INSULSPAN®
STRUCTURAL INSULATING PANEL SYSTEM
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Technical Bulletin

Sloped Roof Span and Transverse Design Load Calculation Method

This bulletin is to be used in conjunction with transverse load design charts for the Insulspan® Structural Insulating Panel (SIP) System used as a component in sloped roof systems.

Insulspan SIP System **Transverse Design Load** charts for sloped roof applications are based upon sloped roof span, **not horizontal span**. Transverse design load is calculated as a normal load acting perpendicular to panel skin.

The attached calculation sheet provides the method for calculating span and load for use with the Insulspan transverse load design charts. Spans are based on sloped dimensions from center to center of roof supports and not horizontal dimensions.

The sloped roof span calculated should be rounded up to the next larger full foot for use with design tables. Design load from Insulspan design tables must be greater than calculated design load. Design load is approximate for estimating purposes only. Final design load must be determined using appropriate load adjustment factors (e.g. exposure factor, importance factor, etc) per applicable Code.

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ROOF SPAN AND LOAD CALCULATION FOR INSULSPAN PANEL SIZING

PROJECT NAME: _____ PROJECT NUMBER: _____

PREPARED BY: _____ DATE: _____

APPLICABLE BUILDING CODE: _____
(INSERT LOCAL APPLICABLE CODE REFERENCE USED)

ROOF GEOMETRY/TRIGONOMETRY

ROOF PITCH* _____ IN 12 ROOF ANGLE, A _____ DEGREES

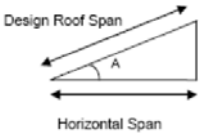
COSINE A = _____ (COSINE A)^2= _____ 1/(COSINE A)= _____

*NOTE: IF MORE THAN ONE ROOF PITCH, PREPARE SEPARATE CALCULATION SHEET FOR EACH ROOF PITCH.

ROOF SPAN CALCULATION

HORIZONTAL ROOF SPAN = _____ Feet/Meters
(IE. HORIZONTAL SPAN TO CENTER OF SUPPORTS)

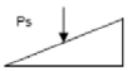
SLOPED ROOF SPAN = _____ Feet/Meters



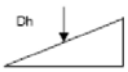
DESIGN SPAN FOR PANEL SIZING _____ **Feet/Meters**
(ROUND UP TO LONGER FULL SPAN FOR DESIGN)

ROOF SNOW LOAD CALCULATION

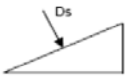
ROOF SNOW + RAIN LOAD, Ps _____ psf (kPa)
(SNOW + RAIN LOAD AS PER APPLICABLE CODE)



DEAD LOAD CALCULATION



DEAD LOAD OF ELEMENTS ALONG THE HORIZONTAL, Dh = _____ psf/kPa
(E.G. SUSPENDED ACOUSTICAL CEILING, PLUMBING, MECHANICAL, ETC.)

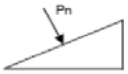


DEAD LOAD OF ELEMENTS ALONG THE SLOPE, Ds = _____ psf/kPa
(e.g. 10 psf (0.5 kPa) FOR GENERAL SIZING)

ROTATED DEAD LOAD ALONG THE SLOPE;
Ds'=Ds / COSINE A = _____ psf/kPa

TOTAL LOAD CALCULATION

TOTAL VERTICAL LOAD, Pv = Ps + Ds' + Dh = _____ psf/kPa



TOTAL NORMAL LOAD
Pn = Pv x (COSINE A)^2 = _____ psf/kPa
(LOAD ACTING PERPENDICULAR TO PANEL SKIN)

DESIGN LOAD FOR PANEL SIZING

DESIGN LOAD = TOTAL NORMAL LOAD = _____ **psf/kPa**
(Round up to the next larger full psf/kPa)