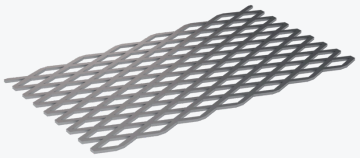
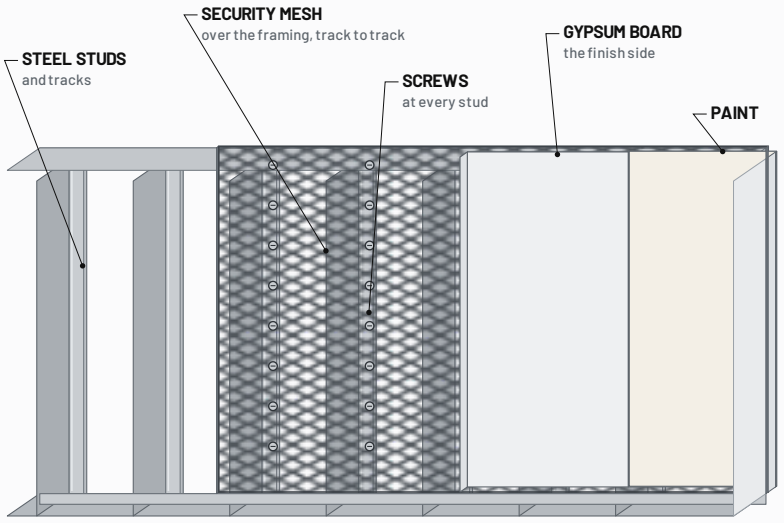
# SECURITY MESH

Flattened expanded steel mesh for secure walls and ceilings · 3/4" #9F and 1-1/2" #9F



SECURITY MESH
3/4" #9F expanded steel




PRODUCT 23 · LATH & MESH

Saturn Metal security mesh is a **flattened expanded steel** sheet: one piece of steel slit and stretched into a mesh of diamonds, then pressed flat. Screwed to the studs behind the gypsum board, it adds a **continuous steel layer** inside the wall that helps it resist forced entry. Used in **pharmacies, banks, cash offices, server rooms, records rooms, retail and demising walls**. Two styles: **3/4" #9F** and **1-1/2" #9F**, in 4' × 8' sheets.

- One piece of steel: no welds or wires to come apart
- Hidden inside the wall; the finish looks like any partition
- Flattened strands lie flat under the board
- Walls, ceilings and full-height partitions to the structure

| TYPE | STYLES | STRAND | SHEET | GOES | FASTENING |
|---|---|---|---|---|---|
| Expanded steel | 3/4" · 1-1/2" #9F | #9, flattened | 4' × 8' | Inside the wall | Screws to studs |

## 1 FOUR NAMES, ONE PRODUCT

**Security mesh**
Our product name: a steel mesh layer inside a wall, ceiling or floor assembly.

**Expanded metal**
Says how the mesh is formed: one steel sheet slit and stretched open.

**Flattened mesh**
The "F" in #9F: the strands are pressed flat, so the sheet lies smooth.

**Anti-intrusion mesh**
A site name for the same layer behind the drywall.

## 2 THE PARTS OF THE MESH

1. **Strands.** #9 steel strands around each diamond opening
2. **Bonds.** where strands meet; the sheet is one piece, with no welds
3. **Diamond openings.** SWD × LWD sets the style: 3/4" or 1-1/2"
4. **Flattened face.** lies flat on the studs, under the board

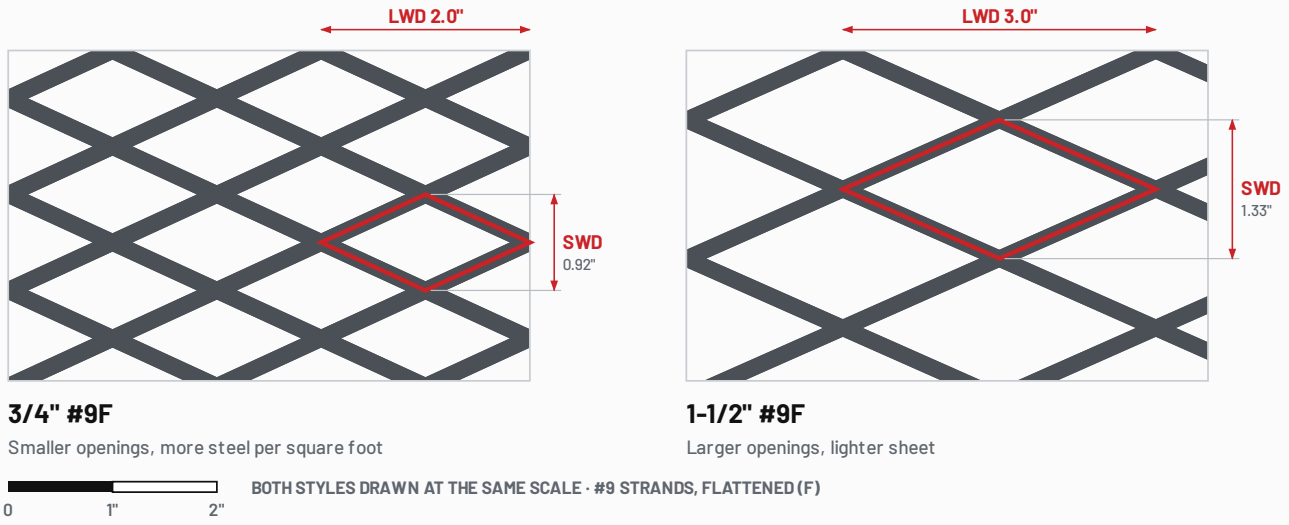
| ONE PIECE | HIDDEN | TWO STYLES | 4' × 8' |
|---|---|---|---|
| No welds or wires | Behind the board | 3/4" and 1-1/2" #9F | Flat sheets |


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# STYLES & SPECIFICATIONS

The two patterns, how to read the name, and the specifications

## 3 TWO STYLES, SAME SCALE




**3/4" #9F**

Smaller openings, more steel per square foot

**1-1/2" #9F**

Larger openings, lighter sheet

BOTH STYLES DRAWN AT THE SAME SCALE · #9 STRANDS, FLATTENED (F)

| STYLE | SWD × LWD (NOMINAL) | STRAND | FINISH | SHEET |
|---|---|---|---|---|
| **3/4" #9F** | 0.92" × 2.0" | #9, flattened | Flat sheet | 4' × 8' |
| **1-1/2" #9F** | 1.33" × 3.0" | #9, flattened | Flat sheet | 4' × 8' |

## 4 SPECIFICATIONS

| | |
|---|---|
| TYPE | Expanded steel mesh, flattened (F), one-piece sheet |
| STYLES | 3/4" #9F and 1-1/2" #9F |
| OPENING | SWD × LWD 0.92" × 2.0" and 1.33" × 3.0", nominal |
| STRAND | #9, flattened |
| SHEET | 4' × 8'; other patterns on request |
| PLACEMENT | Fastened to the framing, behind the finish board |

## 5 GOOD TO KNOW

**Reading the name**

"3/4" is the nominal opening size, "#9" the strand gauge and "F" means flattened. So 3/4" #9F is a 3/4" mesh with #9 strands pressed flat.

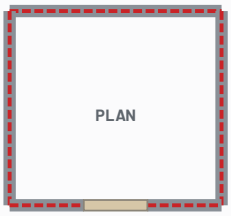
**Which style?**

3/4" #9F has smaller openings and more steel per square foot; 1-1/2" #9F is lighter with larger openings. The security design sets the style.

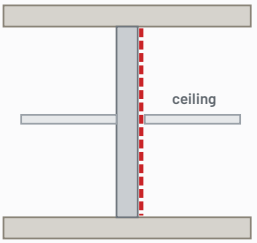
# WHERE IT GOES & HOW IT WORKS

Secure rooms, full-height partitions, ceilings and demising walls

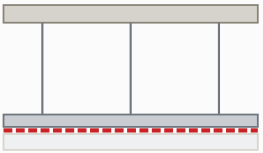
## 6 WHERE IT GOES



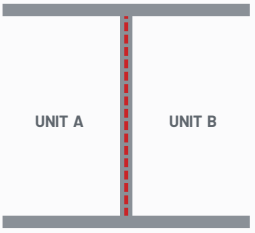

**SECURE ROOMS**
pharmacies, cash offices, records




**FULL HEIGHT**
floor slab to the structure above



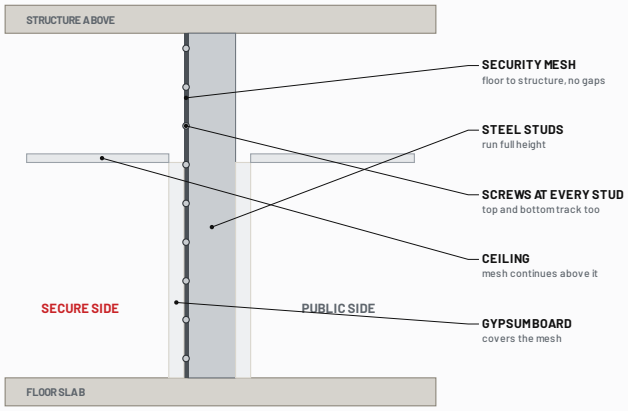
**CEILINGS**
above lay-in or board ceilings




**DEMISING WALLS**
between tenants and units

SKETCHES · RED DASHED LINE = SECURITY MESH

## 7 A SECURE PARTITION, IN SECTION




The mesh goes on the framing **before the board**, on the side the design shows, usually the secure side. It runs as one steel layer from the floor slab to the structure above, past the ceiling, and is screwed to every stud and to the top and bottom tracks.

A wall is only as strong as its weakest part. Carry the mesh across the whole area, close the gaps at the floor, the structure and the ends of the wall, and treat the openings: doors, ducts, access panels and services.

## 8 WHERE IT GOES, BY SPACE

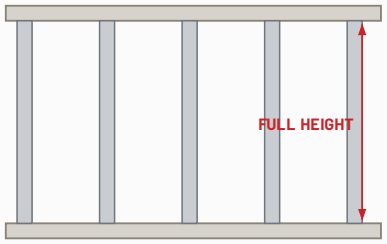
| SPACE | WHERE THE MESH GOES | WATCH FOR |
|---|---|---|
| Pharmacy, cash office, safe room | All walls of the room, full height | Doors and frames rated to match |
| Server or records room | Walls and the ceiling | Duct, cable and pipe openings |
| Retail or demising wall | The full wall between units | Continuity above the ceiling |
| Secure ceiling | Over the ceiling framing | Access panels and fixtures |

# INSTALLATION, STEP BY STEP

Frame, cut, hang, fasten, join and board over

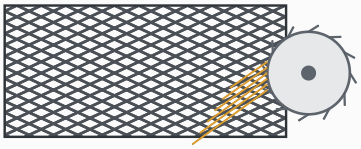
## 9 SIX STEPS TO A SECURE WALL

### 1 Framing first



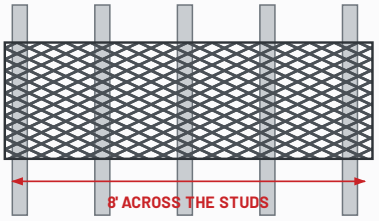

Frame the wall full height, slab to structure, with studs and tracks as the design shows. Add blocking where the mesh needs a support.

### 2 Cut with power tools



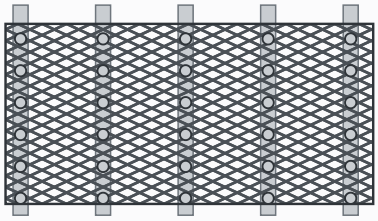
Cut the mesh with a carbide-tipped or abrasive saw, a cut-off grinder, a heavy-duty nibbler or a torch. Mark cuts on a strand line.

### 3 Hang across the studs



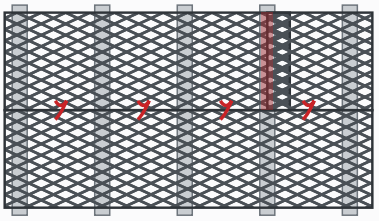

Set each 4' × 8' sheet with the long way across the studs, starting at the floor, so its ends land on studs.

### 4 Screw to every stud



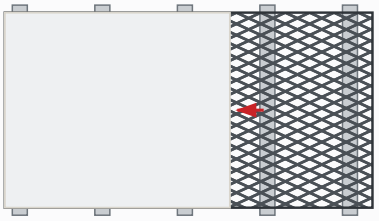
Fasten through the mesh into every stud and track with pan-head self-drilling or tamper-resistant screws, long enough to pass through the stud steel. Spacing per the design.

### 5 Butt and tie the joints



Butt end joints on a stud and fasten both ends. Butt edge joints and tie them with wire midway between studs. Where sheets overlap, use longer screws.

### 6 Board over it



Hang the gypsum board over the mesh with screws long enough for the extra layer. Finish the wall as usual.

**Heavy, sharp sheets.** Cut edges are sharp and sheets are heavy. Put on leather gloves, eye and hearing protection for cutting, and lift sheets with two people. Hot work needs the site's fire-safety precautions.

## 10 BEFORE YOU START

**Tools**
Power saw or cut-off grinder, nibbler, screw gun, pliers for tie wire, chalk line, gloves, eye and hearing protection.

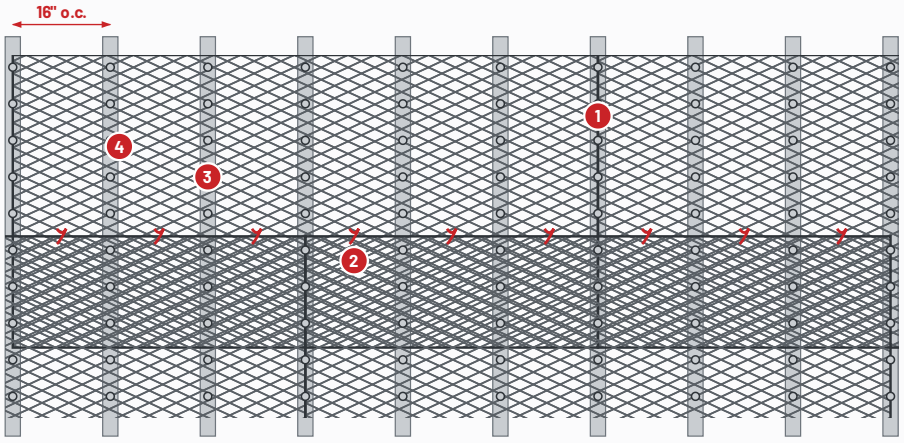
**Materials**
Security mesh of the specified style, screws for the framing, tie wire, longer board screws.

**Framing**
Studs and tracks plumb, full height, at the specified spacing; blocking where the design shows.

# JOINTS, FASTENING & CARE

Butt joints, ties and screws; common problems and fixes

## 11 JOINTS AND FASTENING




1. **END JOINTS BUTTED ON A STUD**
   both sheet ends fastened to it
2. **EDGE JOINTS BUTTED AND TIED**
   tie wire midway between studs
3. **SCREWS AT EVERY STUD**
   spacing per the security design
4. **LONG WAY ACROSS THE STUDS**
   8' sheets, 4' high

## 12 FASTENING BY FRAMING

| FRAMING | FASTENING | NOTES |
|---|---|---|
| Steel studs and tracks | Pan-head self-drilling screws, or tamper-resistant screws | Long enough to pass fully through the stud steel |
| Heavier steel studs | Welding, where the design calls for it | Weld size and spacing per the design |
| Wood framing | Barbed roofing nails or heavy staples | Penetration into the wood per the design |
| Overlapped sheets | Longer screws through both layers | Keep the same penetration into the stud |

## 13 TROUBLESHOOTING

| YOU SEE | LIKELY CAUSE | FIX |
|---|---|---|
| Board will not sit flat | Raised strand or lapped sheets under the board | Butt joints instead of lapping; flatten cut edges |
| Gap above the ceiling | Mesh stopped at the ceiling line | Carry the mesh to the structure above |
| Loose edge between studs | Edge joint not tied | Tie edges with wire midway between studs |
| Screws spinning | Too short or wrong point for the stud steel | Use self-drilling screws long enough for both layers |

## 14 DO & DON'T

| | |
|---|---|
| DO | Run the mesh full height and the full length of the secure wall. |
| DO | Land every end joint on a stud and fasten both sheets to it. |
| DO | Store sheets flat and dry, off the ground. |
| DON'T | Leave gaps at the floor, the structure or around openings. |
| DON'T | Add mesh to a fire-rated wall without checking the rated design. |


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# QUESTIONS, SPECIFYING & NOTICE

Common questions, estimating and a specification guide

## 15 COMMON QUESTIONS

**Where does the mesh go in the wall?**
On the framing, under the gypsum board, on the side the design shows (usually the secure side).

**3/4" or 1-1/2"?**
3/4" #9F has smaller openings and more steel; 1-1/2" #9F is lighter. The security design decides.

**Do sheets overlap?**
Butt them: ends on a stud, edges tied between studs. If an overlap is needed, use longer screws.

**How do I cut it?**
With power tools: a carbide-tipped or abrasive saw, a cut-off grinder, a heavy-duty nibbler or a torch.

**Does it go above the ceiling?**
For a secure room, yes: run the walls to the structure above, or add mesh over the ceiling.

**Fire-rated walls?**
Check with the designer that adding mesh keeps the wall within its rated design.

## 16 ESTIMATING

| WALL HEIGHT | ROWS OF 4' × 8' SHEETS | SHEETS PER 100 FT OF WALL |
|---|---|---|
| **8'** | 2 | 25 |
| **9'** | 3 | 38 |
| **10'** | 3 | 38 |
| **12'** | 3 | 38 |

One 4' × 8' sheet covers 32 ft² with butt joints. Top row cut to height; add for cuts and openings.

## 17 SPECIFICATION GUIDE

Security mesh: Saturn Metal flattened expanded steel security mesh, style [3/4" #9F] [1-1/2" #9F], 4' × 8' sheets. Install on the framing behind the finish board, full height from floor to structure above, long dimension across studs, end joints butted on studs, edge joints butted and wire-tied midway between studs, fastened to every stud and track with self-drilling or tamper-resistant screws at the spacing shown.

**Related:** DS-01 interior steel stud framing · DS-02 load-bearing stud framing · DS-05 slotted deflection track · DS-16 tie wire · DS-22 metal lath
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**IMPORTANT NOTICE**

This data sheet gives general product information only. It is not engineering, design or installation advice. A qualified design professional must review every application, and the building code and project documents always govern. Mesh style, placement, fastening, joints, openings and any effect on fire-rated assemblies must follow the security design, the building code and the project specification. The mesh is one part of a secure assembly; it does not make a wall or room secure on its own. Drawings are schematic and not to scale unless noted; dimensions are nominal and subject to standard tolerances. Values marked typical, approximate or commonly specified are for reference only. Standards are referenced by name for identification; always use the edition required by the governing code. Saturn Metal may change products and information without notice; confirm current data before ordering or specifying. Warranties and remedies, if any, are only those in Saturn Metal's written terms of sale. Names of standards bodies belong to their owners. Saturn Metal is a metal products manufacturer and/or supplier; this sheet does not mean the product is manufactured by Saturn Metal. © Saturn Metal