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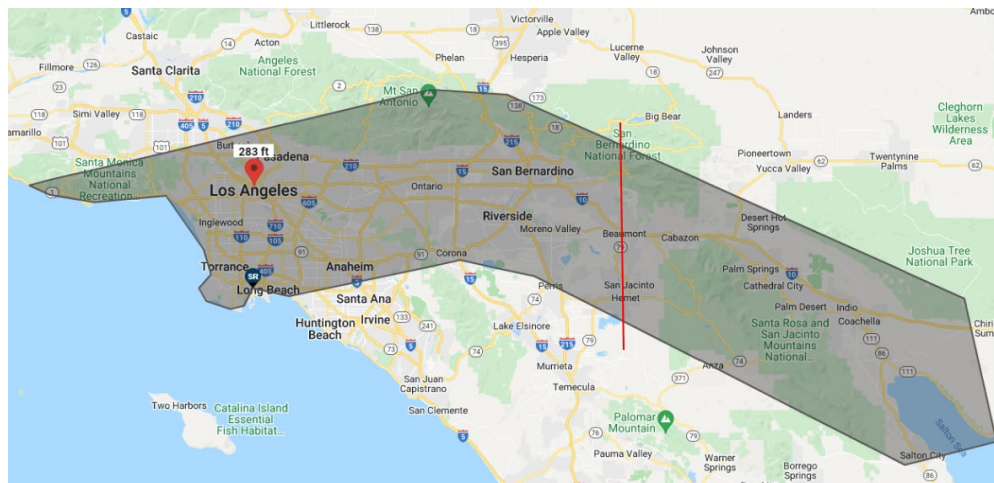
## Fastening Pattern Guidelines for Tape and Staple Applications

Tape and Staple is a popular fastened base sheet application technique in multi-ply Built-Up Roofing (BUR) systems over wood decks. Traditionally, fastened base sheets use 32 ga 1 5/8" diameter tin caps with 11ga annular ring shank nails into wood decks where field of roof fastening calls for 9" o.c. at the sheet laps and two equally spaced rows between the laps at 18" o.c. staggered. Perimeters and corners are enhanced per JM detail [BM-9,18,18](#).

However, with tape and staple, special equipment is used to lay down Senco 1/4" wide tape and install 7/8" (or 1 3/4" depending on application) x 7/16" crown 16 ga staples into the wood deck with one pass. The following table provides guidelines for different fastening patterns based on different project conditions.

Situation	JM Detail	Tape	Staple	Fastening Pattern
Wind Riders (max 85mph)	BM-9,9,9,9-TS	1/4" wide Senco	Senco 1 3/4" (minimum) x 7/16" Crown 16 ga	9,9,9,9
High Wind Zones <sup>1</sup> East of Beaumont, CA	BM-9,9,9,9-TS	1/4" wide Senco	Senco 1 3/4" (minimum) x 7/16" Crown 16 ga	9,9,9,9
High Wind Zones <sup>1</sup> West of Beaumont, CA	BM-9,9,9-TS	1/4" wide Senco	Senco 7/8" (minimum) x 7/16" Crown 16 ga	9,9,9
All other areas	BM-9,9,9-TS	1/4" wide Senco	Senco 7/8" (minimum) x 7/16" Crown 16 ga	9,9,9

<sup>1</sup>High Wind Zones per The Applied Technology Council (ATC) Wind Hazards Map, areas around and east of Los Angeles, CA. See map below



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The following table provides the fastening attachment patterns for the field (zone 1) of the roof, the perimeter (zone 2) of the roof, and the corners (zone 3) of the roof (field prime (zone 1'), if required, will follow field (zone 1) attachment rates):

JM Detail	Fastening Patterns		
	Field	Perimeters	Corners
<u>BM-9,9,9-TS</u> Using ¼" wide Senco tape and 7/8" x 7/16" crown 16 ga staples	9" o.c. at laps and 2 equally spaced rows between laps at 9" o.c.	9" o.c. at the laps and 6 equally spaced rows between laps at 9" o.c.	9" o.c. at laps and 6 equally spaced rows between laps in both directions - utilizing a "crisscross" pattern at 9" o.c.
<u>BM-9,9,9,9-TS</u> Using ¼" wide Senco tape and 1 ¾" x 7/16" crown 16 ga staples	9" o.c. at laps and 3 equally spaced rows between laps at 9" o.c.	9" o.c. at the laps and 7 equally spaced rows between laps at 9" o.c.	9" o.c. at laps and 7 equally spaced rows between laps in both directions - utilizing a "crisscross" pattern at 9" o.c.

The preceding requirements are based on actual uplift testing done in accordance with ANSI/FM Approvals 4474 Appendix C: 5 X 9 SIMULATED WIND UPLIFT PRESSURE TEST PROCEDURE. The following table provides maximum (allowable) uplift pressure for each system:

JM Detail	Uplift Testing Results (PSF) Allowable
<a href="#">BM-9,9,9-TS</a>	-15
<a href="#">BM-9,9,9,9-TS</a>	-30

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