

CTI TECHNICAL BULLETIN

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Caution in Using Cable Tray Covers Outdoors

Improperly secured covers on outdoor cable trays can cause a serious hazard in harsh environment conditions such as wind, snow, and ice. In the most cases, covers are not used on cable trays for technical or safety reasons. Customers with experience with “raceways” tend to lean towards requiring that cable trays be completely enclosed in metal. The technical properties of tray rated cables incorporate mechanical and UV protection built into their construction. This makes the use of covers unnecessary and if they are used they should be the ventilated type.

Cable trays with solid covers that are exposed to high winds exhibit the same aerodynamic phenomenon that occurs with aircraft, which is the positive pressure beneath the cover and the negative pressure above allows for the cover to lift off. Covers in this application should be clamped down with heavy duty wrap around clamps that can restrain the covers in this environment.

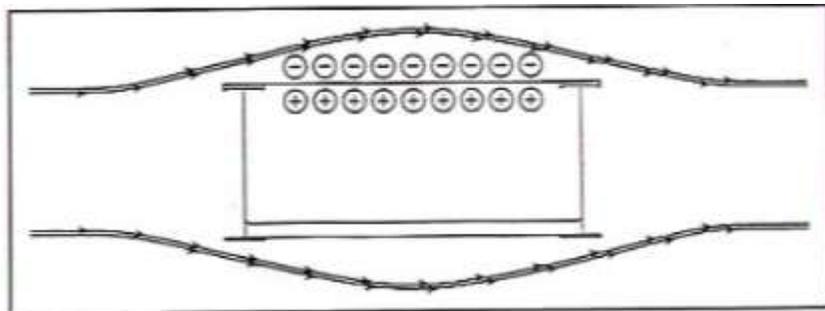


Figure 1: Wind Effect on Covered Cable Trays

Depending on the location of the cable tray if personnel are required to remove the covers in a windy environment they need be aware of the safety concerns this poses. Covers offer a large surface area for the wind to apply force to. It would be very easy for it to be pulled out of the hands of the person holding it, which would cause hazardous debris for anyone or thing in the area. Not only could the cover be dropped, but the person themselves could be pulled off whatever they are standing on. Safety concerns always need to be assessed before installing or adding covers outdoors.

Covers that will be exposed to snow and ice need to be overlapped at the expansion joint locations to ensure buckling doesn't occur. Stiffeners may also be added to the covers to help brace them for heavy loads. In addition to adding stiffeners flanges can

be incorporated to increase rigidity. The material thickness of the cover should also be designed to withstand the environment that it will be placed in. Thicker material will be more rigid and capable of resisting buckling under loads such as ice and snow, and it will add weight to resist flying off in high winds. Most manufacturers offer standard 20 to 22 gage covers. Covers need to be thicker in outdoor installations subject to wind to resist peeling off the tray. Covers should have flanges to provide rigidity and the ends should overlap and be fastened with bar/strap type cover clamps near the joints and in the middle areas. To provide additional holding power in high wind applications screws can be used with fender washers in between the bar/strap type cover clamps.

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