SAMPLE QUANTITIES REPORT

# Finishing quantities

Example house: G+1, 1,000 sq ft per floor

| PREPARED FOR | LOCATION | REPORT ID | DATE |
|---|---|---|---|
| Example house (sample) | Lucknow, Uttar Pradesh | NS-IN-SAMPLE | 29 October 2026 |

**This is a sample report**
It is a real report from the same calculations a paid report uses, made for an example house (G+1, 1,000 sq ft on each floor, Lucknow). It is not your project and nothing in it applies to your plot. Your own report uses your plot, floors and city, so its figures will differ.

## Your finishing at a glance

ROOMS COUNTED
**9**
3 bedrooms, 3 bathrooms, 1 kitchen, 2 living rooms

BUILDING
**One house**
2 floors, 3.00 m floor to floor

PAINT INSIDE
**Standard**
Cement putty (about 1 mm), one coat of primer, two coats of emulsion

PAINT OUTSIDE
**Acrylic emulsion**
Smooth acrylic exterior emulsion, 2 coats over exterior primer

FLOOR TILES
**600 × 600 mm**
Laid straight, fixed with a mortar bed

BATHROOM WALLS
**Tiled to the door height**
300 × 600 mm wall tiles

FALSE CEILING
**None**
Gypsum board on a steel frame

KITCHEN
**L shape**
Counter only

WARDROBES
**None**
Built in, plywood and laminate

## What to order

The main totals. The line under each figure is the range the real number is likely to fall in.

| PAINTED AREA | TILES | DOORS AND WINDOWS | WINDOW GLASS |
|---|---|---|---|
| 942 m² | 254 m² | 22 nos | 16 m² |
| 801 to 1,130 m² | 228 to 292 m² | 19 to 28 nos | 13 to 21 m² |

**How to use this report**
This is a code-based planning estimate worked out from the answers you gave, not a design for your drawings. Use it to plan, to check a contractor's quantities for gross errors and to order the first lots. Where a figure rests on an assumption, the report says so. Final quantities come from the drawings and the professional who signs them.

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## Surfaces, measured

Every area comes from the room plan, measured following the rules of IS 1200 as the tool reads them (editions named under Standards and sources; the 2024 revisions have not been checked). Walls are the clear height of the room, floor to the underside of the slab.

| SURFACE | MEASURED (M²) | TAKEN OUT (M²) | NET (M²) | BASIS |
|---|---|---|---|---|
| **Walls in rooms and passages** | 404.0 | 20.5 | 383.5 | Paint; doors out once, windows half; the wall above the kitchen counter is tiled |
| **Bathroom walls above the tiles** | 21.6 | 0.0 | 21.6 | Paint above the 2.1 m tiling |
| **Ceilings, inside** | 162.4 | 0.0 | 162.4 | Slab or board, painted either way |
| **Outside of the building** | 384.8 | 10.4 | 374.4 | Walls, parapet, balcony edges and undersides; openings half from each face |
| **Doors, both faces** | 33.2 | 0.0 | 33.2 | Shutters of timber; frames are counted with them |
| **Bathroom wall tiles** | 60.5 | 5.0 | 55.4 | Door opening taken out |
| **Kitchen wall above the counter, tiles** | 2.5 | 0.0 | 2.5 | 4.2 m run, 0.6 m high |
| **Floors to be tiled** | 166.9 | 0.0 | 166.9 | Measured before the skirting goes on (IS 1200 Part 11) |

Clear height is 2.85 m (3.00 m floor to floor less a 0.15 m slab). Rooms are the same ones MasonryPro uses, so the two reports measure the same walls.

## Putty, primer and paint

Standard: putty, primer and emulsion. Outside: smooth acrylic exterior emulsion, 2 coats over exterior primer. Quantities include 5% for wastage.

| ITEM | AREA (M²) | SPREAD, ALL COATS, A M² | QUANTITY | UNIT |
|---|---|---|---|---|
| **Wall putty, cement based** | 567.6 | 0.60 kg | 358 | kg |
| **Primer, inside** | 567.6 | 0.075 L | 45 | L |
| **Interior emulsion, 2 coats** | 567.6 | 0.090 L | 54 | L |
| **Primer, outside** | 374.4 | 0.095 L | 37 | L |
| **Exterior acrylic emulsion** | 374.4 | 0.167 L | 66 | L |
| **Primer, doors** | 33.2 | 0.075 L | 3 | L |
| **Enamel or multi-surface paint, doors** | 33.2 | 0.090 L | 3 | L |

Spread is for the coats named, on a plastered surface. Buy paint in the pack sizes you like and round up; keep a litre or two for touching up. CPWD DAR 2016 item 13.46.1 (0.167 L a m²); primer from the maker sheet, 100 to 120 sq ft a litre. The spread for the inside comes from the makers' data sheets; Maker sheets: 0.083 to 0.100 L a m² for two coats.

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## Tiles, use by use

Pieces are one over the pitch of the tile in both directions, joint included, on the area to buy.

| USE | TILE | NET AREA (M²) | EXTRA | TO BUY (M²) | PIECES |
|---|---|---|---|---|---|
| **Floors of living rooms, bedrooms, kitchens and passages, with skirting** | 600 × 600 mm | 157.9 | 5% | 165.8 | 458 |
| **Bathroom floors** | 300 × 300 mm | 17.5 | 10% | 19.3 | 210 |
| **Balcony floors** | 300 × 300 mm | 4.5 | 10% | 5.0 | 54 |
| **Bathroom walls, to the door height** | 300 × 600 mm | 55.4 | 10% | 61.0 | 336 |
| **Kitchen wall above the counter** | 300 × 600 mm | 2.5 | 10% | 2.8 | 16 |

Floor tile is 600 × 600 mm, laid straight. Extra is for breakage and cutting: 5% straight, 10% diagonal, and 10% for large tiles or small rooms. No standard fixes these; they are Assumed.

## Tiles to order

The sizes added up, with the boxes where the maker’s box is known.

| TILE | TO BUY (M²) | PIECES | IN A BOX | BOXES |
|---|---|---|---|---|
| **600 × 600 mm** | 165.8 | 458 | 4 pieces, 1.44 m² | 115 |
| **300 × 300 mm** | 24.2 | 264 | Not in the data read | – |
| **300 × 600 mm** | 63.7 | 351 | 5 pieces, 0.90 m² | 71 |

Box sizes are from one maker’s data sheet for each size and will differ with the maker. For a tile not in the data read, order by the piece.

## Fixing the tiles, grout, skirting and wet areas

A 20 mm bed of 1:4 mortar on floors and 12 mm of 1:3 on walls, with a cement slurry under each (CPWD item text).

| ITEM | QUANTITY | UNIT | BASIS |
|---|---|---|---|
| **Cement for the bed and the slurry** | 2,489 | kg | 50 bags of 50 kg |
| **Sand for the bed** | 4.56 | m³ | Coarse sand |
| **Grout** | 31 | kg | Net area of every tile, with 10% extra |
| **Skirting** | 118.2 | m | 100 mm high, cut from the floor tile, with 10% for cutting |
| **Waterproofing coat in bathrooms** | 26.2 | m² | Floor and 0.30 m up the walls; at least 2 coats |
| **Corner fillet and glass-fibre mesh** | 28.8 | m | 50 × 50 mm fillet; 150 mm mesh over it |

Grout is the density of 1.6 kg a litre times the joint length, width and tile thickness (a 600 × 600 mm tile gives 0.10 kg a m²). Skirting runs round the living rooms, bedrooms and passages less the door widths.

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## Stone

Thresholds and the kitchen counter.

| ITEM | QUANTITY | UNIT | BASIS |
|---|---|---|---|
| **Door thresholds** | 5 | nos | 4.6 m, one at each bathroom, main and balcony door |
| **Kitchen counter, granite** | 2.8 | m² | 2.5 m² with 10% for cutting and the sink; 0.6 m deep |
| **Counter edge, moulded** | 4.2 | m | Front edge of the counter |

## Doors

Counted from the rooms. Shutters and frames of timber; frames are 100 × 65 mm with a 100 mm horn at each top corner.

| DOOR | SIZE (M) | SHUTTER, IS 1003 | NUMBER | SHUTTERS (M²) | FRAME TIMBER (M³) | HINGES |
|---|---|---|---|---|---|---|
| **Main door** | 1.00 × 2.10 | 10 DS 21 | 1 | 2.1 | 0.035 | 4 |
| **Room door** | 0.90 × 2.10 | 9 DS 21 | 4 | 7.6 | 0.138 | 12 |
| **Bathroom door** | 0.80 × 2.10 | 8 DS 21 | 3 | 5.0 | 0.101 | 9 |
| **Door of the terrace stair room** | 0.90 × 2.10 | 9 DS 21 | 1 | 1.9 | 0.034 | 3 |
| **All doors** | | | **9** | **16.6** | **0.309** | **28** |

Frame timber is the length of the two sides and the top, with the horns, times the section. The section is Assumed; IS 4021, which fixes frame sections, could not be read.

## Windows, ventilators and glazed doors

Sizes are the usual ones; no standard fixes them. Sections are the frame and the sashes, in aluminium or uPVC as you choose.

| OPENING | SIZE (M) | NUMBER | GLASS (M²) | SECTIONS (M) |
|---|---|---|---|---|
| **Balcony door, glazed** | 1.20 × 2.10 | 1 | 2.1 | 17.0 |
| **Bedroom window** | 1.50 × 1.20 | 3 | 4.5 | 38.4 |
| **Living room window** | 1.80 × 1.20 | 3 | 5.4 | 42.0 |
| **Kitchen window** | 1.20 × 1.20 | 1 | 1.2 | 11.6 |
| **Stair window** | 1.20 × 1.20 | 2 | 2.4 | 23.2 |
| **Bathroom ventilator** | 0.60 × 0.45 | 3 | 0.7 | 6.3 |
| **All windows and glazed doors** | | **13** | **16.4** | **138.5** |

Glass is 80% of the opening, 4 to 5.5 mm, with 5% for cutting. Sashes are two to a window wider than 0.9 m; a ventilator is a fixed louvre. Grills, nets and the sill are not counted.

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## Door hardware

Counted on the rule of one set to a door. Hinges follow IS 1003; the rest is Assumed.

| ITEM | NUMBER | BASIS |
|---|---|---|
| **Door hinges** | 28 | 3 for a shutter up to 0.9 m wide, 4 above (IS 1003 cl 8.2) |
| **Lock sets** | 4 | One for the main door and for every bedroom |
| **Tower bolts** | 5 | Two on the main door, one on each bathroom door |
| **Handle pairs** | 9 | One for every door |
| **Door stoppers** | 9 | One for every door |

## Checked against the Indian Standards

**PASS** IS 15622:2006 cl 4.1

### Tile type for floors and walls

Floor tiles in bathrooms, balconies and kitchens should be of water absorption group BIa (up to 0.08%), which means vitrified or porcelain tiles. Glazed ceramic tiles are for walls. This report counts the sizes you chose; the group is your choice at the shop.

**PASS** IS 1200 (Part 11):1977, (Part 12):1976, (Part 13):1994; later editions exist (BIS lists 2024 revisions of Parts 11 and 13, not checked)

### How the surfaces are measured

Floors are measured before the skirting and dado go on. Openings up to 0.5 m² are not taken out of paint or plaster; from 0.5 to 3 m², one face is taken out. Doors, windows and glazed balcony doors are taken out on that rule, and the skirting is measured in running metres after the door widths. This follows the rules of the editions named, as the tool reads them; the 2024 revisions of Parts 11 and 13 have not been checked.

**PASS** NBC 2016 Part 3, as summarised in secondary sources; clause numbers not given

### Kitchen and bathroom sizes

The rooms in this report are sized from your floor area. The kitchen works out near 9.8 m² against a minimum of 5.0 m² (1.8 m wide), and a bathroom with a WC near 5.8 m² against 2.8 m².

**PASS** IS 1003 (Part 1):2003 cl 7.2 and Table 3

### Door sizes

Doors are sized to the standard designations: 10 DS 21 for the main door (1.0 m), 9 DS 21 for rooms and the kitchen (0.9 m) and 8 DS 21 for bathrooms (0.8 m), all 2.1 m high. The number in the name times 100 mm is the opening width.

**PASS** NBC 2016 Part 8, as summarised in secondary sources; clause numbers not given

### Window size against room size

A habitable room needs windows of at least a tenth of its floor area. The bedroom window counted is 1.8 m² for a room of about 17.7 m² (10%) and the living room has 3.2 m² of window for about 27.2 m² (12%).

**NOTE** IS 3067:1988 (scope: basements and roofs)

### Waterproofing in bathrooms

No Indian Standard read here gives the coverage of a bathroom waterproofing coat; IS 3067 covers basements and roofs. This report counts the area to coat (the floor and 0.30 m up the walls) and the corner fillet, and leaves the coverage to the product's data sheet. Test it by ponding water for 24 hours before the tiles go on.

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PASS IS 2395 (Part 1):1994

**Coats of paint**

IS 2395 gives no single number of coats for emulsion or distemper, so the coats counted follow the makers' data sheets: cement putty (about 1 mm), one coat of primer, two coats of emulsion.

## How far off can this be

- Painted area: from 15% below to 20% above the figure shown.
- Putty, primer and paint: from 30% below to 35% above the figure shown.
- Tiles: from 10% below to 15% above the figure shown.
- Mortar, adhesive and grout: from 35% below to 30% above the figure shown.
- False ceiling: from 15% below to 20% above the figure shown.
- Doors and windows: from 15% below to 25% above the figure shown.
- Plywood and laminate: from 30% below to 40% above the figure shown.

## Assumptions

- Code: surfaces are measured following the rules of IS 1200 as the tool reads them, in the editions named under Standards and sources: (Part 11) floors, dado and skirting, (Part 12) plaster and (Part 13) paint. BIS lists 2024 revisions of Parts 11 and 13; the tool has not been checked against them. Openings to 0.5 m² are not taken out, from 0.5 to 3 m² one face is. Door shutters are the standard sizes of IS 1003 (Part 1). Plywood sheets are IS 303.
- Practice: the exterior paint spread is the CPWD Delhi Analysis of Rates 2016 coefficient (cement paint 0.384 kg, smooth acrylic 0.167 L, textured 0.328 L a m²) and the door paint is 0.075 L of primer and 0.090 L of paint a m². The DAR's exterior primer is 0.22 kg a m² in 2016 and 0.09 L in a later schedule; the maker's sheet (0.09 to 0.108 L) agrees with the later figure, so 0.095 L is used.
- Maker: the inside spread (putty, primer, emulsion, distemper) is from the data sheets of Asian Paints, Nerolac and Berger, because the DAR emulsion items could not be read. These vary widely between brands (an emulsion is 0.063 to 0.138 L a m² for two coats), so the range around the paint figure is wide.
- Derived: tiles a m² is one over (length + joint) times (width + joint). Grout is 1.6 kg a litre times the joint length, width and tile thickness. Panel areas for wardrobes and kitchen units are worked out from the box geometry. Board joint and hanger counts for the false ceiling follow the spacing of a public gypsum specification.
- Assumed: the room plan (shared with MasonryPro): a bedroom is one share of the floor, a living room 1.3 shares plus 0.3 for each bedroom, a kitchen 0.75, a bathroom 0.33, and the passages about half a share. Walls are taken as 230 mm outside and 115 mm inside.
- Assumed: clear height 2.85 m. Bathroom wall tiles stop at 2.1 m. The wall above the kitchen counter is tiled 0.6 m high. Kitchen runs are 3 m straight, 4.2 m in an L and 5.4 m in a U; wardrobes are 2.4 m (master) and 1.8 m (others).
- Assumed: wastage of 5% on paint, putty and primer; 5% to 15% on tiles by the layout and the size; 10% on grout; 8% on gypsum board; 12% on plywood and laminate; 10% on granite; 5% on glass. No standard or maker gives these.
- Assumed: door and window sizes and counts: a window in every bedroom and kitchen, two in a living room on the ground floor or in a flat, a ventilator in each bathroom, a stair window for each storey in a building of two floors or more, a glazed door to each balcony, and a stair room on the terrace of any building of two floors or more.
- Assumed: the false ceiling hangers are 0.45 m long, and the cove, if any, is not counted.
- Assumed: the tile bed (mortar or adhesive) covers every tiled area, with the floor bed at 11.0 kg of cement and 0.022 m³ of sand a m² and the wall bed at 9.2 kg and 0.0125 m³ a m². These come from CPWD item text quoted in public tenders; the DAR flooring pages could not be read.
- The plaster underneath, the cement and sand for it, and the walls are in MasonryPro. Putty starts where the plaster ends.

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## Not counted in this report

- Plaster, and the cement and sand for it (these are in MasonryPro).
- The flooring screed under tile adhesive, stairs (treads, risers and landings), and the terrace and parapet finish.
- Marble, granite, wood and laminate flooring apart from the thresholds and counter. No source read gives their quantities.
- Sanitary fittings, taps and bathroom accessories (these are in PlumbingPro) and the lights and fans (in ElectricalPro).
- Jointing tape and compound for the false ceiling, cove lighting, access panels, curtain boxes and any bulkhead.
- Drawers, channels, baskets, pull-outs, locks, handles on drawers, mirrors and shelf pins; loft cabinets above 2.1 m.
- Window grills, mosquito nets, sills, curtains and blinds, and timber windows.
- Inside of the terrace stair room, the compound wall and gate, and polishing of timber.
- Scaffolding, masking, putty sanding, curing water and the carriage of materials.

## Standards and sources used

- IS 1200 (Part 11):1977, (Part 12):1976, (Part 13):1994 Methods of measurement of building and civil engineering works (BIS lists 2024 revisions of Parts 11 and 13; the tool has not been checked against them)
- IS 15622:2006 Pressed ceramic tiles; IS 2395 (Part 1):1994 Painting practice; IS 3067:1988 Damp-proofing and waterproofing
- IS 1003 (Part 1):2003 Timber panelled and glazed shutters; IS 2202 (Part 2):1983 Flush door shutters; IS 303:2024 Plywood
- CPWD Delhi Analysis of Rates 2016, Volume 2 sub-head 13 (finishing: plaster, paint, primers) and Volume 1 materials list
- Data sheets of paint, putty, adhesive, grout and tile makers (Asian Paints, Nerolac, Berger, Sika, Laticrete, Mapei, Kajaria); public CPWD-pattern tender documents for gypsum ceilings and tile beds

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APPENDIX A

# Calculation sheet

InteriorPro: how every figure in this report was worked out

**What this sheet is**

This sheet shows how InteriorPro turned your answers into the paint, putty, tile, ceiling, door, window and plywood quantities in the report. Each step is written out: the rule, the numbers put in, the result and where the rule comes from, so that a contractor, an architect or a bank's engineer can check the arithmetic. It checks quantities for planning and ordering. It is not a drawing, a bill of quantities or a design.

## How to read it

Each row is one step. STEP says what is being found. FORMULA gives it in symbols. WORKING puts the numbers in. RESULT is the answer with its unit. SOURCE names the clause or table the step rests on. The columns take turns being a lighter and a darker cream, so each figure sits under its own heading. Amber rows are inputs: a figure you gave, or a value read from a code table. Green rows are figures that appear in the report. Every sum was carried out at full precision and is shown rounded, so re-keying the rounded numbers by hand may differ in the last digit.

## Method in brief

1. Your answers are read and the clear height of a room is found: the floor to floor height less the slab (section 1).
2. Each floor is shared out among its rooms in proportion to a weight for each kind of room, and the length of wall round each room follows from its shape. This room plan is an assumption and is the same one MasonryPro uses (section 2).
3. Doors, windows, ventilators and balcony doors are counted from the rooms by fixed rules (section 3).
4. The surfaces are measured following the rules of IS 1200 as the tool reads them (editions named in the references; the 2024 revisions have not been checked): walls at clear height with openings taken out by the 0.5 m² and 3 m² rules, ceilings, the outside from the plinth to the parapet, and doors on both faces (section 4).
5. Tiles are found use by use: net area, an allowance for breakage, pieces from the size of the tile plus its joint, then boxes. Skirting, the mortar bed or the adhesive, and the grout follow (section 5).
6. Bathroom waterproofing, door thresholds and the kitchen counter are measured from the same rooms (section 6).
7. Putty, primer and paint are each the area to be painted times a spread from a maker or from the CPWD analysis of rates, times the wastage (section 7).
8. No false ceiling was chosen, so none is counted.
9. Door shutters, frames, glass, window sections and hardware follow from the counts (section 8). No wardrobes or kitchen units were chosen, so no plywood or laminate is counted.
10. Every figure is rounded up to something that can be bought (section 9). The room and window sizes quoted in the report are shown (section 10), and the likely range of each total is applied (section 11).
11. Every total, table figure and buy-list line of the report is rebuilt here and compared with the report's own in the reconciliation. Had one differed, this sheet would have been left out of the report.

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## Read this before relying on the sheet

- The rooms are not measured. Their sizes come from a room plan that shares each floor out by fixed weights, so the wall, floor and ceiling areas, and the number of doors and windows, will differ from your drawings. The ranges in section 11 say how far.
- Each NirmanShastra tool lays out the same house by its own rule, so the area of a room in this report can differ noticeably from the same room in another NirmanShastra report. Only MasonryPro uses the same room plan as this report.
- The surfaces follow the rules of IS 1200 Part 11 (1977 edition) and Part 13 (1994 edition) as the tool reads them. BIS lists 2024 revisions of Parts 11 and 13, and the tool has not been checked against them. No clause number of IS 1200 is quoted here. One difference is already suspected: a summary of the BIS draft of the 2024 revision of Part 13 suggests that, where the two faces of a wall have different finishes, an opening between 0.5 and 3 m² is taken out first from the face with the narrower reveal and is halved only where the reveals are equal. This tool halves it for every window and outer door. The total area taken out is the same either way; only the split between inside and outside paint would move. This has not been checked against the full text.
- The spreads of paint, putty, adhesive and grout, the tile boxes and the counts for a false ceiling come from makers' data sheets, the CPWD Delhi Analysis of Rates 2016 and a public tender specification. They are not Indian Standards, they differ from brand to brand and from site to site, and none was tested on a site.
- The allowances for wastage are assumptions: paint 5%, tiles 5% to 15%, grout 10%, gypsum board 8%, plywood and laminate 12%, granite 10%, glass 5%. No standard or maker gives them. Frame timber has no allowance for converting rough timber (sawing, planing and waste).
- Door and window sizes, counts and frame sections are typical values. The frame section could not be checked against IS 4021.
- The shutter area of a door is taken as the area of the whole opening. For 9 DS 21 the shutter of IS 1003 (Part 1) Table 3 is 1.60 m² and the opening is 1.89 m², so the area used is about 18% more than the shutter, and the door paint in section 7 is worked on that larger area. Hinges are counted from the width of the opening (three up to 0.9 m, four above), but IS 1003 (Part 1) cl. 8.2 speaks of the width of the shutter: a 900 mm shutter takes three hinges, and the main door (1.00 m opening, 10 DS 21) is given 4 here, one more than the standard would give.
- Nothing is designed here. Waterproofing is counted by area only (IS 3067 covers basements and roofs, so the coverage is left to the product's data sheet). The screed under tile adhesive, stairs, plaster, polishing and the terrace finish are not counted.
- The kitchen and bathroom size checks and the window size check quoted in the report are NBC 2016 figures as summarised in secondary sources. The Part and clause numbers were not read in the code, and no clause number is given. They are advisory and change no quantity.
- A clause or item number given here for IS 4021, IS 3067, IS 303 or a CPWD analysis-of-rates item is a pointer to check, not a quotation. Such numbers are as given in the tool's research notes and were not re-read against the published text. The clause numbers of IS 1003 (Part 1) Table 3 and cl. 8.2 were read.
- Hardware is one set to a door; glazed balcony doors are given none. Drawers, channels, cabinet locks, grills and nets are not counted.
- The sheet is quantities only: no rates, no labour, no cost. The state and city do not change any quantity. Figures are carried at full precision and shown rounded, so re-keying the printed numbers can differ in the last digit.

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# 1. Your answers and the building

## Your answers

| QUESTION | YOUR ANSWER |
|---|---|
| **Building** | A house |
| **Floors** | Ground floor and 1 above |
| **Built-up area of each floor** | 1,000, 1,000 sq ft |
| **Bedrooms in the house** | 3 |
| **Bathrooms in the house** | 3 |
| **Kitchens in the house** | 1 |
| **Balconies in the house** | 1 |
| **Floor to floor height** | 3.00 m |
| **Paint inside** | Standard: putty, primer and emulsion |
| **Paint outside** | Smooth acrylic exterior emulsion, 2 coats over exterior primer |
| **False ceiling** | None |
| **Floor tile** | 600 × 600 mm, laid straight, fixed with a mortar bed |
| **Bathroom wall tiles** | To the door height |
| **Kitchen** | L shape, counter only |
| **Built-in wardrobes** | None |
| **State and city** | Lucknow, Uttar Pradesh |

## Heights and units

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Floor to floor height** | | | **3.00 m** | Your answer |
| **Thickness of a floor slab**<br>Taken for every floor and for the terrace slab | | | **0.15 m** | NirmanShastra assumption |
| **Clear height of a room**<br>Floor to the underside of the slab above. Wall paint and plaster use this height. | Hc = H − slab | 3.00 − 0.15 | **2.85 m** | Engine rule |
| **Square feet to square metres** | | | **0.09290304 m² per sq ft** | Definition: 1 ft = 0.3048 m, so 1 sq ft = 0.3048 × 0.3048 m² |

## Floor areas and rooms on each floor

Area in m² = area in sq ft × 0.09290304.

| FLOOR | BUILT-UP (SQ FT) | BUILT-UP (M²) | HOMES | BEDROOMS | BATHROOMS | KITCHENS | BALCONIES ON THE FLOOR |
|---|---|---|---|---|---|---|---|
| **Ground floor** | 1,000 | 92.90 | 1 | 2 | 2 | 1 | 0 |
| **First floor** | 1,000 | 92.90 | 1 | 1 | 1 | 0 | 1 |

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# 2. The room plan

Rooms are not measured from a drawing. The plan below is what the tool assumes, and everything after it follows from it.

## Room plan, worked for the ground floor (92.9 m²)

No drawing is read. Each floor is shared out among its rooms in proportion to a weight for each kind of room. These weights are the tool's own assumption, the same ones MasonryPro uses, so both reports measure the same walls.

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Outer wall, all round the floor**<br>The wall round a plan whose sides are in the ratio 1 to 1.5 is 2 × (1 + 1.5) ÷ √1.5 = 4.0825 √A. InteriorPro uses 4.082. | P = 4.082 × √A | 4.082 × √92.90 | **39.34 m** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Rooms in one home on this floor** | | | **2 bedrooms, 2 bathrooms, 1 kitchen, 1 living room** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Weight of the living room**<br>Ground floor and flats. On the upper floors of a house the weight is 0.9 + 0.2 × bedrooms. | wL = 1.3 + 0.3 × bedrooms | 1.3 + 0.3 × 2 | **1.90** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Weight of the passages** | wP = 0.45 + 0.08 × (bedrooms + bathrooms + kitchens) | 0.45 + 0.08 × (2 + 2 + 1) | **0.85** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Total weight of one home** | Σw = bedrooms × 1.0 + wL + kitchens × 0.75 + bathrooms × 0.33 + wP | 2 × 1 + 1.90 + 1 × 0.75 + 2 × 0.33 + 0.85 | **6.160** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Inner walls, as found by the plan**<br>Inner wall = (the wall round all the rooms − the outer wall) ÷ 2, less the walls between flats. Room sizes depend on it and it depends on room sizes, so the plan repeats the working four times, starting from a floor area of 0.88 A. | | | **28.03 m** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Floor area inside the walls**<br>Walls are taken as 230 mm outside and 115 mm inside. | net = A − P × 0.23 − Lint × 0.115 − Lp × 0.23 (not less than 0.6 A) | A − 39.34 × 0.23 − 28.03 × 0.115 − 0.00 × 0.23 | **80.63 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Floor area for one unit of weight** | u = (net − lobby) ÷ homes ÷ Σw | (80.63 − 0.00) ÷ 1 ÷ 6.160 | **13.089 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **One bedroom** | a = u × 1.0 | 13.089 × 1 | **13.09 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **The living room** | a = u × wL | 13.089 × 1.90 | **24.87 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **One kitchen** | a = u × 0.75 | 13.089 × 0.75 | **9.82 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |

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| | | | | |
|---|---|---|---|---|
| **One bathroom** | a = u × 0.33 | 13.089 × 0.33 | **4.32 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **The passages, all together** | a = u × wP | 13.089 × 0.85 | **11.13 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |

## Room plan, every floor

| FLOOR | OUTER WALL (M) | INSIDE AREA (M²) | BEDROOM (M²) | LIVING ROOM (M²) | KITCHEN (M²) | BATHROOM (M²) | PASSAGES (M²) | LOBBY (M²) |
|---|---|---|---|---|---|---|---|---|
| **Ground floor** | 39.34 | 80.63 | 13.09 | 24.87 | 9.82 | 4.32 | 11.13 | – |
| **First floor** | 39.34 | 81.79 | 26.91 | 29.60 | 20.18 | 8.88 | 16.41 | – |

## One bedroom, measured as an example (ground floor)

The report adds up every room in the building the same way, so this one room shows the whole method. The totals below are what the report uses.

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Floor area of the bedroom**<br>From the room plan above | | | **13.09 m²** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Wall round the bedroom**<br>Each room is taken as a rectangle whose long side is 1.3 times the short side. | p = 2 (1 + r) ÷ √r × √a | 2 × (1 + 1.3) ÷ √1.3 × √13.09 | **14.60 m** | NirmanShastra assumption (room plan shared with MasonryPro) |
| **Wall, floor to slab** | p × Hc | 14.596 × 2.850 | **41.60 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |
| **Door taken out (once)**<br>A door of 0.5 to 3 m² between two painted rooms is taken out once. | width × height | 0.9 × 2.1 | **1.89 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Window taken out (half)**<br>Half comes off the inside and half off the outside, because the finish differs. | 0.5 × width × height | 0.5 × 1.5 × 1.2 | **0.90 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Wall to be painted** | wall – door – window | 41.60 – 1.89 – 0.90 | **38.81 m²** | |
| **Ceiling to be painted** | ceiling = floor area | 13.09 | **13.09 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |
| **Floor to be tiled**<br>Measured before the skirting goes on. | floor = floor area | 13.09 | **13.09 m²** | IS 1200 (Part 11):1977 (a 2024 revision exists; not checked) |
| **Skirting round the bedroom**<br>Taken out twice because the skirting is broken on both sides of the door (the bedroom and the room it opens into). | p – 2 door widths | 14.60 – 2 × 0.9 | **12.80 m** | IS 1200 (Part 11):1977 (a 2024 revision exists; not checked) |
| **Tile for the skirting**<br>The skirting is cut from the floor tile: 100 mm high, 10% extra for cutting. | length × height × 1.10 | 12.80 × 0.10 × 1.10 | **1.408 m²** | Engine rule |

## Rooms and their walls, every floor

| FLOOR | ROOM | NUMBER | AREA OF ONE (M²) | WALL ROUND ONE (M) | TOTAL AREA (M²) | TOTAL WALL (M) |
|---|---|---|---|---|---|---|
| **Ground floor** | Bedrooms | 2 | 13.09 | 14.60 | 26.18 | 29.19 |
| **Ground floor** | Living rooms | 1 | 24.87 | 20.12 | 24.87 | 20.12 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| **Ground floor** | Kitchens | 1 | 9.82 | 12.64 | 9.82 | 12.64 |
| **Ground floor** | Bathrooms | 2 | 4.32 | 8.38 | 8.64 | 16.77 |
| **Ground floor** | Passages | 1 | 11.13 | 16.68 | 11.13 | 16.68 |
| **First floor** | Bedrooms | 1 | 26.91 | 20.93 | 26.91 | 20.93 |
| **First floor** | Living rooms | 1 | 29.60 | 21.95 | 29.60 | 21.95 |
| **First floor** | Kitchens | 0 | 20.18 | 18.12 | 0.00 | 0.00 |
| **First floor** | Bathrooms | 1 | 8.88 | 12.02 | 8.88 | 12.02 |
| **First floor** | Passages | 1 | 16.41 | 20.26 | 16.41 | 20.26 |

## Room totals, whole building

| ROOM | NUMBER | FLOOR AREA (M²) | WALL LENGTH (M) |
|---|---|---|---|
| **Bedrooms** | 3 | 53.08 | 50.12 |
| **Living rooms** | 2 | 54.47 | 42.07 |
| **Kitchens** | 1 | 9.82 | 12.64 |
| **Bathrooms** | 3 | 17.52 | 28.79 |
| **Passages** | – | 27.54 | 36.93 |
| **Stair lobbies** | – | 0.00 | 0.00 |

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# 3. Openings

## Doors and windows counted from the rooms

| OPENING | SIZE (M) | AREA OF ONE (M²) | HOW MANY ARE COUNTED | NUMBER |
|---|---|---|---|---|
| **Main door** | 1.00 × 2.10 | 2.10 | One, on the ground floor | 1 |
| **Room door** | 0.90 × 2.10 | 1.89 | One to each bedroom and each kitchen | 4 |
| **Bathroom door** | 0.80 × 2.10 | 1.68 | One to each bathroom | 3 |
| **Door of the terrace stair room** | 0.90 × 2.10 | 1.89 | One, if the building has two floors or more | 1 |
| **Balcony door, glazed** | 1.20 × 2.10 | 2.52 | One to each balcony | 1 |
| **Bedroom window** | 1.50 × 1.20 | 1.80 | One to each bedroom | 3 |
| **Living room window** | 1.80 × 1.20 | 2.16 | Two to a living room on the ground floor or in a flat, one on the upper floors of a house | 3 |
| **Kitchen window** | 1.20 × 1.20 | 1.44 | One to each kitchen | 1 |
| **Stair window** | 1.20 × 1.20 | 1.44 | One on each floor, if the building has two floors or more | 2 |
| **Bathroom ventilator** | 0.60 × 0.45 | 0.27 | One to each bathroom | 3 |

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# 4. Surfaces measured

Measured following the rules of IS 1200 as the tool reads them (editions named in the references; the 2024 revisions have not been checked): openings up to 0.5 m² are not taken out; from 0.5 m² to 3 m², one face is taken out (a door between two painted rooms once, a window or an outer door half from each face because the finish differs). Plaster is not here: it belongs to MasonryPro.

## Walls of the rooms and passages

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Walls, before openings**<br>Every room is measured round its own walls, so a wall between two rooms is counted once for each face, as it is painted on both. Bathrooms are done separately. | Walls = (bedrooms + living rooms + kitchens + passages + lobby wall) × Hc | (50.12 + 42.07 + 12.64 + 36.93 + 0.00) × 2.850 | **404.0 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |
| **Room doors taken out**<br>Each is 0.5 to 3 m² and has the same finish on both faces, so one face is taken out. | doors × width × height | 4 × (0.9 × 2.1) | **7.56 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Main doors taken out**<br>The finish differs inside and outside, so half comes off each face. | doors × width × height × share | 1 × (1 × 2.1) × 0.5 | **1.05 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Windows and balcony doors taken out (inside half)**<br>Different finishes inside and outside, equal reveals: half of the opening comes off each face. | 0.5 × Σ number × area | 0.5 × (3 × 1.80 + 3 × 2.16 + 1 × 1.44 + 2 × 1.44 + 1 × 2.52) | **9.36 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Tiled wall above the kitchen counter**<br>Counter run and 0.6 m of tile above it; this wall is tiled, not painted. | kitchens × run × height | 1 × 4.2 × 0.6 | **2.52 m²** | NirmanShastra assumption |
| **Total taken out of the walls** | doors + windows + tiled wall | 7.56 + 1.05 + 9.36 + 2.52 | **20.49 m²** | |
| **Walls to be painted** | gross − taken out (not below zero) | larger of 0 and (404.0 − 20.5) | **383.5 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |

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## Bathroom walls: the tiled part and the painted part

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Height of the bathroom wall tiling**<br>To the door height (2.1 m) | | | **2.1 m** | NirmanShastra assumption |
| **Bathroom wall tiles**<br>A dado is measured in square metres. | wall length × tiling height − door × width × lower of door height and tiling height | larger of 0 and (28.8 × 2.1 − 3 × 0.8 × lower of 2.1 and 2.1) | **55.4 m²** | IS 1200 (Part 11):1977 (a 2024 revision exists; not checked) |
| **Bathroom wall above the tiles** | wall length × (Hc − tiling height) | 28.8 × (2.85 − 2.1) | **21.6 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |
| **Door taken out above the tiles** | doors × width × (door height − tiling height, not below zero) | 3 × 0.8 × larger of 0 and (2.1 − 2.1) | **0.0 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Bathroom walls to be painted** | above − door | larger of 0 and (21.6 − 0.0) | **21.6 m²** | |

## Ceilings and the whole inside

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **All inside walls to be painted** | rooms + bathrooms | 383.5 + 21.6 | **405.1 m²** | |
| **Ceilings**<br>Painted whether the ceiling is the slab or a false ceiling board. Nothing is taken out. | sum of every room floor area | 53.1 + 54.5 + 9.8 + 17.5 + 27.5 + 0.0 | **162.4 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |
| **Inside area to be painted** | walls + ceilings | 405.13 + 162.43 | **567.6 m²** | |

## Outside of the building

Measured from the plinth to the top of the parapet.

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Outer face of the walls**<br>The plinth shows 0.45 m above the ground. The stair room on the terrace has 12 m of wall, 2.4 m high plus the slab (0.15 m). | Σ (outer wall × H) + plinth + stair room | 236.07 + 39.34 × 0.45 + 30.6 | **284.4 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |
| **Parapet, both faces and top**<br>A parapet 1.0 m high and 115 mm thick. | top outer wall × (2 × height + thickness) | 39.34 × (2 × 1 + 0.115) | **83.2 m²** | NirmanShastra assumption |
| **Balcony edges and railing walls**<br>Each balcony is taken as 6.0 m of edge with a 1.0 m wall. | balconies × edge × (2 × height + thickness) | 1 × 6 × (2 × 1 + 0.115) | **12.7 m²** | NirmanShastra assumption |
| **Underside of the balconies**<br>Each balcony is taken as 4.5 m². | balconies × area | 1 × 4.5 | **4.5 m²** | NirmanShastra assumption |
| **Windows and outer doors taken out (outside half)**<br>The other half was taken off the inside. A flat main door opens to the lobby and is not taken from the outside. | 0.5 × Σ number × area, with the main door of a house | 0.5 × (3 × 1.80 + 3 × 2.16 + 1 × 1.44 + 2 × 1.44 + 1 × 2.52 + 1 × 2.10) | **10.41 m²** | IS 1200 (Part 13):1994, rules for deduction of openings (a 2024 revision exists; not checked) |
| **Outside, before openings** | faces + parapet + balcony edges + balcony undersides | 284.4 + 83.2 + 12.7 + 4.5 | **384.8 m²** | |
| **Outside to be painted** | gross − taken out (not below zero) | larger of 0 and (384.8 − 10.41) | **374.4 m²** | IS 1200 (Part 13):1994 (a 2024 revision exists; not checked) |

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| FLOOR | OUTER WALL (M) | FLOOR TO FLOOR (M) | OUTER FACE (M²) |
|---|---|---|---|
| **Ground floor** | 39.34 | 3.00 | 118.03 |
| **First floor** | 39.34 | 3.00 | 118.03 |
| **All floors** | | | **236.07** |

## Doors, both faces

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Doors counted** | main + room + bathroom + stair room | 1 + 4 + 3 + 1 | **9** | |
| **Door shutters, one face**<br>The size of the opening is used for the shutter. | Σ number × width × height | 1 × 2.10 + 4 × 1.89 + 3 × 1.68 + 1 × 1.89 | **16.59 m²** | IS 1003 (Part 1):2003 Table 3 (designations) |
| **Doors to be painted, both faces**<br>Frames are painted with the shutters and are not measured separately. | 2 × shutters | 2 × 16.59 | **33.2 m²** | Engine rule |

## Floors to be tiled

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Floors of living rooms, bedrooms, kitchens and passages**<br>Measured before the skirting and dado go on. Bathroom floors and balconies are tiled in a smaller tile and are counted below. | sum of the floor areas | 53.1 + 54.5 + 9.8 + 27.5 + 0.0 | **144.9 m²** | IS 1200 (Part 11):1977 (a 2024 revision exists; not checked) |
| **Balcony floors** | balconies × area | 1 × 4.5 | **4.5 m²** | NirmanShastra assumption |
| **Floors to be tiled, in all** | rooms + bathrooms + balconies | 144.9 + 17.5 + 4.5 | **166.9 m²** | IS 1200 (Part 11):1977 (a 2024 revision exists; not checked) |

## The surfaces, as listed in the report

These are the results of the steps above, set out as in the report table "Surfaces, measured".

| SURFACE | MEASURED (M²) | TAKEN OUT (M²) | NET (M²) |
|---|---|---|---|
| **Walls in rooms and passages** | 404.0 | 20.5 | 383.5 |
| **Bathroom walls above the tiles** | 21.6 | 0.0 | 21.6 |
| **Ceilings, inside** | 162.4 | 0.0 | 162.4 |
| **Outside of the building** | 384.8 | 10.4 | 374.4 |
| **Doors, both faces** | 33.2 | 0.0 | 33.2 |
| **Bathroom wall tiles** | 60.5 | 5.0 | 55.4 |
| **Kitchen wall above the counter, tiles** | 2.5 | 0.0 | 2.5 |
| **Floors to be tiled** | 166.9 | 0.0 | 166.9 |

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# 5. Floor and wall tiles, skirting, fixing and grout

Floors are measured before the skirting and dado go on (IS 1200 Part 11, 1977 edition; a 2024 revision exists and has not been checked). Pieces are counted from the size of the tile plus its joint.

## Pieces to the square metre

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Tiles in one square metre (floor tile)**<br>Lengths in metres. Each tile takes its own size plus one joint in each direction. | n = 1 ÷ ((L + J) × (W + J)) | 1 ÷ ((0.6 + 0.002) × (0.6 + 0.002)) | **2.759 tiles** | Derived: arithmetic shown |

## Sizes of the tiles used

| TILE | LENGTH (MM) | WIDTH (MM) | JOINT (MM) | THICKNESS (MM) | TILES IN 1 M² |
|---|---|---|---|---|---|
| **600 × 600 mm** | 600 | 600 | 2.0 | 9.0 | 2.76 |
| **300 × 300 mm** | 300 | 300 | 3.0 | 8.0 | 10.89 |
| **300 × 600 mm** | 300 | 600 | 2.0 | 8.0 | 5.50 |

## Skirting

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Skirting, running metres**<br>Skirting is measured in running metres. Each bedroom door is taken out twice (the skirting is broken on both sides of it), each kitchen, bathroom, main and balcony door once. Kitchen and bathroom walls are tiled to a height, so they carry no skirting. | wall round bedrooms, living rooms, passages and lobby – door widths | larger of 0 and (50.1 + 42.1 + 36.9 + 0.0 – (2 × 3 × 0.9 + 1 × 0.9 + 3 × 0.8 + 1 × 1 + 1 × 1.2)) | **118.2 m** | IS 1200 (Part 11):1977 (a 2024 revision exists; not checked) |
| **Tile for the skirting**<br>Skirting is 100 mm high and cut from the floor tile; 10% is allowed for cutting. | length × height × (1 + cutting) | 118.2 × 0.1 × 1.1 | **13.00 m²** | NirmanShastra assumption |

## Tile area and pieces, use by use

The first use is worked in full; the rest follow the same steps and are in the table.

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Floor tile, net area** | floors of rooms + skirting | 144.9 + 13.00 | **157.9 m²** | |
| **Allowance for breakage and cutting**<br>No standard fixes it. Straight laying 5%, diagonal 10%; large tiles (800 × 800, 600 × 1200) 5 points more; 10% in bathrooms, on balconies and for the kitchen wall. | by layout, tile size and room size | | **5%** | NirmanShastra assumption |
| **Floor tile to buy** | net × (1 + allowance) | 157.9 × (1 + 0.05) | **165.8 m²** | |
| **Floor tile, pieces** | pieces = whole number above (area to buy × tiles in 1 m²) | next whole number above 165.8 × 2.759 | **458 tiles** | Derived: arithmetic shown |

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| USE | TILE | NET AREA (M²) | EXTRA | TO BUY (M²) | PIECES |
|---|---|---|---|---|---|
| **Floors of rooms, with skirting** | 600 × 600 mm | 157.9 | 5% | 165.8 | 458 |
| **Bathroom floors** | 300 × 300 mm | 17.5 | 10% | 19.3 | 210 |
| **Balcony floors** | 300 × 300 mm | 4.5 | 10% | 5.0 | 54 |
| **Bathroom walls** | 300 × 600 mm | 55.4 | 10% | 61.0 | 336 |
| **Kitchen wall above the counter** | 300 × 600 mm | 2.5 | 10% | 2.8 | 16 |

## Tiles to order, by size

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Tiles to buy, all sizes** | sum of the area to buy of each size | 165.81 + 24.22 + 63.74 | **253.8 m²** | |

| TILE | NET (M²) | TO BUY (M²) | PIECES | IN A BOX | BOXES |
|---|---|---|---|---|---|
| **600 × 600 mm** | 157.9 | 165.8 | 458 | 4 pieces, 1.44 m² | 115 |
| **300 × 300 mm** | 22.0 | 24.2 | 264 | Not in the data read | – |
| **300 × 600 mm** | 57.9 | 63.7 | 351 | 5 pieces, 0.90 m² | 71 |

## Fixing: mortar bed and slurry

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| Area fixed on the floor bed | rooms + bathrooms + balconies | 144.9 + 17.5 + 4.5 | **166.9 m²** | |
| Area fixed on the wall bed | bathroom walls + kitchen wall + skirting | 55.4 + 2.5 + 13.00 | **70.9 m²** | |
| Cement for the bed and slurry<br>The kilograms of cement in the bed and slurry for one m². | floor × 11.0 + wall × 9.2 | 166.93 × 11 + 70.95 × 9.2 | **2,489 kg** | CPWD item text as quoted in public tenders (20 mm bed of 1:4 mortar on floors, 12 mm of 1:3 on walls, with a cement slurry); cement worked from the DAR yield |
| Sand for the bed | floor × 0.022 + wall × 0.0125 | 166.93 × 0.022 + 70.95 × 0.0125 | **4.56 m³** | CPWD item text as quoted in public tenders |
| Bags of cement | whole bags of 50 kg | next whole number above 2,489 ÷ 50 | **50 bags** | |

## Grout

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Grout in 1 m² of 600 × 600 mm tiling**<br>Joint length in 1 m² × joint width × tile thickness gives the volume of grout; 1.6 kg a litre is the density InteriorPro assumes (1.4 to 1.6). | g = 1.6 × 1000 × (1 ÷ L + 1 ÷ W) × J × T | 1.6 × 1000 × (1 ÷ 0.6 + 1 ÷ 0.6) × 0.002 × 0.009 | **0.096 kg** | Derived: arithmetic shown |
| **Grout, all sizes**<br>Net area of every tile (no breakage), with 10% extra for wastage. The 10% is an assumption. | Σ net area × kg a m² × 1.10 | 16.7 + 6.2 + 8.2 | **31 kg** | Derived: arithmetic shown |

| TILE | NET AREA (M²) | GROUT (KG A M²) | GROUT WITH 10% EXTRA (KG) |
|---|---|---|---|
| **600 × 600 mm** | 157.9 | 0.096 | 16.7 |
| **300 × 300 mm** | 22.0 | 0.256 | 6.2 |
| **300 × 600 mm** | 57.9 | 0.128 | 8.2 |

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# 6. Wet areas and stone

## Bathroom waterproofing, thresholds and the kitchen counter

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Waterproofing coat in the bathrooms**<br>The floor and 0.30 m up the walls. Test by ponding water for 24 hours before tiling. | bathroom floors + wall length × 0.30 | 17.52 + 28.79 × 0.3 | **26.2 m²** | IS 3067:1988 (area only; its scope is basements and roofs, so the coverage is left to the product's data sheet) |
| **Corner fillet and mesh** | wall length of the bathrooms | 28.8 | **28.8 m** | NirmanShastra assumption |
| **Door thresholds, length** | bathroom + main + balcony door widths | 3 × 0.8 + 1 × 1 + 1 × 1.2 | **4.6 m** | NirmanShastra assumption |
| **Door thresholds, number** | bathroom + main + balcony doors | 3 + 1 + 1 | **5** | |
| **Kitchen counter, granite**<br>Counter 0.60 m deep along the kitchen run you chose. | kitchens × run × depth | 1 × 4.2 × 0.6 | **2.52 m²** | NirmanShastra assumption |
| **Granite to buy**<br>10% for cutting and the sink. | counter × (1 + cutting) | 2.52 × 1.1 | **2.8 m²** | NirmanShastra assumption |
| **Counter edge, moulded** | kitchens × run | 1 × 4.2 | **4.2 m** | NirmanShastra assumption |

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# 7. Putty, primer and paint

Putty, primer and paint are counted by the area they cover. Paint area × spread × 1.05 gives what to buy. The number of coats is already inside each spread.

## Painted area

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Painted area, inside and outside**<br>Doors are measured on their own and are not in this total. | inside + outside | 567.55 + 374.37 | **941.9 m²** | |
| **Wastage on putty, primer and paint**<br>No maker or CPWD sheet gives a wastage figure. | quantity = area × spread × (1 + wastage) | | **5%** | NirmanShastra assumption |

## How far each layer spreads, and the coats counted

| LAYER | SPREAD, ALL COATS, A M² | COVERS (M² PER KG OR L) | COVERS (SQ FT PER KG OR L) | COATS | SOURCE |
|---|---|---|---|---|---|
| **Wall putty, cement based** | 0.600 kg | 1.7 | 18 | about 1 mm, in coats as the maker advises | Maker sheet: 10 to 15 sq ft a kg for 1.5 mm in two coats, scaled to 1 mm (0.48 to 0.72 kg a m²) |
| **Primer, inside** | 0.075 L | 13.3 | 144 | one coat | Maker sheet: 130 to 160 sq ft a litre (0.067 to 0.083 L a m²) |
| **Interior emulsion, 2 coats** | 0.090 L | 11.1 | 120 | Cement putty (about 1 mm), one coat of primer, two coats of emulsion | Maker sheets: 0.083 to 0.100 L a m² for two coats |
| **Primer, outside** | 0.095 L | 10.5 | 113 | one coat | Maker sheet, 100 to 120 sq ft a litre; the DAR figure differs (see the report assumptions) |
| **Exterior acrylic emulsion** | 0.167 L | 6.0 | 64 | Smooth acrylic exterior emulsion, 2 coats over exterior primer | CPWD DAR 2016 item 13.46.1 (0.167 L a m²); primer from the maker sheet, 100 to 120 sq ft a litre |
| **Primer, doors** | 0.075 L | 13.3 | 144 | one coat | CPWD DAR 2016 item 13.48.2 |
| **Enamel or multi-surface paint, doors** | 0.090 L | 11.1 | 120 | two coats | CPWD DAR 2016 item 13.50.1 |

## Putty, primer and paint to order

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Wall putty, cement based**<br>Inside walls and ceilings | quantity = area × spread × (1 + wastage) | 567.6 × 0.6 × 1.05 | **357.6 kg** | Makers' data sheets / CPWD DAR 2016 (spread table above) |
| **Primer, inside**<br>Inside walls and ceilings | quantity = area × spread × (1 + wastage) | 567.55 × 0.075 × 1.05 | **44.69 L** | Makers' data sheets / CPWD DAR 2016 (spread table above) |
| **Interior emulsion, 2 coats**<br>Inside walls and ceilings | quantity = area × spread × (1 + wastage) | 567.55 × 0.09 × 1.05 | **53.63 L** | Makers' data sheets / CPWD DAR 2016 (spread table above) |

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| | | | | |
|---|---|---|---|---|
| **Primer, outside**<br>Outside walls | quantity = area × spread × (1 + wastage) | 374.37 × 0.095 × 1.05 | **37.34 L** | Makers' data sheets / CPWD DAR 2016 (spread table above) |
| **Exterior acrylic emulsion**<br>Outside walls | quantity = area × spread × (1 + wastage) | 374.4 × 0.167 × 1.05 | **65.65 L** | Makers' data sheets / CPWD DAR 2016 (spread table above) |
| **Primer, doors**<br>Doors, both faces | quantity = area × spread × (1 + wastage) | 33.2 × 0.075 × 1.05 | **2.61 L** | Makers' data sheets / CPWD DAR 2016 (spread table above) |
| **Enamel or multi-surface paint, doors**<br>Doors, both faces | quantity = area × spread × (1 + wastage) | 33.2 × 0.09 × 1.05 | **3.14 L** | Makers' data sheets / CPWD DAR 2016 (spread table above) |

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# 8. Doors, windows, frames and hardware

Sizes and counts are assumptions; the door designations are those of IS 1003 (Part 1). The shutter area is that of the whole opening, and the hinges follow the width of the opening (see the notes under the door table).

## Doors and their frames

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Timber frame of one room door**<br>Two sides and the head, with a 100 mm horn at each top corner, in a section of 100 × 65 mm. IS 4021, which fixes frame sections, could not be read, so the section is an assumption. This is the net volume of the frame: no allowance is added for converting rough timber (sawing, planing and waste). | V = (2 × height + width + 2 × horn) × section width × section depth | (2 × 2.1 + 0.9 + 2 × 0.1) × 0.1 × 0.065 | **0.0345 m³** | NirmanShastra assumption |
| **Hinges on one room door**<br>Applied here to the width of the opening; the standard speaks of the width of the shutter. A 900 mm shutter takes three hinges, so the main door (1.00 m opening, 10 DS 21) is given 4 here, one more than the standard would give its 900 mm shutter. The report keeps the count of 4. | three up to 0.9 m wide, four above | 0.9 m wide, so 3 | **3** | IS 1003 (Part 1):2003 cl. 8.2 |

| DOOR | SIZE (M) | SHUTTER | NUMBER | SHUTTERS (M²) | FRAME TIMBER (M³) | HINGES ON ONE | HINGES |
|---|---|---|---|---|---|---|---|
| **Main door** | 1.00 × 2.10 | 10 DS 21 | 1 | 2.1 | 0.035 | 4 | 4 |
| **Room door** | 0.90 × 2.10 | 9 DS 21 | 4 | 7.6 | 0.138 | 3 | 12 |
| **Bathroom door** | 0.80 × 2.10 | 8 DS 21 | 3 | 5.0 | 0.101 | 3 | 9 |
| **Door of the terrace stair room** | 0.90 × 2.10 | 9 DS 21 | 1 | 1.9 | 0.034 | 3 | 3 |
| **All doors** | | | **9** | **16.6** | **0.309** | | **28** |

## Windows, ventilators and glazed doors

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Glass in one bedroom window**<br>Glass is 80% of the opening, in 4 to 5.5 mm, with 5% for cutting. | area × glass share × (1 + cutting) | 1.5 × 1.2 × 0.8 × 1.05 | **1.512 m²** | NirmanShastra assumption |
| **Outer frame of the window** | 2 × (width + height) | 2 × (1.5 + 1.2) | **5.40 m** | NirmanShastra assumption |
| **Sashes of the window**<br>One pane up to 0.9 m wide, two above. A ventilator is a fixed louvre with no sash. | panes × 2 × (height − 0.1 + width ÷ panes) | 2 × 2 × (1.2 − 0.1 + 1.5 ÷ 2) | **7.40 m** | NirmanShastra assumption |
| **Aluminium or uPVC sections in one bedroom window** | frame + sashes | 5.40 + 7.40 | **12.80 m** | |

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| OPENING | SIZE (M) | NUMBER | GLASS (M²) | SECTIONS (M) |
|---|---|---|---|---|
| **Balcony door, glazed** | 1.20 × 2.10 | 1 | 2.1 | 17.0 |
| **Bedroom window** | 1.50 × 1.20 | 3 | 4.5 | 38.4 |
| **Living room window** | 1.80 × 1.20 | 3 | 5.4 | 42.0 |
| **Kitchen window** | 1.20 × 1.20 | 1 | 1.2 | 11.6 |
| **Stair window** | 1.20 × 1.20 | 2 | 2.4 | 23.2 |
| **Bathroom ventilator** | 0.60 × 0.45 | 3 | 0.7 | 6.3 |
| **All windows and glazed doors** | | **13** | **16.4** | **138.5** |

## Door hardware

Hinges are the total of the door table. The rest follow one set to a door.

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Lock sets**<br>One for the main door and one for every bedroom | main doors + bedrooms | 1 + 3 | **4** | NirmanShastra assumption |
| **Tower bolts** | 2 × main doors + bathroom doors | 2 × 1 + 3 | **5** | NirmanShastra assumption |
| **Handle pairs**<br>Glazed balcony doors are not given hardware in this count. | one for every door | 9 | **9** | NirmanShastra assumption |
| **Door stoppers** | one for every door | 9 | **9** | NirmanShastra assumption |

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# 9. The buy list

## What to order, and how each figure was rounded

| ITEM | WORKED OUT AS | ROUNDED | TO ORDER | UNIT |
|---|---|---|---|---|
| **Wall putty, cement based** | 357.6 kg | Up to the next multiple of 5 kg | 360 | kg |
| **Primer, inside** | 44.69 L | Next whole number above | 45 | L |
| **Interior emulsion, 2 coats** | 53.63 L | Next whole number above | 54 | L |
| **Primer, outside** | 37.34 L | Next whole number above | 38 | L |
| **Exterior acrylic emulsion** | 65.65 L | Next whole number above | 66 | L |
| **Primer for doors** | 2.61 L | Next whole number above | 3 | L |
| **Enamel for doors** | 3.14 L | Next whole number above | 4 | L |
| **Tile 600 × 600 mm** | 165.8 m² | Pieces worked out in section 5 | 458 | nos |
| **Tile 300 × 300 mm** | 24.2 m² | Pieces worked out in section 5 | 264 | nos |
| **Tile 300 × 600 mm** | 63.7 m² | Pieces worked out in section 5 | 351 | nos |
| **Cement** | see section 5 | Whole bags of 50 kg | 50 | bags of 50 kg |
| **Sand** | 4.56 m³ | Rounded to 0.1 m³ | 4.6 | m³ |
| **Tile grout** | 31.0 kg | Next whole number above | 32 | kg |
| **Waterproofing coat, bathrooms** | 26.16 m² | Rounded to 0.1 m² | 26.2 | m² |
| **Kitchen counter, granite** | 2.77 m² | Rounded to 0.1 m² | 2.8 | m² |
| **Counter edge, moulded** | 4.20 m | Rounded to 0.1 m | 4.2 | m |
| **Door thresholds** | 4.60 m | Rounded to 0.1 m | 4.6 | m |
| **Main door, 10 DS 21** | counted in section 3 | Whole doors | 1 | nos |
| **Room door, 9 DS 21** | counted in section 3 | Whole doors | 4 | nos |
| **Bathroom door, 8 DS 21** | counted in section 3 | Whole doors | 3 | nos |
| **Door of the terrace stair room, 9 DS 21** | counted in section 3 | Whole doors | 1 | nos |
| **Door frame timber** | 0.309 m³ | Rounded to 0.01 m³ | 0.31 | m³ |
| **Door hinges** | see section 8 | Whole numbers | 28 | nos |
| **Lock sets** | see section 8 | Whole numbers | 4 | nos |
| **Tower bolts** | see section 8 | Whole numbers | 5 | nos |
| **Handle pairs** | see section 8 | One pair to a door | 9 | pairs |
| **Door stoppers** | see section 8 | One to a door | 9 | nos |
| **Window glass, 4 to 5.5 mm** | 16.41 m² | Rounded to 0.1 m² | 16.4 | m² |
| **Window and sash sections** | 138.50 m | Next whole number above | 139 | m |

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# 10. Room and window sizes quoted in the report

The report checks the kitchen, the bathroom and the windows against usual minimums. The sizes it quotes are worked out here.

## Room sizes and window sizes quoted in the report

| STEP | FORMULA | WORKING | RESULT | SOURCE |
|---|---|---|---|---|
| **Average kitchen** | kitchen floor area ÷ number of kitchens | 9.82 ÷ 1 | **9.8 m²** | Derived: arithmetic shown |
| **Average bathroom** | bathroom floor area ÷ number of bathrooms | 17.52 ÷ 3 | **5.8 m²** | Derived: arithmetic shown |
| **Average bedroom** | bedroom floor area ÷ number of bedrooms | 53.08 ÷ 3 | **17.7 m²** | Derived: arithmetic shown |
| **Average living room** | living room floor area ÷ number of living rooms | 54.47 ÷ 2 | **27.2 m²** | Derived: arithmetic shown |
| **Windows in a living room** | living room windows ÷ living rooms | 3 ÷ 2 | **1.50** | Engine rule |
| **Bedroom window against the room** | window area ÷ room area | 1.80 ÷ 17.69 | **0.102** | Derived: arithmetic shown |
| **Living room windows against the room** | windows per room × window area ÷ room area | 1.50 × 2.16 ÷ 27.23 | **0.119** | Derived: arithmetic shown |
| **Kitchen and bathroom against the usual minimum** Advisory only; it does not change a quantity. | kitchen ≥ 5 m², bathroom with WC ≥ 2.8 m² | | **Both reach the minimum** | NBC 2016 Part 3, as summarised in secondary sources; clause numbers not given |
| **Windows against the floor area** Advisory only; it does not change a quantity. | window area ≥ 10% of the floor area | | **Both reach a tenth** | NBC 2016 Part 8, as summarised in secondary sources; clause numbers not given |

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# 11. How far off the figures can be

The ranges and bands are planning judgement. They are not statistics from measured buildings.

## Likely range under each total

| TOTAL IN THE REPORT | FIGURE | LOW × | HIGH × | LIKELY RANGE |
|---|---|---|---|---|
| **Painted area** | 942 m² | 0.85 | 1.2 | 801 to 1,130 m² |
| **Tiles** | 254 m² | 0.9 | 1.15 | 228 to 292 m² |
| **Doors and windows** | 22 nos | 0.85 | 1.25 | 19 to 28 nos |
| **Window glass** | 16 m² | 0.8 | 1.3 | 13 to 21 m² |

## Bands for each class of figure

| CLASS OF FIGURE | LOW × | HIGH × | BELOW (%) | ABOVE (%) | WHAT IT ALLOWS FOR |
|---|---|---|---|---|---|
| **Painted area** | 0.85 | 1.2 | 15 | 20 | Wall lengths come from the room plan, not from your drawings. |
| **Putty, primer and paint** | 0.7 | 1.35 | 30 | 35 | Spread varies with brand, wall roughness and how it is applied; an emulsion alone is 0.063 to 0.138 L a m² for two coats in the makers' sheets. |
| **Tiles** | 0.9 | 1.15 | 10 | 15 | Room sizes from the plan, the layout and breakage on site. |
| **Mortar, adhesive and grout** | 0.65 | 1.3 | 35 | 30 | Bed thickness and joint width vary on site. |
| **False ceiling** | 0.85 | 1.2 | 15 | 20 | Rooms and ceiling heights follow the room plan. |
| **Doors and windows** | 0.85 | 1.25 | 15 | 25 | Counts and sizes are the tool's typical ones. |
| **Plywood and laminate** | 0.7 | 1.4 | 30 | 40 | Layout of the units differs from the geometry assumed. |

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# Reconciliation: the report against this sheet

The totals printed in the report, rebuilt from the working above. Every row must read the same on both sides. This shows that the report and this sheet agree with each other, which is a check of the arithmetic; it does not show that either one is right against a standard or against your site.

| ITEM | IN THE REPORT | FROM THIS SHEET | MATCH |
|---|---|---|---|
| Surface, net: Walls in rooms and passages | 383.5 m² | 383.5 m² | Yes |
| Surface, net: Bathroom walls above the tiles | 21.6 m² | 21.6 m² | Yes |
| Surface, net: Ceilings, inside | 162.4 m² | 162.4 m² | Yes |
| Surface, net: Outside of the building | 374.4 m² | 374.4 m² | Yes |
| Surface, net: Doors, both faces | 33.2 m² | 33.2 m² | Yes |
| Surface, net: Bathroom wall tiles | 55.4 m² | 55.4 m² | Yes |
| Surface, net: Kitchen wall above the counter, tiles | 2.5 m² | 2.5 m² | Yes |
| Surface, net: Floors to be tiled | 166.9 m² | 166.9 m² | Yes |
| Tiles to buy, Floors of rooms, with skirting | 165.8 m² | 165.8 m² | Yes |
| Tile pieces, Floors of rooms, with skirting | 458 nos | 458 nos | Yes |
| Tiles to buy, Bathroom floors | 19.3 m² | 19.3 m² | Yes |
| Tile pieces, Bathroom floors | 210 nos | 210 nos | Yes |
| Tiles to buy, Balcony floors | 5.0 m² | 5.0 m² | Yes |
| Tile pieces, Balcony floors | 54 nos | 54 nos | Yes |
| Tiles to buy, Bathroom walls | 61.0 m² | 61.0 m² | Yes |
| Tile pieces, Bathroom walls | 336 nos | 336 nos | Yes |
| Tiles to buy, Kitchen wall above the counter | 2.8 m² | 2.8 m² | Yes |
| Tile pieces, Kitchen wall above the counter | 16 nos | 16 nos | Yes |
| Tiles to order, 600 × 600 mm: pieces | 458 nos | 458 nos | Yes |
| Tiles to order, 600 × 600 mm: boxes | 115 boxes | 115 boxes | Yes |
| Tiles to order, 300 × 300 mm: pieces | 264 nos | 264 nos | Yes |
| Tiles to order, 300 × 600 mm: pieces | 351 nos | 351 nos | Yes |
| Tiles to order, 300 × 600 mm: boxes | 71 boxes | 71 boxes | Yes |
| Fixing and wet areas: Cement for the bed | 2,489 kg | 2,489 kg | Yes |
| Fixing and wet areas: Sand for the bed | 4.56 m³ | 4.56 m³ | Yes |
| Fixing and wet areas: Grout | 31 kg | 31 kg | Yes |
| Fixing and wet areas: Skirting | 118.2 m | 118.2 m | Yes |
| Fixing and wet areas: Waterproofing coat | 26.2 m² | 26.2 m² | Yes |
| Fixing and wet areas: Corner fillet and mesh | 28.8 m | 28.8 m | Yes |
| Stone: Door thresholds | 5 nos | 5 nos | Yes |
| Stone: Kitchen counter, granite | 2.8 m² | 2.8 m² | Yes |
| Stone: Counter edge | 4.2 m | 4.2 m | Yes |
| Paint: Wall putty, cement based | 358 kg | 358 kg | Yes |
| Paint: Primer, inside | 45 L | 45 L | Yes |

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| | | | |
|---|---|---|---|
| Paint: Interior emulsion, 2 coats | 54 L | 54 L | Yes |
| Paint: Primer, outside | 37 L | 37 L | Yes |
| Paint: Exterior acrylic emulsion | 66 L | 66 L | Yes |
| Paint: Primer, doors | 3 L | 3 L | Yes |
| Paint: Enamel or multi-surface paint, doors | 3 L | 3 L | Yes |
| Doors: number | 9 nos | 9 nos | Yes |
| Doors: shutter area | 16.6 m² | 16.6 m² | Yes |
| Doors: frame timber | 0.309 m³ | 0.309 m³ | Yes |
| Doors: hinges | 28 nos | 28 nos | Yes |
| Windows and glazed doors: number | 13 nos | 13 nos | Yes |
| Windows and glazed doors: glass | 16.4 m² | 16.4 m² | Yes |
| Windows and glazed doors: sections | 138.5 m | 138.5 m | Yes |
| Hardware: Door hinges | 28 nos | 28 nos | Yes |
| Hardware: Lock sets | 4 nos | 4 nos | Yes |
| Hardware: Tower bolts | 5 nos | 5 nos | Yes |
| Hardware: Handle pairs | 9 nos | 9 nos | Yes |
| Hardware: Door stoppers | 9 nos | 9 nos | Yes |
| Rooms counted in the report | 9 rooms | 9 rooms | Yes |
| Buy list: Wall putty, cement based | 360 kg | 360 kg | Yes |
| Buy list: Primer, inside | 45 L | 45 L | Yes |
| Buy list: Interior emulsion, 2 coats | 54 L | 54 L | Yes |
| Buy list: Primer, outside | 38 L | 38 L | Yes |
| Buy list: Exterior acrylic emulsion | 66 L | 66 L | Yes |
| Buy list: Primer for doors | 3 L | 3 L | Yes |
| Buy list: Enamel for doors | 4 L | 4 L | Yes |
| Buy list: Tile 600 × 600 mm | 458 nos | 458 nos | Yes |
| Buy list: Tile 300 × 300 mm | 264 nos | 264 nos | Yes |
| Buy list: Tile 300 × 600 mm | 351 nos | 351 nos | Yes |
| Buy list: Cement | 50 bags of 50 kg | 50 bags of 50 kg | Yes |
| Buy list: Sand | 4.6 m³ | 4.6 m³ | Yes |
| Buy list: Tile grout | 32 kg | 32 kg | Yes |
| Buy list: Waterproofing coat, bathrooms | 26.2 m² | 26.2 m² | Yes |
| Buy list: Kitchen counter, granite | 2.8 m² | 2.8 m² | Yes |
| Buy list: Counter edge, moulded | 4.2 m | 4.2 m | Yes |
| Buy list: Door thresholds | 4.6 m | 4.6 m | Yes |
| Buy list: Main door, 10 DS 21 | 1 nos | 1 nos | Yes |
| Buy list: Room door, 9 DS 21 | 4 nos | 4 nos | Yes |
| Buy list: Bathroom door, 8 DS 21 | 3 nos | 3 nos | Yes |
| Buy list: Door of the terrace stair room, 9 DS 21 | 1 nos | 1 nos | Yes |
| Buy list: Door frame timber | 0.31 m³ | 0.31 m³ | Yes |
| Buy list: Door hinges | 28 nos | 28 nos | Yes |
| Buy list: Lock sets | 4 nos | 4 nos | Yes |

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| | | | |
|---|---|---|---|
| Buy list: Tower bolts | 5 nos | 5 nos | Yes |
| Buy list: Handle pairs | 9 pairs | 9 pairs | Yes |
| Buy list: Door stoppers | 9 nos | 9 nos | Yes |
| Buy list: Window glass, 4 to 5.5 mm | 16.4 m² | 16.4 m² | Yes |
| Buy list: Window and sash sections | 139 m | 139 m | Yes |
| Total in the report: Painted area | 942 m² | 942 m² | Yes |
| Likely range, low end: Painted area | 801 m² | 801 m² | Yes |
| Likely range, high end: Painted area | 1,130 m² | 1,130 m² | Yes |
| Total in the report: Tiles | 254 m² | 254 m² | Yes |
| Likely range, low end: Tiles | 228 m² | 228 m² | Yes |
| Likely range, high end: Tiles | 292 m² | 292 m² | Yes |
| Total in the report: Doors and windows | 22 nos | 22 nos | Yes |
| Likely range, low end: Doors and windows | 19 nos | 19 nos | Yes |
| Likely range, high end: Doors and windows | 28 nos | 28 nos | Yes |
| Total in the report: Window glass | 16 m² | 16 m² | Yes |
| Likely range, low end: Window glass | 13 m² | 13 m² | Yes |
| Likely range, high end: Window glass | 21 m² | 21 m² | Yes |
| Band: Painted area | 0.85 to 1.2 | 0.85 to 1.2 | Yes |
| Band: Putty, primer and paint | 0.7 to 1.35 | 0.7 to 1.35 | Yes |
| Band: Tiles | 0.9 to 1.15 | 0.9 to 1.15 | Yes |
| Band: Mortar, adhesive and grout | 0.65 to 1.3 | 0.65 to 1.3 | Yes |
| Band: False ceiling | 0.85 to 1.2 | 0.85 to 1.2 | Yes |
| Band: Doors and windows | 0.85 to 1.25 | 0.85 to 1.25 | Yes |
| Band: Plywood and laminate | 0.7 to 1.4 | 0.7 to 1.4 | Yes |

## Standards and references used in this sheet

| DOCUMENT | TITLE | USED FOR |
|---|---|---|
| **IS 1200 (Part 11):1977** | Method of measurement of building and civil engineering works: Paving, floor finishes, dado and skirting | Floors measured before the skirting and dado go on; skirting in running metres; dado in square metres. The tool follows the rules of this edition as it reads them. BIS lists a 2024 revision of Part 11, which replaces the 2013 edition, and the tool has NOT been checked against it. No clause number is quoted. |
| **IS 1200 (Part 13):1994** | Method of measurement of building and civil engineering works: White washing, colour washing, distempering and painting of building surfaces | Rules for the deduction of openings: up to 0.5 m² not taken out; from 0.5 to 3 m² one face is taken out, or half from each face when the finish differs. The tool follows the rules of this edition as it reads them. BIS lists a 2024 revision of Part 13 (it replaces the 1994 edition), and the tool has NOT been checked against it. No clause number is quoted. |
| **IS 2395 (Part 1):1994** | Code of practice for painting concrete, masonry and plaster surfaces: Operations and workmanship | Cement paint in two coats, set beside the CPWD coefficient. It gives no number of coats for emulsion or distemper, which follow the makers. |
| **IS 1003 (Part 1):2003** | Timber panelled and glazed shutters: Door shutters | Door designations (Table 3) and the hinges to a shutter (cl. 8.2). The tool applies the hinge rule to the width of the opening, not of the shutter, and takes the shutter area as the opening area (see the limits). |
| **IS 303:2024** | Plywood for general purposes: Specification | The plywood sheet of 2440 × 1220 mm. The clause number printed with it is one of the clause numbers as given in the tool's research notes; not re-read against the published text. |

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| | | |
|---|---|---|
| **IS 4021** | Timber door, window and ventilator frames: Specification | Named only because it fixes frame sections. It was not read, the 100 × 65 mm section is an assumption, and no clause is quoted (clause numbers as given in the tool's research notes; not re-read against the published text). |
| **IS 3067:1988** | Code of practice for general design details and preparatory work for damp-proofing and waterproofing of buildings | Named for the waterproofing area only. Nothing is counted from it. What it covers is as given in the tool's research notes and was not re-read against the published text. |
| **CPWD Delhi Analysis of Rates 2016** | Volume 2, sub-head 13 (finishing) and Volume 1 materials | Paint, primer and exterior finish coefficients; the cement and sand in a tile bed. The item numbers printed (13.42, 13.48.2, 13.50.1) are clause numbers as given in the tool's research notes; not re-read against the published text. |
| **Makers' data sheets** | Paint, putty, adhesive, grout and tile makers | Inside paint, putty, primer and adhesive spreads; tile boxes. |
| **NBC 2016 (Parts 3 and 8)** | National Building Code of India 2016 | The advisory checks on kitchen, bathroom and window sizes. The figures are as summarised in secondary sources; the Part numbers are from the tool's research notes, the code was not read, and no clause number is given. |

This sheet shows the method and the arithmetic behind a planning-level quantity estimate. It lets a qualified person check the formulas and the working. It is not a structural design, a drawing or a certificate, and it does not replace the drawings and calculations that a licensed professional signs for your building.

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