

## Section 09 50 Ceilings

### Part 1 – General

#### 1.01 Scope

Furnish and install the Torsion Spring Metal Tile 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

Torsion Spring Metal Pans and slotted suspension runners shall be as manufactured by Steel Ceilings Inc., Johnstown, Ohio:  
[www.steelceilings.com](http://www.steelceilings.com)

#### 2.02 Materials

##### Suspension System

- T-Bar suspension system shall be formed from galvanized steel and shall be heavy duty with face dimension of  $1\frac{5}{16}$ " and slotted for torsion spring attachment (wide tee for Reveal Torsion Spring). Main runners shall be spaced not to exceed 48" on center by direct suspension from the existing structure with not less than 12-gauge pre-straightened hanger wires, wrapped tightly 3 full turns, spaced 48 inches on center.
- Wall molding shall be formed from galvanized steel (aluminum, stainless steel) in C-shape to receive metal pans
- Hold downs shall be formed from the same materials as the molding

##### Torsion Spring Metal Panels

- Metal pans shall be formed from \_\_\_ gauge galvanized steel – minimum A40/G40 (aluminum, stainless steel)
- Panels shall measure 24" x 24" (24" x 48", 30"x 60" or custom sized)
- Panels shall be square edge

- 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

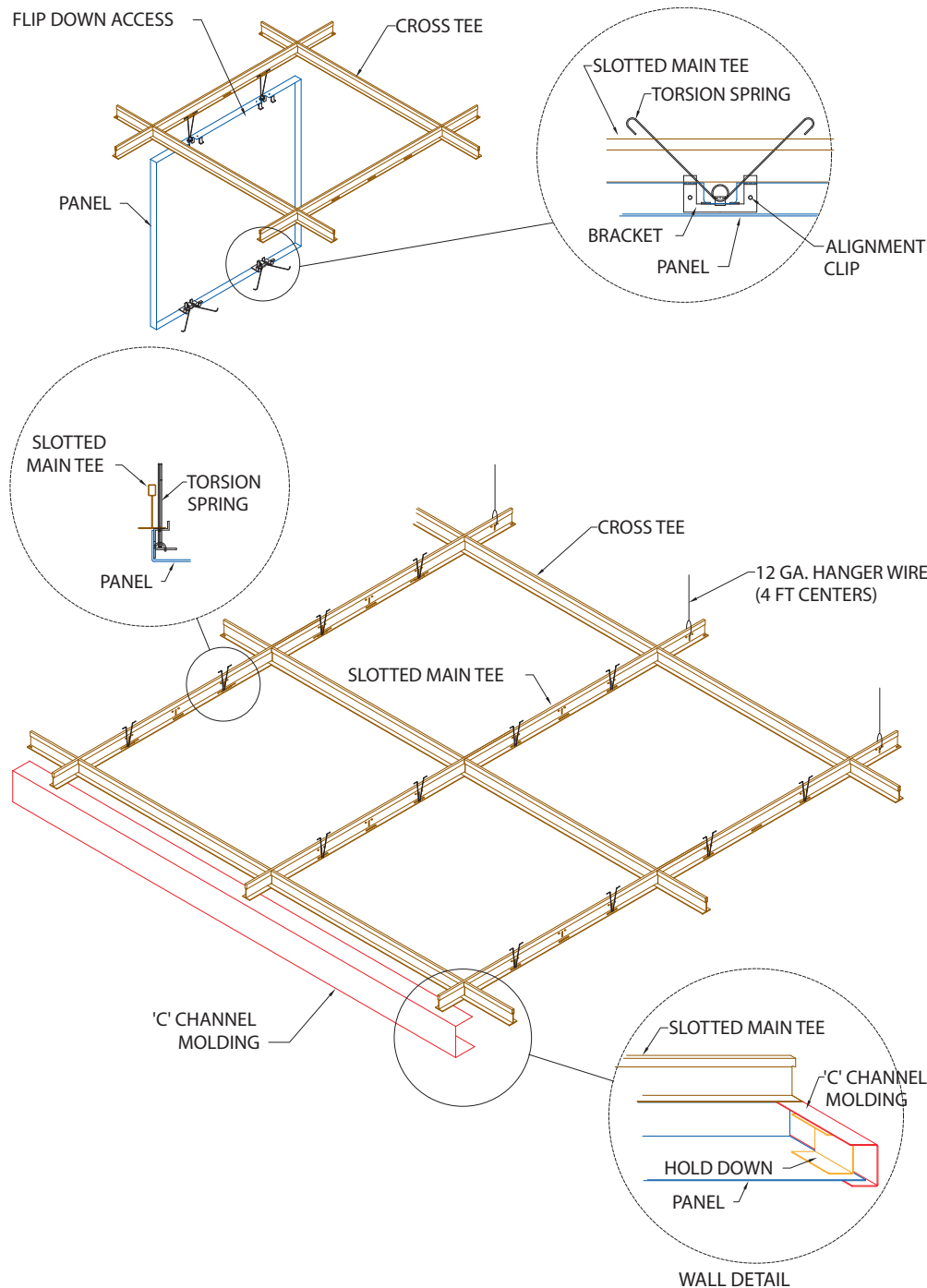
- Installer must inspect the area that is to receive the metal ceiling system for conditions that may affect the installation and notify, in writing, any conditions that must be rectified before commencing
- All work above the ceiling shall be completed before proceeding with this installation
- All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

# TORSION SPRING METAL PAN SYSTEM

SIZE (INCHES)	Min. 12x24, Max. 36x96
ACCESSIBILITY	Downward
VISUAL	Concealed
EDGE DETAIL	Square
MATERIALS	Steel, Aluminum, Stainless
FINISHES	Painted, Natural
RELATIVE COST	\$\$



## OVERVIEW

The Steel Ceilings Torsion Spring Metal Pan System has proven to be an excellent choice for those seeking a fully accessible yet concealed system. It affords the end user 100% accessibility into the plenum space at any point in the ceiling without the use of any special tools. The panels have a special heavy duty torsion spring that is secured to a special alignment clip on the upturned flanges of the metal panels. The torsion spring engages into a concealed slotted T-bar suspension system assuring a positive attachment. Torsion Spring is also available in Reveal format with a 1/4" reveal between panels.

## MODULE

Torsion Spring can be made in a variety of modules, which, depending on material etc, can be up to 48" x 48" and 36" x 96".

## METAL

The metal panels are manufactured from 20-26 gauge galvanized steel. Panels can also be produced in stainless steel or aluminum in varying thicknesses.

## PERFORATIONS

A full range of perforation patterns are available with or without plain borders. Steel Ceilings maintains a range of perforating dies in-house and custom perforations can be provided. Perforation patterns can be staggered or diagonal 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 edges of the panels are square edge.

## 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 Torsion Spring system consists of a grid very similar to standard exposed grid suspension system except certain runners are slotted to receive the torsion spring. The suspension system is suspended from the structure with wire, angle or threaded rod. As a result the grid system remains visually concealed from below. The panels are installed from below by engaging the torsion spring into the slotted runner.

## MAINTENANCE BENEFIT

The standard Torsion Spring system from Steel Ceilings is manufactured with a recessed side next to the torsion spring, allowing the panels to be undone on two sides and then hinged down using the other sides' springs. This prevents the need to totally remove the panel for maintenance, as the Torsion Spring panel acts like a swing down access door.

## CONCEALED OR EXPOSED SUSPENSION SYSTEM

The entire ceiling assembly has no visual suspension runners providing a clean unobstructed visual appearance.

## 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 either interior or protected exterior applications. When the ceiling is used in an exterior application wind load requirements need to be considered and special installation procedures need to be followed, including the possible use of cam locks.

## FIRE PERFORMANCE

The ceiling system has been tested in accordance with ASTM E-84 and is considered incombustible. 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.