

| ROOF HATCHES  |  |  |   |
|---|--|--|---|
| Condition   | Requirement  | Source Section   | Solution/Note   |
| Guard near roof edge  | Provide guards when hatch is within 10 ft of edge >30 in above lower level; guard extends ≥30 in beyond hatch ends; openings ≤21 in sphere | IBC §1015.7  | Use curb-mounted safety railing kits sized to hatch; 42 in height; no membrane penetrations |
| Hatch opening for roof access   | Clear opening ≥16 sq ft with minimum dimension ≥24 in (where access via hatch/trap door applies)   | IBC §1011.12.2   | Select 48×48, 32×72, 30×78, etc.; coordinate firefighter access/standpipe requirements      |
| Stair/ship-ladder headroom  | Minimum headroom 80 in over stair  | IBC §1011.3; OSHA 1910.25(b)(2)  | Confirm hatch length for stair pitch; ensure clearance                                      |
| Fixed ladder clearances   | Fixed ladder: clear rung width ≥16 in; rung spacing 10–14 in; typical back clearance ≥7 in; climbing-side clearance ~30 in to hinged side  | OSHA 1910.23   | Coordinate ladder placement and hatch orientation   |
| SMOKE VENTS   |  |  |   |
| Condition   | Requirement  | Source Section   | Solution/Note   |
| Occupancy trigger   | Group F-1 or S-1 >50,000 sq ft undivided area: provide smoke & heat vents or mechanical smoke removal                                      | IBC §910.2.1 / §910.4  | Use UL 793-listed SafeMAX™/ThermalMAX™/LightMAX™/AcousticMAX™                               |
| High-piled combustible storage  | IFC Table 3206.2 requires smoke/heat removal with specifics for sprinklered/unsprinklered  | IBC §910.2.2 (via IFC)   | Coordinate NFPA 204 design and sprinkler interaction  |
| Product listing   | Automatically operated roof vents shall be listed to UL 793  | IBC §910.3; UL 793   | BD smoke vents are UL 793 listed; include fusible link and manual pulls                     |
| Design method   | Size vents, air inlets, draft curtains via NFPA 204 hand calcs or LAVENT   | NFPA 204 (2024)  | Provide design calcs and maintenance plan; snow/wind performance in submittal               |
| FALL PROTECTION   |  |  |   |
| Condition   | Requirement  | Source Section   | Solution/Note   |
| Unprotected sides/edges ≥4 ft   | Protect via guardrails, safety nets, or personal fall protection systems   | OSHA 1910.28(b)(1)   | Preferred: guardrails or travel restraint to keep workers away from edge                    |
| Low-slope roof <6 ft from edge  | Guardrail/net/restraint/fall arrest required   | OSHA 1910.28(b)(13)(i)   | Use portable/perimeter guardrails or PFAS   |
| Low-slope roof 6–15 ft from edge  | Same protections; designated areas only if work is infrequent & temporary  | OSHA 1910.28(b)(13)(ii)  | Document frequency/temporariness if using designated areas                                  |
| Guardrail geometry & strength   | Top rail 42 in ±3 in; openings ≤19 in; 200 lb top rail; 150 lb midrail; deflection ≥39 in  | OSHA 1910.29(b)  | Verify kit data sheets; field installation per manufacturer                                 |
| Managed program & equipment   | Establish program; select equipment per Z359 series (harness, connectors, SRDs, anchorage, rescue)   | ANSI/ASSP Z359.1 (2024)  | Include training & rescue planning in submittals  |
| CHECKLIST   |  |  |   |
| 1. Hatch within 10 ft of edge? If yes, guard per IBC §1015.7 provided (21-in sphere). |  | 6. Smoke Vent UL 793 listing documented; fusible link temp; snow/wind opening; manual release. |   |
| 2. Hatch opening ≥16 sq ft and min dimension ≥24 in where required.                   |  | 7. Fall protection plan per OSHA 1910.28 and Z359.1; guardrail data per 1910.29.               |   |
| 3. Hatch Headroom ≥80 in over stair/ship ladder.                                      |  | 8. Atrium smoke control (if applicable) per IBC §909/NFPA 92/101.                              |   |
| 4. Ladder clearances (width, spacing, back clearance, climb-side) per OSHA 1910.23.   |  | 9. FM guidance considered (hail protection, HVAC interaction).                                 |   |
| 5. Smoke Vent triggers (F-1/S-1 area; high-piled storage) verified.                   |  | 10. Inspection/maintenance program & training records on file.                                 |   |
| CODES & EDITIONS  |  |  |   |
| Topic   | Latest Edition   | Primary Sections   | Notes   |
| IBC (Model Building Code)   | 2024   | §1015.7; §1011.12.2; §910  | Verify local adoption/amendments with AHJ   |
| NFPA 204 (Smoke & Heat Venting)   | 2024   | Ch. 4–13   | Hand calcs & LAVENT modeling; inspection & maintenance                                      |
| OSHA 29 CFR 1910 Subpart D  | Updated through Oct 31, 2025   | 1910.28; 1910.29; 1910.23  | General industry rooftop fall protection & ladders  |
| ANSI/ASSP Z359.1 (Fall Protection Code)   | 2024   | Z359.1 with linked equipment standards   | Managed program, equipment selection, rescue planning                                       |