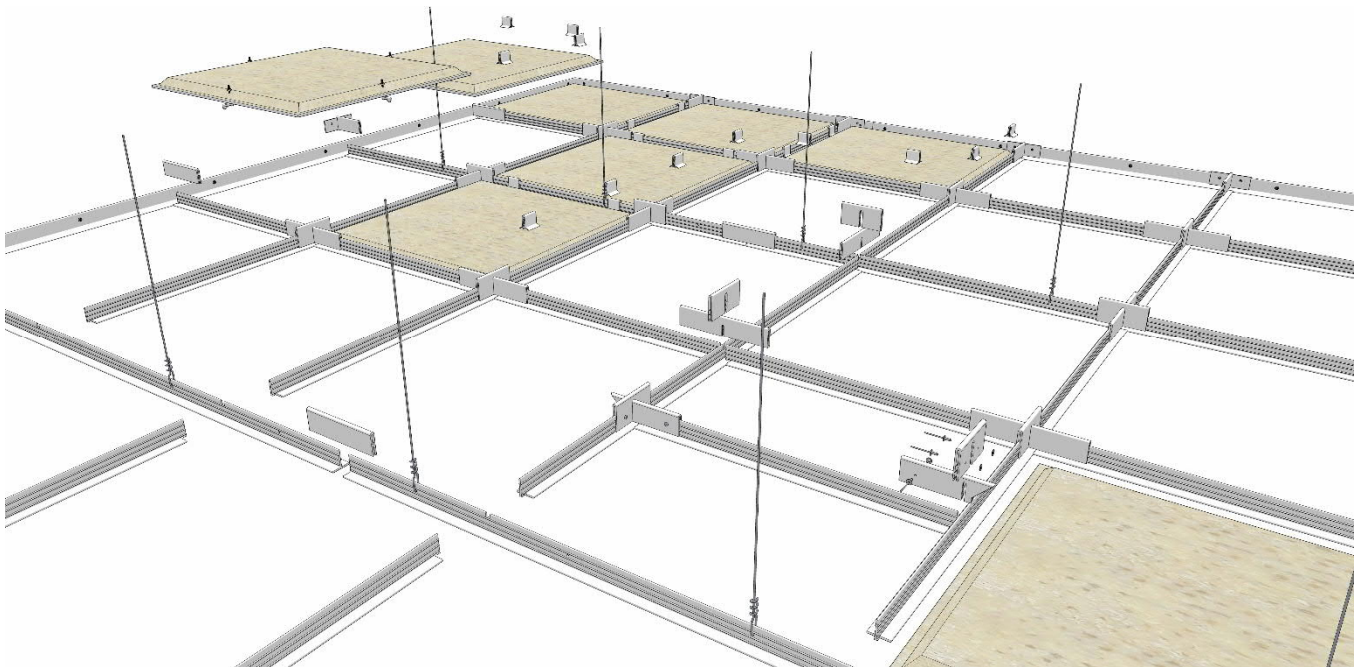




Arcoplast TR35 Suspended Ceiling System Installation Manual – V.1



The Fiberglass and Plastic Suspended Ceiling Grid System

USDA Accepted

Class 1/A Flame Rated

Seismic Zones A thru F

ICC Approved (ER-1722)

Arcoplast **TR35** Suspended Ceiling System - Installation Manual

INTRODUCTION

The **Arcoplast TR35 Suspended Ceiling System** is a suspended invert T grid system designed for extreme environments. It is created using a combination of fiberglass strands, woven roving and fiberglass veils wetted in a polyester matrix resin pulled through a heated metal die, resulting in a consistent, true dimensional profile.

The polyester resin is pigmented white, so the color is built-in, eliminating dimpling, misting, orange peel, and grainy finish often associated with painted components.

The **TR35 Suspended Ceiling System** is made up of **Rails** and **Junctions**, comprising of **Clamps**, **Clips** and **Fasteners**. The **Rails** are made of pultruded fiberglass thermoset in polyester resin. The **Clamps** and **Clips** are made of extruded, grade 1, type 2 virgin PVC.

The **TR35** system is chemical resistant, corrosion proof, waterproof, and will last the life of the building.

TR35 Suspended Ceiling System has two panel options to fit the needs of your criteria.:

The **Acryloyl** solid core matrix ceiling panels are composed of a non-porous, resin rich, finish, on both sides, providing outstanding color fastness with excellent chemical and stain resistance. The pristine surfaces will not support growth of mold, fungus and mildew. The panel's surface and core throughout will not crack, peel, fade nor deteriorate over time. **Acryloyl** ceiling panels are manufactured using an acrylic resin compound, blended with a mixture of ATH fillers, resulting in an exceptional performance in low flame and low smoke index.

The **Arcoplast i-Panel** offers a lightweight, high density fiberglass core, molded, and encapsulated in a matrix of fiberglass wetted matt and polyester resin blended with fire retardant additives. The insulated closed edge **i-Panel** surface is finished with a permanent, impermeable high gloss, corrosion, and stain resistant gel coat that is easy to clean and maintain. The **i-Panel** offers extreme environments a buffer of heat transfer.

If you have any questions or require additional support material, please contact **Arcoplast Technical Services** at 636-978-7781 www.arcoplast.com

READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION

The **TR35 Suspended Ceiling System** comprises of a **Rail and Clamp** system with a compliment of auxiliary components, these few components make possible a vast array of possibilities. The **TR35 Dynamic Panel-Bay System** houses a variety of panel and sealing systems to accommodate a vast range of industry applications. The **TR35** system not only returns impressive results in performance, but significant economic gains are well documented.

CODE OF PRACTICES

1. All workmanship should be of the highest standard according to the Suspended Ceiling System install shall follow and adhere to the Ceilings & Interior Systems Construction Association (CISCA) “Code of Practices”.
2. All ceiling panels shall be installed in a uniform manner with neat and snug fitted borders.
3. All ceiling panel joints and exposed suspension systems shall be straight, flush, and aligned.
4. All ceilings shall be level to 1/4” (6.35 mm) in 10” (25.4 cm) at the time of installation.
5. The contractor shall leave the ceiling and area in a clean and finished condition.
6. The contractor must understand and comply with local authorities having jurisdiction (AHJ).

PREPARATION

1. Become familiar with the Project Building and any special or unusual conditions.
2. Inspect the area for hazards to insure a safe installation.
3. Verify you have all the construction documents, submittals, manufacturer’s instructions, shop drawings, and all other necessary installation information.
4. Refer to the provided drawings for the project. Verify you are in the correct area for the install. Verify and measure the ceiling area.
5. Refer to pages 26-29 in this manual for material part number list for the **TR35 Suspended Ceiling Grid System**. Verify the quantities provided are what is required to install the system in a complete workmanlike finished installation. It is the end installer’s responsibility to double check the exact conditions of the design in the field.

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INITIAL LAYOUT NOTES

TR35 has a smaller net opening to the room than does a typical 9/16" (14.29 mm) or 15/16" (23.81 mm) grid spaced 4'-0" (121.92 cm) on-center. **TR35** is manufactured for a 4'-0 1/4" (122.56 cm) on-center spacing of the **Mainrails**. This "extra" 1/4" provides room for the clips that connect the grid together and allows ceiling panels to drop in place. Ceiling panels are typically 1/4" (6.35 mm) less than the nominal dimension (i.e. a 2'x4' is 23 3/4" by 47 3/4"). Even though **TR35** is spaced 4'-0 1/4" (122.555 cm) on-center, the net opening of the grid is smaller than a 15/16" (23.81 mm) grid because the **TR35** face is 1 3/8" (34.93 mm). Verify that any item that hangs below the grid or needs to swing down below the gridline is compatible with this smaller opening. Particularly watch for diffusers that extend below the grid line or some trougher lights with swing-open doors for re-lamping. Most wet-location trougher light or clean room lights provide adequate swing door clearance. This issue seems to be more important in seismic zone categories C, D, E, & F where lights and other ceiling equipment are often more tightly fastened in place and aren't as free to move in the grid.

With a 4'-0 1/4" (122.56 cm) on-center spacing, the grid will "grow" relative to a 4'-0" (121.92 cm) on-center grid. The **TR35 Mainrails** are 144 3/4" (367.67 cm) long and are notched every 24 1/8" (61.28 cm) beginning 12 1/16" (30.64 cm) from the end. For a nominal 60'-0" (18.288 m) room with 5 **Mainrails** in a run, **TR35** will be 5 3/4" (19.05 mm) = 3 3/4" (95.25 mm) longer than a grid based on a 4'-0" (121.92 cm) on-center spacing. Pay close attention to sprinkler head, diffuser, HEPA filter, and light fixture placements especially in very large areas.

TYPICAL TR35 DUTY

The standard **TC35 Suspended Ceiling System** is classified as light duty per ASTM C635 (IBC). With minor modifications to the **Mainrail** spacing and the **Hanger** spacing, the duty of the **TR35** system is as follows:

- **Light Duty Assembly:** **Mainrails** are to be spaced at 4'-0 1/4" (122.56 cm) (typical 2 x 2, 2 x 4, or 4 x 4 spacing), **Hangers** are to be spaced at 4'-0" (121.92 cm) on the **Mainrails**.
- **Medium Duty Assembly:** **Mainrails** are to be spaced at 4'-0 1/4" (122.56 cm) (typical 2 x 2, 2 x 4, or 4 x 4 spacing), **Hangers** are to be spaced at 3'-0" (91.44 cm) on the **Mainrails**. When ceiling panels exceed 2.5 Lbs/Sq. Ft. (12.19 Kg/ Sq. M.) it is required to install the **TR35 Rails and Clamps** with **Lock Rivets** and **Backup Washers**.
- **Heavy Duty Assembly:** **Mainrails** are to be spaced at 2'-0 1/8" (61.28 cm) (typical 2 x 2 spacing or 2 x 4 spacing), **Hangers** are to be spaced at 2'-0" (60.96 cm) on the **Mainrails**. When ceiling panels exceed 4 Lbs/Sq. Ft. (19.8 Kg/Sq. M.) it is required to install the **TR35 Rails and Clamps** with **Lock Rivets** and **Backup Washers**.

Outside perimeter **Panels** and **Rails** can be cut to length as required by the design and layout of the project. The flexibility of the **TR35** system lends well to various configurations as needed for the specific project.
[FIG. 1](#), [FIG. 2](#) & [FIG. 3](#)

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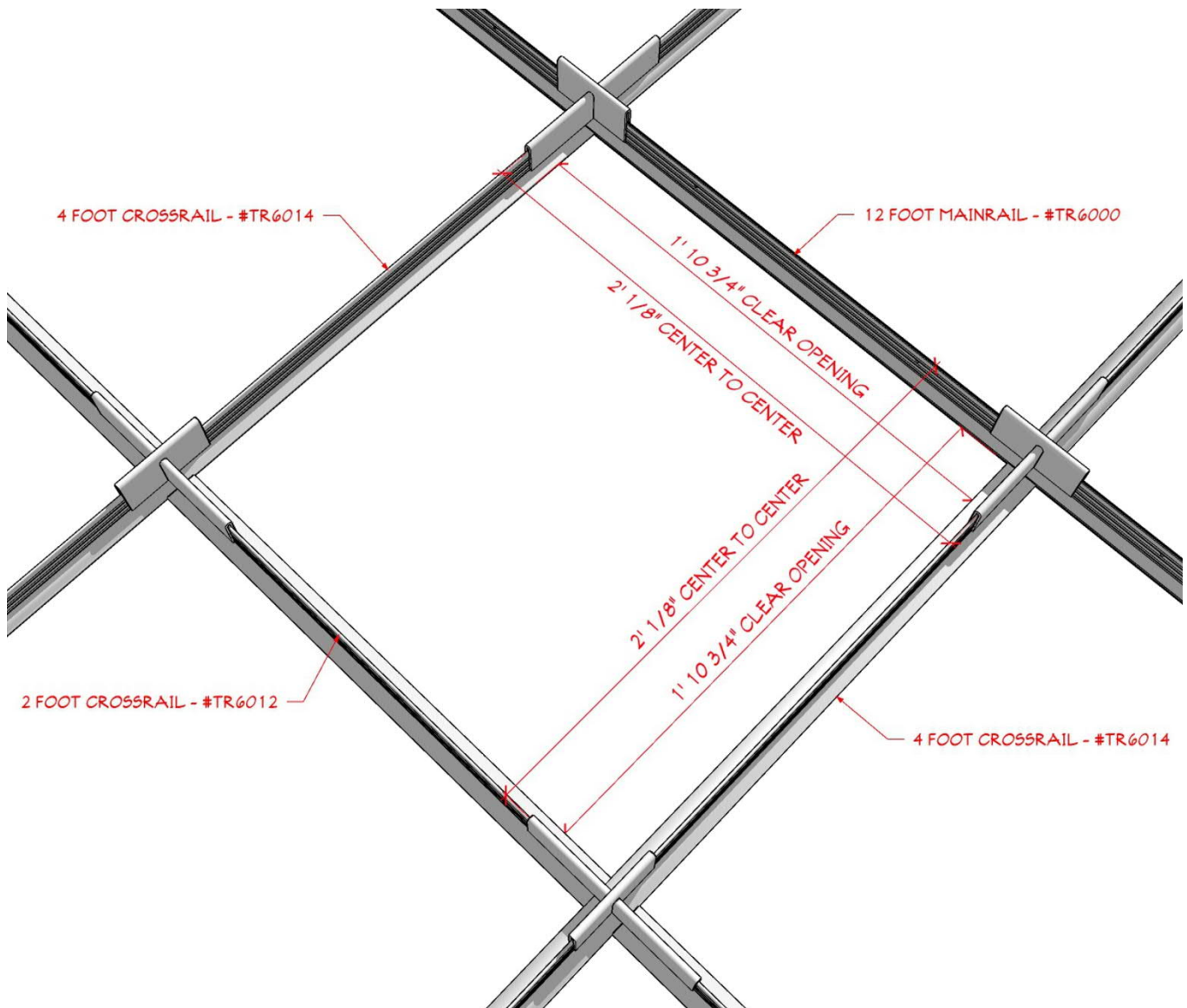


FIG.1
Typical 2 x 2 Spacing

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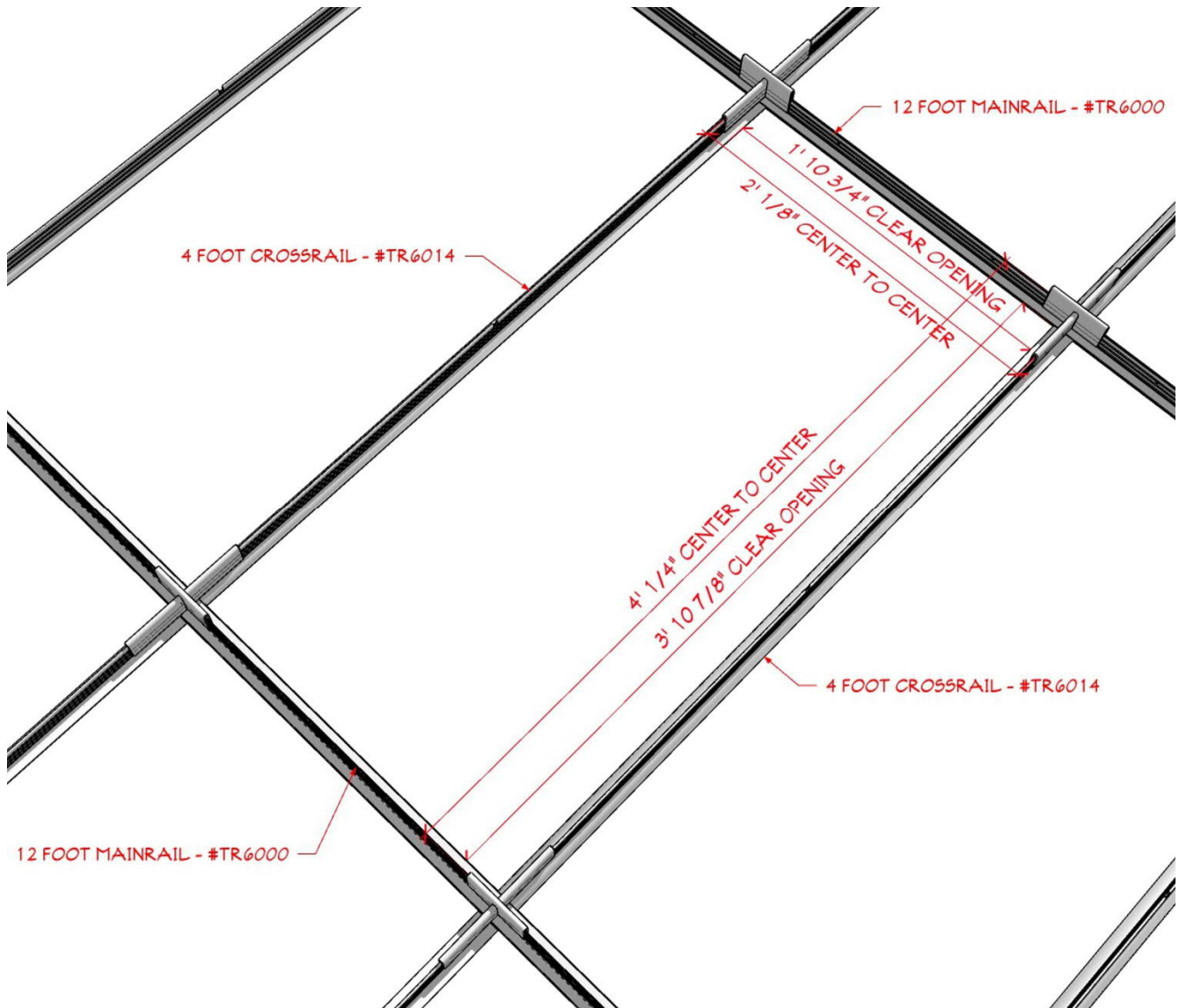


FIG. 2
Typical 2 x 4 Spacing

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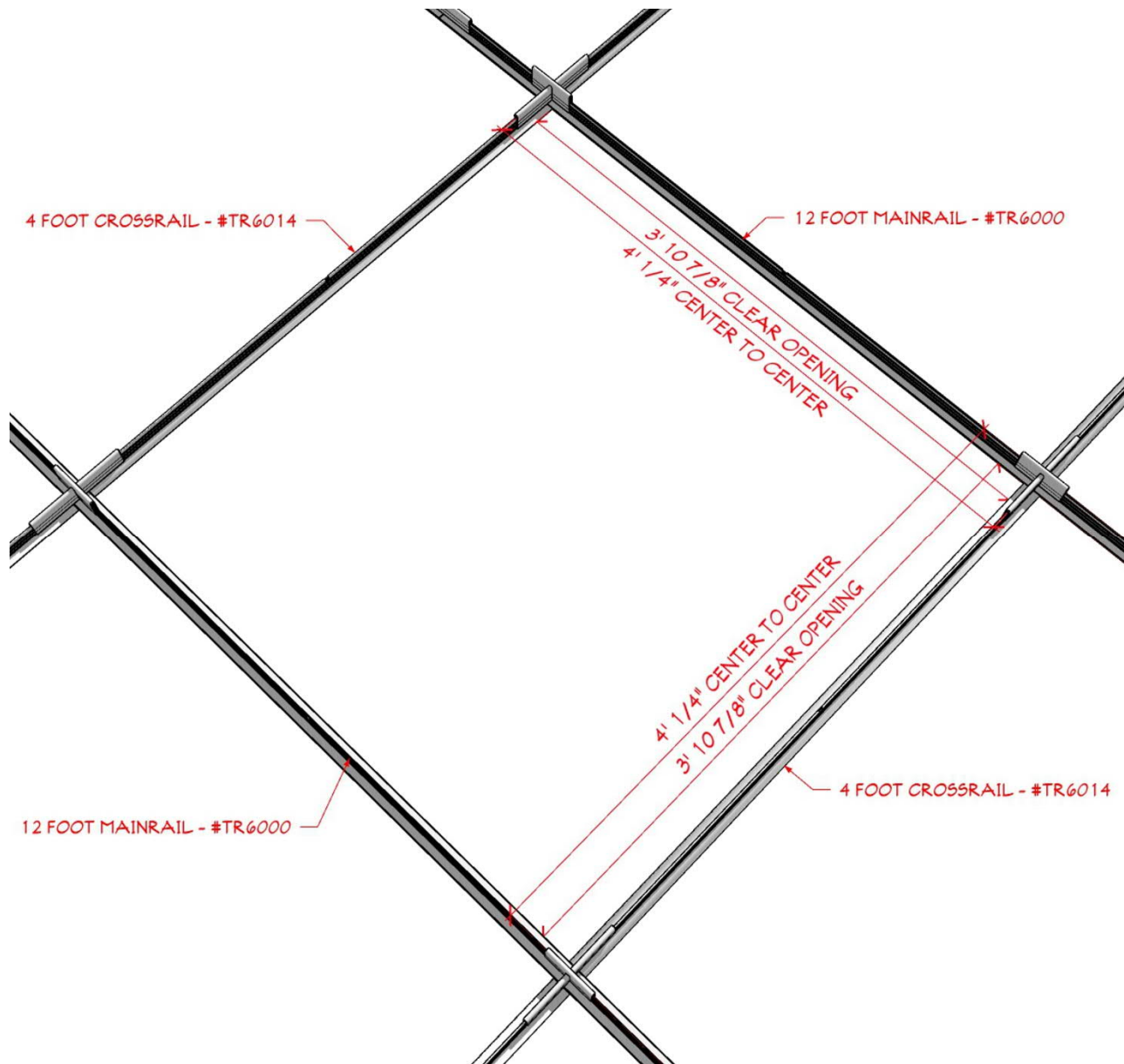


FIG. 3
Typical 4 x 4 Spacing

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SPECIAL TOOLS FOR TR35 SUSPENDED CEILING SYSTEM INSTALLATION

With the **TR35 Suspended Ceiling System**, the methods, means and tools that are required for installation are similar to any other inverted T grid ceiling system. The **TR35 System** allows for a robust install method that follows along with the steel grid system most are familiar with and follow the same procedures.

The tools and methods for cutting the **TR35** Materials are as follows:

1. **Wallrail, Mainrail, Crossrail:** Power miter saw with a diamond blade. Circular saw with a diamond blade. Hand hack saw can also be used for minimal individual cuts. If a diamond saw blade is not available, a high tooth count, carbide tipped blade can also result in a smooth cut.
2. **Clamps:** Power miter saw with a 100 T minimum carbide tip saw blade. Circular saw with a 60 T minimum carbide tip blade. Hand hack saw can also be used for individual cuts. Any saw blade being used to cut the **Clamps** should use a high tooth count to allow a sharp, smooth cut result.
3. **Acryloyl Ceiling Panels:** Table saw & circular saw, a high tooth count, carbide tipped blade can result in a smooth cut. General Purpose Bi-Metal hole saw, 3.5 tp1 tooth design. Hole saw standard high strength steel bits for penetrations.
4. **i-Panel Ceiling Panels:** Table saw with diamond blade. Circular saw with a diamond blade. Hole saw with a diamond bit are preferred for penetrations. Hole saw standard high strength steel bits can also be used with caution for penetrations.

Cutting Note: **ArcoZap**, a spray on acrylic sealant that prevents capillary absorption, is to be applied at all raw cuts in the **TR35 Rails**. **ArcoZap** is available from **Arcoplast**.

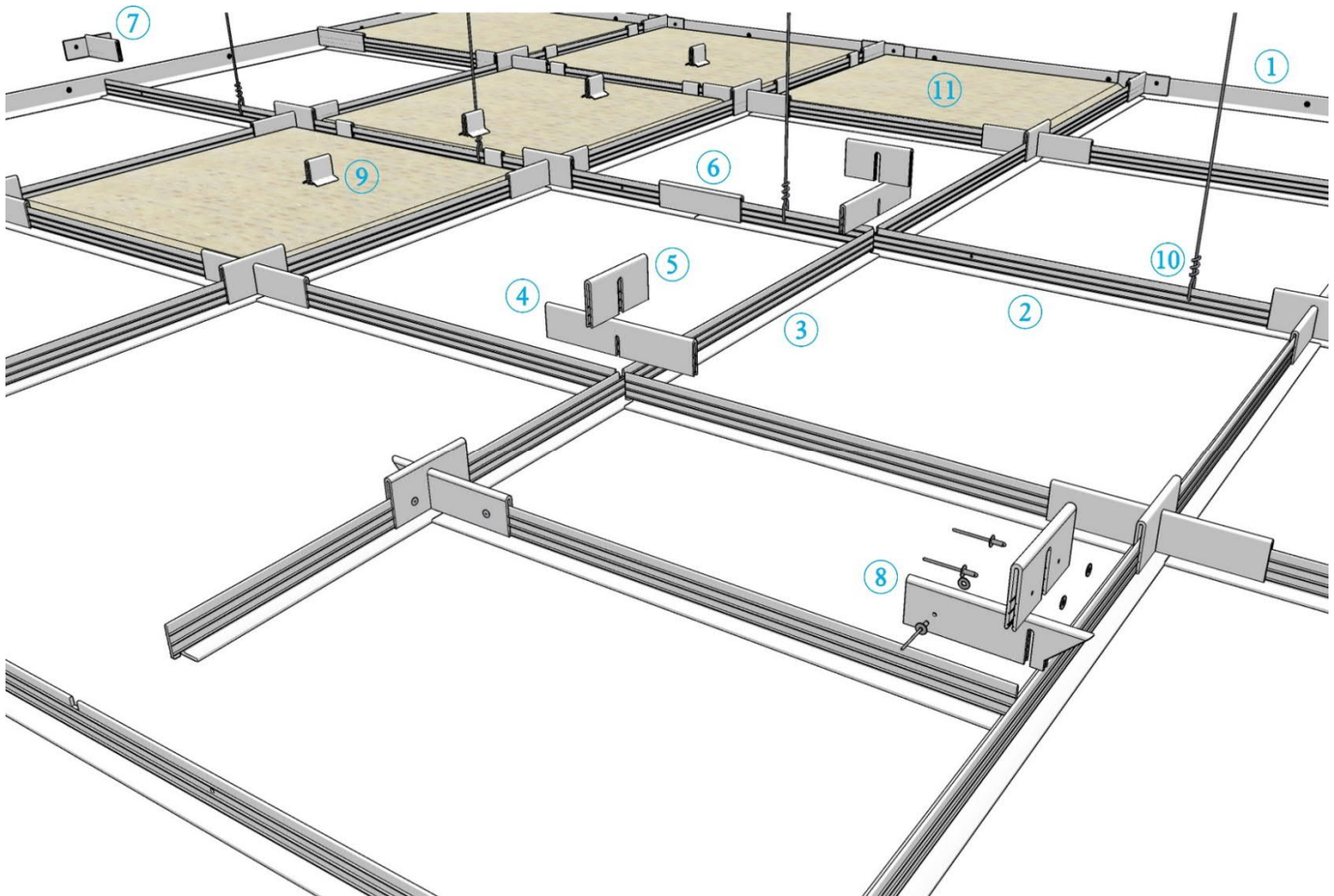
SAFETY PRECAUTIONS

When handling, power cutting, drilling, or grinding fiberglass composite or other plastic materials, it is essential to wear protective clothing, gloves, goggles, filter masks, etc. and protect the surrounding areas from the dust and dirt from the materials.

IMPORTANT

Be certain to review and observe all OSHA rules and regulations, manufacturer's instructions, and job site safety procedures when using all tools.

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TR35 System Ceiling System - Main Components

The science and terminology for **TR35**, is specific to the **TR35 Suspended Ceiling System**.

1. **Wallrail** – 12'-0"
2. **Mainrail** – 12'-0"
3. **Crossrail** – 1'-0", 2'-0", 3'-0", 4'-0"
4. **Interlock Clamp** – 8" (can be modified)
5. **Overlock Clamp** – 4"
6. **Splice Clamp** – 6"
7. **T-Clamp** – 4 1/2"
8. **Offset Clamp** – 8" (can be modified) (**Lock Rivet** and **Backup Washer** shown for fastening option)
9. **Lock Down Clip**
10. **Hanger Wire** (Hanger Wire Hole)
11. **Lay-In Ceiling Panel**

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Wallrail Installation

1. Determine the elevation of your suspended ceiling. Allow proper clearance for all obstructions or grid installed accessories. Report back to the Architect, Engineer or G.C. of all discrepancies.
2. Once the ceiling elevation has been confirmed, Install the **Wallrail** at the desired ceiling elevation around the perimeter of the room.
3. Attach the **Wallrail** to the wall (structure) with specified or appropriate fasteners (non-corroding) at a minimum of 16" O.C. (406.4 mm) spacing but typical into studs or provided blocking. Pre-drill the **Wallrail** as required at mounting locations. Locate structural members as required for a sound installation. **FIG. 4**
4. When screwing the **Wallrail** into place, it may be necessary to run a bead of sealant between the **Wallrail** and wall to ensure a gas, moisture, and air-tight installation. Refer to the specific requirements for the project for sealing and caulking specifications.
5. **Wallrail** corner joints shall be a mitered connection. All in line **Wallrail** joints shall be square cut and consistent in elevation and square. Sealant shall be used in environments that require a moisture, gas, and air-tight installation. **FIG. 5**

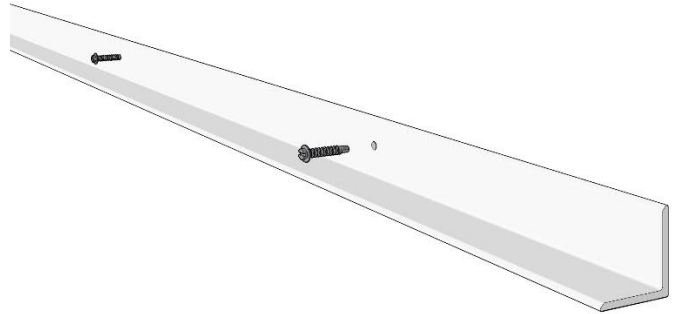


FIG. 4
Wallrail Installation

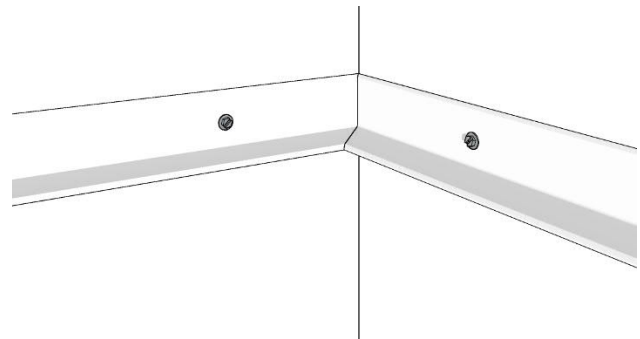


FIG. 5
Wallrail Corner Installation

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Mainrail Installation – T-Junction, Splice Junction, Splice-End Junction

1. Determine the center of the room on opposing walls. Check the room squareness and suitability of your layout. Mark locations of the **Mainrail**. Refer to all reflected ceiling plans for the project.
2. Determine the position of first **Crossrail** and starting **Mainrail** for proper **Crossrail** at **Mainrail** notch alignment.
3. Install corrosive resistant hanger eyes or locate suitable wire attachment structure. Install appropriate suspension wire along **Mainrail**, typically 4'-0" on center or less (depending on grid duty). Drill any additional hanging wire holes between 1st and 2nd teeth (approximately 9/16" (14.3 mm) down) of **Mainrail** and no closer than 3" (75 mm) to any other hanging holes. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. FIG. 6
4. Install the **T-Clamp** at the starting end of the **Mainrail** (**T-Junction**). The **T-Clamp** should rest on top of the **Wallrail** and be securely attached to the wall to prevent shifting during the grid installation. This mounting will provide a flush **Rail** finish. Use appropriate fasteners for job conditions. FIG. 7
5. Install the **Splice Clamp** at the ends of the **Mainrail** (**Splice Junction**) to extend lengths to reach opposite wall. FIG. 8
6. Install the **Splice Clamp** at terminating end (**Splice-End Junction**) of the **Mainrail** (opposite starting end, opposite **T-Clamp**). This end "floats" to provide building and ceiling movement and provides a flush **Rail** finish. FIG. 9

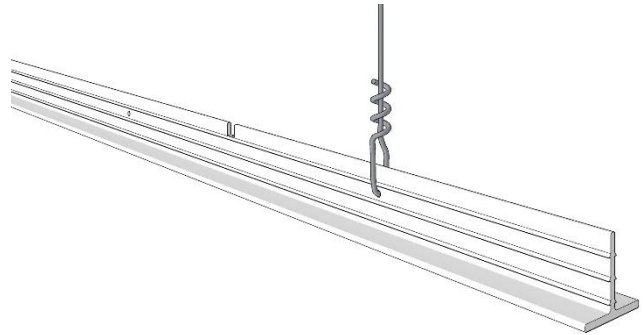


FIG. 6
Mainrail Installation

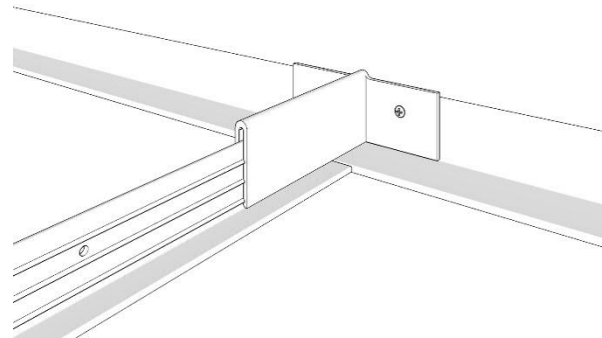


FIG. 7
Mainrail T-Junction

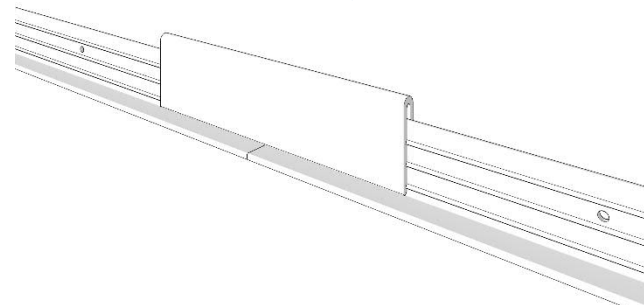


FIG. 8
Mainrail Splice Junction

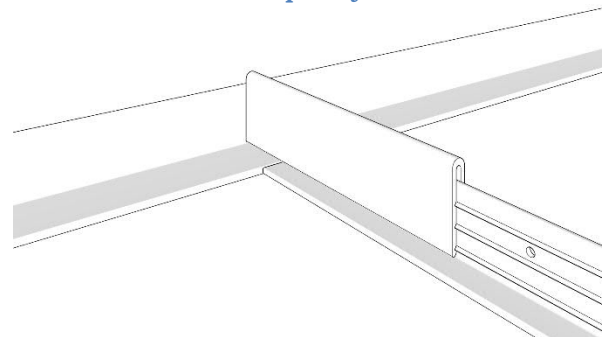


FIG. 9
Mainrail Splice-End Junction

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Crossrail Installation – Cross Junction, T Junction, Splice-End Junction

1. Assemble the **Crossrail** to the **Mainrail** using an **Interlock Clamp** (**Cross Junction**). The use of an **Overlock Clamp** at the **Cross Junction** helps to assure a positive connection. The **Overlock Clamp** snaps to the **Mainrail**. These **Cross Junctions** occur at the **Location Notches** on the **Mainrails**. FIG. 10
2. Cut the **Crossrail** to length for the border areas and Install the **T-Clamp** at the starting end of the **Crossrail** (**T-Junction**). The **T-Clamp** should rest on top of the **Wallrail** and be securely attached to the wall to prevent shifting during the grid installation. This mounting will provide a flush rail finish. Use appropriate fasteners for job conditions. FIG. 11
3. Install the **Splice Clamp** at terminating end (**Splice-End Junction**) of the **Crossrail** (opposite starting end, opposite **T-Clamp**). This end “floats” to provide building and ceiling movement and provides a flush rail finish. FIG. 12

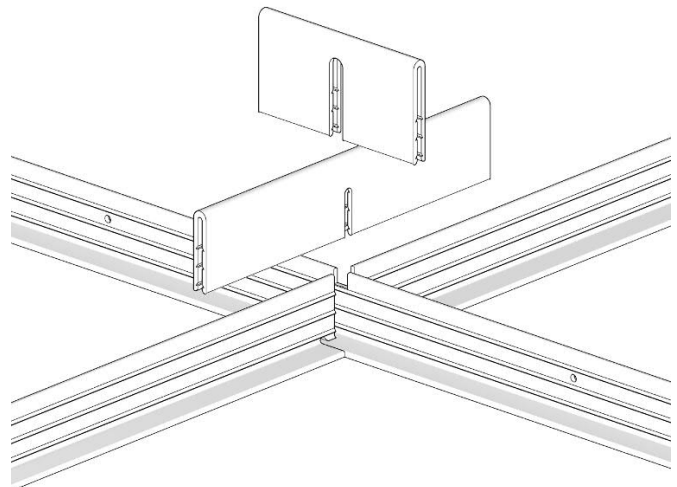


FIG. 10
Cross Junction

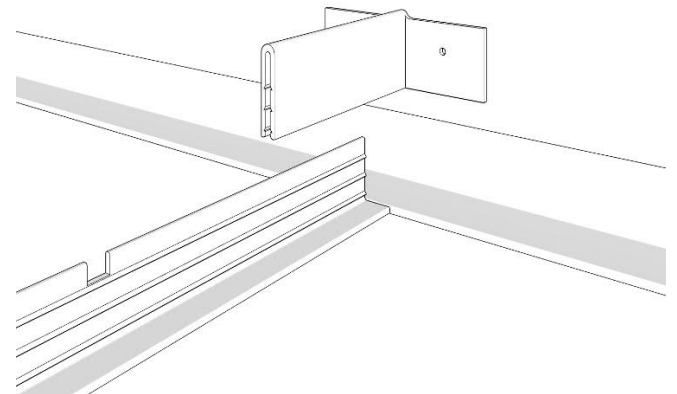


FIG. 11
Crossrail T-Junction

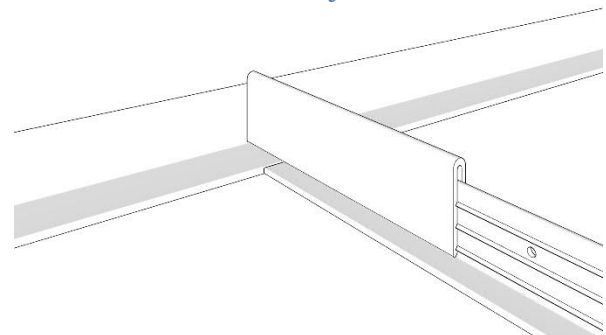
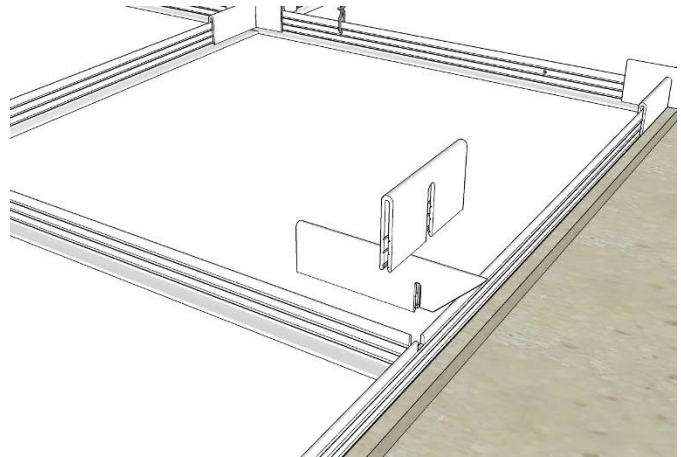


FIG. 12
Crossrail Splice-End Junction

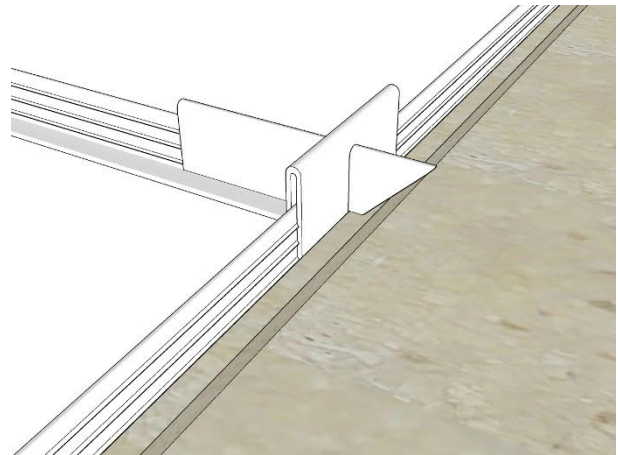
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Intersecting Obstacles - Modified Cross Junction

1. When intersecting **Rails** are to be at locations where there is a **Locating Notch** but there is an intersecting obstacle, assemble the **Rail** to the **Rail** (**Mainrail** or **Crossrail** in either case) using an **Interlock Clamp** (**Modified Cross Junction**). The use of an **Overlock Clamp** at the **Modified Cross Junction** helps to assure a positive connection. The **Overlock Clamp** snaps to the **Rail**. These **Modified Cross Junctions** occur on a rail where there is a **Locating Notch**. [FIG. 13](#)
2. The **Interlock Clamp** can be “modified” to intersect with any type of ceiling condition such as ceiling panels, light fixtures, air handing equipment (diffusers, grilles, HEPA equipment), grid change in direction, etc.. These “**Modified**” **Interlock Clamps** can be supplied by **Arcoplast** from the factory or can be modified easily in the field per encountered item or situations. [FIG. 14](#)



[FIG. 13](#)
[Modified Cross Junction](#)



[FIG. 14](#)
[Modified Interlock Clamp Junction](#)

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Intersecting Obstacles - Offset Junction

1. When intersecting **Rails** are to be at locations where there is **No Locating Notch** and there is an intersecting obstacle, assemble the **Rail** to the **Rail** (**Mainrail** or **Crossrail** in either case) using an **Offset Clamp** (**Offset Junction**). The use of an **Overlock Clamp** at the **Offset Junction** helps to assure a positive connection. The **Overlock Clamp** snaps to the **Rail**. Since the **Offset Clamps** can be located anywhere on the rail it doesn't have the locking ability of the **Locating Notch**. They will need to be secured with **Lock Rivets** and **Backup Washers** to maintain trueness. These **Offset Junctions** occur anywhere on a rail where this is no **Locating Notch**. FIG. 15
2. The **Offset Clamp** can be “modified” to intersect with any type of ceiling condition such as ceiling panels, lights, air handling equipment (diffusers, grilles, HEPA equipment) grid change in direction, etc.. These “**Modified**” **Offset Clamps** can be supplied by Arcoplast from the factory or can be modified easily in the field per encountered item or situation. FIG. 16

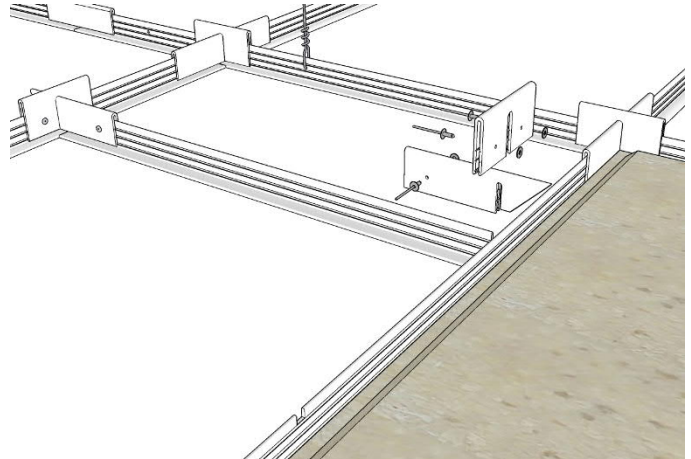


FIG. 15
Offset Junction

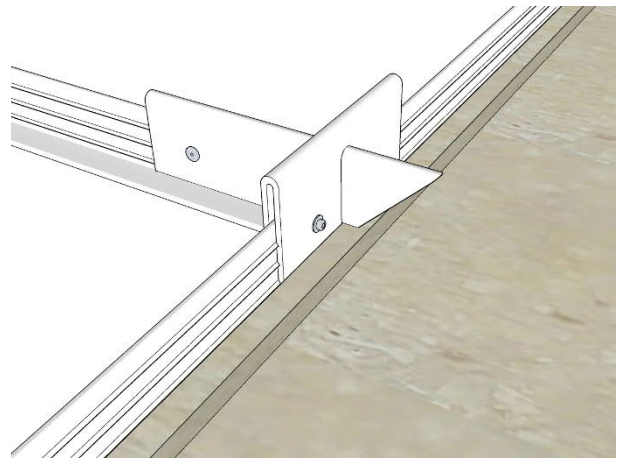


FIG. 16
Modified Offset Clamp Junction

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Intersecting Obstacles – Splice End Junction, T-Junction

1. When intersecting **Rails** are located at a ceiling item such as a HEPA filter or a lay-in box light fixture a standard **Splice Clamp** can be used for the **Junction**. They will need to be secured with **Lock Rivets** and **Backup Washers** to maintain integrity. These **Splice End Junctions** occur anywhere on a rail where there are ceiling items that interfere with the ability to use an **Interlock Clamp** or an **Offset Clamp**. These can also happen at either a **Locating Notch** or **No Locating Notch**. FIG. 17
2. When intersecting **Rails** are located at a ceiling item such as light fixtures, air duct diffusers, HEPA filters, a standard **T-Clamp** can be used for the **Junction**. They will need to be secured with **Lock Rivets** and **Backup Washers** to maintain integrity. These **T-Junctions** occur anywhere on a rail where there are ceiling items that interfere with the ability to use **Interlock Clamp** or an **Offset Clamp**. These can also happen at either a **Locating Notch** or **No Locating Notch**. FIG. 18

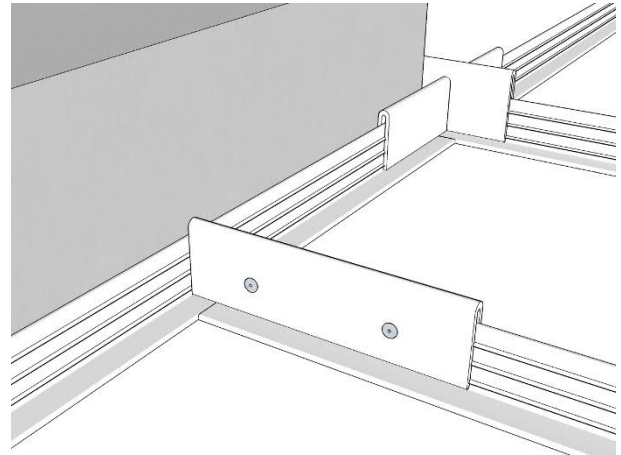


FIG. 17
Splice End Junction – Locating Notch or No
Locating Notch

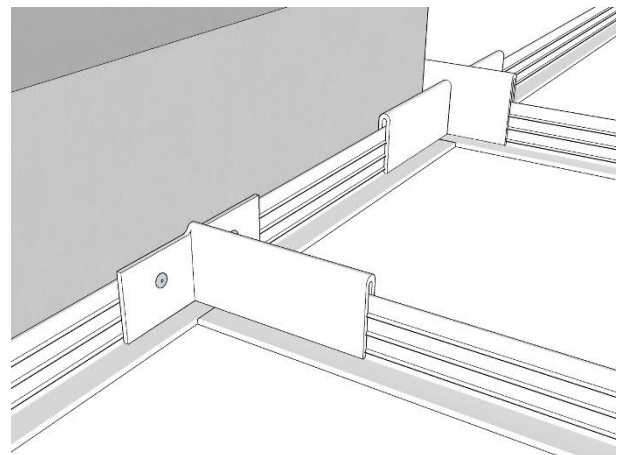


FIG. 18
T-Junction – Locating Notch or No Locating Notch

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Alternate TR35 Attaching Methods

1. The **Arcoplast TR-7400 Bracket** is to be used as an alternative method to attach the **TR35 Mainrails**. The **TR-7400 Bracket** is useful to attach **TR35** to a C-Channel steel sub-frame to attach directly to building structure. [FIG 19](#)
2. The **Arcoplast TR-7500 Bracket** is to be used as an alternative method to attach the **TR35 Mainrails**. The **TR-7500 Bracket** is useful to attach **TR35** to heavy gauge (#8) mounting wire or 1/4" (6.35 mm) plain rod which then is attached directly to building structure. [FIG 20](#)

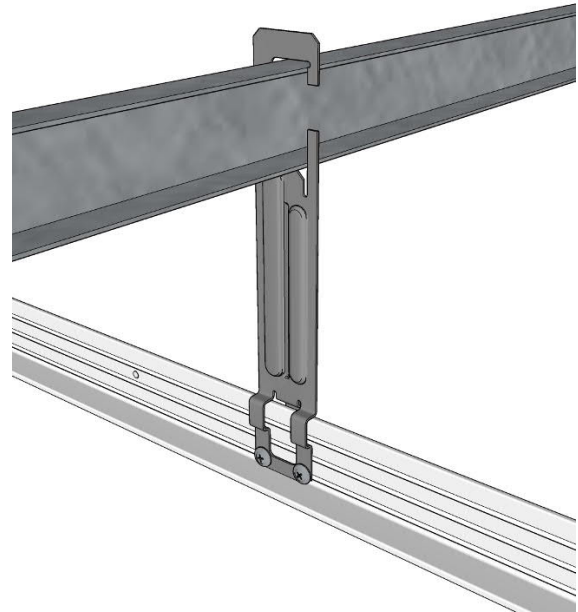


FIG. 19
Arcoplast TR-7400 Bracket

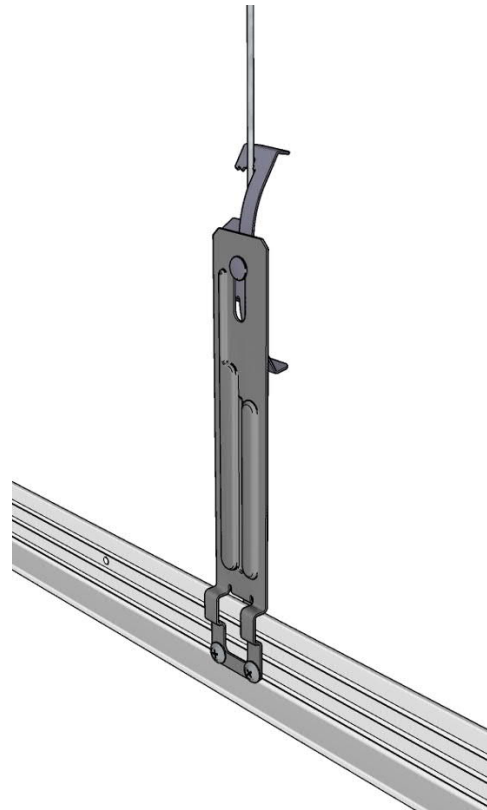


FIG. 20
Arcoplast TR-7500 Bracket

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Lay-In Panel Installation

1. Start installation of the full size lay-in ceiling panels on one side of the room using the proper **Panel Clips**. The **Panel Clips** are positioned at One (1) per side at 29" or less in panel size or Two (2) per side at 30" or more in panel size. [FIG. 21](#)
2. Cut the border lay-in ceiling panels to fit their openings and seal edges if required for panel type as required following manufacturer's recommendations. Install the cut lay-in panels using the proper **Panel Clips** as required to finish the complete ceiling system. [FIG. 22](#)
3. **Panel Clips**, lock and secure the ceiling panels into the **TR35 Grid** with or without gasket seals. Gasket seals used with **Panel Clips** reduces panel deflection, air leakage, air flow reduction, and cross contamination which significantly increases the ceiling system performance.

NOTE: TR35 Suspended Ceiling System with a lay in ceiling panel which uses **Caulking** for a sealant does not require the use of **Panel Clips**.

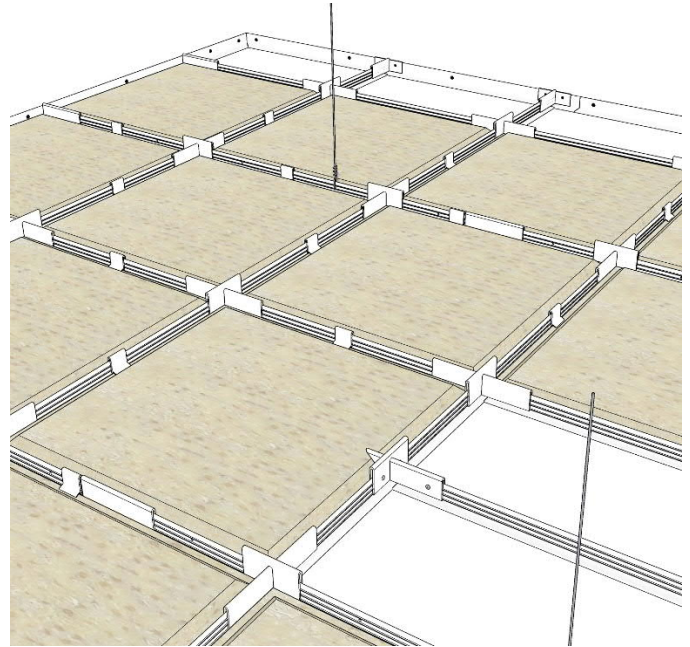


FIG. 21
Install Full Size Lay-In Ceiling Panels

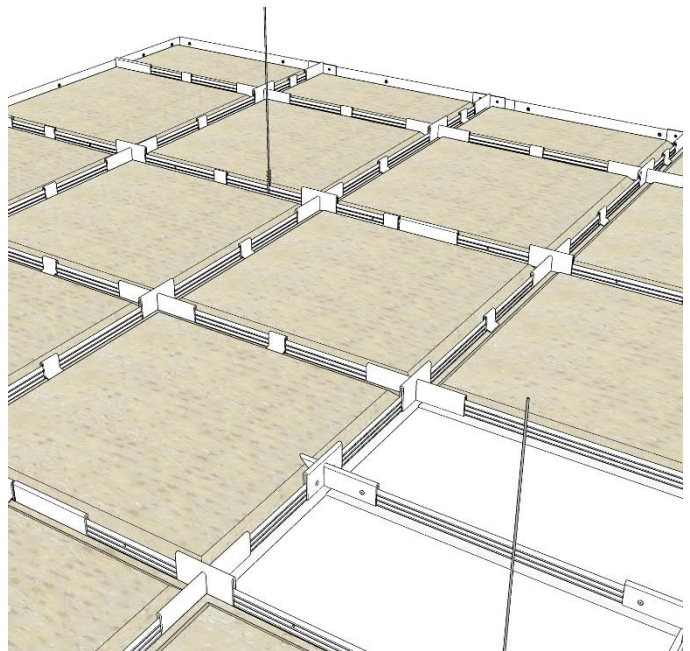


FIG. 22
Install Cut / Border Lay-In Ceiling Panels

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Panel Clips are offered in different panel thickness options and are provided with a standard “double leg” design. Installing standard panel clips around MEP fixtures will require a slight modification, one of the “legs” on the **Clip** will have to be removed by cutting it with a utility knife. It is possible to order a “single leg” **Panel Clip** from the factory or the **Clips** can be easily modified in the field. **Panel Clips** are available in three sizes: **Low, Mid & High**, and two formats: **Single** and **Double Clips**. FIG. 23

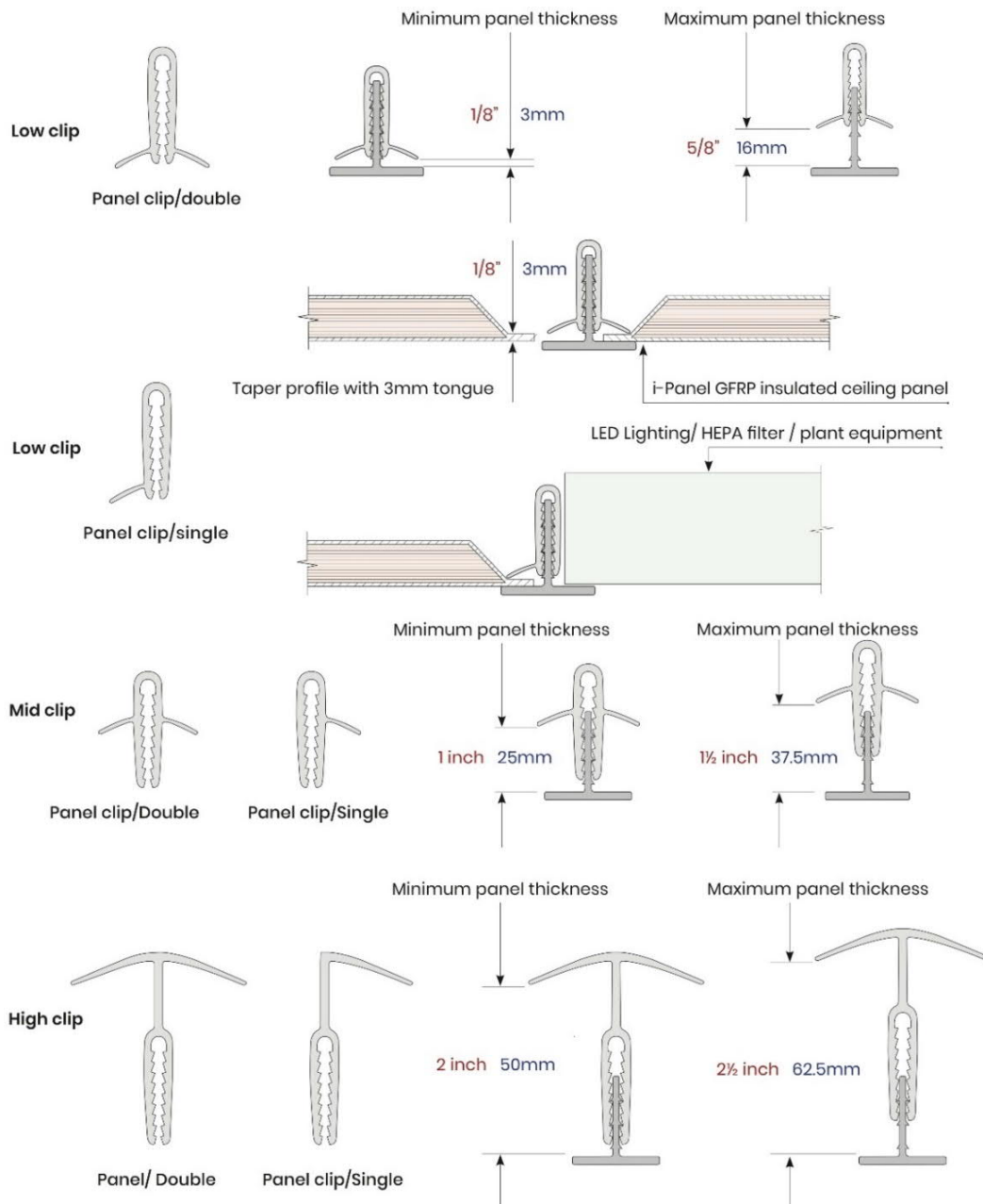


FIG. 23

Panel Clip Options and Formats

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INSTALLATION NOTES:

1. Light fixtures, air duct diffusers, HEPA filters, etc. must be independently supported from the **TR35 Suspended Ceiling Grid System**.
2. Since the **TR35 Suspended Ceiling System** has a coefficient in thermal expansion of 2.8×10^{-6} in./in./DEG F., it is suggested to install the grid at the ambient temperature at which the facility will operate. Consider leaving room for expansion if the temperature will vary during operation of the facility.
3. Fasteners shall be selected per the project specific requirements. Non-corroding fasteners are recommended in most installations. Consult the Architect, Engineer or G.C. for any questions with fastener selection.
4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of four tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. Sealant, caulking, finishing compound, structural adhesive, gasketing, backers, etc. shall be selected per the project specific requirements. **Arcoplast** have many options available for sealing, adhering and gasketing the **TR35 Suspended Ceiling System**.
6. **Arcoplast** offers many variations and materials for the **TR35** lay-in ceiling panels. After the different styles of ceiling panels are selected, they may require additional cutting and finishing procedures. Consult with an **Arcoplast** representative for any additional procedures or details concerning installation.
7. When installing lay-in ceiling panels be aware that **Lock Rivets** by design intrude into the panel bay space by 1/8 inch (1.5 mm). **TR35 Suspended Ceiling Systems** assembled using **Lock Rivets** require ceiling panels with a smaller length and width of 1/4 inch (6mm).
8. If the need arises to order additional **Rails** it is a good rule of thumb to order the “next size up” in **Rail** length just in case of measuring discrepancies. The same is true with **Clamps**, **Clips**, or other accessories, it is best to order a few more than required just in case of counting errors or handling damage.

Arcoplast TR35 Suspended Ceiling System - Installation Manual

Arcoplast TR35 SHD (Seismic/Heavy Duty) Installation Supplement

Seismic compliance and specifications are unique to every country, state and region based on national, regional, and local building codes. It is beyond the scope of this document to present more than working examples and reference material, as every build from design to construction has a regime of unique requirements specific to a buildings purpose and location.

Seismic Categories C, D, E, & F and the **TR35 Heavy Duty Grid System** is made up of the same components, assembled differently. Most notably is the use of **Lock Rivets** used to lock **Rails** and **Clamps** into the grid to strengthen and secure the grid.

Another aspect of interest is the **TR35 Suspended Ceiling System** is assembled to allow for movement in the event of an earthquake. There are different arrays where the **Mainrails** and **Crossrails** can move. This is made possible by what is called the **Seismic Step**, fitted with a **Closure Gasket**, working in conjunction with the working design of the **Clamps**, **Junctions**, and **Slip Connections**.

INDUSTRY STANDARDS

Suspension and wall attachment requirements for metal ceiling suspension systems used primarily to support acoustical tile or acoustical lay-in panels should be followed with additions noted below. Guidelines which cover these requirements are summarized in the following documentation:

For all USA and International Seismic Building Code Compliance it is essential to consult government departments and agencies that have jurisdiction. In the USA local jurisdiction has the final say for all code requirements.

ASTM E580: Standard practice for installation of ceiling suspension systems for acoustical tile and lay-in panels in areas subject to earthquake ground motions

ASCE 7 Adopts: ASTM E580 for most of its seismic requirements for suspended ceilings

IBC Adopts: SCE 7 for nearly all seismic requirements

State Building Code: Local jurisdiction. City, County, Township, or State agencies such as (OSHPD)

CISCA: Ceilings & Interior Systems Construction Association's Brochure, Guidelines for Seismic Restraint Direct Hung Suspended Ceiling Assemblies, Seismic Construction Handbook.

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Seismic Cross Junction Installation – Seismic Cross Junction, Seismic Offset Junction - Seismic Categories C, D, E, & F

1. **Seismic Cross Junctions** and **Seismic Offset Junctions** are installed the same way as typical standard duty **Cross Junctions** and **Offset Junctions** EXCEPT both are installed with **Lock Rivets** and **Backup Washers**. FIG. 24, FIG. 25
2. The **Lock Rivets** and **Backup Washers** are installed with the **Clamps** and are to be drilled in the field as required. Once the **Clamp** is installed proceed to drill through the **Rail** and **Clamp** assembly at the location(s) as noted in this manual. These location positions are typical for all **Seismic Interlock**, **Seismic Overlock**, and **Seismic Offset Clamps**. FIG. 26

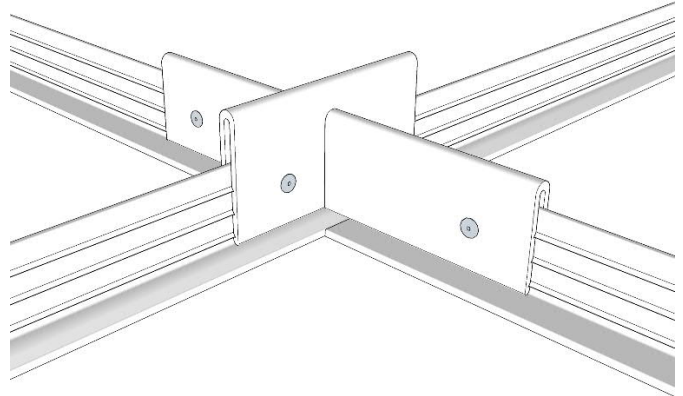


FIG. 24
Seismic Cross Junction

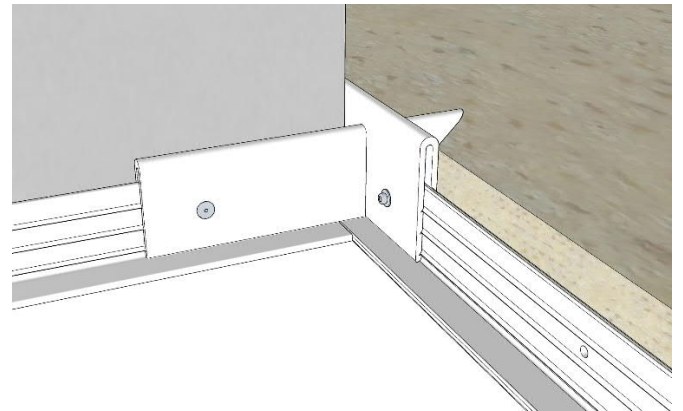


FIG. 25
Seismic Offset Junction - Modified

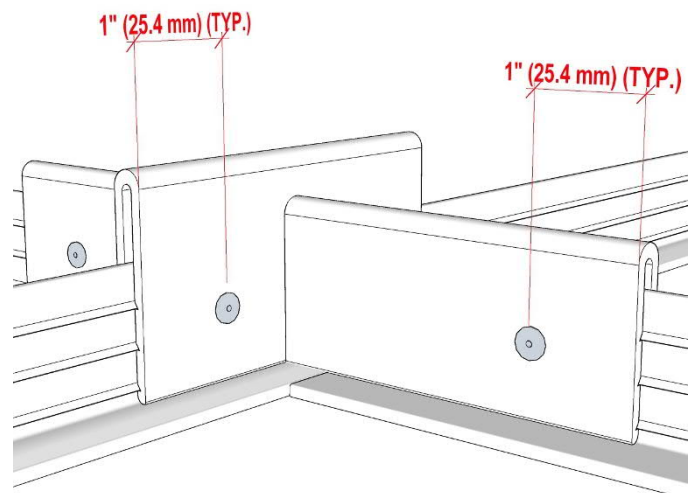


FIG. 26
Typical Rivet Locations

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Seismic T-Junction Installation - Seismic Categories C,

3. The **Seismic T-Junction** introduces the **Seismic-Step**. **Mainrails** and **Crossrails** ride on the **Wallrail** ledge. This is the **Seismic-Step**. The **T-Clamp** should mount tight to the **Wallrail** and be securely attached to the wall to prevent shifting during the grid installation. This mounting **WILL NOT** provide a flush rail finish. Use appropriate fasteners for job conditions. The **Wallrail** will then be fitted with 1/8" (3 mm) **Closure Gasket** to provide a closed seal at the lay-in ceiling panel and the **Wallrail**. FIG. 27
4. The opposite end of the **Mainrails** and **Crossrails** will have the same **Seismic T-Junction** installation as above. FIG 28
5. The **Mainrails** and **Crossrails** will have the ability to have a slip movement of 3/8 inch (9.5mm) at each end of the Rail Lane. This allows for a total of 3/4" (19 mm) slip movement in the **Rail Lane**. FIG 29

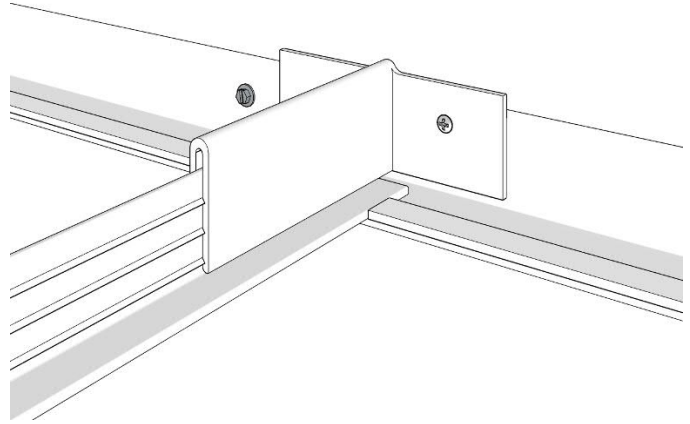


FIG. 27
Seismic T-Junction – Seismic Categories C

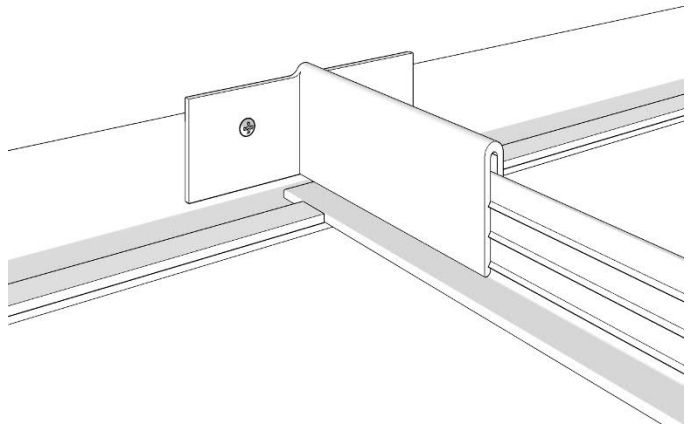


FIG. 28
Seismic T-Junction – Seismic Categories C

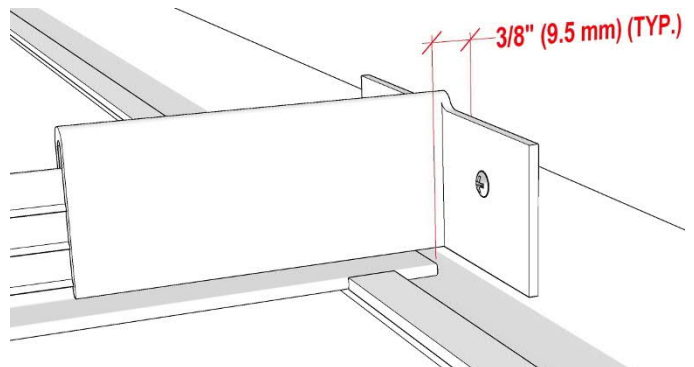


FIG. 29
Seismic T-Junction – Seismic Categories C

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Seismic T-Junction Installation - Seismic Categories D, E, & F

1. The **Seismic T-Junction** introduces the **Seismic-Step**. **Mainrails** and **Crossrails** ride on the **Wallrail** ledge. This is the **Seismic-Step**. The **T-Clamp** should mount tight to the **Wallrail** and be securely attached to the wall to prevent shifting during the grid installation. The **Mainrail** and or **Crossrail** positioned tight to the **Wallrail** and will be attached with a **Lock Rivet** and **Backup Washer**. This mounting **WILL NOT** provide a flush rail finish. Use appropriate fasteners for job conditions. The **Wallrail** will then be fitted with 1/8" (3 mm) **Closure Gasket** to provide a closed seal at the lay-in ceiling panel and the **Wallrail**. **FIG. 30**

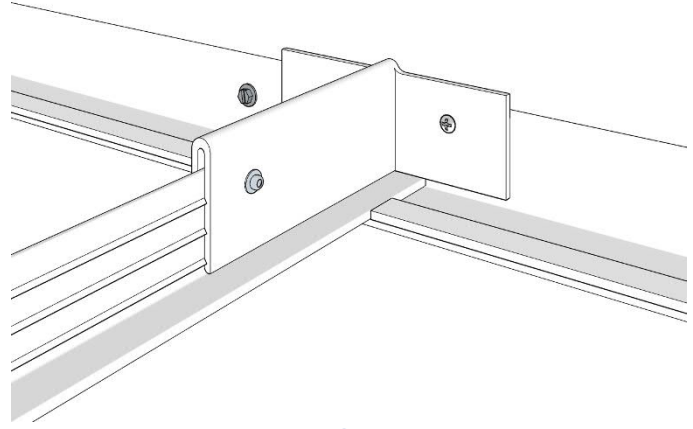


FIG. 30

Seismic T-Junction – Seismic Categories D, E, & F

2. The **Lock Rivets** and **Backup Washers** are installed with the **Clamps** and are to be drilled in the field as required. Once the **Clamp** is installed proceed to drill through the **Rail** and **Clamp** assembly at the location(s) as noted in this manual. These location positions are typical for all **Seismic T-Clamp**, Categories D, E, F.

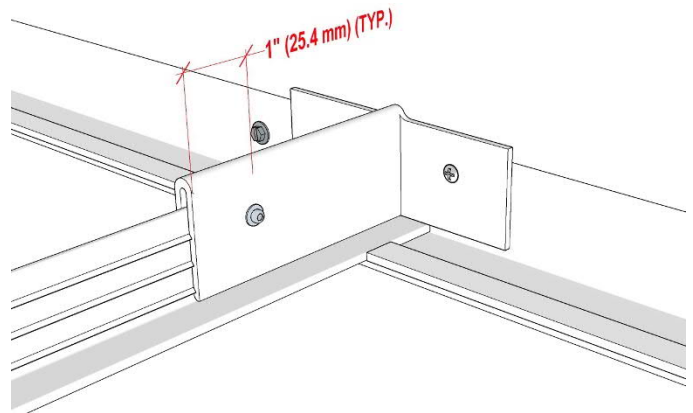


FIG. 31

Seismic T-Junction – Seismic Categories D, E, & F

3. **FIG 31**
4. The opposite end of the **Mainrails** and **Crossrails** will have the same **Seismic T-Junction** installation as above except in a four-sided room the ceiling grid must be fixed to two adjacent walls, and each opposing wall must allow for seismic movement of no less than 3/4" (19mm). This layout methodology holds true to irregular shaped rooms also. **FIG 32**

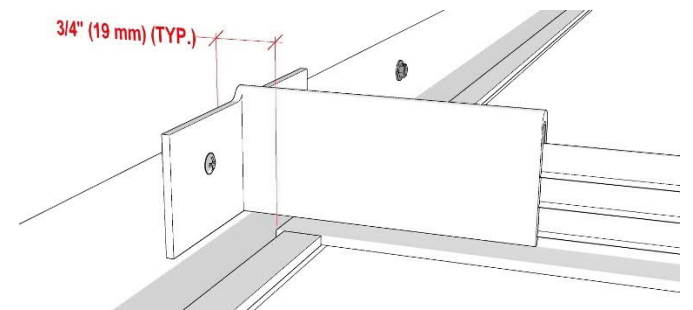


FIG. 32

Seismic T-Junction – Seismic Categories D, E, & F

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Seismic Splice Junction Installation - Seismic Categories C, D, E, & F

3. **Seismic Splice Junctions** are installed the same way as a standard duty **Splice Junction** EXCEPT they are installed with **Lock Rivets** and **Backup Washers**. FIG. 30
4. The **Lock Rivets** and **Backup Washers** are installed with the **Clamps** and are to be drilled in the field as required. Once the **Clamp** is installed proceed to drill through the **Rail** and **Clamp** assembly at the location(s) as noted in this manual. These location positions are typical for all **Seismic Splice Clamps**. FIG. 31

Seismic Separation Splice Junction - Seismic Categories D, E, & F

5. **Seismic Separation Splice Junctions** are required for areas exceeding 2500 sq. ft (232 sq. meters). The **Seismic Separation Splice Junction** is made up of two (2) **Mainrails**, the first **Mainrail** is locked with a **Lock Rivet** and **Backup Washer**, the second **Mainrail** facilitates a slip movement of a maximum of 3/4 inch (19 mm). A **Sliprail Cover** is then attached to the “locked” **Mainrail** using 3M VHB Tape. FIG. 32

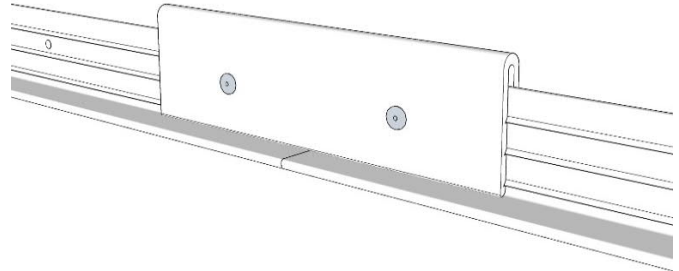


FIG. 30
Seismic Splice Junction

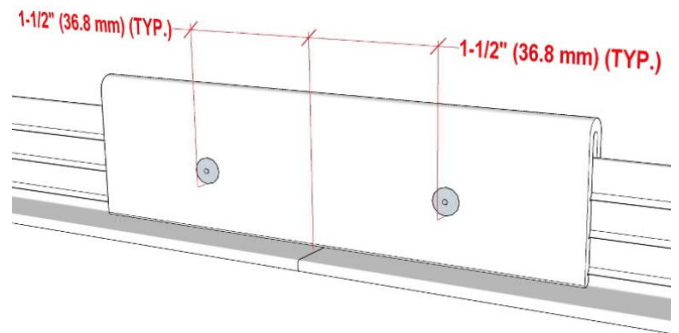


FIG. 31
Typical Rivet Locations

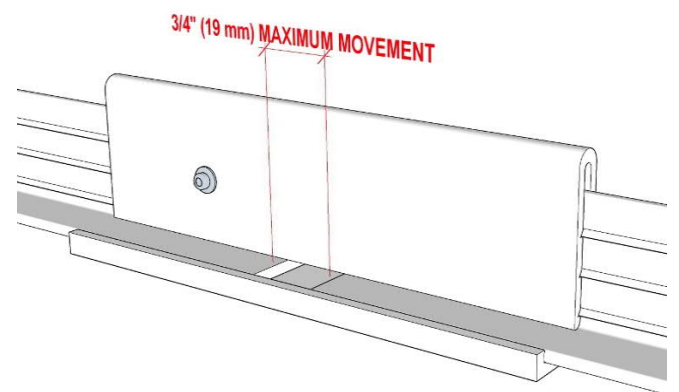


FIG. 32
Seismic Separation Splice Junction

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SHD INSTALLATION NOTES:

1. All **Seismic Junctions** shall have **Lock Rivets** having a shear strength equal to or greater than 1/8" diameter stainless steel **Lock Rivets**.
2. All **Seismic Clamps** shall have one **Lock Rivet** and **Backup Washer** each side of the **clamp**. The **Lock Rivet** and **Backup Washer** must be at least 1" (25.4 mm) from the end of the **Clamp**. The **Lock Rivet** and **Backup Washer** must be at least 1/2" (12.7 mm) down from the top of the **Rail Stem** but shall be no more than 3/4" (19 mm) down. This location spacing places the **Lock Rivet** and **Backup Washer** well below the top **Tooth** on the **Rail** but at or above the second **Tooth** down from the top of the **Rail Stem**.
3. When installing lay-in ceiling panels be aware that **Lock Rivets** by design intrude into the panel bay space by 1/8 inch (1.5 mm). **TR35 Suspended Ceiling Grid Systems** assembled using **Lock Rivets** and **Backup Washer** require ceiling panels with a smaller length and width of 1/4 inch (6mm).
4. Since the **TR35 Suspended Ceiling Grid System** has a smaller net grid / panel opening and the introduction of **Lock Rivets** in Seismic Categories C, D, E, & F, particularly watch for ceiling equipment (MEP equipment, specifically lighting fixture lens frames) which are more tightly fastened into place from the building structure to make sure the items fit and operate properly before proceeding with the installation

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Mainrail • Crossrail • Wallrail

Profile	Name	Imperial		Metric		Pcs/Ctn	P/N
	Mainrail	12 ft ¾"	80Lbs	3677 mm	36.28 Kg	24 x items	TR-6000
	Crossrail 1 ft	1 ft	25 Lbs	305 mm	11.34 Kg	96 x items	TR-6001
	Crossrail 2 ft	2 ft	50 Lbs	610 mm	22.68 Kg	96 x items	TR-6015
	Crossrail 3 ft	3 ft	35 Lbs	915 mm	15.50 Kg	48 x items	TR-6003
	Crossrail 4 ft	4 ft	50 Lbs	1220 mm	22.68 Kg	48 x items	TR-6010
	Wallrail	12 ft	76 Lbs	3657 mm	34.48 Kg	20 x items	WR-5060

Gasket seals and Caulking

Profile	Name	Fitted	Pcs/Ctn	P/N
	Aqua Fin seal	*Factory fitted	per meter fitted	TR-AF
	Bubble Seal	*Factory fitted	per meter fitted	TR-BS
	TR35 Caulking	Applied on-site	per carton 12 items	TR-CK
	Foam Gasket	*Factory fitted	per meter fitted	TR-FG16
	Closure Foam Gasket	Applied on-site	per meter fitted	TR-FG47

*Factory fitted gaskets involve 6-8 week lead time. For further information regarding factory fitted gaskets, please contact Arcoplast P/N number for Rails installed with TR35 Caulking or factory fitted with Gasket seals.

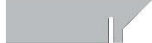
- 1/ Select the quantity and type of Rail using the appropriate P/N number.
- 2/ Select the P/N number for the appropriate gasket or caulking for the assigned area.
Note: Calculate the quantity of the gasket or caulking based on the reflected ceiling plan, dimensions and configuration of the Railbays.

Hint: If there are multiple areas with different configurations, it is recommended to calculate each area separately.

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Clamps

Profile	Name	Imperial		Metric		Pcs/Ctn	P/N
	Splice clamp	6 inch	30 Lbs	152 mm	13.61 Kg	300 x items	TR-5020
	T-Clamp	4 ¼ inch	1 Lbs	108 mm	0.45 Kg	10 x items	TR-5010
	Interlock Clamp*	8 inch	38 Lbs	204 mm	17.24 Kg	300 x items	TR-5035
	Interlock modified cut Clamp*					300 x items	TR-5035 MC
	Overlock Clamp	4 inch	20 Lbs	102 mm	9.07 Kg	250 x items	TR-5040
	Offset Clamp*	8 inch	38 Lbs	204 mm	17.24 Kg	300 x items	TR-5030
	Offset modified cut Clamp*					300 x items	TR-5030 MC

 * Offset and Interlock clamps can be modified on site or factory cut to order

Clips

Profile	Name		Imperial		Metric		Pcs/Ctn	P/N
	Panel Clip	PC-50 Double	1/8 inch	1.13 Lbs	3 mm	0.820 Kg	100 x items	TR-5050D
	Panel Clip	PC-50 Single	1/8 inch	1.10 Lbs	3 mm	0.760 Kg	100 x items	TR-5050S
	Panel Clip	PC-51 Double 25x100	5/8 - 1 ¼ inch	2.1 Lbs	16 - 32 mm	0.9 Kg	100 x items	TR-5051D
	Panel Clip	PC-51 Single 25x100	5/8 - 1 ¼ inch	2.1 Lbs	16 - 32 mm	0.9 Kg	100 x items	TR-5051S
	Panel Clip	PC-55 Double 25	2 inch	2.1 Lbs	50 mm	0.9 Kg	100 x items	TR-5052D
	Panel Clip	PC-55 Single 25	2 inch	2.1 Lbs	50 mm	0.9 Kg	100 x items	TR-5052S

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Fasteners • Rivets washers • Wafer screws

Fastener	Name	Imperial		Metric		Pcs/Ctn	P/N
	Lockrivet R13A 3x13mm Rivet & Washer Aluminum	1/8 x 1/2 inch	7.7 oz	3x13mm	218 g	100 x items	TR-7020
	Lockrivet R13S 3x13mm Rivet & Washer Stainless	1/8 x 1/2 inch	8.7 oz	3x13mm	246 g	100 x items	TR-7025
	Lockrivet R13Z 3x13mm Rivet & Washer Zinc plated steel	1/8 x 1/2 inch	8.2 oz	3x13mm	232 g	100 x items	TR-7030
	Screw Wafer Head 8 Gauge	5/8 inch	4.6 oz	15.8mm	130 g	100 x items	TR-7035

BioSeal A-1010

	Name	Imperial		Metric		Pcs/Ctn	P/N
	BioSeal A-1010 : Twin cartridge	13.5 Fl oz	1.67 Lb	400 ml	644 g	1 x item	A-1010

3M Tape • ArcoZap Spray

Extras	Name	Imperial		Metric		Pcs/Ctn	P/N
	3M#396 Panel Tape Seal 2 inch	2" x 36 yards	8.4 oz	50mm x 33M	238g	1 x item	3M#396-2
	3M#396 Panel Tape Seal 3 inch	3" x 36 yards	12.6 oz	75mm x 33M	340g	1 x item	3M#396-3
	ArcoZap : Acrylic Protection spray	12 oz	13.7oz	0.355 Lt	388g	1 x item	TR-7060

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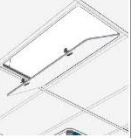
Hangers

Profile	Name		Imperial		Metric		Pcs/Ctn	P/N
	Hanger Wire Galv	12 Gage	12 feet	25 Lbs	3657 mm	11.34 Kg	50 x units	TR-7210
	Hanger wire Monel	12 Gage	12 feet	19 Lbs	3657 mm	8.62 Kg	50 x units	TR-7220
	Hanger Wire Stainless	12 Gage	12 feet	25 Lbs	3657 mm	11.34 Kg	50 x units	TR-7230
	TR35-7400 Lather carrier channel clip						100 x units	TR-7400

Ceiling Panel Latch

	Name	Imperial		Metric		Pcs/Ctn	P/N
	Ceiling Panel latch	7.3 oz	per unit	20 g	per unit	100 x items	TR-5059

Ceiling Service and Access Hatches

	Name	Imperial		Metric		Pcs/Ctn	P/N
	Service Hatch : Solid door	8x8 in	7.67 lbs	203 x 203 mm	3.47 Kg	1 x unit	SH-SD 88
		12x12 in	9.85 lbs	305 x 305 mm	4.46 Kg	1 x unit	SH-SD 1212
		16x16 in	15.32 lbs	406 x 406 mm	6.94 Kg	1 x unit	SH-SD 1616
		20x20 in	23.90 lbs	508 x 508 mm	10.84 Kg	1 x unit	SH-SD 2020
	Service Hatch : Clear door	8x8 in	7.67 lbs	203 x 203 mm	3.47 Kg	1 x unit	SH-CD 88
		12x12 in	9.85 lbs	305 x 305 mm	4.46 Kg	1 x unit	SH-CD 1212
		16x16 in	15.32 lbs	406 x 406 mm	6.94 Kg	1 x unit	SH-CD 1616
		20x20 in	23.90 lbs	508 x 508 mm	10.84 Kg	1 x unit	SH-CD 2020
	Name	Imperial		Metric		Pcs/Ctn	SKU
	Access Hatch : Solid door	24x24 in	24.46 lbs	609 x 609 mm	11.09 Kg	1 x unit	SH-SD 2424
		24x36 in	29.9 lbs	609 x 915 mm	13.56 KG	1 x unit	SH-SD 2426
		24x48 in	38.52 lbs	609 x 1220 mm	17.47 KG	1 x unit	SH-SD 2448

Arcoplast TR35 Suspended Ceiling System - Installation Manual

DISCLAIMER

This manual is provided for informational purposes only. Arcoplast, Inc.'s (hereinafter "Arcoplast") information contained in this manual represents the current views of Arcoplast on the issues discussed as of the date of publication. These opinions, as expressed, should not be interpreted to be a commitment on the part of Arcoplast, and Arcoplast cannot guarantee the accuracy of any information presented after the date of publication. The user assumes the entire risk as to the accuracy and the use of this document.

This manual provides a basic guide for the installation of Arcoplast TR35 Suspended Ceiling System and is intended to supplement, rather than replace, the basic construction knowledge of the construction professional. All installations of Arcoplast TR35 Suspended Ceiling Systems must be in accordance with all applicable building codes.

INFORMATION CONTAINED IN THIS DOCUMENT IS PROVIDED "AS IS," WITHOUT ANY WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE.

IMPORTANT: FAILURE TO INSTALL THIS PRODUCT IN ACCORDANCE WITH ARCOPLAST'S INSTALLATION MANUAL MAY LEAD TO PERSONAL INJURY, PROPERTY DAMAGE AND/OR AFFECT PERFORMANCE OF ARCOPLAST'S TR35 SUSPENDED CEILING SYSTEM(S).

In no respect shall Arcoplast incur any liability for any damages, including, but limited to, direct, indirect, special, or consequential damages arising out of, resulting from, or any way connected to the use AND/OR INSTALLATION of its TR35 Suspended Ceiling System(s), whether or not based upon warranty, contract, tort, STATUTORY PROVISION or otherwise; whether or not injury was sustained by person, property or otherwise; and whether or not loss was sustained from, arose out of, OR the result of Arcoplast TR35 Suspended Ceiling System(s).

NOTE: No installation manual can anticipate all the questions that might arise during installation of Arcoplast TR35 Suspended Ceiling System(s) product. Recognizing this, Arcoplast focused on the tools and techniques used to complete typical installations. Where appropriate, Arcoplast also included alternative approaches for specific installation steps. If you encounter a unique installation problem not covered in this manual, we suggest you contact Arcoplast directly at 1-888-736-2726.



Arcoplast **TR35** Suspended Ceiling System - Installation Manual



For additional information contact our technical services (888) 736-2726

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