

Small-power rules playbook, BS 7671 (draft)

“ **Status:** draft v0.1 for engineer review, not an approved NFE standard · **Standard:** BS 7671 (NFE's default) · **Scope:** apartment type A · **Rule file:** [rules/bs7671/apartment_type_a_small_power.yaml](#) · **Owner:** to be named · **Last reviewed:** 21 Oct 2026

This page holds the reasoning behind NFE's rules for where small-power sockets go on jobs under BS 7671. The YAML rule file holds the numbers that the [electrical toolkit](#) applies. BS 7671 sets no socket counts or positions, so these are NFE's own design rules, applied under it. They decide where sockets go; they don't replace the engineer's BS 7671 design checks.

The first draft was read off the engineer's own layout for the repeated apartment type on LSHA F6 (apartment type A: the two mirrored apartments, W and E) and was tried in the [phase 1 pilot](#). So it records what we drew, not yet what we have agreed is right. **Engineers: fill in the "To decide" items, correct anything that's wrong, and name who signs it off.**

How to change a rule

1. Agree the change and write the reason on this page.
2. Change the YAML to match, and raise its version (v0.1-draft, then v0.2-draft and so on).
3. Add a line to the history table at the bottom.

A rule set is written for one standard, and the toolkit refuses to apply it to a job under another. When a job is governed by IEC 60364 or US EAS 811-1:2014, it gets its own playbook page and rule folder.

Defaults for every room

Setting	Draft value	Basis	To decide
Clearance from door openings	0.30 m	Draft value	Confirm
Clearance from corners	0.30 m	Draft value	Confirm

Setting	Draft value	Basis	To decide
Minimum spacing between sockets	0.80 m	Draft value	Confirm
Walls to avoid	Walls facing a balcony	The LSHA apartments' lounge, dining and kitchen balcony sides are glazed folding doors	Confirm. Windows are not detected yet
Mounting height, high-level socket	1,200 mm	F6 legend	Confirm
Mounting height, all other sockets	Not set	Not on the pilot drawings	Set a height for each type

For reference, the research noted that England's Approved Document M puts switches and sockets in dwellings 450–1,200 mm above the floor ([Electrical Drawing Tools Evaluation \(Oct 2026\)](#)).

Rules by room: apartment type A (v0.1)

Room	Draft rule	Why, and how it did on F6	To decide
Bedroom	2 twin USB sockets, a pair either side of the bed head, 2.4 m apart	Bedside pair; the engineer used USB twins 2.4–2.5 m apart. All 4 within 0.11 m of the engineer's	Height. Sockets on any other wall (desk, dressing table)?
Lounge	3 twin 13 A sockets on the media wall, plus 1 high-level twin on the same wall for a wall-mounted TV. The media wall is the wall the media unit stands against; failing that, the wall shared with the other lounge; failing that, the longest wall	TV and media cluster. All 8 TV-wall sockets within 0.6 m	Sockets on other walls?
Kitchen	1 high-level twin on the longest wall (worktop, by the hob run); 2 twin 13 A on the wall backing onto the pantry (appliances); 1 high-level twin on that pantry wall (worktop)	Parts of the kitchens were missed by 1.1–6.9 m	How many worktop sockets, and how far apart?
Kitchen island	Not modelled yet	The engineer drew two <code>HIGHLEVEL</code> symbols on each island, which the legend calls floor sockets. Islands aren't detected yet, and floor sockets have no symbol of their own	A rule, and a separate floor-socket symbol

Room	Draft rule	Why, and how it did on F6	To decide
Cinema	3 twin 13 A along the two long side walls (AV equipment), plus 4 high-level twins on the same walls for wall-mounted AV and speakers (a guess: two per side wall)	The far end of each cinema was missed	What goes on the far wall? Is the high-level count right?
Lobby	1 twin 13 A anywhere on the perimeter (cleaning)	-	Confirm
Pantry	1 twin 13 A anywhere on the perimeter (appliance)	Rule unknown; missed on F6	The rule
Balcony	1 twin 13 A on the longest wall	The engineer used plain twins on the short end wall; missed on F6	Weatherproof or not (a weatherproof type exists), and which wall
Dining	None	The engineer put no sockets in the dining zones	Sockets or not
Bathroom and WC	None modelled	The shaver sockets sit in unlabelled bathrooms on F6	A shaver-socket rule
Corridor	None modelled	The corridor sockets on F6 are in unlabelled spaces and weren't compared	A rule

Overall, 27 of the 44 generated sockets landed within 1 m of the engineer's (median 0.58 m). Because the counts were read off the same drawing, matching counts prove nothing about design quality; the positions are the test.

Device types

The rules name device types. The toolkit's catalogue (`src/nfe_electrical/data/catalogue.yaml`), which the engineers also own, maps each type to an NFE symbol. A mounting height is set only where a pilot legend states one.

Device type	Symbol (block, attribute)	Height
<code>socket_twin_13a</code>	<code>SOCKET</code> , S	Not set
<code>socket_twin_usb</code>	<code>SOCKET</code> , USB	Not set
<code>socket_twin_high_level</code>	<code>HIGHLEVEL</code> , HL	1,200 mm
<code>socket_twin_weatherproof</code>	<code>SOCKET</code> , WP	Not set
<code>socket_single_13a</code>	<code>SOCK SINGLE</code>	Not set
<code>shaver_socket</code>	<code>sh</code>	Not set

The catalogue also has a 20 A double-pole switch (`dp_switch_20a`) and a cooker control unit (`cooker_control_unit`), for when the kitchen rules cover them.

How a rule reads in the YAML

```
bedroom:
```

```
- {type: socket_twin_usb, count: 2, place: pair, wall: bed_head, spacing: 2.4,
  why: "bedside pair either side of the bed head"}
```

- **place**: `perimeter` (spread along all usable wall), `wall` (spread along one wall), `pair` (two either side of a wall's midpoint), `corners`, `beside_door`, `centre` or `at`.
- **wall**: `longest`, `shortest`, `long_sides` (the two longest facing walls), `bed_head` (the wall the architect's bed is drawn against), `media_wall` (the wall a TV or media unit stands against), `facing_<room type>` (the wall backing onto that room, such as `facing_pantry`), `opposite_door`, or `north`, `south`, `east` or `west`. A list is tried in order.
- **count**: a number, or a count by area. For example, `{per_m2: 8, min: 2, max: 6}` means one per 8 m² of floor, at least 2 and at most 6.
- **why**: the reason, in one sentence. Keep it in step with this page.

Decisions needed

- ☐ Counts, walls and spacing for each room type above.
- ☐ A mounting height for every socket type (only the 1,200 mm high-level socket is on the drawings).
- ☐ Dining zones: sockets or not.
- ☐ Balconies: weatherproof sockets or plain twins, and on which wall.
- ☐ Kitchen islands: a floor-socket rule, and a symbol of its own instead of `HIGHLEVEL`.
- ☐ Rules for pantries, the far end of cinemas, bathroom shaver sockets and corridors.
- ☐ The door, corner and spacing clearances.
- ☐ Who owns this playbook, and who signs off each version.

History

Version	Date	Change
v0.1-draft	21 Oct 2026	First draft, read off the engineer's LSHA F6 layout for apartment type A and tried in the phase 1 pilot

Revision #2

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