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# Master Engineers And Designers, Inc.

An Employee-Owned Company

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December 12, 2007

Mr. Jeffrey Hoffman  
Vice President - Business Development  
LiteSteel Technologies America LLC  
P.O. Box 81910  
Wesley Hills, MA 02481-0011

Reference: LiteSteel Beam USA Engineering Data Review  
MEAD Project No. 558-369

Dear Mr. Hoffman:

As requested, we have reviewed the LiteSteel Beam Span and Comparison Tables as generated by Mr. Nader Elhadj of the National Association of Home Builders (NAHB) Research Center. The tables were generated to express the section properties and capacities in U.S. units using U.S. material properties. Included in the review were the Moment and Shear Capacity Tables, Web Crippling Tables, Comparison Tables, and Moment and Web Crippling Graphic Charts.

The Design Specification referenced for the analysis is the *North American Specification for the Design of Cold-Formed Steel Structural Members, 2001 Edition, with 2004 Supplement*, as developed by the Institute of Iron and Steel. This specification is the current governing specification for cold-formed steel referenced by most building codes in the United States.

For the purposes of the review, we generated our own calculations to verify the tables and received clarifications from Smorgon Steel for some of the design parameters used. Our review reveals that the tables accurately reflect the capacities and performance capabilities of the LiteSteel Beam sections included in the tables.

Also, attached to this letter are a few case studies on previous projects we have performed that illustrate how LiteSteel Beams could have replaced the sections used. The comparisons include using LiteSteel Beam sections versus structural steel, dimensioned lumber, and parallel strand lumber. In all cases the LiteSteel Beam provides a lighter-weight section with comparable or better performance with regards to capacity and deflection.

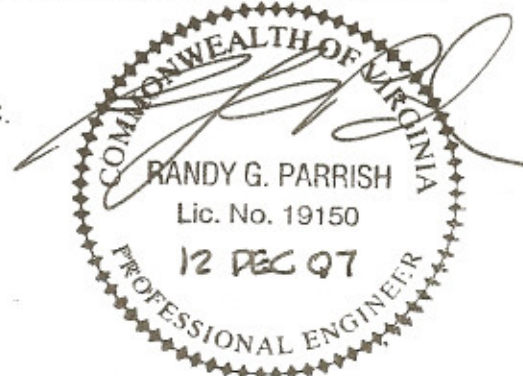
Please let us know if you have any questions or require any additional information.

Sincerely,

MASTER ENGINEERS AND DESIGNERS, INC.



Randy G. Parrish, P. E.  
Senior Structural Engineer



**Case Study 1**

Residence Floor Beam

DL= 20 psf  
 LL= 40 psf  
 Span = 16 ft      Trib Width= 12.25 ft

w (plf) = 735 ASD  
 M (ft-k) = 23.52 ASD

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	M <sub>allow</sub> (ft-k)	Total Defl (in)
5 1/4"x11 1/4" PSL	19.50	2.90	2000.00	623.00	26.96	0.87
<b>(2) 1000LSB300-98</b>	<b>14.94</b>	36.00	29500.00	64.40	39.18	<b>0.57</b>

*The LSB provides a higher moment capacity with lower weight and a lower deflection.*

**Case Study 2**

Existing Wall Removal

DL= 39 psf  
 LL= 70 psf  
 Span = 17 ft      Trib Width= 12.84 ft

w (plf) = 1400 ASD  
 M (ft-k) = 50.56 ASD

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	M <sub>allow</sub> (ft-k)	Total Defl (in)
W10x26	26.00	30.00	29000.00	144.00	76.73	0.63
<b>(2) 1200LSB350-98</b>	<b>17.98</b>	36.00	29500.00	111.80	56.70	<b>0.80</b>

*The LSB provides adequate moment capacity with lower weight and a comparable deflection.*

**Case Study 3**

**Roof and 2nd Floor Support**

Roof DL=	14 psf		
Roof LL=	25 psf		
Span =	8 ft	Trib Width=	9 ft
Roof w (plf) =	351		
Roof M (ft-k) =	2.81		
Floor DL=	8 psf		
Floor LL=	30 psf		
Span =	8 ft	Trib Width=	5.75 ft
Floor w (plf) =	219		
Floor M (ft-k) =	1.75		
Total w (plf) =	569.50 ASD		
Total M (ft-k) =	4.56 ASD		

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	M <sub>allow</sub> (ft-k)	Total Defl (in)
(2) 2x12 (#2 SPF)	5.90	0.88	1100.00	356.00	4.61	0.13
<b>800LSB250-59</b>	<b>3.67</b>	36.00	29500.00	10.10	7.68	<b>0.11</b>

*The LSB provides a higher moment capacity with lower weight and a lower deflection.*

**Case Study 4**

**Floor Support Beam**

DL= 10 psf  
 LL= 40 psf  
 Span = 8.25 ft      Trib Width= 12 ft  
 w (plf) = 600 ASD  
 M (ft-k) = 5.10 ASD

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	Mallow (ft-k)	Total Defl (in)
(3) 2x10 (#2 SPF)	7.23	0.88	1100.00	297.00	4.68	0.19
<b>800LSB250-59</b>	<b>3.67</b>	36.00	29500.00	10.10	7.68	<b>0.21</b>

*The LSB provides higher moment capacity with lower weight and a comparable deflection.*

**Case Study 5**

**1st and 2nd Floor Support**

2nd Flr DL= 10 psf  
 2nd Flr LL= 30 psf  
 Span = 13.5 ft      Trib Width= 10.59 ft

2nd Flr w (plf) = 423.6  
 2nd Flr M (ft-k) = 9.65

1st Flr DL= 10 psf  
 1st Flr LL= 40 psf  
 Span = 13.5 ft      Trib Width= 13.17 ft

1st Flr w (plf) = 659  
 1st Flr M (ft-k) = 15.00

Wall DL = 160 plf

Total w (plf) = 1242 ASD  
 Total M (ft-k) = 28.30 ASD

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	M <sub>allow</sub> (ft-k)	Total Defl (in)
(2) 2 11/16 x11 7/8 PS	20.00	2.90	2000.00	750.00	30.56	0.62
<b>(2) 1000LSB300-98</b>	<b>14.94</b>	36.00	29500.00	64.40	39.18	<b>0.49</b>

*The LSB provides higher moment capacity with lower weight and a lower deflection.*

**Case Study 6**

Floor Support Beam

DL= 10 psf  
 LL= 40 psf  
 Span = 14 ft      Trib Width= 6.5 ft

w (plf) = 325 ASD  
 M (ft-k) = 7.96 ASD

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	Mallow (ft-k)	Total Defl (in)
3 1/2 x 11 7/8 PSL	13.00	2.90	2000.00	488.00	19.90	0.29
<b>1000LSB300-98</b>	<b>7.47</b>	36.00	29500.00	32.20	19.59	<b>0.30</b>

*The LSB provides comparable moment capacity with lower weight and a comparable deflection.*

**Case Study 7**

Floor Support Beam

DL= 10 psf  
 LL= 40 psf  
 Span = 12 ft      Trib Width= 11.16 ft

w (plf) = 558 ASD  
 M (ft-k) = 10.04 ASD

**Compared Properties**

Section	Wgt (plf)	Fb (ksi)	E (ksi)	Ix (in4)	Mallow (ft-k)	Total Defl (in)
3 1/2 x 11 7/8 PSL	13.00	2.90	2000.00	488.00	19.90	0.27
<b>1000LSB300-98</b>	<b>7.47</b>	36.00	29500.00	32.20	19.59	<b>0.27</b>

*The LSB provides comparable moment capacity with lower weight and a comparable deflection.*