



DESIGN GUIDELINE 4.8

FALL PROTECTION ON ROOFS

General

This section specifically includes design requirements and standards for fall protection measures on roofs and skylights. It does not address policies and procedures for employee fall protection.

References

Comply with the following:

MIOSHA Part 45 Fall Protection Standard for Construction Industry
MIOSHA Part 2 Wall and Floor Openings, Stairways and Skylights
ANSI/ASSE Z359.1-2007, Parts 3 and 5 and Z359.2-2007, Part 5

Related Sections

UM Design Guideline Sections:
[6.0 DG 075000 Roofing Systems](#)

Design Requirements

Rooftop Equipment Maintenance

Design rooftop areas containing a fall hazard of greater than four feet with specific regard to fall protection. Comply with the following passive protection measures wherever possible:

- Locate equipment (including roof drains) a minimum of six feet from the edge of the roof. This includes any pathways to or around the equipment. A clear pathway must be provided.
- Include permanent structures such as parapet walls or guard rails that meet MIOSHA regulations.. Note that the guard rails can form a perimeter around the equipment and service space rather than being mounted at the edge of the roof.

If the project budget or architectural considerations preclude using one of the two methods above, obtain the approval of the Design Manager to substitute a permanently mounted anchorage system and/or a horizontal lifeline system for personal fall arrest complying with the following:

- The anchorage system must be designed by a qualified engineer and installed under the supervision of a qualified individual.

- The anchorages must be located a minimum of ten feet from the roof edge and must be easily accessible.
- The interval between tie-offs must be spaced no more than fifty feet apart. Tie off point must accept a safety line that will use a trolley.
- Anchorages must be situated so as to minimize the fall distance and the possible damage to fall arrest lanyards from nearby sharp or rough edges.
- Anchorage points must be independent of any anchorage being used to support or suspend platforms.
- Anchorage points are mandatory for steep pitch roofs (greater than 4:12), whether or not passive protection is also provided.

Anchorage Point Certification

- Anchorage points need to be tested and certified upon installation.
- Documentation of certification, including location, weight, date tested, party responsible for testing etc. shall be submitted to owners representative prior to project close out.

Roofing Material Maintenance

- **If a parapet wall or guardrail around the edge of roofing is not installed, a permanently mounted anchorage system** and/or a horizontal lifeline system for personal fall arrest **must be installed to allow for the safe maintenance of the roofing material. Follow criteria cited above.**

Skylights

- Provide appropriate fall protection at all skylights. Guards and / or screens must comply with MIOSHA regulations and Michigan Building Code.
- Provide permanent signage on guards at perimeter of skylight noting designed weight limits.
- Provide permanent signage on guards at perimeter of skylight noting “Warning – skylight. Do not step or sit on skylight. Access only for cleaning and maintenance by approved personal.”