

3 **SAFETY IN OFFICES AND OFFICE-LIKE**
4 **SPACES (“OFFICE SAFETY”)**

5
6 NIST S 7101.62

7 Document Approval Date: 01/12/2021

8 Effective Date:¹ 11/07/2017
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11 **1. PURPOSE**

12 The purpose of this program is to establish the safety requirements necessary to protect the safety
13 and health of employees and associates in offices² and office-like spaces³.
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16 **2. BACKGROUND**

- 17 a. NIST P 7100.00: Occupational Safety and Health Policy articulates NIST’s commitment to
18 making occupational safety and health an integral core value and vital part of the NIST
19 culture by, in part, complying with applicable laws, regulations, and other promulgated safety
20 and health requirements.
21
- 22 b. NIST must meet the requirements of the [Occupational Safety and Health Act](#) (OSH Act),
23 which requires employers to provide their employees with working conditions that are free of
24 recognized hazards that are causing or are likely to cause death or serious physical harm.
25 Implementation of this suborder through the requirements in Section 6 and roles and
26 responsibilities in Section 9 of this document fulfills those requirements for offices and
27 office-like spaces.
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¹ For revision history, see Appendix A.

² An office is defined as a workspace where administrative duties such as reading, writing, telephone use, and computer use are performed. Types of offices include private office, shared office, cubicle, and open office.

³ An office-like space is defined as a space, such as a conference room, copier room, break room, or ordinary computer room that has the same types of hazards as a typical office or office environment.

30 **3. APPLICABILITY**

31 a. The provisions of this suborder apply to:

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33 (1) All offices and office-like spaces at NIST and non-NIST sites;⁴ and

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35 (2) All activities conducted by NIST employees and associates in offices and office-like
36 spaces that are not subject to the requirements of NIST S 7101.20: Work and Worker
37 Authorization Based on Hazard Reviews (“Hazard Review”), that is:

38

39 (a) Common everyday tasks performed routinely by members of the general public at
40 work and home and that do not involve extraordinary hazards; and

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42 (b) Activities that present inherently low safety risks.

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44 b. The provisions of this suborder do not apply to residential work locations (e.g., telework).

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47 **4. REFERENCES**

48 a. [Occupational Safety and Health Act, Section 5\(a\)\(1\) \(“General Duty Clause”\)](#).

49

50 b. 29 CFR 1910, Subpart L, [Fire Protection](#) and Subpart S, [Electrical](#).

51

52 c. 29 CFR 1910, Subpart D, [Walking-Working Surfaces](#), especially Sections 1910.22, [General](#)
53 [Requirements](#).

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55 d. 29 CFR 1910.141, [Sanitation](#).

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57 e. NIST O 7101.00: [Occupational Safety and Health Management System](#)

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59 f. NIST P 7100.00: [Occupational Safety and Health Policy](#).

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63 **5. APPLICABLE NIST DIRECTIVES**

64 a. NIST S 7101.20: [Work and Worker Authorization Based on Hazard Reviews](#)

65

66 b. NIST S 7101.22: *Hazard Signage*

⁴A non-NIST site is an off-site non-residential workplace owned and operated by an entity other than NIST at which NIST employees and associates carry out their assigned duties. Examples include joint institutes such as JILA in Boulder, CO, the Hollings Marine Laboratory in Charleston, SC, and Joint Quantum Institute in College Park, MD.

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68 c. NIST S 7101.23: [Safety Education and Training](#)
69
70 d. NIST S 7101.26: [Workplace Inspection](#)
71
72 e. NIST S 7101.63: [Walking and Working Surface Program](#)
73
74 f. NIST S 7101.64: [Electrical Safety](#)
75
76 g. NIST S 7101.71: *Industrial Hygiene*
77

78
79 **6. REQUIREMENTS**

80 a. Housekeeping

- 81
82 (1) Offices and office-like spaces should be kept clean and dry.
83
84 (2) Items shall not be located or stored where they would present slipping or tripping hazards
85 or hinder an evacuation.
86
87 (3) Cords that hang/dangle underneath desk and/or tables should be secured with cable ties to
88 prevent tripping hazard.
89
90 (4) Drawers on desks and file cabinets shall be closed when not in use to prevent tripping and
91 struck-against incidents.
92
93 (5) Stacked items should be kept below eye level to avoid struck-by incidents;
94
95 (6) Heavy or bulky items should be stored at lower levels or in a manner that minimizes their
96 potential to fall or cause shelving, bookcases, file cabinets, or other types of furniture to
97 topple. “Heavy or bulky” pertains to the potential for physical injury if the items were to
98 fall or the furniture to topple. Loading on furniture shall not exceed manufacturers’
99 stated limits.
100
101 (7) Items should not be located or stored where they block ventilation.
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103
104 b. Walking/Working Surfaces
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106 (1) Loose, damaged, slippery, or uneven flooring should be reported as soon as possible for
107 repair or replacement.⁵

108
109 (2) Cord guards covering cords positioned across walkways shall be secured in such a
110 manner as to avoid tripping hazards [see also Section 6d(1)(f)]. Cord guards shall not be
111 covered with mats or rugs.

112
113 (3) Floor mats shall be non-sliding and in good condition with edges lying flat.

114
115 c. Step Stools and Small Step Ladders

116
117 (1) Step stools or small step ladders should be used to reach elevated objects

118
119 **NOTE:** Office furniture, such as chairs and desks, should not be used.

120
121 (2) Step stools and small step ladders shall have anti-slip feet.

122
123 (3) Step stools and small step ladders should have hand rails when over 2-steps.

124
125 (4) Step stools and small step ladders shall be maintained in good condition, inspected before
126 each use, and used in accordance with manufacturers' instructions.

127
128 d. Electrical Safety⁶

129
130 (1) General

131
132 (a) When in use, electrical cord plugs of any kind shall be fully inserted into receptacles
133 such that the plugs' metal prongs are not showing.

134
135 (b) Three-prong to 2-prong plug adapters shall not be used.

136
137 (c) Tension on electrical cords plugged into receptacles shall be avoided.

138
139 (d) Cords, cables, and/or wires shall not be pinched.

140 (e) Flexible cords and cables shall be not attached to building surfaces as permanent
141 installations.

⁵ In Gaithersburg, Boulder, and Fort Collins, a [Maintenance Request \(M-Slip\)](#) shall be submitted to OFPM requesting repair or replacement. At sites owned and operated by entities other than NIST, requests shall be submitted to the responsible entity.

⁶ The requirements in this subsection are replicated in NIST S 7101.64, Electrical Safety.

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(f) Cord guards shall be used to protect flexible cords positioned across walkways from wear and tear caused by foot and other traffic [see also Section 6b(2)].

(g) Cords with damaged plugs (*e.g.*, broken, cracked, or missing prongs or ground pins) or exposed wire shall be removed from service immediately and discarded, or if they are part of a piece of equipment, that equipment shall not be used until the cord has been replaced.

(2) Permanently-Installed Electrical Outlets

(a) The load on permanently-installed electrical outlets shall not exceed 16 amperes (1920 Watts) for 20-amp circuits or 12 amperes (1440Watts) for 15-amp circuits.^{7, 8}

(b) Permanently installed electrical outlets with broken, missing, and/or cracked cover plates shall be:

i. Covered and not used; and

ii. Reported as soon as possible for repair or replacement.⁴

(c) If permanent 120-volt electrical receptacles rated 15 or 20 amps are within six (6) feet (183 centimeter) of a water source in wet locations, such as a kitchen or break room, ground-fault-circuit-interrupter (GFCI) protections shall be installed.⁶ This protection may be provided at the receptacle itself, in an upstream device such as another receptacle, or as a GFCI circuit breaker in the electrical distribution panel.

(3) Supplemental Power Devices

(a) Supplemental power devices, such as power strips, surge suppressors, uninterruptible power supplies (UPS), and extension cords, shall bear the mark of a Nationally Recognized Testing Laboratory, such as Underwriters Laboratories (UL) or Factory Mutual.

⁷ Most circuits in offices and office-like spaces at NIST are 20-ampere circuits, but some are 15-ampere circuits. If you wish to attach more than a 12-ampere (1440 W) load and you are not sure if the circuit is 20-ampere circuit, contact OSHE on x5375, Option 3.

⁸ If additional outlets or GFCI protection are required in Gaithersburg, Boulder, or Fort Collins, OU-funded work orders ([Form NIST-260](#)) shall be submitted to the Office of Facilities and Property Management (OFPM) to have additional outlets or GFCI protection installed. If additional outlets or GFCI protection are required at sites owned and operated by entities other than NIST, requests shall be submitted to those entities to have additional outlets or GFCI protection installed.

- 175
176 (b) Only supplemental power devices that are grounded shall be used. Grounded cords
177 have three prongs on their plugs, rather than two.
178
- 179 (c) Supplemental power devices shall be connected directly to permanently-installed
180 electrical outlets (no “daisy chaining” or “piggybacking” to other supplemental power
181 devices).⁶
182
- 183 (d) Supplemental power devices shall be used and stored according to the manufacturers’
184 safety instructions.
185
- 186 (e) Supplemental power devices shall not be modified in any manner, including for the
187 purpose of mounting.
188
- 189 (f) Supplemental power devices shall be mounted according to the manufacturers’
190 instructions.
191
- 192 (g) Supplemental power devices shall not be secured to building structures (walls,
193 columns, ceilings, and floors) with tape, zip-ties, nails, or other fastening devices that
194 require tools such as screw driver, knife, scissors, etc. for removal.
195
- 196 (h) Extension cords shall not be used as substitutes for permanent wiring and shall be
197 unplugged and properly stored after use.⁶
198
- 199 (i) Supplemental-power-device cords shall not be routed through walls, floors, windows,
200 doorways, or ceilings where they cannot be inspected and could be unknowingly
201 damaged.
202
- 203 (j) Damaged supplemental power devices, such as those with exposed electrical
204 conductors or wires, shall be repaired by the manufacturer (or similar qualified
205 service provider) or discarded immediately.
206
- 207 (k) Power strips, surge suppressors, or UPSs shall not be opened unless the operator’s
208 manual provided by the manufacturer allows and includes instructions for doing it.
209

210 (l) The working space around serviceable electrical panels⁹ shall be kept clear at all
211 times of moveable objects such as furniture, equipment, materials, etc.¹⁰

212
213 i. The working space shall permit at least a 90-degree opening of hinged panels.

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215 (m) If the working space around a serviceable electrical panel contains permanently
216 installed structural members such as walls, columns, work surfaces, etc.), the
217 condition shall be reported to OSHE on x5375, Option 3.¹¹

218
219 (4) Appliances

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221 (a) Manufacturers' safety instructions shall be followed for appliances used in offices
222 and office-like spaces

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224 (b) Electrical appliances that have current loads greater than 12 amperes (power loads
225 greater than 1440 Watts), such as space heaters, refrigerators, and microwave ovens,
226 shall be plugged directly into permanently installed electrical outlets or any power
227 strip that is listed for commercial or industrial applications, has a master circuit
228 breaker, a master power switch, and a metal case.¹² Extension cords, regardless of
229 length, may not be used with electrical appliances with high power loads.

230
231 (c) Electrical appliances with heating elements, such as portable electric space heaters,
232 coffee pots, toasters, and toaster ovens shall meet the following technical and usage
233 requirements:

234
235 i. They shall bear the mark of a [Nationally Recognized Testing Laboratory](#)
236 (NRTL), such as Underwriters Laboratories (UL) or Factory Mutual;^{13, 12}

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⁹See definition of "Working Space". It is presumed that electrical panels in NIST offices and office-like spaces are supplied by 150 volts or less. If panels are supplied by greater than 150 volts, the depth of the access in front of the panel must be at least 42 inches (1.07 m) in the direction of the panel.

¹⁰ In the future, the working space shall also be kept clear of permanently installed structural members such as walls, columns, work surfaces, etc. This is purview of the responsible facilities organization, and, as such, is outside the scope of this suborder.

¹¹ OSHE and the Office of Facilities and Property Management (OFPM) will (a) evaluate the condition to determine what actions need to be taken to protect workers and ensure regulatory compliance, and (b) ensure those actions are taken or planned.

¹² Contact OSHE on x5375, Option 3 for a list of acceptable power strips.

¹³ Appliances brought to NIST from outside the U.S. warrant attention. For assistance, contact OSHE on ext. 5375, Option 3.

¹² A label representing that a product "conforms" to a standard is not a sufficient replacement for the mark of a NRTL.

- 238 ii. They shall be plugged directly into permanently installed electrical outlets or any
239 power strip that is listed for commercial or industrial applications, has a master
240 circuit breaker, a master on/off switch, and a metal case.¹⁰ Extension cords,
241 regardless of length, may not be used with electrical appliances with heating
242 elements.
- 243
- 244 iii. Manufacturers' clearance requirements around coffee pots, toasters, and toaster
245 ovens shall be followed.
- 246
- 247 iv. When in use, toaster ovens shall not be left unattended.
- 248
- 249 v. Combustible materials (furniture, paper, and household consumer products) shall
250 be kept at least 3 feet (0.9 m) from the front of portable electric space heaters and
251 away from their back and sides.
- 252
- 253 vi. Portable electric space heaters shall be equipped with a safety tip-over switch
254 that will shut off the heater when tipped over.
- 255
- 256 vii. Portable electric space heaters shall have a thermal cutoff feature that will shut
257 off the heater upon detection of abnormal temperature conditions.
- 258
- 259 viii. Portable electric space heaters shall have an adjustable temperature controller
260 incorporating a thermostat to cycle the heater based on surrounding temperature.
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262 e. Fire Safety

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264 (1) No open flames such as lit candles and portable propane burners shall be allowed in
265 offices or office-like spaces. Burning incense is also not allowed.

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267 (2) Fire-Related Storage

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269 (a) Flammable or combustible chemicals, other than household consumer products and
270 personal items such as disinfectant wipes, disinfectant gel, rubbing alcohol, hairspray,
271 nail polish, nail polish remover, and personal medication (inhalers), shall not be
272 stored in offices or office-like spaces.

273

274 (b) Stored materials in non-sprinklered areas shall be at least 24 inches (0.61 m) from the
275 ceiling.

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277 **NOTE:** This requirement does not apply to materials stored on shelves against walls
278 unless determined by OSHE to be unsafe.

279
280 (c) Stored materials in sprinklered areas shall be at least 18 inches (0.46 m) below the
281 height of the sprinkler heads.

282
283 **NOTE:** Exemptions from this requirement are possible under certain circumstances.
284 OSHE must be contacted for the approval of any storage or storage design that
285 deviates from the requirement.

286
287 (3) Exit paths shall be at least 28 inches (0.71 m) wide for small office spaces (no more than
288 six occupants).¹⁴

289
290 (4) Exits paths shall be clear of obstructions.

291
292 f. Office Equipment/Furniture

293
294 (1) Copiers, printers, paper shredders, and other office equipment shall be placed and used
295 according to manufacturers' instructions. In common-use spaces, manufacturers'
296 instructions shall be easily accessible to all users.

297
298 (2) Paper cutters shall be equipped with finger-guard rails and located on flat stable surfaces.
299 Blades shall be latched when not in use.

300
301 **NOTE:** Rotary trimmers are excluded.

302
303 (3) Box cutters with recessed blades should be used.

304
305 (4) Equipment and furniture with sharp edges should be protected with edge guards where
306 applicable.

307
308 (5) Furniture that could fall or topple should be secured to walls.

309
310 g. Office Chemicals

311
312 (1) Hazardous chemicals other than household consumer products and personal items [see
313 Section 6e(2)(a)] shall not be stored in offices or office-like spaces.

314

¹⁴ Contact OSHE on x5375, Option 3 for specific exit widths for other office spaces.

315 (2) Consumer products such as “Windex”, correction fluid, adhesives, board cleaners, and
316 copier/printer toners and inks are permitted in office and office-like spaces provided that
317 the products are used in these areas in the same manner that a consumer would use them,
318 *i.e.*, where the duration and frequency of use is not greater than what the typical
319 consumer would experience.

320

321 h. Ergonomics

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323 (1) Employees shall have the right to receive OSHE-provided ergonomic assessments to
324 address office ergonomic risk factors, *i.e.*, elements of their jobs, or the methods by
325 which their jobs are performed, that could contribute to the development of
326 musculoskeletal injuries.

327

328 (2) Heavy items that must be lifted should be stored at waist height, when possible.

329

330 i. Lighting

331

332 (1) Non-functional lighting that presents a safety hazard should be reported as soon as
333 possible for repair or replacement.⁴

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335 (2) Work stations and computer monitors should be positioned to reduce glare.

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337 (3) Where appropriate, task lighting should be used.

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340 **7. DEFINITIONS**

341 a. Non-NIST Site – An off-site non-residential workplace owned and operated by an entity
342 other than NIST at which NIST employees and associates carry out their assigned duties.
343 Examples include joint institutes such as JILA in Boulder, CO, the Hollings Marine
344 Laboratory in Charleston, SC, and Joint Quantum Institute in College Park, MD.

345

346 b. Office – A workspace where administrative duties such as reading, writing, telephone use,
347 and computer use are performed. Types of office include private office, shared office,
348 cubicle, and open office.

349

350 c. Office-Like Space – A space, such as a conference room, copier room, break room, or
351 ordinary computer room that has the same types of hazards as a typical office or office
352 environment.

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- 354 d. Supplemental Power Devices – Power strips, surge suppressors, uninterruptible power
355 supplies (UPS), and extension cords. Chargers for portable computers and mobile devices
356 are not supplemental power devices as defined herein.
357
- 358 e. Working Space (around serviceable electrical panels) – A space around a serviceable
359 electrical panel with the following dimensions:
360
- 361 (1) A depth in the direction of access to the panel of at least 36 inches (0.91 m) from the
362 front of the panel;
363
- 364 (2) A width in front of the panel of 30 inches (0.76 m) or the width of the panel, whichever is
365 greater; and
366
- 367 (3) A height from the floor or platform to 6 feet 6 inches (1.98 m) or the top of the panel,
368 whichever is greater.
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371 **8. ACRONYMS**

- 372 a. CFR – Code of Federal Regulations
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- 374 b. NRTL – Nationally Recognized Testing Laboratory
375
- 376 c. OFPM – Office of Facilities and Property Management
377
- 378 d. OSHA – Occupational Safety and Health Administration
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- 380 e. OSHE – Office of Safety, Health, and Environment
381
- 382 f. OU – Organizational Unit
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- 384 g. UPS – Uninterruptible power supplies
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387 **9. RESPONSIBILITIES**

388 Roles and responsibilities specific to this suborder are as follows:
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- 390 a. OU Directors are responsible for ensuring that the requirements of this suborder are met in
391 their offices and office-like spaces.
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394 **10. AUTHORITIES**

395 There are no authorities specific to this suborder alone.

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398 **11. DIRECTIVE OWNER**

399 Chief Safety Officer

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402 **12. APPENDICES**

403 a. Revision History

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Appendix A. Revision History

Revision No.	Approval Date	Effective Date	Brief Description of Change; Rationale
0	04/15/15	04/01/16	None – Initial document
1	04/07/16	04/07/16	<ul style="list-style-type: none"> Replaced requirement in Section 6d(4) that appliances be “kept a minimum of 3 feet (0.91m) away from combustibles and flammable materials” with (a) “Manufacturers’ clearance requirements around coffee pots, toasters, and toaster ovens shall be followed”, “When in use, toaster ovens shall not be left unattended”, and “Combustible materials (furniture, paper, and household consumer products) shall be kept at least 3 feet (0.9 m) from the fronts of portable electric space heaters and away from their back and sides.”
2	04/07/16	10/01/16	<ul style="list-style-type: none"> Added additional safety requirements for portable electric space heaters to Section 6d(4) in accordance with NIST N 7101-62, Portable Electric Space Heaters.
3	10/26/17	10/26/17	<ul style="list-style-type: none"> Revised the requirement for receptacles within 6’ of a water source to read: “If permanent 120-volt electrical receptacles rated 15 or 20 amps are within...”. Revised the mounting guidelines for supplemental power devices to read: “Supplemental power devices shall not be modified in any manner, including for the purpose of mounting.”
4	11/07/17	11/07/17	<ul style="list-style-type: none"> Restored the following item at line 192: “Supplemental power devices shall be mounted according to the manufacturers’ instructions.” This item had been removed at Revision No. 4.
5	1/12/21	April Camenisch	<ul style="list-style-type: none"> Updated CFR links and NIST Suborder links.