TECHNICAL BULLETIN
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EXTREME PANEL TECHNOLOGIES

SUBJECT: ROOF SIPS IN CANTILEVER CONDITIONS

Extreme SIPs are used in many applications where the SIPs create the eave and gable end overhangs of the roof. Using SIPs to create the overhangs for eaves and gables is advantageous because it speeds up the construction of the project and saves labor costs associated with hand framing.

Extreme SIPs have been evaluated through a series of full-scale destructive tests at an independent, code-recognized laboratory to determine the capabilities of SIPs in cantilever applications. These full-scale tests followed ASTM E-72 parameters for loading and monitoring deflection of the tested SIPs. The following addresses the capabilities of Extreme SIPs when installed in a cantilever application for roof overhangs.

When evaluating overhangs or cantilevers, consideration must be given to how the SIP cantilever is oriented in relation to the SIP span between supports. The two cantilever orientations that are possible include parallel and perpendicular to the SIP span. SIP cantilevers that are parallel to the SIP span can support greater overhangs with the use of structural I-Joist or Double 2x splines.

At SIP roof corner overhangs, SIPs simultaneously cantilever both parallel and perpendicular in relation to the SIP span. Where cantilevering perpendicular to the SIP span, utilize the Block Spline support loads indicated in the “Cantilevered Roof SIPs Type S Spline Capacity” table on the next page (TABLE 1).

SIPs spanning both parallel and perpendicular to the SIP span are subject to two conditions:

1. The overall SIP width must be a minimum of two times the perpendicular cantilever.
2. The back span of the parallel cantilever (‘Y’ dimension in FIGURE 1) must be a minimum of two times the cantilever (‘X’ dimension in FIGURE 1).
3. Unless engineered, the maximum cantilever oriented perpendicular to the SIP span is 4’.

In situations where increased loads are required or where an overhang greater than 4’ is desired, I-Joists (See Detail #EPT-203) or double 2x (Detail #EPT-205) splines can be used in conjunction with the “Cantilevered Roof SIPs Type “L” or Type “I” Spline Capacity” table on the following pages (TABLE 2).

These I-Joist and double 2x spline cantilevers are subject to two conditions:

1. The cantilever must be parallel to the SIP span.
2. The back span of the cantilever ('Y' dimension in FIGURE 2) must be a minimum of two times the cantilever ('X' dimension in FIGURE 2).

When Extreme SIPs utilize I-Joist (Detail #EPT-203) or double 2x (Detail #EPT-205) splines at a frequency of 4' O.C., overhangs of up to 6' of horizontal projection are possible. Greater loads can be achieved if the spline frequency is increased to 2' O.C. Refer to the "Cantilevered Roof SIPs Type S Spline Capacity" table below (TABLE 1) for determining the cantilever capacities oriented perpendicular to the SIP span.

FIGURE 1
Type S (Block) Spline

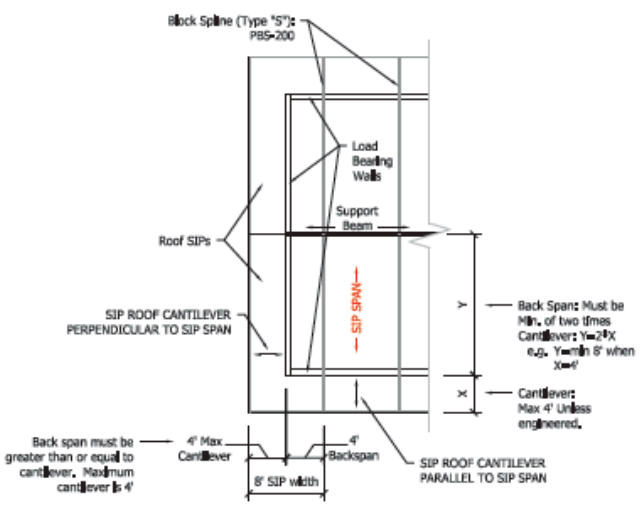
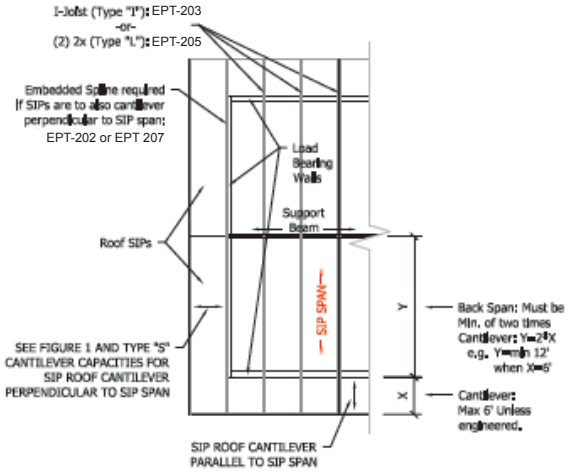


FIGURE 2
Type I (I-Joist) Spline OR
Type L (2X Lumber) Spline



CANTILEVERED ROOF SIPS TYPE S
SPLINE CAPACITY (PSF) - TABLE 1

SIP Thickness	Type S Spline	
	2' Maximum Cantilever	4' Maximum Cantilever
4 ½"	81*	41*
6 ½"	114*	57*
8 ¼"	149*	75*
10 ¼"	161*	81*
12 ¼"	166*	83*

CANTILEVERED ROOF SIPS TYPE L/TYPE I
SPLINE CAPACITY (PSF) - TABLE 2

SIP Thickness	Type L or I Spline with splines 4' o.c.		Type L or I Spline with splines 2' o.c.	
	4' cantilever with minimum 8' back span	6' cantilever with minimum 12' back span	4' cantilever with minimum 8' back span	6' cantilever with minimum 12' back span
4 ½"	53*	54*	81*	53*
6 ½"	87*	67*	114*	87*
8 ¼"	115*	84*	149*	115*
10 ¼"	125*	91*	161*	125*
12 ¼"	129*	93*	166*	129*

* Value is less than the ultimate load divided by a safety factor of three.