(8')] from office walls.

Note: Ensure manufacturer of ceiling tiles permits backloading of tiles for the environmental conditions of this installation. Acoustic batt manufacturer will provide typical mass per unit area information when requested.

### 3.3 Gypsum Wallboard Installation

1. Apply gypsum wallboard panels [parallel to] [perpendicular to] studs according to [ULC] [UL] [board manufacturer's recommended] [NBC Assembly No.] [NRC Report Test No.] [OC Test No.] [RAL Test No.] design requirements. Position all [edges over studs for parallel application] [ends over studs for perpendicular application]. Use maximum practical lengths to minimize end joints. Fit ends and edges closely, but not forced together. Stagger joints on opposite sides of partitions.
2. Apply [one][two] layer of gypsum wallboard with screw fastener length [ mm( ") ] and penetration [ mm( ") ] spaced [ mm( ") ] o.c. along edge joints and [ mm( ") ] o.c. in the field.
3. Keep insulation minimum (75mm) from heat emitting devices such as recessed light fixtures, and minimum (50mm) from sidewalls of CAN4-S604 type A chimneys and CAN1-B149.1 and CAN1-B149.2 type B and L vents.

# THERMAL PRODUCTS DESCRIPTIONS

## LIGHTWEIGHT STEEL FRAMING THERMAL:

**PINK® Fiber Glass Insulation Batts for Steel Stud Walls** are available in multiple sizes and RSI values for exterior wall thermal performance and certain interior walls for their acoustical performance. Owens Corning **PINK® Fiber Glass Insulation for Steel Stud Walls** and the **PINK® Thermal Wall Insulation** system utilizing fiber glass batts for exterior walls and extruded polystyrene insulating sheathing should be specified to address the thermal requirements of exterior walls.<sup>15</sup>

**PINK® Fiber Glass Insulation for Steel Stud Walls** is engineered and tested to maximize the value of lightweight steel framing (LSF) methods used in commercial and residential low to high-rise buildings. It is manufactured in dimensions and thickness (RSI values) to suit LSF construction standards.

Specifications that address thermal performance and the demand for ever greater energy efficiency should request information on Owens Corning's **PINK® Thermal Wall System**. The RSI values of **PINK® Fiber Glass Insulation for Steel Stud Walls** are listed by thickness in the Owens Corning Division 07210 literature. STC values and Fire Resistant Ratings may be found in the Owens Corning *Acoustical Wall Insulation Design Guide* or the fire ratings listed by Underwriters Laboratories of Canada List of Equipment & Materials and the National Research Council.

LSF construction is in accordance with Standard CAN/CSA S136-94, which establishes Canadian requirements for member design, connections, bracing, fabrication, installation, testing and protection. Additional information on LSF construction may be found in the *Lightweight Steel Framing Design Manuals* published by the Canadian Sheet Steel Building Institute (CSSBI).



LSF supports a wide range of interior and exterior finishes and can be easily detailed to maximize acoustical performance and thermal protection.<sup>16</sup>

For maximum thermal performance rigid insulating sheathing is mechanically fastened to the exterior face of the stud wall (without or with structural backup sheathing). Owens Corning **CodeBord™** Extruded Polystyrene insulating sheathing will enhance the overall assemblies thermal resistance, addressing thermal bridging and provide dew point control.<sup>17</sup>

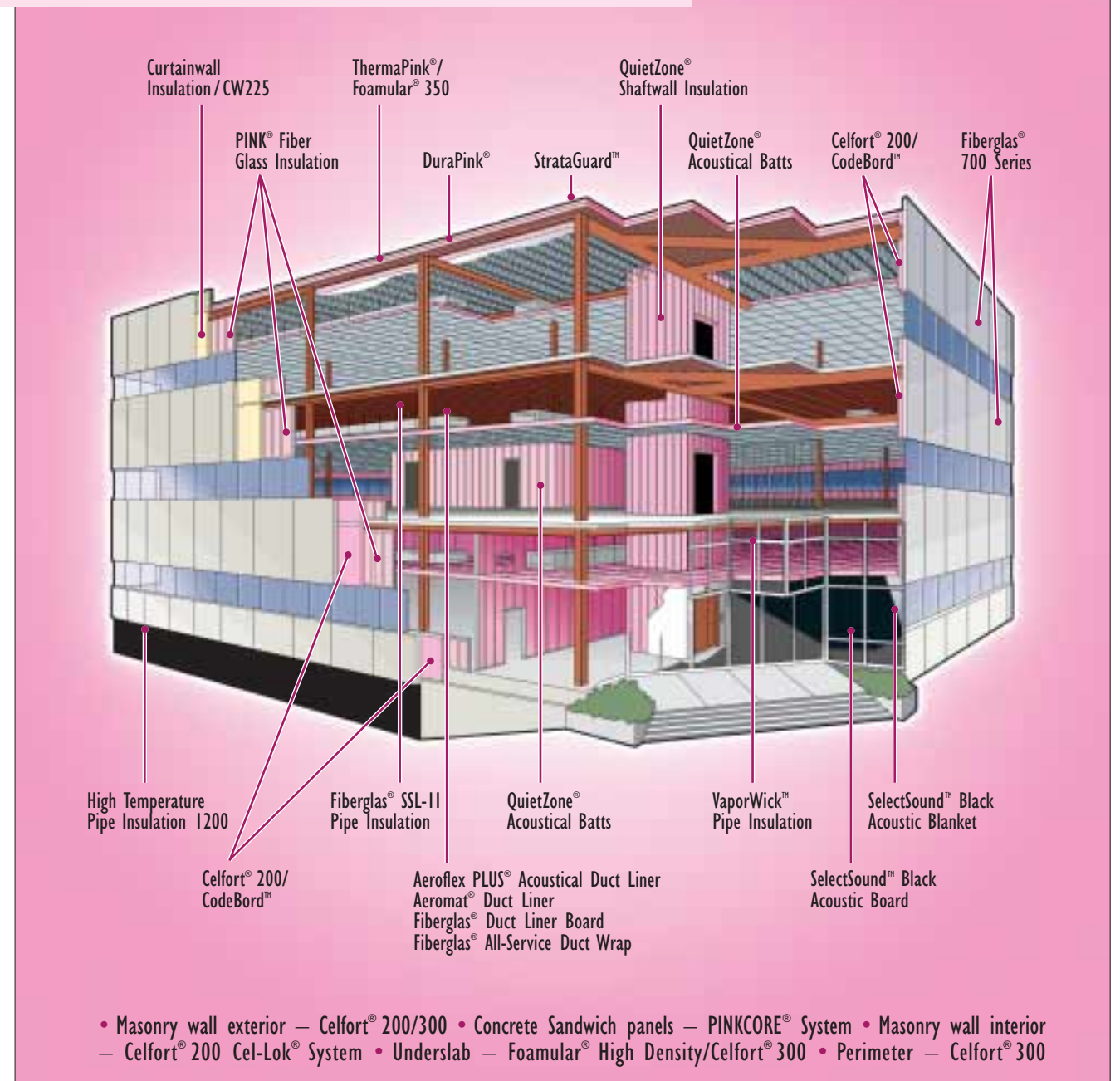
Organization Designations:	
CGSB	Canadian General Standards Board
CSA	Canadian Standards Association
NRC	National Research Council of Canada
CSSBI	Canadian Sheet Steel Institute
ASTM	American Society for Testing and Material
CSC	Construction Specifications Canada
ULC	Underwriters Laboratories of Canada
CMHC	Canada Mortgage and Housing Corporation
CSCC	Canadian Steel Construction Council
CISC	Canadian Institute for Steel Construction
GA	Gypsum Association
OCBA	Ontario Concrete Block Association

<sup>15</sup>See OCC Building Materials Technical Services Bulletin BMTS B-1-1, CCMC Listing #05650 and ORTECH Report 97-J53-M0187-B. Owens Corning Steel Stud insulation and Pink thermal insulation are manufactured to conform to all the requirements of CAN/ULC-S702-97, Type I properties.

<sup>16</sup>See Owens Corning Datasheet B-1-34 April 2002 *Acoustical Applications of Owens Corning Steel Stud Insulation*.

<sup>17</sup>LSF walls may be designed with or without structural sheathing. It is recommended that Owens Corning CodeBord™ Extruded Polystyrene Insulating Sheathing be used on the exterior of the LSF wall to maximize thermal and moisture protection. The deflection allowable height is independent of the sheathing. The most cost effective, thermally efficient, and moisture resistant wall is one with a proper balance between cavity and outboard sheathing insulation. Please reference Owens Corning literature and technical bulletins on the use and value of CodeBord™ Extruded Polystyrene Insulating Sheathing.

## TO DO THE JOB RIGHT YOU NEED THE RIGHT INSULATION.



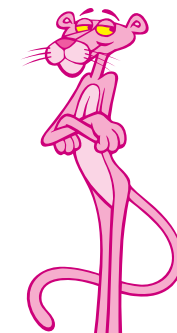
Owens Corning has a full range of PINK® Fiber Glass and Rigid Foam Insulation products developed to meet your exacting standards in design and construction.

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

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