

## FALL RESTRAINTS AND METAL ROOFING

### INTRODUCTION

AEP Span receives many inquiries regarding fall restraint systems (arresting devices) and their attachment to metal roofing. Metal roofing systems, and primarily standing seam systems provide a visible opportunity for attaching fall protection devices. Unfortunately, the loads that fall restraint devices are required to withstand are far beyond the capacity of our metal roof panels, clips, and fasteners. Simply put, AEP Span's roof systems would fail under the extreme loads these devices require.

A review of the OSHA requirements governing fall restraint devices:

### OSHA (FEDERAL REQUIREMENTS)

#### 1926.760(d)(2)

"Fall arrest system components shall be used in fall restraint systems and shall conform to the criteria in § 1926.502 (see Appendix G). Either body belts or body harnesses shall be used in fall restraint systems."

#### 1926.502(d)(15)

"Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows: as part of a complete personal fall arrest system which maintains a safety factor of at least two; and under the supervision of a qualified person."

### ADDITIONAL REQUIREMENTS/STANDARDS

#### ANSI Z359.18

Safety Requirements for Anchorage Connectors for Active Fall Protection Systems consensus standard; more stringent requirements than OSHA. Available through ANSI.org

#### ANSI Z359.1

(obsolete consensus standard)

While there are several fall restraint systems that attach directly to metal roofing seams, AEP Span is unaware of any systems that have included complete load path evaluation – not just attachment of the fall restraint device to the panel seam, but also the loads imparted upon the panel & panel clip connection, the panel clip to clip fastener connection, and the panel fastener to substrate connection.

In addition, we are aware that most fall protection systems are evaluating OSHA loads for the downslope load direction (falls over eave), but loads perpendicular to the panel seams (falls over gable edge) also need to be accounted for. Loads in this direction induce complicated prying of panel systems that should also be evaluated.

### IN SUMMARY

AEP Span's roof systems are not designed to handle OSHA's high fall protection load requirements. AEP Span recommends that fall restraint anchorages be attached directly to the main building structure, independent of the metal roof system. Standard roof penetration flashing details are then incorporated to ensure a watertight connection.

Additional information regarding recommended fall restraint anchor types and associated flashing details is available upon request.