KATERRA

Katerra CLT Pre-Analysis Span Tables

Updated February 2020

References

Katerra CLT Product Definition
CLT Handbook USA

Limitations/Assumptions

- The tables are based on ANSI/APA PRG 320 V2 Grade CLT (SPF Species Combination).
- Ct and Cm are assumed to be normal (1.0 factors).
- Where partition loading is required, it is recommended to include it as SDL when using the span tables.
  - Partition loads are not considered when checking to see if the total applied dead load is greater than 20 psf for vibration design per the US CLT Handbook. This obviates the stiffness penalty when determining the maximum vibration-controlled span.
- Occupied roofs should use the "FLOOR" tables in order to include vibrations.
- Fire design: Tabulated span values assume that the underside of the CLT is exposed and chars during a fire. If the CLT is appropriately protected in order to achieve the rating, it is not necessary to check the fire rated spans.
- Consult the manufacturer for maximum CLT spans based on Katerra CLT ASTM E119 furnace testing for 1hr and 2hr exposure.
- The potential effects of ponding on flat roofs have not been considered.
- These tables are provided for pre-analysis only. For a specific project, the gravity design of CLT Floor/Roof members shall be performed by a qualified design professional.

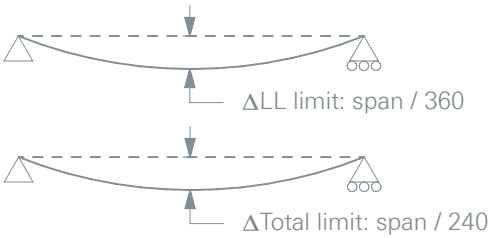
Notes

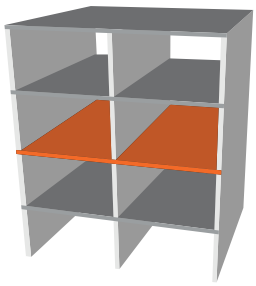
- Calculations to generate the span tables are based on the shear analogy method as referenced in ANSI/APA PRG 320.
- Only the creep portion of dead load deflection is included in the total deflection calculations as permitted by the 2018 International Building Code Table 1604.3, footnote d.
- Fire strength is calculated per NDS 2018 Chapter 16. Note that this requires delamination at glue lines to be considered which effectively increases the rate of charring as compared to solid wood. Katerra CLT is produced with adhesive that have been demonstrated to prevent delamination and act as solid wood during a fire. Consult the manufacturer for more information on this topic.
- Full dead and live / roof live loads are used in the fire strength check.
- There is no deflection limit for the fire case.
- The AoR or Fire Consultant should verify that the chosen assembly satisfies any additional fire requirements such as panel connection joint integrity.
- Vibrations are evaluated at floors (except cantilevers) using the US CLT Handbook method.
- Vibrations are not evaluated for roofs.

Katerra CLT Layups

	CLT Layup Destination	Total Thickness (in)	Lamination Thickness in CLT Layup (in)								
			=	⊥	=	⊥	=	⊥	=	⊥	=
3-Ply	K3-0320	3.24	1.08	1.08	1.08						
	K3-0350	3.54	1.08	1.38	1.08						
	K3-0380	3.84	1.38	1.08	1.38						
	K3-0410	4.14	1.38	1.38	1.38						
5-Ply	K5-0540	5.40	1.08	1.08	1.08	1.08	1.08				
	K5-0600	6.00	1.08	1.38	1.08	1.38	1.08				
	K5-0630	6.30	1.38	1.08	1.38	1.08	1.38				
	K5-0690	6.90	1.38	1.38	1.38	1.38	1.38				
7-Ply	K7-0970	9.66	1.38	1.38	1.38	1.38	1.38	1.38	1.38		
9-Ply	K9-1120	11.22	1.38	1.08	1.38	1.08	1.38	1.08	1.38	1.08	1.38
	K9-1240	12.42	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38

SS Deflection Limits





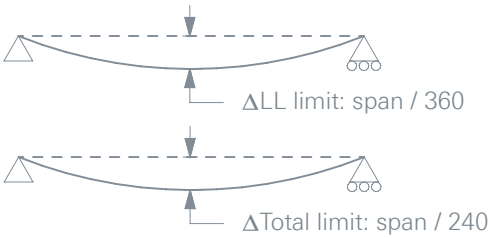
Cant Deflection Limits

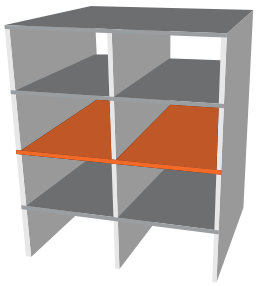
FLOOR | LL = 40psf | SDL=30psf									
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire
3-Ply	K3-0320	3.24	SS	9′ - 10″	Vibration	x	3′ - 2″	Strength	x
			Cant	5′ - 8″	Strength	x	1′ - 7″	Strength	x
	K3-0350	3.54	SS	10′ - 5″	Vibration	x	4′ - 0″	Strength	x
			Cant	6′ - 1″	Strength	x	2′ - 0″	Strength	x
	K3-0380	3.84	SS	11′ - 2″	Vibration	x	3′ - 2″	Strength	x
			Cant	6′ - 9″	Strength	x	1′ - 7″	Strength	x
	K3-0410	4.14	SS	11′ - 9″	Vibration	x	4′ - 0″	Strength	x
			Cant	7′ - 2″	Strength	x	2′ - 0″	Strength	x
5-Ply	K5-0540	5.40	SS	13′ - 8″	Vibration	13′ - 8″	9′ - 0″	Strength	5′ - 8″
			Cant	8′ - 4″	Strength	8′ - 4″	4′ - 6″	Strength	2′ - 10″
	K5-0600	6.00	SS	14′ - 6″	Vibration	14′ - 6″	10′ - 8″	Strength	10′ - 0″
			Cant	8′ - 11″	Strength	8′ - 11″	5′ - 4″	Strength	5′ - 0″
	K5-0630	6.30	SS	15′ - 7″	Vibration	15′ - 7″	9′ - 8″	Strength	9′ - 8″
			Cant	9′ - 10″	Strength	9′ - 10″	4′ - 10″	Strength	4′ - 10″
	K5-0690	6.90	SS	16′ - 8″	Vibration	16′ - 8″	11′ - 4″	Strength	11′ - 4″
			Cant	10′ - 5″	Strength	10′ - 5″	5′ - 8″	Strength	5′ - 8″
7-Ply	K7-0970	9.66	SS	20′ - 6″	Vibration	20′ - 6″	15′ - 11″	Vibration	15′ - 11″
			Cant	13′ - 5″	Strength	13′ - 5″	8′ - 3″	Strength	8′ - 3″
9-Ply	K9-1120	11.22	SS	23′ - 0″	Vibration	23′ - 0″	17′ - 7″	Vibration	17′ - 7″
			Cant	15′ - 4″	Strength	15′ - 4″	9′ - 1″	Strength	9′ - 1″
	K9-1240	12.42	SS	24′ - 3″	Vibration	24′ - 3″	19′ - 10″	Vibration	19′ - 11″
			Cant	16′ - 2″	Strength	16′ - 2″	10′ - 8″	Strength	10′ - 8″

Notes

1. SS = Simply supported single span
2. Cant = Rigid end support cantilever
3. Table cells denoted ‘x’ indicate that a calculation for fire maximum span under fire conditions has not been performed.
4. LL = Live Load, Lr = Roof Live Load, S = Snow Load, SDL = Superimposed Dead Load
5. Self-weight of the CLT panel is included in the calculations and is in addition to the stated SDL.
6. Maximum Span can be considered the clear span between face of supports.
7. Minor direction maximum spans in excess of 12′ - 0″ may not be achievable due to manufacturing limitations. Please consult with the manufacturer.
8. Refer to stated limitations of use and notes on Page 2 of this document for additional information.

SS Deflection Limits





Cant Deflection Limits

FLOOR | LL = 40psf | SDL=40psf									
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire
3-Ply	K3-0320	3.24	SS	9′ - 10″	Vibration	x	3′ - 0″	Strength	x
			Cant	5′ - 4″	Strength	x	1′ - 6″	Strength	x
	K3-0350	3.54	SS	10′ - 5″	Vibration	x	3′ - 9″	Strength	x
			Cant	5′ - 9″	Strength	x	1′ - 11″	Strength	x
	K3-0380	3.84	SS	11′ - 2″	Vibration	x	2′ - 11″	Strength	x
			Cant	6′ - 4″	Strength	x	1′ - 6″	Strength	x
	K3-0410	4.14	SS	11′ - 9″	Vibration	x	3′ - 9″	Strength	x
			Cant	6′ - 9″	Strength	x	1′ - 11″	Strength	x
5-Ply	K5-0540	5.40	SS	13′ - 8″	Vibration	13′ - 8″	8′ - 6″	Strength	5′ - 4″
			Cant	7′ - 11″	Strength	7′ - 11″	4′ - 3″	Strength	2′ - 8″
	K5-0600	6.00	SS	14′ - 6″	Vibration	14′ - 6″	10′ - 1″	Strength	9′ - 6″
			Cant	8′ - 5″	Strength	8′ - 5″	5′ - 1″	Strength	4′ - 9″
	K5-0630	6.30	SS	15′ - 7″	Vibration	15′ - 7″	9′ - 1″	Strength	9′ - 1″
			Cant	9′ - 4″	Strength	9′ - 4″	4′ - 7″	Strength	4′ - 7″
	K5-0690	6.90	SS	16′ - 4″	Vibration	16′ - 4″	10′ - 8″	Strength	10′ - 8″
			Cant	9′ - 11″	Strength	9′ - 11″	5′ - 4″	Strength	5′ - 4″
7-Ply	K7-0970	9.66	SS	20′ - 6″	Vibration	20′ - 6″	15′ - 9″	Strength	15′ - 9″
			Cant	12′ - 9″	Strength	12′ - 9″	7′ - 10″	Strength	7′ - 10″
9-Ply	K9-1120	11.22	SS	23′ - 0″	Vibration	23′ - 0″	17′ - 4″	Strength	17′ - 4″
			Cant	14′ - 7″	Strength	14′ - 7″	8′ - 8″	Strength	8′ - 8″
	K9-1240	12.42	SS	24′ - 3″	Vibration	24′ - 3″	19′ - 10″	Vibration	19′ - 10″
			Cant	15′ - 5″	Strength	15′ - 4″	10′ - 2″	Strength	10′ - 2″

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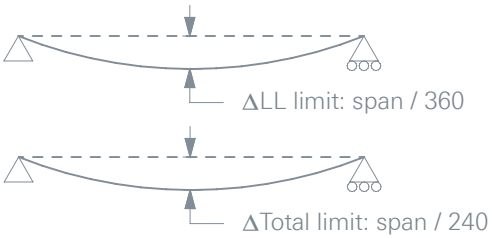

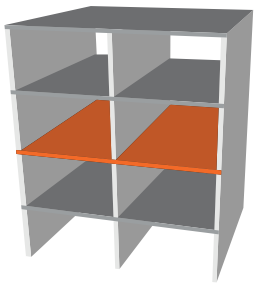

Cant Deflection Limits

FLOOR | LL = 50psf | SDL=30psf									
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
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			Cant	5′ - 4″	Strength	x	1′ - 6″	Strength	x
	K3-0350	3.54	SS	10′ - 5″	Vibration	x	3′ - 9″	Strength	x
			Cant	5′ - 9″	Strength	x	1′ - 11″	Strength	x
	K3-0380	3.84	SS	11′ - 2″	Vibration	x	2′ - 11″	Strength	x
			Cant	6′ - 4″	Strength	x	1′ - 6″	Strength	x
	K3-0410	4.14	SS	11′ - 9″	Vibration	x	3′ - 9″	Strength	x
			Cant	6′ - 9″	Strength	x	1′ - 11″	Strength	x
5-Ply	K5-0540	5.40	SS	13′ - 8″	Vibration	13′ - 8″	8′ - 6″	Strength	5′ - 4″
			Cant	7′ - 11″	Strength	7′ - 11″	4′ - 3″	Strength	2′ - 8″
	K5-0600	6.00	SS	14′ - 6″	Vibration	14′ - 6″	10′ - 1″	Strength	9′ - 6″
			Cant	8′ - 5″	Strength	8′ - 5″	5′ - 1″	Strength	4′ - 9″
	K5-0630	6.30	SS	15′ - 7″	Vibration	15′ - 7″	9′ - 1″	Strength	9′ - 1″
			Cant	9′ - 4″	Strength	9′ - 4″	4′ - 7″	Strength	4′ - 7″
	K5-0690	6.90	SS	16′ - 8″	Vibration	16′ - 8″	10′ - 8″	Strength	10′ - 8″
			Cant	9′ - 11″	Strength	9′ - 11″	5′ - 4″	Strength	5′ - 4″
7-Ply	K7-0970	9.66	SS	20′ - 6″	Vibration	20′ - 6″	15′ - 9″	Strength	15′ - 9″
			Cant	12′ - 9″	Strength	12′ - 9″	7′ - 10″	Strength	7′ - 10″
9-Ply	K9-1120	11.22	SS	23′ - 0″	Vibration	23′ - 0″	17′ - 4″	Strength	17′ - 4″
			Cant	14′ - 7″	Strength	14′ - 7″	8′ - 8″	Strength	8′ - 8″
	K9-1240	12.42	SS	24′ - 3″	Vibration	24′ - 3″	19′ - 10″	Vibration	19′ - 10″
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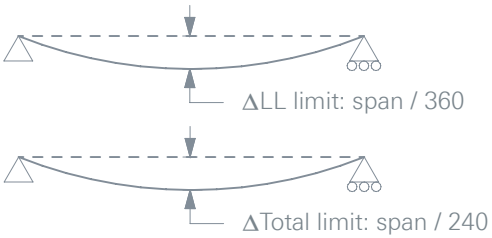

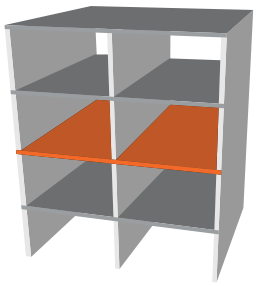

Cant Deflection Limits

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CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
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			Cant	5′ - 1″	Strength	x	1′ - 5″	Strength	x
	K3-0350	3.54	SS	10′ - 5″	Vibration	x	3′ - 7″	Strength	x
			Cant	5′ - 6″	Strength	x	1′ - 10″	Strength	x
	K3-0380	3.84	SS	11′ - 2″	Vibration	x	2′ - 10″	Strength	x
			Cant	6′ - 0″	Strength	x	1′ - 5″	Strength	x
	K3-0410	4.14	SS	11′ - 9″	Vibration	x	3′ - 7″	Strength	x
			Cant	6′ - 5″	Strength	x	1′ - 9″	Strength	x
5-Ply	K5-0540	5.40	SS	13′ - 8″	Vibration	13′ - 8″	8′ - 1″	Strength	5′ - 1″
			Cant	7′ - 6″	Strength	7′ - 6″	4′ - 1″	Strength	2′ - 7″
	K5-0600	6.00	SS	14′ - 6″	Vibration	14′ - 6″	9′ - 7″	Strength	9′ - 0″
			Cant	8′ - 0″	Strength	8′ - 0″	4′ - 10″	Strength	4′ - 6″
	K5-0630	6.30	SS	15′ - 7″	Vibration	15′ - 7″	8′ - 8″	Strength	8′ - 8″
			Cant	8′ - 10″	Strength	8′ - 10″	4′ - 4″	Strength	4′ - 4″
	K5-0690	6.90	SS	16′ - 4″	Vibration	16′ - 4″	10′ - 2″	Strength	10′ - 2″
			Cant	9′ - 5″	Strength	9′ - 5″	5′ - 1″	Strength	5′ - 1″
7-Ply	K7-0970	9.66	SS	20′ - 6″	Vibration	20′ - 6″	15′ - 0″	Strength	15′ - 0″
			Cant	12′ - 2″	Strength	12′ - 2″	7′ - 6″	Strength	7′ - 6″
9-Ply	K9-1120	11.22	SS	23′ - 0″	Vibration	23′ - 0″	16′ - 7″	Strength	16′ - 7″
			Cant	14′ - 0″	Strength	13′ - 12″	8′ - 3″	Strength	8′ - 3″
	K9-1240	12.42	SS	24′ - 3″	Vibration	24′ - 3″	19′ - 5″	Strength	19′ - 5″
			Cant	14′ - 9″	Strength	14′ - 9″	9′ - 9″	Strength	9′ - 9″

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6. Maximum Span can be considered the clear span between face of supports.
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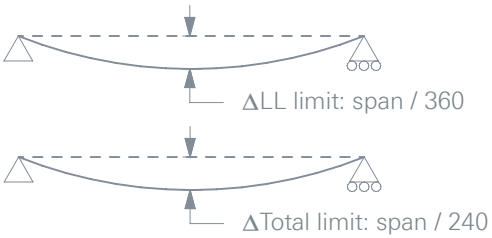

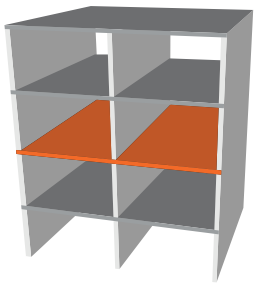

Cant Deflection Limits

FLOOR | LL = 100psf | SDL=15psf									
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
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	K3-0380	3.84	SS	10′ - 0″	Deflection	x	2′ - 6″	Strength	x
			Cant	5′ - 4″	Strength	x	1′ - 3″	Strength	x
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			Cant	5′ - 9″	Strength	x	1′ - 7″	Strength	x
5-Ply	K5-0540	5.40	SS	13′ - 3″	Deflection	13′ - 3″	7′ - 3″	Strength	4′ - 7″
			Cant	6′ - 9″	Strength	6′ - 9″	3′ - 8″	Strength	2′ - 3″
	K5-0600	6.00	SS	14′ - 5″	Strength	14′ - 5″	8′ - 8″	Strength	8′ - 1″
			Cant	7′ - 2″	Strength	7′ - 2″	7′ - 2″	Strength	4′ - 1″
	K5-0630	6.30	SS	15′ - 9″	Strength	15′ - 9″	7′ - 9″	Strength	7′ - 9″
			Cant	8′ - 0″	Strength	7′ - 12″	3′ - 11″	Strength	3′ - 11″
	K5-0690	6.90	SS	16′ - 8″	Vibration	16′ - 8″	9′ - 2″	Strength	9′ - 2″
			Cant	8′ - 6″	Strength	8′ - 6″	4′ - 7″	Strength	4′ - 7″
7-Ply	K7-0970	9.66	SS	20′ - 10″	Vibration	20′ - 10″	13′ - 7″	Strength	13′ - 7″
			Cant	11′ - 0″	Strength	10′ - 12″	6′ - 9″	Strength	6′ - 9″
9-Ply	K9-1120	11.22	SS	23′ - 6″	Vibration	23′ - 6″	15′ - 0″	Strength	15′ - 0″
			Cant	12′ - 8″	Strength	12′ - 8″	7′ - 6″	Strength	7′ - 6″
	K9-1240	12.42	SS	24′ - 8″	Vibration	24′ - 8″	17′ - 8″	Strength	17′ - 8″
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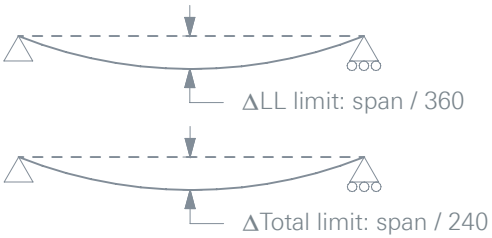

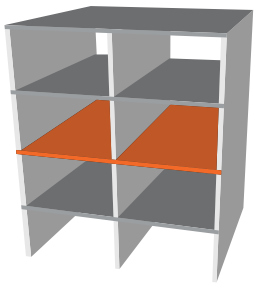

Cant Deflection Limits

FLOOR | LL = 100psf | SDL=25psf									
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire
3-Ply	K3-0320	3.24	SS	8′ - 5″	Deflection	x	2′ - 5″	Strength	x
			Cant	4′ - 4″	Strength	x	1′ - 3″	Strength	x
	K3-0350	3.54	SS	9′ - 1″	Deflection	x	3′ - 1″	Strength	x
			Cant	4′ - 8″	Strength	x	1′ - 6″	Strength	x
	K3-0380	3.84	SS	10′ - 0″	Deflection	x	2′ - 5″	Strength	x
			Cant	5′ - 2″	Strength	x	1′ - 2″	Strength	x
	K3-0410	4.14	SS	10′ - 9″	Deflection	x	3′ - 1″	Strength	x
			Cant	5′ - 6″	Strength	x	1′ - 6″	Strength	x
5-Ply	K5-0540	5.40	SS	12′ - 11″	Strength	12′ - 11″	7′ - 0″	Strength	4′ - 5″
			Cant	6′ - 6″	Strength	6′ - 6″	3′ - 6″	Strength	2′ - 2″
	K5-0600	6.00	SS	13′ - 11″	Strength	13′ - 11″	8′ - 4″	Strength	7′ - 10″
			Cant	6′ - 11″	Strength	6′ - 11″	4′ - 2″	Strength	3′ - 11″
	K5-0630	6.30	SS	15′ - 4″	Strength	15′ - 4″	7′ - 6″	Strength	7′ - 6″
			Cant	7′ - 8″	Strength	7′ - 8″	3′ - 9″	Strength	3′ - 9″
	K5-0690	6.90	SS	16′ - 4″	Strength	16′ - 4″	8′ - 10″	Strength	8′ - 10″
			Cant	8′ - 2″	Strength	8′ - 2″	4′ - 5″	Strength	4′ - 5″
7-Ply	K7-0970	9.66	SS	20′ - 6″	Vibration	20′ - 6″	13′ - 1″	Strength	13′ - 1″
			Cant	10′ - 7″	Strength	10′ - 7″	6′ - 7″	Strength	6′ - 7″
9-Ply	K9-1120	11.22	SS	23′ - 0″	Vibration	23′ - 0″	14′ - 6″	Strength	14′ - 6″
			Cant	12′ - 3″	Strength	12′ - 3″	7′ - 3″	Strength	7′ - 3″
	K9-1240	12.42	SS	24′ - 3″	Vibration	24′ - 3″	17′ - 1″	Strength	17′ - 1″
			Cant	12′ - 11″	Strength	12′ - 11″	8′ - 6″	Strength	8′ - 6″

Notes

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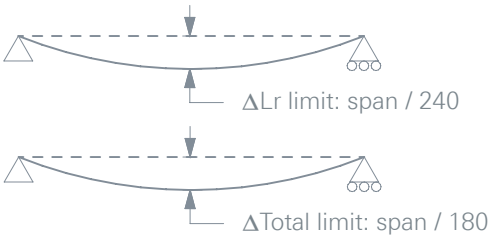
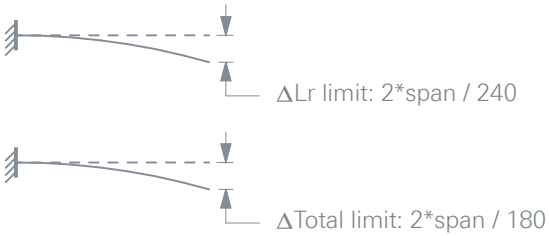
2. Cant = Rigid end support cantilever
3. Table cells denoted ‘x’ indicate that a calculation for fire maximum span under fire conditions has not been performed.
4. LL = Live Load, Lr = Roof Live Load, S = Snow Load, SDL = Superimposed Dead Load
5. Self-weight of the CLT panel is included in the calculations and is in addition to the stated SDL.
6. Maximum Span can be considered the clear span between face of supports.
7. Minor direction maximum spans in excess of 12′ - 0″ may not be achievable due to manufacturing limitations. Please consult with the manufacturer.
8. Refer to stated limitations of use and notes on Page 2 of this document for additional information.

SS Deflection Limits



Cant Deflection Limits



ROOF | Lr = 20psf | SDL=15psf										
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction			
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire	
3-Ply	K3-0320	3.24	SS	14′ - 6″	Deflection	x	4′ - 8″	Deflection	x	
			Cant	8′ - 7″	Strength	x	2′ - 5″	Strength (M)	x	
	K3-0350	3.54	SS	15′ - 7″	Deflection	x	6′ - 0″	Deflection	x	
			Cant	9′ - 2″	Strength	x	3′ - 0″	Strength	x	
	K3-0380	3.84	SS	17′ - 1″	Deflection	x	4′ - 8″	Deflection	x	
			Cant	10′ - 1″	Strength	x	2′ - 4″	Strength	x	
	K3-0410	4.14	SS	18′ - 3″	Deflection	x	5′ - 11″	Deflection	x	
			Cant	10′ - 8″	Strength	x	3′ - 0″	Strength	x	
5-Ply	K5-0540	5.40	SS	21′ - 11″	Deflection	21′ - 11″	13′ - 4″	Strength	7′ - 6″	
			Cant	12′ - 3″	Strength	12′ - 3″	6′ - 8″	Strength	3′ - 9″	
	K5-0600	6.00	SS	23′ - 7″	Deflection	23′ - 7″	15′ - 8″	Strength	13′ - 2″	
			Cant	13′ - 1″	Strength	13′ - 0″	7′ - 10″	Strength	6′ - 7″	
	K5-0630	6.30	SS	25′ - 7″	Deflection	25′ - 7″	14′ - 1″	Strength	14′ - 1″	
			Cant	14′ - 5″	Strength	14′ - 4″	7′ - 0″	Strength	7′ - 0″	
	K5-0690	6.90	SS	27′ - 4″	Deflection	27′ - 4″	16′ - 5″	Strength	16′ - 5″	
			Cant	15′ - 2″	Strength	15′ - 1″	8′ - 2″	Strength	8′ - 2″	
7-Ply	K7-0970	9.66	SS	35′ - 6″	Deflection	35′ - 6″	23′ - 5″	Strength	23′ - 6″	
			Cant	19′ - 0″	Strength	18′ - 12″	11′ - 9″	Strength	11′ - 9″	
9-Ply	K9-1120	11.22	SS	40′ - 7″	Deflection	40′ - 7″	25′ - 6″	Strength	25′ - 6″	
			Cant	21′ - 6″	Strength	21′ - 6″	12′ - 9″	Strength	12′ - 9″	
	K9-1240	12.42	SS	43′ - 1″	Deflection	43′ - 1″	29′ - 7″	Strength	29′ - 7″	
			Cant	22′ - 5″	Strength	22′ - 5″	14′ - 10″	Strength	14′ - 10″	

Notes

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3. Table cells denoted ‘x’ indicate that a calculation for fire maximum span under fire conditions has not been performed.
4. LL = Live Load, Lr = Roof Live Load, S = Snow Load, SDL = Superimposed Dead Load
5. Self-weight of the CLT panel is included in the calculations and is in addition to the stated SDL.
6. Maximum Span can be considered the clear span between face of supports.
7. Minor direction maximum spans in excess of 12′ - 0″ may not be achievable due to manufacturing limitations. Please consult with the manufacturer.
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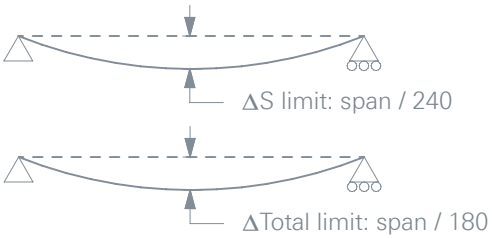
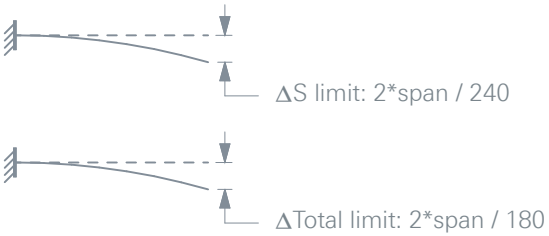
SS Deflection Limits



Cant Deflection Limits



ROOF | S = 20psf | SDL=15psf										
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction			
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire	
3-Ply	K3-0320	3.24	SS	16′ - 6″	Strength	x	4′ - 7″	Strength	x	
			Cant	8′ - 3″	Strength	x	2′ - 3″	Strength	x	
	K3-0350	3.54	SS	17′ - 8″	Strength	x	5′ - 10″	Strength	x	
			Cant	8′ - 10″	Strength	x	2′ - 11″	Strength	x	
	K3-0380	3.84	SS	19′ - 4″	Strength	x	4′ - 6″	Strength	x	
			Cant	9′ - 8″	Strength	x	2′ - 3″	Strength	x	
	K3-0410	4.14	SS	20′ - 6″	Strength	x	5′ - 9″	Strength	x	
			Cant	10′ - 3″	Strength	x	2′ - 10″	Strength	x	
5-Ply	K5-0540	5.40	SS	23′ - 7″	Strength	23′ - 7″	12′ - 9″	Strength	7′ - 6″	
			Cant	11′ - 10″	Strength	11′ - 10″	6′ - 5″	Strength	3′ - 9″	
	K5-0600	6.00	SS	25′ - 1″	Strength	25′ - 1″	15′ - 0″	Strength	13′ - 2″	
			Cant	12′ - 6″	Strength	12′ - 6″	7′ - 6″	Strength	6′ - 7″	
	K5-0630	6.30	SS	27′ - 7″	Strength	27′ - 7″	13′ - 6″	Strength	13′ - 6″	
			Cant	13′ - 10″	Strength	13′ - 10″	6′ - 9″	Strength	6′ - 9″	
	K5-0690	6.90	SS	29′ - 1″	Strength	29′ - 1″	15′ - 9″	Strength	15′ - 9″	
			Cant	14′ - 7″	Strength	14′ - 7″	7′ - 10″	Strength	7′ - 10″	
7-Ply	K7-0970	9.66	SS	36′ - 5″	Strength	36′ - 5″	22′ - 6″	Strength	22′ - 6″	
			Cant	18′ - 3″	Strength	18′ - 3″	11′ - 3″	Strength	11′ - 3″	
9-Ply	K9-1120	11.22	SS	41′ - 3″	Strength	41′ - 3″	24′ - 6″	Strength	24′ - 6″	
			Cant	20′ - 7″	Strength	20′ - 7″	12′ - 3″	Strength	12′ - 3″	
	K9-1240	12.42	SS	43′ - 0″	Strength	43′ - 0″	28′ - 5″	Strength	28′ - 5″	
			Cant	21′ - 6″	Strength	21′ - 6″	14′ - 2″	Strength	14′ - 2″	

Notes

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4. LL = Live Load, Lr = Roof Live Load, S = Snow Load, SDL = Superimposed Dead Load
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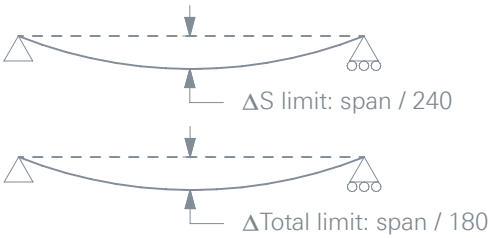
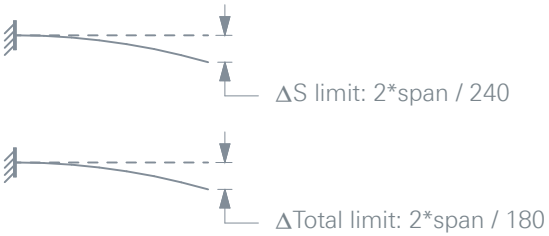
SS Deflection Limits



Cant Deflection Limits



ROOF | S = 40psf | SDL=15psf										
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction			
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire	
3-Ply	K3-0320	3.24	SS	13′ - 7″	Strength	x	3′ - 9″	Strength	x	
			Cant	6′ - 9″	Strength	x	1′ - 11″	Strength	x	
	K3-0350	3.54	SS	14′ - 7″	Strength	x	4′ - 10″	Strength	x	
			Cant	7′ - 3″	Strength	x	2′ - 5″	Strength	x	
	K3-0380	3.84	SS	16′ - 0″	Strength	x	3′ - 9″	Strength	x	
			Cant	8′ - 0″	Strength	x	1′ - 10″	Strength	x	
	K3-0410	4.14	SS	17′ - 1″	Strength	x	4′ - 9″	Strength	x	
			Cant	8′ - 6″	Strength	x	2′ - 4″	Strength	x	
5-Ply	K5-0540	5.40	SS	19′ - 10″	Strength	19′ - 10″	10′ - 8″	Strength	6′ - 3″	
			Cant	9′ - 11″	Strength	9′ - 11″	5′ - 4″	Strength	3′ - 2″	
	K5-0600	6.00	SS	21′ - 1″	Strength	21′ - 1″	12′ - 8″	Strength	11′ - 1″	
			Cant	10′ - 7″	Strength	10′ - 7″	6′ - 4″	Strength	5′ - 6″	
	K5-0630	6.30	SS	23′ - 4″	Strength	23′ - 4″	11′ - 5″	Strength	11′ - 5″	
			Cant	11′ - 8″	Strength	11′ - 8″	5′ - 8″	Strength	5′ - 8″	
	K5-0690	6.90	SS	24′ - 8″	Strength	24′ - 8″	13′ - 4″	Strength	13′ - 4″	
			Cant	12′ - 4″	Strength	12′ - 4″	6′ - 8″	Strength	6′ - 8″	
7-Ply	K7-0970	9.66	SS	31′ - 5″	Strength	31′ - 5″	19′ - 5″	Strength	19′ - 5″	
			Cant	15′ - 8″	Strength	15′ - 8″	9′ - 8″	Strength	9′ - 8″	
9-Ply	K9-1120	11.22	SS	35′ - 10″	Strength	35′ - 10″	21′ - 3″	Strength	21′ - 3″	
			Cant	17′ - 11″	Strength	17′ - 11″	10′ - 7″	Strength	10′ - 7″	
	K9-1240	12.42	SS	37′ - 7″	Strength	37′ - 7″	24′ - 9″	Strength	24′ - 9″	
			Cant	18′ - 9″	Strength	18′ - 9″	12′ - 5″	Strength	12′ - 5″	

Notes

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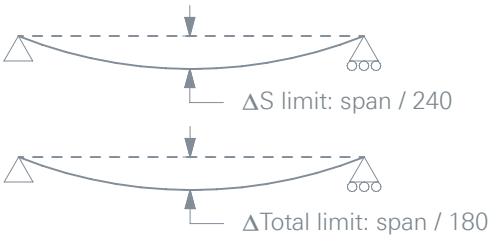
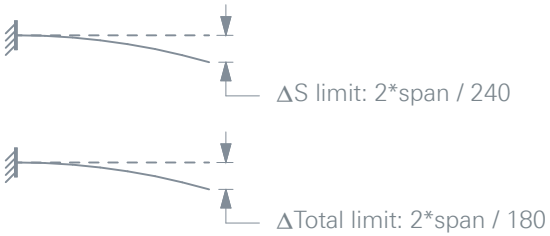
SS Deflection Limits



Cant Deflection Limits



ROOF | S = 60psf | SDL=15psf									
CLT Layup Designation		CLT Thickness (in)	Span Type	Major Direction			Minor Direction		
				Max Span	Controlling Criteria	Max Span 1hr Fire	Max Span	Controlling Criteria	Max Span 1hr Fire
3-Ply	K3-0320	3.24	SS	11′ - 10″	Strength	x	3′ - 3″	Strength	x
			Cant	5′ - 11″	Strength	x	1′ - 8″	Strength	x
	K3-0350	3.54	SS	12′ - 9″	Strength	x	4′ - 2″	Strength	x
			Cant	6′ - 4″	Strength	x	2′ - 1″	Strength	x
	K3-0380	3.84	SS	20′ - 6″	Strength	x	10′ - 0″	Strength	x
			Cant	6′ - 12″	Strength	x	1′ - 8″	Strength	x
	K3-0410	4.14	SS	14′ - 11″	Strength	x	4′ - 2″	Strength	x
			Cant	7′ - 5″	Strength	x	2′ - 1″	Strength	x
5-Ply	K5-0540	5.40	SS	17′ - 5″	Strength	17′ - 5″	9′ - 5″	Strength	5′ - 6″
			Cant	8′ - 8″	Strength	8′ - 8″	4′ - 8″	Strength	2′ - 9″
	K5-0600	6.00	SS	18′ - 7″	Strength	18′ - 7″	11′ - 2″	Strength	9′ - 9″
			Cant	9′ - 4″	Strength	9′ - 4″	5′ - 7″	Strength	4′ - 11″
	K5-0630	6.30	SS	20′ - 6″	Strength	20′ - 6″	10′ - 1″	Strength	10′ - 1″
			Cant	10′ - 3″	Strength	10′ - 3″	5′ - 0″	Strength	5′ - 0″
	K5-0690	6.90	SS	21′ - 9″	Strength	21′ - 9″	11′ - 9″	Strength	11′ - 9″
			Cant	10′ - 11″	Strength	10′ - 11″	5′ - 11″	Strength	5′ - 11″
7-Ply	K7-0970	9.66	SS	28′ - 0″	Strength	28′ - 0″	17′ - 3″	Strength	17′ - 3″
			Cant	14′ - 0″	Strength	14′ - 0″	8′ - 8″	Strength	8′ - 8″
9-Ply	K9-1120	11.22	SS	32′ - 1″	Strength	32′ - 1″	19′ - 0″	Strength	19′ - 0″
			Cant	16′ - 0″	Strength	16′ - 0″	9′ - 6″	Strength	9′ - 6″
	K9-1240	12.42	SS	33′ - 9″	Strength	33′ - 9″	22′ - 3″	Strength	22′ - 3″
			Cant	16′ - 11″	Strength	16′ - 11″	11′ - 2″	Strength	11′ - 2″

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