



Section 09 50 Ceilings

Part 1 – General

1.01 Scope

Furnish and install the Linear Expressions Metal Ceiling System as manufactured by Steel Ceilings Inc., Johnstown, Ohio

1.02 Related Sections

- Section 09 20 Plaster and Gypsum Board
- Section 23 00 Heating, Ventilating and Air-conditioning
- Section 26 50 Lighting

1.03 References

- American Society for Testing and Materials (ASTM)

C635 Standard specification for the manufacture, performance and testing of metal suspension systems for acoustical tile and lay-in panel ceilings

C636 Standard practice for installation of metal ceiling suspension systems for acoustical tile and lay-in panels

E84 Test method for surface burning characteristics of building materials

CISCA Ceilings and Interior Systems Construction Association

1.04 Submittals

- Provide product data sheets listing dimensions, style, edge detail, perforation pattern and finish
- Alternates require prior approval no later than 21 days prior to bid date. In addition to the requirements above, submittals for approved alternates must include samples of actual products to be substituted together with test certificates supporting performance claims, a mock up and a written warranty.

1.05 Project Conditions

Environmental Requirements

- Area to receive ceiling systems shall be protected from the weather
- Wet trades work shall be complete and dry prior to installation of ceiling system

- Installation shall not proceed until the temperature and humidity conditions closely approximate finish condition

1.06 Attic Stock

Provide 2% (3% etc) of the ceiling system area materials to be used as attic stock

1.07 Performance

- Materials and installation must comply with Local Building Code and Regulations
- Materials should be stored and handled in accordance with CISCA's *Acoustical Ceilings – Use and Practice*
- Materials to comply to CISCA's *Metal Ceilings Technical Guidelines*
- There are no special seismic requirements

Part 2 – Products

2.01 Manufacturer

Linear Expressions Metal Panels and Crossing Channels shall be as manufactured by Steel Ceilings Inc., Johnstown, Ohio: www.steelceilings.com

2.02 Materials

Suspension System

- Linear main channels and cross channels shall be formed from galvanized steel (aluminum, stainless steel) with face dimension of 2" (up to 8"). Main channels shall be suspended from the existing structure with not less than 12-gauge pre-straightened hanger wires, wrapped tightly 3 full turns. If crossing box is used it shall be of the same material as the main and crossing channels and it will be used as the point of suspension from the structure.
- Wall molding shall be formed from galvanized steel (aluminum, stainless steel) in shape to interface with the channels and infill panels
- Hold downs shall be formed from the same materials as the molding

Infill Metal Panels

- Infill metal panels shall be formed from ___ gauge galvanized steel — minimum A40/G40 (aluminum, 304 stainless steel)

- Panel sizes shall be as indicated on the drawings but shall not exceed 48" x 48"
- Panels shall be square edge and shall flush out with the face of the main and crossing channels
- Panels shall be perforated (non-perforated) with pattern B (C, D, F, FF, G, M, R or custom perforation)
- Panels shall be post painted to seal all perforations with polyester powder global white (color) gloss level 12% to 15% (preferred mill, natural anodized, brushed number 4)

Acoustical Infill

- Panels shall be supplied with 1" (2", etc.) thick 1pcf (2 pcf, etc.) glass fiber insulation wrapped in flame-retardant black polyfilm (nonwoven acoustic fleece) to provide sound absorption NRC of 0.75 (0.95, etc.)

Part 3 – Execution

3.01 Examination

- Installer must inspect the area that is to receive the metal ceiling system for conditions that may affect the installation and notify, in writing, any conditions that must be rectified before commencing
- All work above the ceiling shall be completed before proceeding with this installation
- All wet work shall be completed and thoroughly dry before proceeding with this installation

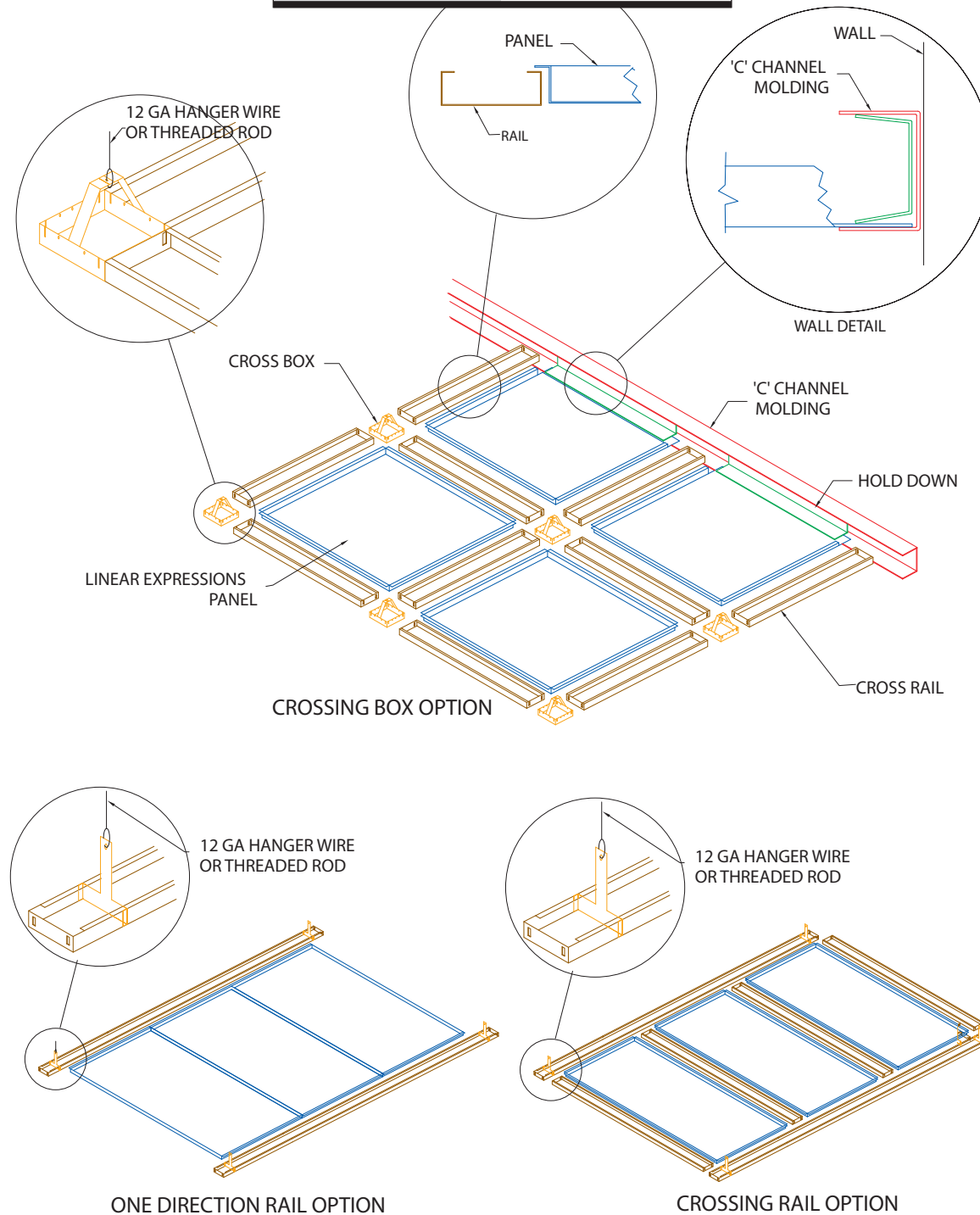
3.02 Installation

- Metal Ceiling components shall be delivered in unopened cartons and shall be clearly marked with manufacturer's name
- Material shall be stored in dry and protected areas
- Install the ceiling system in accordance with the manufacturer's recommendations and the approved shop drawings
- Cut panels shall, where possible, not be less than one half of full size
- Panels shall be free from defects and damaged panels shall be removed and replaced

LINEAR EXPRESSIONS

METAL PAN SYSTEM

SIZE (INCHES)	Module Sizes of: Min. 28x28, Max. 52x52
ACCESSIBILITY	Upward
VISUAL	Modular
EDGE DETAIL	Square
MATERIALS	Steel, Aluminum, Stainless
FINISHES	Painted, Natural
RELATIVE COST	\$\$\$



OVERVIEW

The Steel Ceilings Linear Expressions Metal Pan System is a unique design in metal ceilings. It affords the end user 100% accessibility into the plenum space at any point in the ceiling using linear channels and in-fill panels. Lights, air diffuser slots, sprinkler holes etc can all be accommodated in the channel, allowing the panel to remain total free of encumbrances for easy access and maintenance. The panels that are placed in the center of the module are reveal in design and sit flush with the surrounding channel.

MODULE

The system can be made to suit any module size. The crossing channel and/or the crossing box serve as a framework for the in-fill panels.

METAL

The metal panels are manufactured from 18- to 26-gauge galvanized steel. Panels can also be produced in stainless steel or aluminum in varying thicknesses.

PERFORATIONS

Although the box and channels are not perforated, a full range of perforation patterns are available with or without plain borders for the in-fill panels. Steel Ceilings maintains a range of perforating dies in-house and custom perforations can be provided. Perforation patterns can be staggered, diagonal or straight row and the perforations can be provided in round, square or oblong holes in various diameters and sizes. The panels can also be provided without perforations.

EDGE TREATMENTS

The square edge panels are made to lie flush with the surrounding channel.

ACOUSTICS

The perforated metal panels can be provided with either a non-woven fabric or a fiberglass pad that is wrapped at the factory in black flame retardant polyfilm. Noise reduction coefficients of up to .95 can be achieved depending on the thickness and density of the fiberglass pad that is used. In areas where sound transmission needs to be controlled, attenuation pans can be provided on the back of the perforated pans that can achieve a CAC rating of up to 40 dB.

TYPE OF INSTALLATION

The Linear Expressions system consists of a crossing box (usually 4" x 4") that is suspended with wire, angle or threaded rod. Channels (usually 4" wide) are then clipped onto the box. The panels are installed from above in a lay-in fashion.

MAINTENANCE BENEFIT

The Linear Expressions system from Steel Ceilings is easy to access and the panels are easily removed for maintenance.

CONCEALED OR EXPOSED SUSPENSION SYSTEM

The entire ceiling assembly has a distinctive and visible crossing box and channel (usually 4", but other sizes can be provided).

FINISHES

The finished appearance of the ceiling system is either a powder paint finish in white or color, or a variety of metals including stainless steel, anodized or brushed aluminum, copper steel, brass steel or chrome steel.

APPLICATIONS

This fully accessible ceiling can be used for interior applications only.

FIRE PERFORMANCE

The ceiling system has been tested in accordance with ASTM E-84 and is considered non-combustible. The material has a Flame Spread of less than 25 and Smoke Generation of less than 50.

IMPACT

All materials are 100% recyclable with a high recycled content.