



Tile Roof, Engineering Standard
CITY OF HIGHLAND BUILDING DIVISION
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Policy No. 230

PURPOSE: To establish a policy regarding engineering reports on tile roof patio covers, room additions, and roofs not previously designed for loads of more than 6 lbs. per square foot of roofing material.

POLICY: Engineered design by a design professional is required for any patio cover that is to carry, or convert the roof to carry 6 lbs. or more per square foot of roofing material load. Metal patio covers are pre-engineered and are not to be altered without the approval of the manufacture's design professional.

When a roof of an existing structure was designed for lightweight roofing materials such as wood shake or asphalt tiles (< 4 lbs per sq ft) and is to be replaced with a heavier product, calculations are required.

All calculations are to be provided by a licensed design professional and must include total load path calculations for live, dead load path, including lateral analysis. Stamp and wet signatures are required.

ANALYSIS: This policy is consistent with past practices in the City of Highland and with most cities in the State of California. Patio covers are not constructed with walls therefore added weight may compromise the stability of the structure. The same stability issues are of concern for older structures not designed for heavier roof loads.

Typical weights of asphalt and wood shake shingles vary from 2 to 3.5 lbs. per sq. ft. Structures constructed prior to 1979 were not designed with modern seismic criteria and were only designed for wood shake or asphalt shingle. Converting wood to asphalt tile is of similar weight, but when replacing with heavier material, such as tiles made of clay or concrete, these structures may be compromised.

Providing calculations that determine the ability for a structure to resist proposed additional loads is in the best interest of the public.

Effective Date: January 1, 2011	Revision Date: April 2019	Reference Code & Section:
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