



DURRA Building Systems

Acoustic Demising Walls

Technical Data & Reference Manual

Durra Building Systems
2747 State Highway 160
Whitewright, TX 75491
www.durra.com

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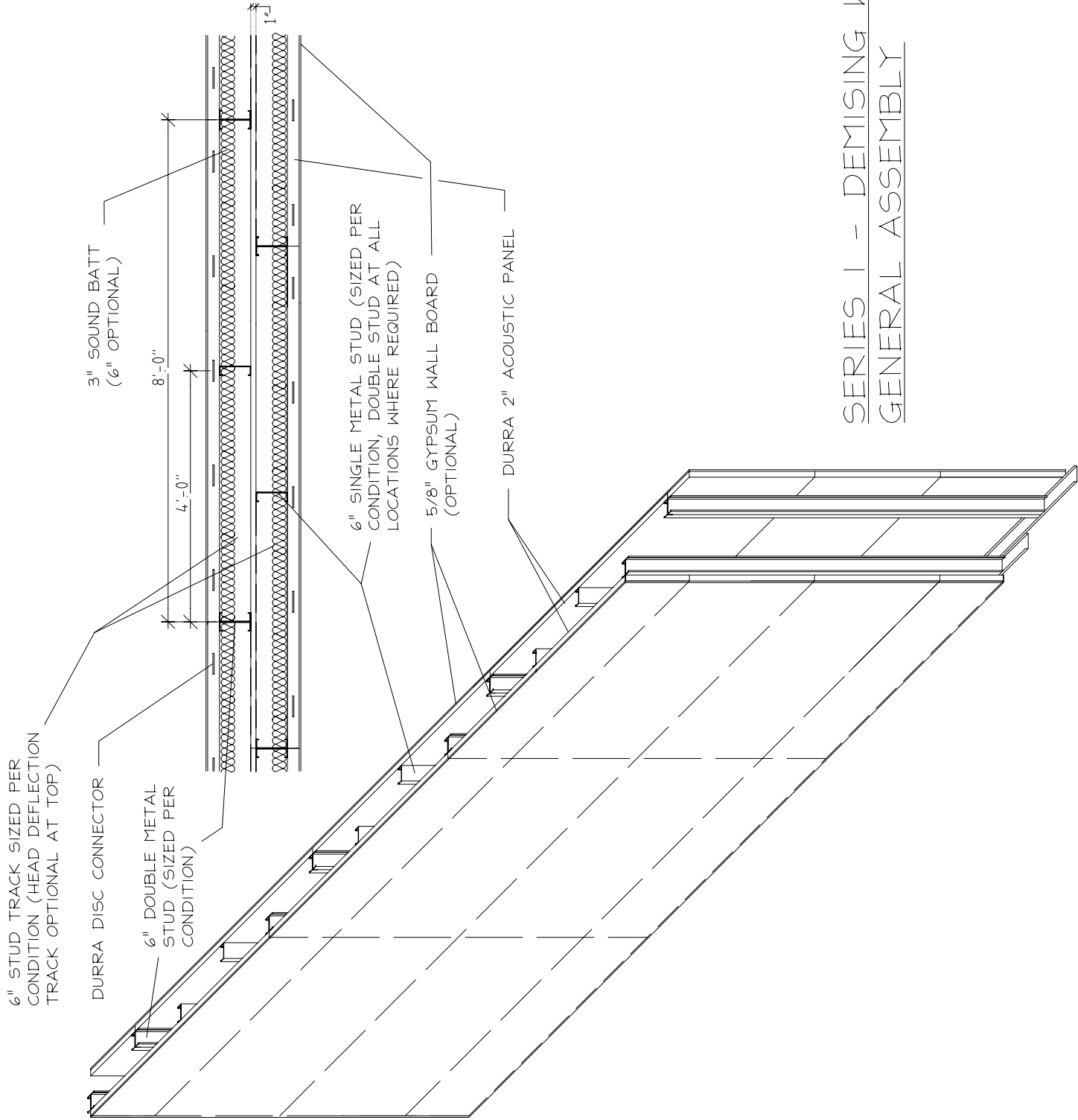
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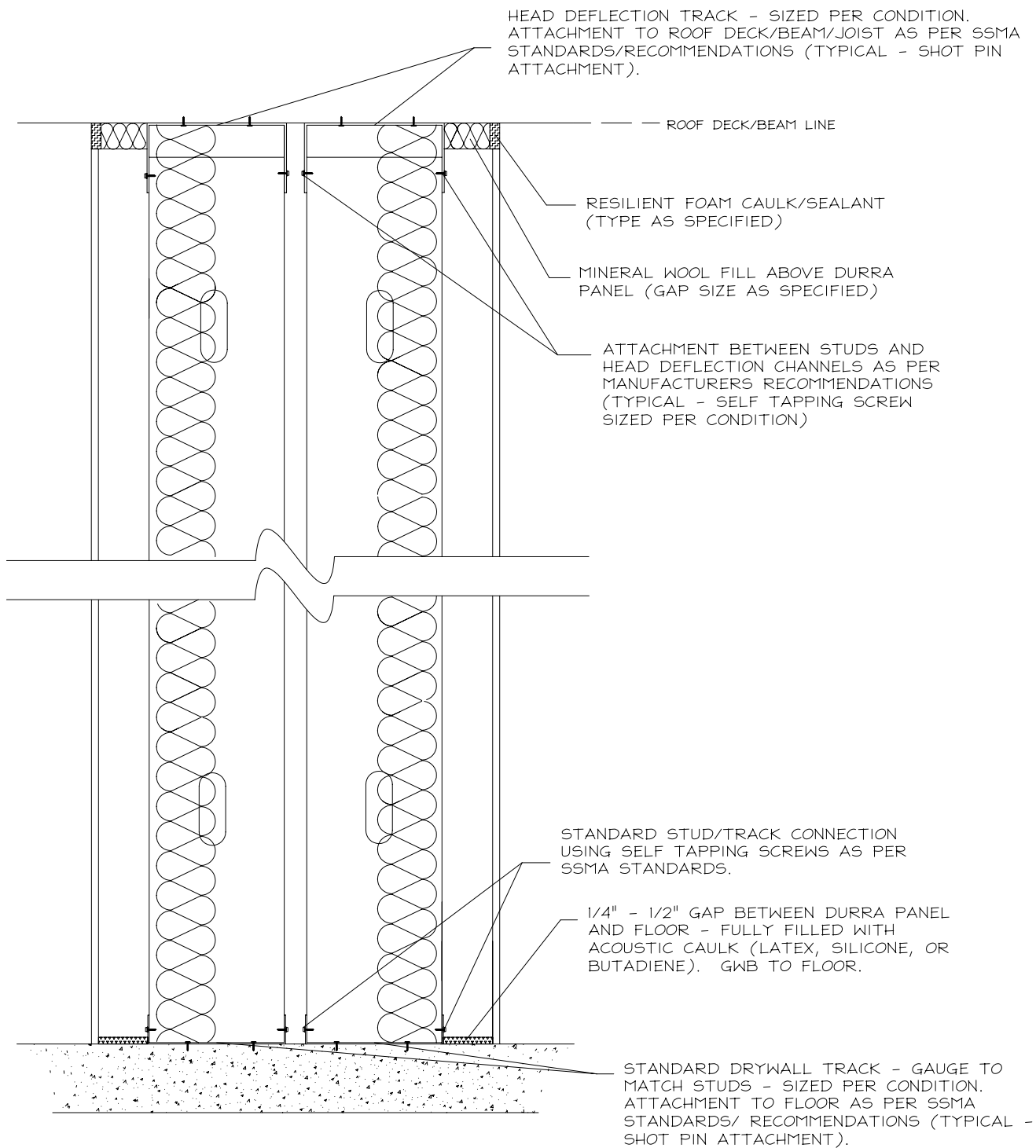
Series I Acoustic Demising Walls

Technical Data

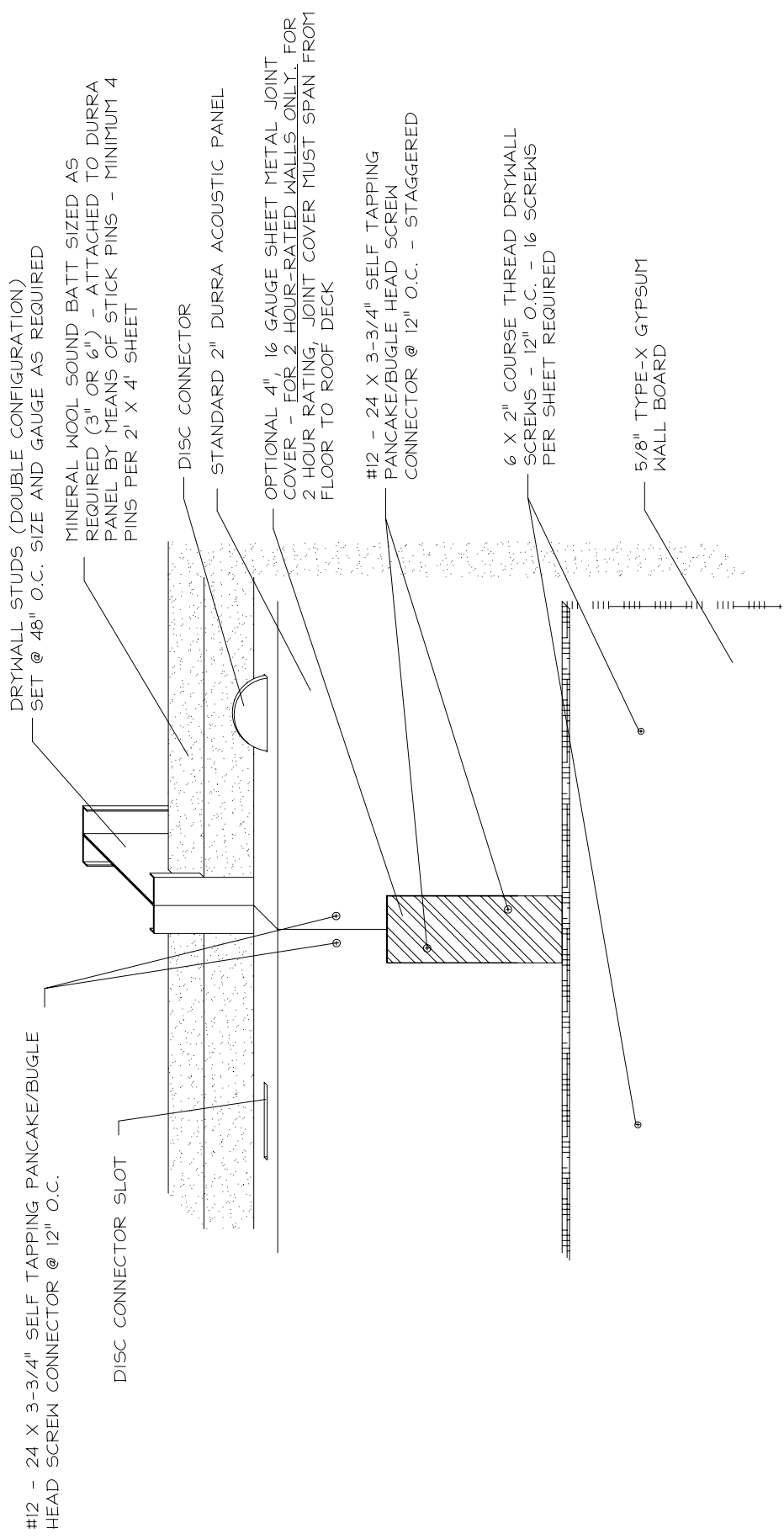
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SERIES I - DEMISING WALL
GENERAL ASSEMBLY



SERIES I - HEAD AND BASE CONNECTION DETAIL



DRYWALL STUDS (DOUBLE CONFIGURATION)
SET @ 48" O.C. SIZE AND GAUGE AS REQUIRED

MINERAL WOOL SOUND BATT SIZED AS
REQUIRED (3" OR 6") - ATTACHED TO DURRA
PANEL BY MEANS OF STICK PINS - MINIMUM 4
PINS PER 2' X 4' SHEET

DISC CONNECTOR SLOT

DISC CONNECTOR

STANDARD 2" DURRA ACOUSTIC PANEL

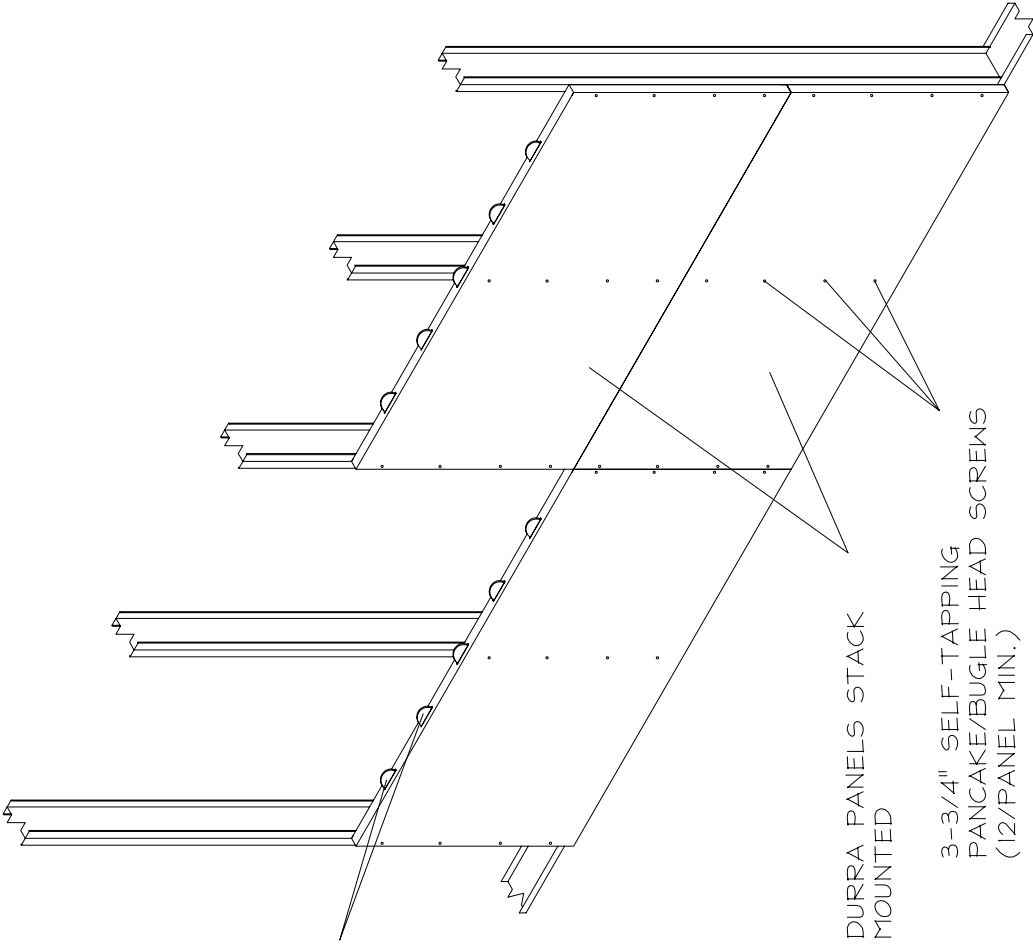
OPTIONAL 4" 16 GAUGE SHEET METAL JOINT
COVER - FOR 2 HOUR-RATED WALLS ONLY. FOR
2 HOUR RATING, JOINT COVER MUST SPAN FROM
FLOOR TO ROOF DECK

#12 - 24 X 3-3/4" SELF TAPPING
PANCAKE/BUGLE HEAD SCREW
CONNECTOR @ 12" O.C. - STAGGERED

6 X 2" COURSE THREAD DRYWALL
SCREWS - 12" O.C. - 16 SCREWS
PER SHEET REQUIRED

5/8" TYPE-X GYPSUM
WALL BOARD

SERIES I & II - PANEL JOINT AND CONNECTION DETAIL



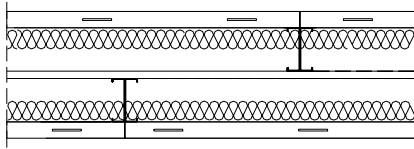
DURRA DISC CONNECTOR
(5 PER JOINT)

DURRA PANELS STACK
MOUNTED

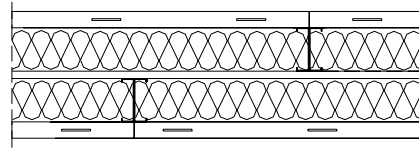
3-3/4" SELF-TAPPING
PANCAKE/BUGLE HEAD SCREWS
(12/PANEL MIN.)

SERIES I - PANEL MOUNTING DETAIL

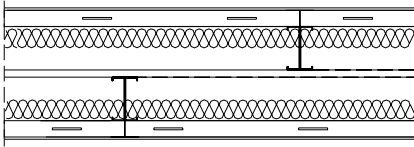
Series I Wall System Components



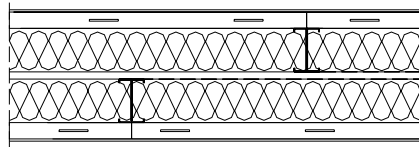
TYPE 1 STC 68



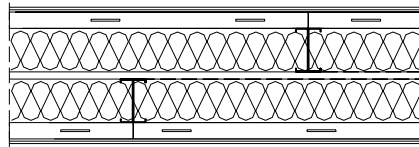
TYPE 5 STC 69



TYPE 3 STC 72



TYPE 7 STC 73



TYPE 8 STC 76

Wall	Thickness	Studs ¹	Head/Base Track ²	Acoustic Panel ³	Facing ⁴	Sound Batt ⁵	UL Rating ⁶
Type 1	17"	Sized to height	Gauge to match studs	2" Durra	None	2 x 3" or 1 x 6"	None
Type 3	18-1/4"	Sized to height	Gauge to match studs	2" Durra	1 layer – 5/8" GWB	2 x 3" or 1 x 6"	1 Hour – UL 052 2 Hour – UL 052
Type 5	17"	Sized to height	Gauge to match studs	2" Durra	None	2 x 6"	None
Type 7	18-1/4"	Sized to height	Gauge to match studs	2" Durra	1 layer – 5/8" GWB	2 x 6"	1 Hour – UL 052 2 Hour – UL 052
Type 8	19-1/2"	Sized to height	Gauge to match studs	2" Durra	2 layers – 5/8" GWB	2 x 6"	1 Hour – UL 052 2 Hour – UL 052

1 – Stud size and gauge determined by wall height and stiffness requirements. Double studs @ 48" O.C. when needed.

2 – Head deflection track optional.

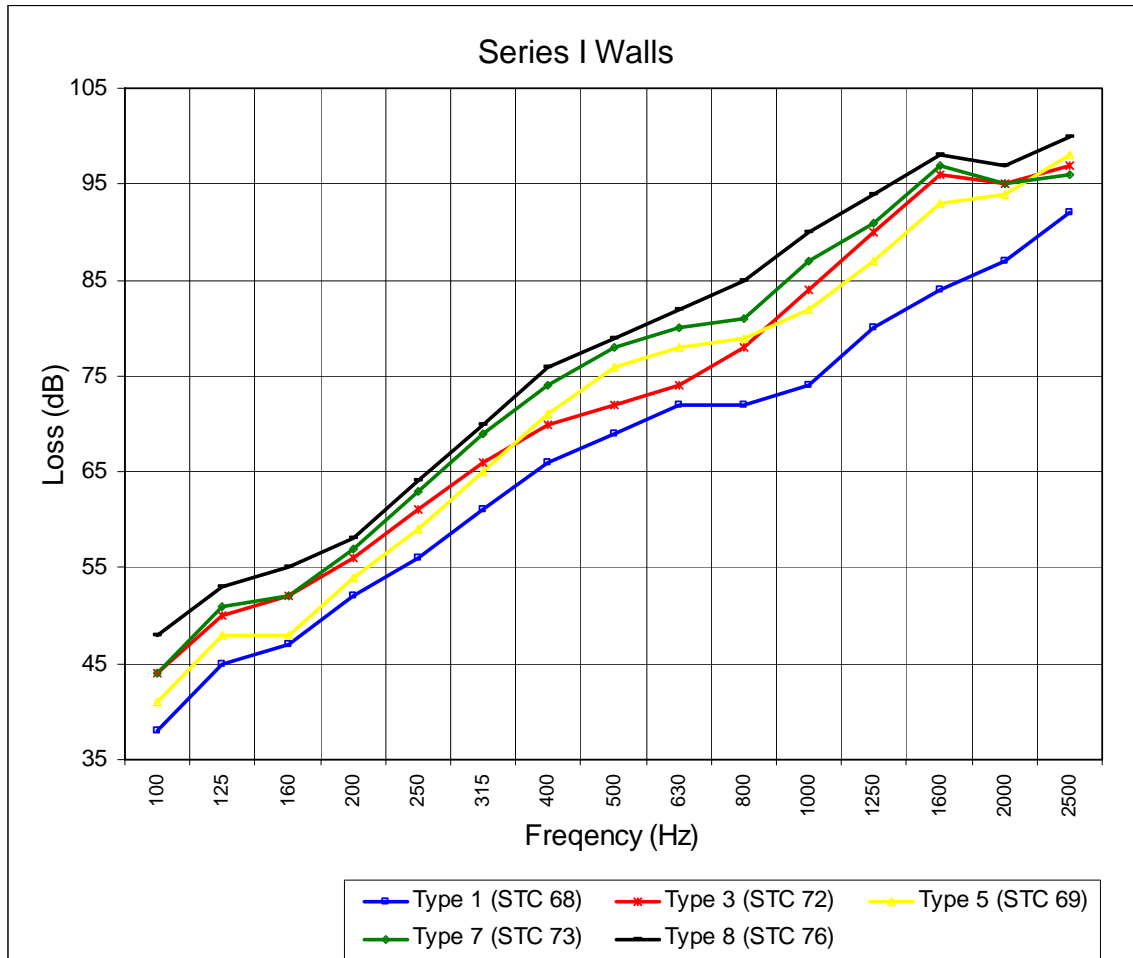
3 – Panel connection to studs by means of #12–24 x 3-3/4" self-tapping bugle/pancake head screws @ 12" O.C.

4 – GWB connection to acoustic panels by means of #6 x 2" course thread drywall screws @ 12" O.C. vertical, 24" O.C. horizontal.

5 – 2.5 pcf mineral wool preferred, fiberglass batt with equal or higher R value can be substituted.

6 – 2 hour rating requires 4", 16 gauge metal joint cover on all vertical acoustic panel joints (see detail).

Acoustical Performance Test Data - Sound Transmission Loss



Wall Design	STC	OITC
Type 1	68	51
Type 3	72	57
Type 5	69	54
Type 7	73	58
Type 8	76	61

Test performed by: Architectural Testing, Inc.
 130 Derry Court
 York, PA 17406

Tests performed in accordance with the following standards:

- ASTM E 90-04
- ASTM E 413-04
- ASTM E 1332-90
- ASTM E 2235-04

Limiting Height Tables for Series I & II Walls

Stud Layout - Alternating Double/Single Studs @ 48" O.C.				
Stud Size	SSMA Description	Gauge	Allowable Deflection	Limiting Height
6"	600S162-33	20	L/120	26'-7"
6"	600S162-43	18	L/120	28'-8"
6"	600S162-54	16	L/120	30'-6"
6"	600S162-68	14	L/120	32'-3"
8"	800S162-33	20	L/120	32'-9"
8"	800S162-43	18	L/120	35'-6"
8"	800S162-54	16	L/120	38'-0"

Stud Layout - Double Studs @ 48" O.C.				
Stud Size	SSMA Description	Gauge	Allowable Deflection	Limiting Height
6"	600S162-54	16	L/120	33'-2"
6"	600S162-68	14	L/120	35'-6"
6"	600S162-97	12	L/120	39'-1"
8"	800S162-68	14	L/120	44'-6"
8"	800S162-97	12	L/120	49'-4"

Limiting height table calculations based upon 5 psf dynamic pressure load.

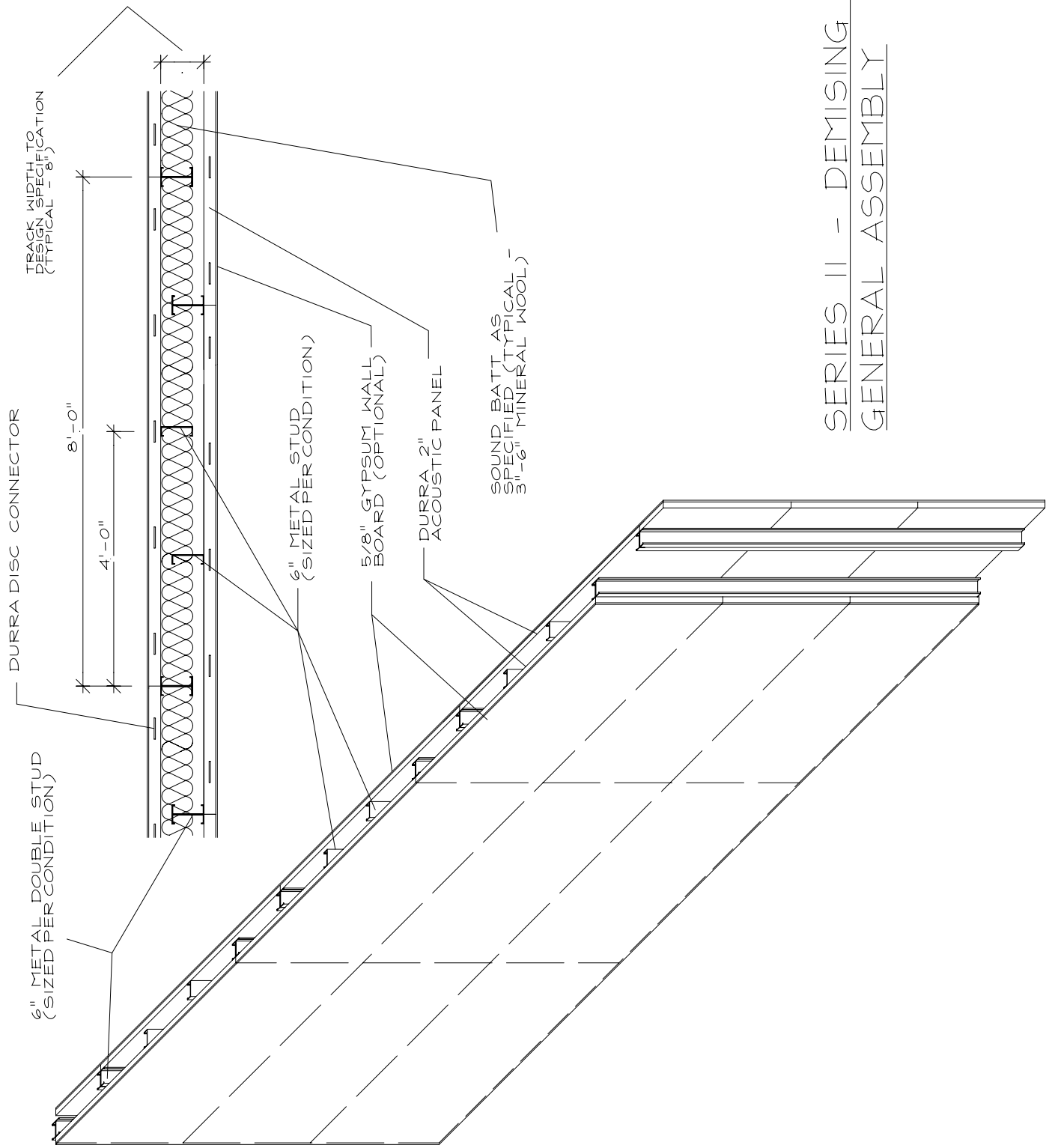
Wall stiffness can be increased by using wide flange studs (600S200 and 800S200).



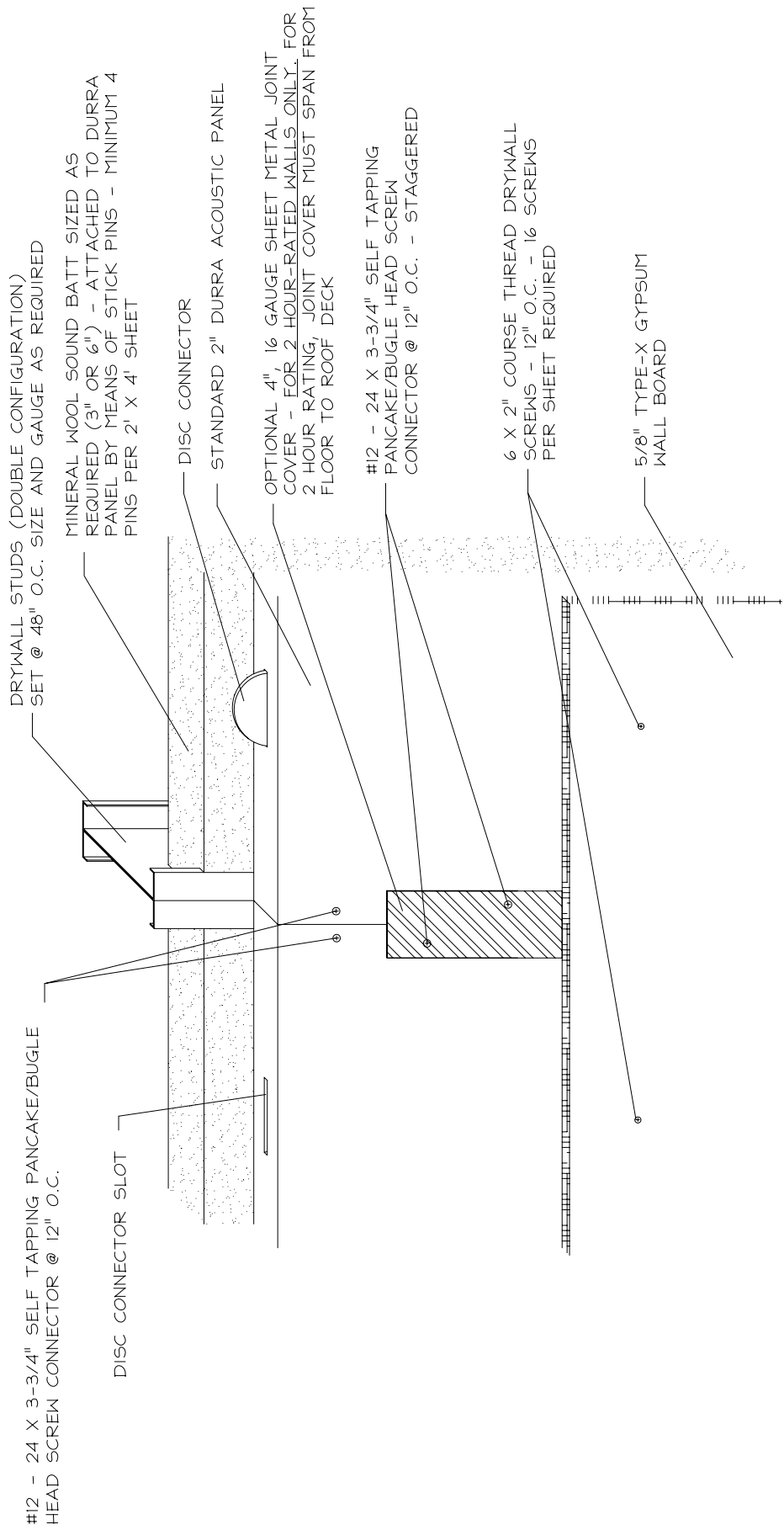
Series II Acoustic Demising Walls

Technical Data

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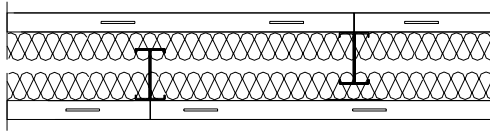


SERIES II - DEMISING WALL
 GENERAL ASSEMBLY

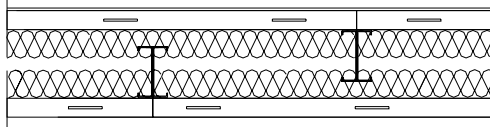


SERIES I & II - PANEL JOINT AND CONNECTION DETAIL

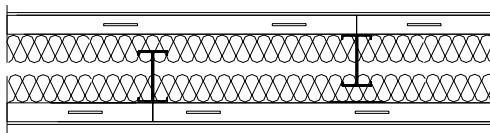
Series II Wall System Components



TYPE 9 STC 64



TYPE 10 STC 67



TYPE 11 STC 69

Wall	Thickness	Studs ¹	Head/Base Track ²	Acoustic Panel ³	Facing ⁴	Sound Batt ⁵	UL Rating ⁶
Type 9	12"	Sized to wall height	Gauge to match studs	2" Durra	None	2 x 3" or 1 x 6"	None
Type 10	12-5/8"	Sized to wall height	Gauge to match studs	2" Durra	5/8" GWB (one side only)	2 x 3" or 1 x 6"	None
Type 11	13-1/4"	Sized to wall height	Gauge to match studs	2" Durra	1 layer – 5/8" GWB	2 x 3" or 1 x 6"	1 Hour– UL052 2 Hour– UL051

1 – Stud size and gauge determined by wall height and stiffness requirements. Double studs @ 48" O.C. when needed.

2 – Head deflection track optional.

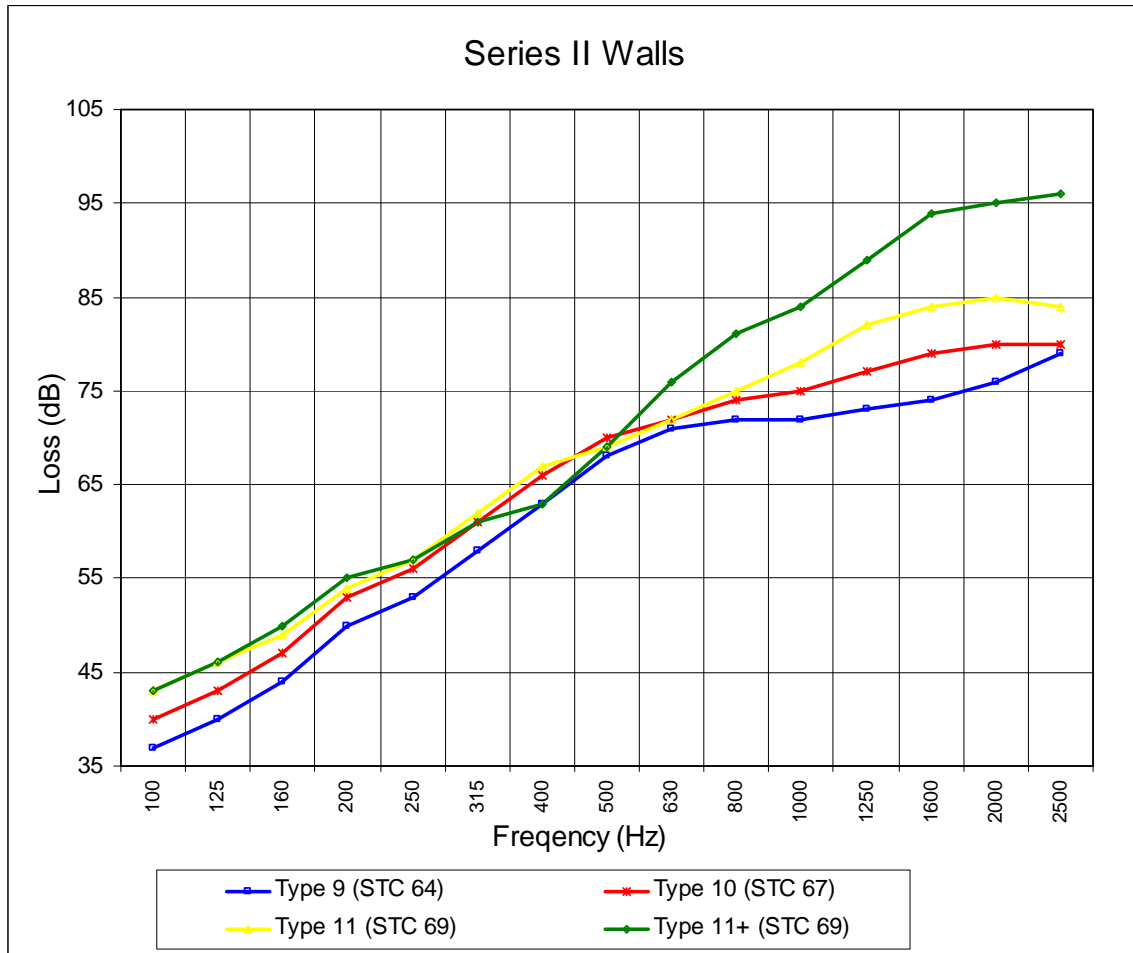
3 – Panel connection to studs by means of #12–24 x 3-3/4" self-tapping bugle/pancake head screws @ 12" O.C.

4 – GWB connection to acoustic panel by means of #6 x 2" course thread drywall screws @ 12" O.C. vertical, 24" O.C. horizontal.

5 – 2.5 pcf mineral wool preferred, fiberglass batt with equal or higher R value can be substituted.

6 – 2 hour rating requires 4", 16 gauge metal joint cover on all vertical acoustic panel joints (see detail).

Acoustical Performance Test Data - Sound Transmission Loss



Wall Design	STC	OITC
Type 9	64	49
Type 10	67	52
Type 11	69	55
Type 11+	69	55

Test performed by: Architectural Testing, Inc.
 130 Derry Court
 York, PA 17406

Tests performed in accordance with the following standards:

- ASTM E 90-04
- ASTM E 413-04
- ASTM E 1332-90
- ASTM E 2235-04

Limiting Height Tables for Series I & II Walls

Stud Layout - Alternating Double/Single Studs @ 48" O.C.				
Stud Size	SSMA Description	Gauge	Allowable Deflection	Limiting Height
6"	600S162-33	20	L/120	26'-7"
6"	600S162-43	18	L/120	28'-8"
6"	600S162-54	16	L/120	30'-6"
6"	600S162-68	14	L/120	32'-3"
8"	800S162-33	20	L/120	32'-9"
8"	800S162-43	18	L/120	35'-6"
8"	800S162-54	16	L/120	38'-0"

Stud Layout - Double Studs @ 48" O.C.				
Stud Size	SSMA Description	Gauge	Allowable Deflection	Limiting Height
6"	600S162-54	16	L/120	33'-2"
6"	600S162-68	14	L/120	35'-6"
6"	600S162-97	12	L/120	39'-1"
8"	800S162-68	14	L/120	44'-6"
8"	800S162-97	12	L/120	49'-4"

Limiting height table calculations based upon 5 psf dynamic pressure load.

Wall stiffness can be increased by using wide flange studs (600S200 and 800S200).



Durra Acoustic Panels

LEED Certification Credits

Materials & Resources		LEED Credit
Construction Waste Management	Divert 50%	Credit 2.1
	Divert 75%	Credit 2.2
Recycled Content	Specify 25%	Credit 4.1
	Specify 50%	Credit 4.2
Local/Regional Materials	20% Manufactured Locally	Credit 5.1
	50% Harvested Locally	Credit 5.2
Rapidly Renewable Materials		Credit 6

Indoor Environmental Quality		LEED Credit
Construction IAQ Management Plan	During Construction	Credit 3.1
	Before Occupancy	Credit 3.2
Low-Emitting Materials	Adhesives & Sealants	Credit 4.1
	Paints	Credit 4.2
Indoor Chemical & Pollutant Source Control		Credit 5

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Standard 2” Acoustic Panel Physical Properties Data Summary

TEST	STANDARD	RESULT
Sound Transmission	ASTM E90	STC 32 (individual 2” panel)
Rack Load	ASTM E72	1103 lb _f
Transverse Load	ASTM E72	105.2 psf (ultimate) 35.1 psf (allowable)
Shear	ASTM C273	1,718 lbs (8kN)
Nail Pull	ASTM C473	109 lbs
Flame Spread	ASTM E84/ UL 723	Bare Panel - Class B (FSI = 35) w/ coating - Class A (FSI < 25)
Fire Rating	ASTM E119/ UL 263	1 & 2 Hour Rating (composite wall systems)
Smoldering Combustion	ASTM C739	Passed – no flaming combustion
Mold and Mildew	ASTM D3273	7 x more resistant than drywall
Moisture Absorption	ASTM C739	4.2% vs. 15% max. allowable
Termite Activity	TCES	Negative (high silica content)

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Series I & II Acoustic Demising Walls

Standard Product Specification

Durra Building Systems
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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The Project Resource Manual—CSI Manual of Practice, Fifth Edition*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all "Specifier Notes" after editing this section.

Section numbers and titles are from *MasterFormat* 1995 Edition, with numbers and titles from *MasterFormat* 2004 Edition in parentheses. Delete version not required.

SECTION 09840 (09 84 33)

ACOUSTIC DEMISING WALL SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Acoustic demising wall system.

1.2 RELATED SECTIONS

- A. Section 05400 (05 40 00) – Cold-Formed Metal Framing.
- B. Section (07 92 19) – (Acoustic Joint Sealants).
- C. Section 09250 (09 29 00) – Gypsum Board.
- D. Section 09260 (09 21 16) – Gypsum Board Assemblies.
- E. Section 09820 – Acoustic Insulation and Sealants.
- F. Section (09 81 00) – (Acoustic Insulation).

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. ASTM C 273 – Standard Test Method for Shear Properties of Sandwich Core Materials.
- B. ASTM C 423 – Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- C. ASTM C 473 – Standard Test Methods for Physical Testing of Gypsum Panel Products.
- D. ASTM C 518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- E. ASTM C 739 – Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation.
- F. ASTM E 72 – Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.
- G. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- H. ASTM E 90 – Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- I. ASTM E 119 – Standard Test Methods for Fire Tests of Building Construction and Materials.
- J. ASTM E 413 – Classification for Rating Sound Insulation.
- K. ASTM E 795 – Standard Practices for Mounting Test Specimens During Sound Absorption Tests.
- L. ASTM E 1332 – Standard Classification for Determination of Outdoor-Indoor Transmission Class.
- M. UL 263 – Standard for Fire Tests of Building Construction and Materials.
- N. UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials.

1.4 PERFORMANCE REQUIREMENTS

- A. Acoustic Demising Wall System:

1. Wall Width: 18.25 inches (464 mm).
2. Fire Rating: UL 2-hour / UL 1-hour ratings required.
3. Sound Transmission Coefficient (STC): to exceed STC 70.

1.5 SUBMITTALS

- A. Comply with Section 01330 (01 33 00) – Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including installation instructions.
- C. Shop Drawings: Submit manufacturer's shop drawings, indicating layout, dimensions, materials, fasteners, and control joints.
- D. Samples: Submit manufacturer's sample of acoustic wall panels, minimum 6 inches (152 mm) by 6 inches (152 mm).

1.6 QUALITY ASSURANCE

- A. Installer's Qualifications:
 1. Experienced in installation of acoustic wall panel system.
 2. Approved by manufacturer.

Specifier Notes: Describe requirements for a pre-installation meeting to coordinate the installation of the acoustic wall panel system and to sequence related work. Delete if not required.
--

- B. Pre-installation Meeting: Convene a pre-installation meeting [2 weeks] [_____] before start of installation of acoustic demising wall system. Require attendance of parties directly affecting work of this section, including Contractor, Architect, Engineer, installer, and manufacturer's representative. Review installation, protection, and coordination with other Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:
 1. Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

2. Unload acoustic wall panels in accordance with manufacturer's instructions.
- B. Storage:
1. Store materials in accordance with manufacturer's instructions.
 2. Store materials in clean, dry area, on level surface, off ground.
 3. Keep temporary protective coverings in place.
 4. Keep acoustic wall panels dry.
- C. Handling:
1. Protect materials from damage during handling and installation.
 2. Handle acoustic wall panels in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Durra Building Systems, 2747 State Highway 160, Whitewright, Texas 75491. Toll Free (866) 364-1198. Phone (903) 364-1198. Fax (903) 364-1108. Web Site: www.durra.com. E-mail contact@durra.com.

2.2 ACOUSTIC WALL PANELS

- A. Acoustic Wall Panels: DURRA Series 1 Acoustic Wall Panel.
1. Core Material:
 - a. Cellulosic matrix derived from wheat straw.
 - b. Free from deleterious materials and residue.
 - c. Compressed under heat and pressure to density specified herein.
 2. Facing Material:
 - a. Heavyweight kraft paperboard facing.
 - b. Thickness: not less than 90#/msf.
 - c. Adhesively applied to both panel faces.
 - d. Suitable for application of finishes.

- e. Flame Spread Rating, ASTM E 84, UL 723: [Class B, without coating].

B. Panel Dimensions:

1. Thickness: 2 inches (51 mm).
2. Width: 4 feet (1,219 mm).
3. Length: 8 feet (2,438 mm), and as indicated on the Drawings.
4. Weight: approximately 3.9 pounds per square foot (19.0 kg/m²).
5. Long Edge: Square.

C. Panel Characteristics:

1. Smoldering Combustion (ASTM C 739): No flaming combustion.
2. Load Capacity (ASTM E 72):
 - a. Rack Load: 1,100 pounds, safety factor of 3.
 - b. Transverse Load: 100.0 psf ultimate, 35.0 psf allowable.
3. Shear Properties (ASTM C 273): 1,718 pounds.
4. Fire Rating (ASTM E 119 and UL 263):
 - a. Double-Wall System, 1-hour: UL Design No. U052.
 - b. Double-Wall System, 2-hour: UL Design No. U051.
5. Sound Transmission Loss, STC (ASTM E 90, E 413, and E 1332):
 - a. Single Panel: 32.
 - b. Wall Systems: Exceed STC 70.
6. Thermal Conductivity, R-Value (ASTM C 518):
 - a. Single Panel: R-4.25.
 - b. Wall Systems: Exceed R-25.
7. Nail Pull, Single Panel (ASTM C 473): 109 pounds.
8. Moisture Absorption (ASTM C 739): < 5.0 percent weight gain.

2.3 ACCESSORIES

Specifier Notes: Edit the list of accessories as required for the specific application. Consult Durra Building Systems for more information.

- A. Durra Connection Disks.
- B. Foil Tape: 2 inches (51 mm) wide.
- C. Acoustic Joint Sealants: As specified in Section 09820 (07 92 19).
- D. Acoustic Insulation:
 - 1. Type: SAFB mineral wool, Thermafire™, Inc., or equivalent.
 - a. Density: 2.5 pounds (1.13 kg).
 - b. Thickness: 3 inches (76 mm).
 - c. R-Value: 3.7 per inch.
- E. Fasteners:
 - 1. Acoustic Panel Connector Screws: Concealor™ self-tapping, low profile, pancake head fasteners, 3-3/4 inches (95.3 mm), or equivalent.
 - 2. Insulation Fasteners: cup head pins 3-1/2 inches (95.3 mm).
 - 3. Steel Stud Fasteners: Grabber™ Stud Screws: #10 by 3/4 inches (19 mm), or equivalent.
 - 4. Drywall Fasteners: Grabber™ Laminating Screws: #10 by 1-1/2 inches (38 mm), or equivalent.
- F. Metal Studs:
 - 1. Sized to wall height and width requirements.
 - 2. Spaced at 48 inches (100 mm) on center, unless otherwise indicated on the Drawings.
 - 3. Single or double, and staggered as indicated on the Drawings.
 - 4. Stud Track: Sized to wall height.
 - 5. As specified in Section 05400 (05 40 00).
- G. Gypsum Board:

1. 5/8 inch (16 mm) thick, Type X.
2. As specified in Section 09250 (09 29 00).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive acoustic wall panel system.
- B. Notify Architect of conditions that would adversely affect installation.
- C. Do not start installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION

- A. Install acoustic wall panel system in accordance with manufacturer's instructions.
- B. Install acoustic wall panel system plumb, level, free of warp or twist, and aligned with adjacent Work.
- C. Cutting Panels:
 1. Cut panels no closer than 1/8 inch (3 mm) to panel edge in accordance with manufacturer's instructions, if field cutting is necessary.
 3. Seal cuts with re-sealing tape in accordance with manufacturer's instructions.
- D. Install acoustic wall panel system to thicknesses indicated on the Drawings.
- E. Finished ACOUSTIC DEMISING WALLS SHOULD NOT BE PENETRATED.
- F. Attaching Panels:
 1. Use specified anchors to attach panels to supporting construction members.
 2. Fasteners should be spaced at 12 in. OC max.
- G. Maintain maximum spacing of support members of 4 feet (1,219 mm) on center.
- H. Metal Studs: Install as specified in Section 05400 (05 40 00).
- I. Acoustic Insulation: Install as specified in Section 09820 (09 81 00).

J. Gypsum Board:

1. Vertical joints to be staggered 24 in. from Durra panel joint.
2. Horizontal joints to be staggered 48 in. from Durra panel joint.
3. Use specified anchors to attach GWB to Durra panel wall surfaces.
4. Fasteners should be spaced at 12 in. OC max. (horizontal) and 8 in. OC max. (vertical).

K. Acoustic Joint Sealants: Install as specified in Section 09820 (07 92 19).

L. Installation Tolerances:

1. Maximum Variation from Plumb: 1/4 inch in 10'-0" (6 mm in 3,048 mm), not exceeding 3/8 inch in 20'-0" (9 mm in 6,069 mm).
2. Maximum Variation from Level: 1/4 inch in 20'-0" (6 mm in 6,069 mm), not exceeding 1/2 inch in 40'-0" (13 mm in 12,192 mm).
3. Maximum Variation in Linear Building Line from Location Indicated: 1/4 inch in 20'-0" (6 mm in 6,069 mm).

3.3 PROTECTION

- A. Protect installed acoustic wall panel system from damage during construction.

END OF SECTION