



**JEI Structural Engineering**

Glazing Systems  
Fast, Friendly, Affordable

Created October 13, 2020

Value Added Extra

**For Client Use Only**

Wind Load Charts w/ Unbraced Length Effects

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## Kawneer 1600 Wall System®2 Curtain Wall



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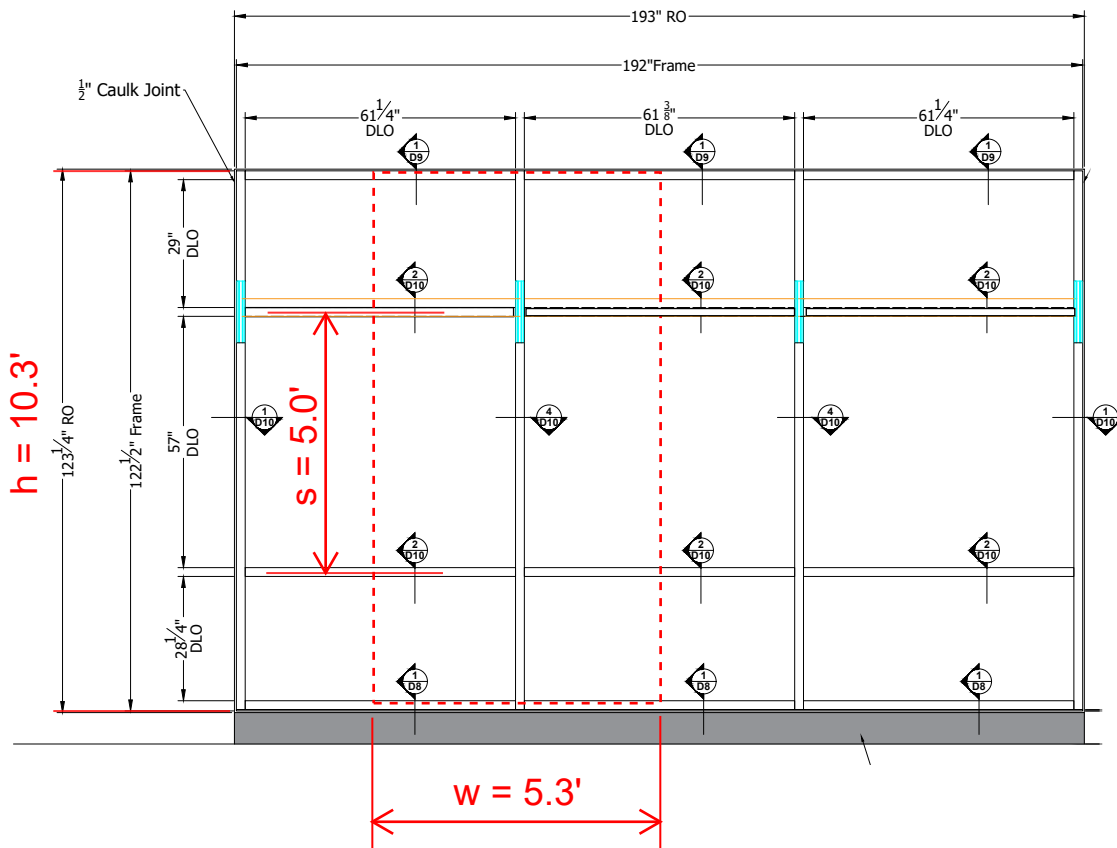
Step 1 - Make sure that max horizontal mullion spacing (s) is not more than chart maximum (12'-0" in this case.)

Step 2 - Enter the chart on the horizontal axis with your spacing or tributary width (w) of the vertical mullion.

Step 3 - Enter the chart on the vertical axis with the maximum span height (h) of the mullion.

Step 4 - Ensure that the intersection is below the design wind load indicated by colored line.

Example





### Wind Load Chart including Unbraced Length Effects

Kawneer 162-001 6063-T6 Aluminum

Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 12'-0" <sup>①</sup>

IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

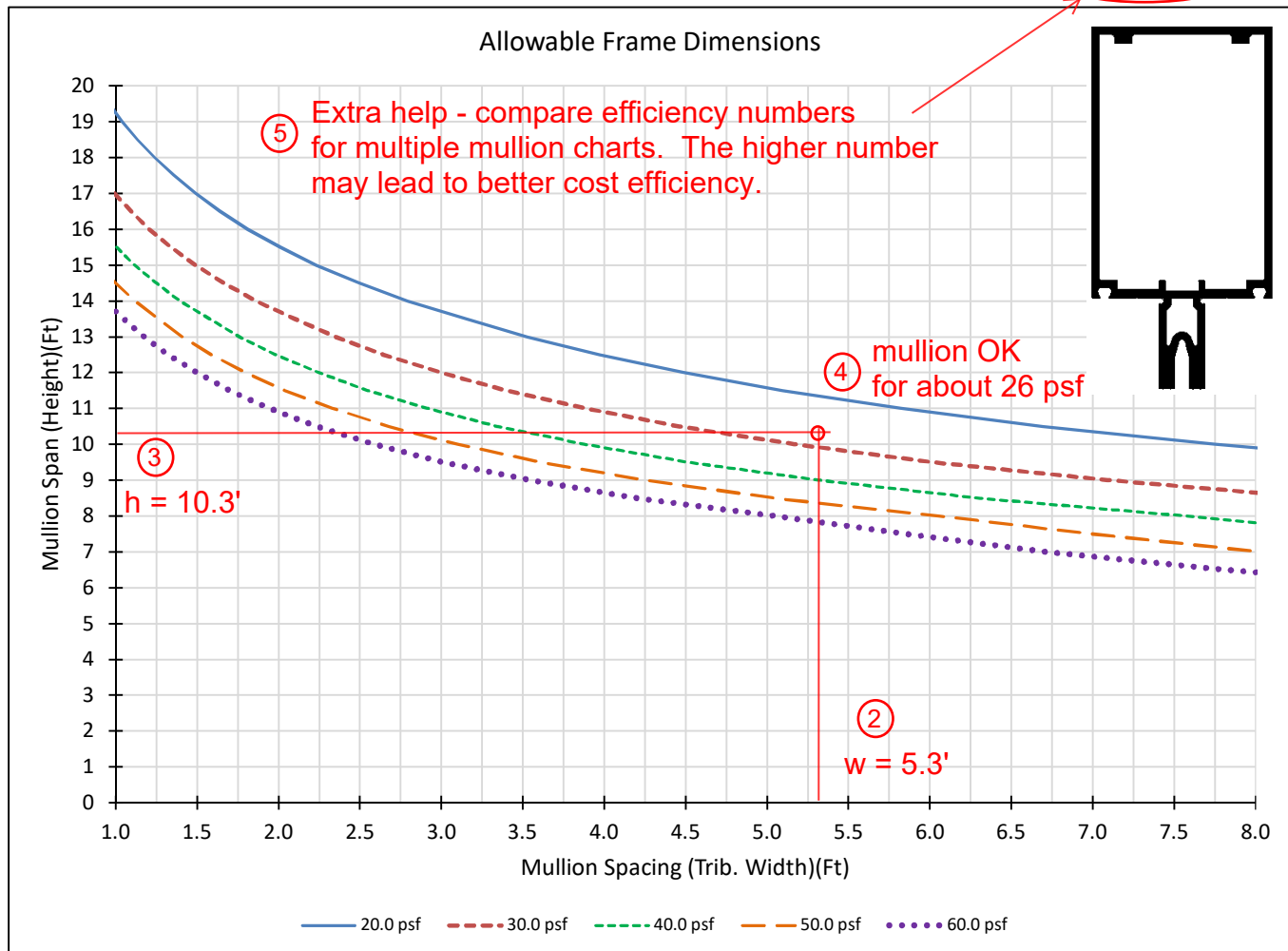
s = 5'

E =	10100 ksi	A =	1.787 in <sup>2</sup>
I <sub>x, alum</sub> =	5.036 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.649 in
S <sub>x, alum</sub> =	1.993 in <sup>3</sup>	wt =	2.147 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	5.036 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for  $\leq 13'6"$  or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Spacing (ft)	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1172	1172	1172





## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-001 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

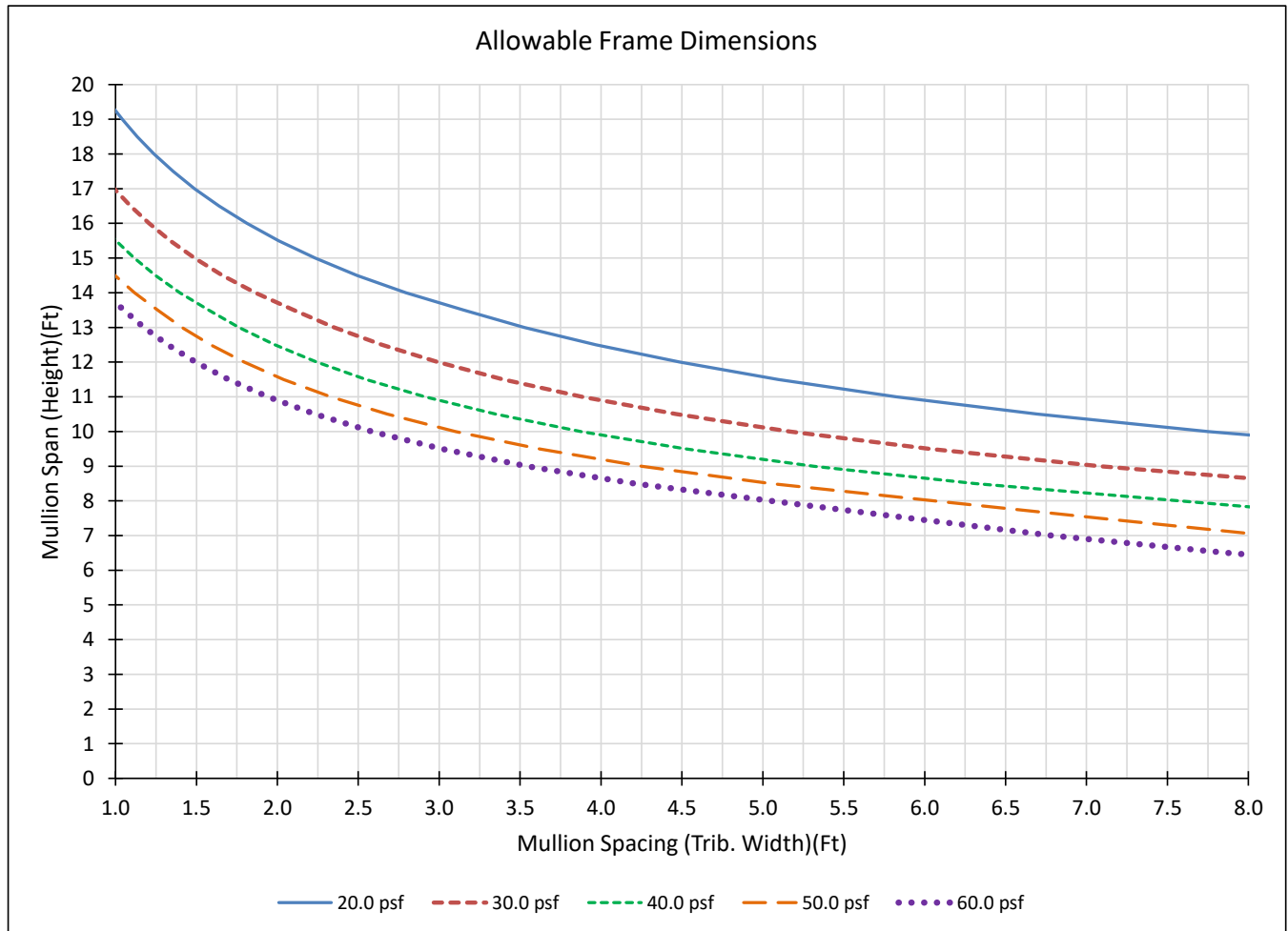
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.787 in <sup>2</sup>
I <sub>x, alum</sub> =	5.036 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.649 in
S <sub>x, alum</sub> =	1.993 in <sup>3</sup>	wt =	2.147 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	5.036 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1172	1172	1172



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-001 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

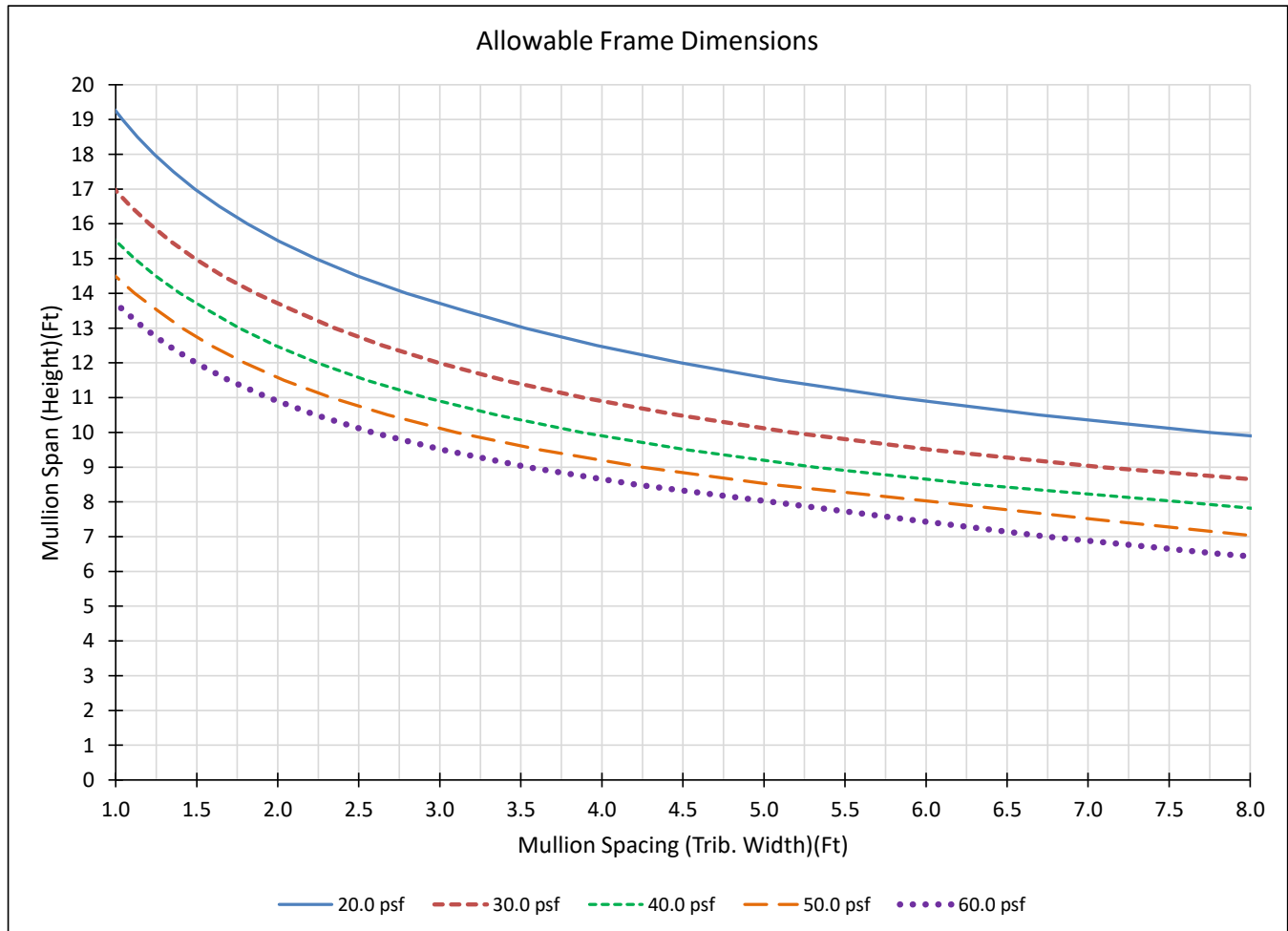
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.787 in <sup>2</sup>
I <sub>x, alum</sub> =	5.036 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.649 in
S <sub>x, alum</sub> =	1.993 in <sup>3</sup>	wt =	2.147 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	5.036 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1172	1172	1172



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-001 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

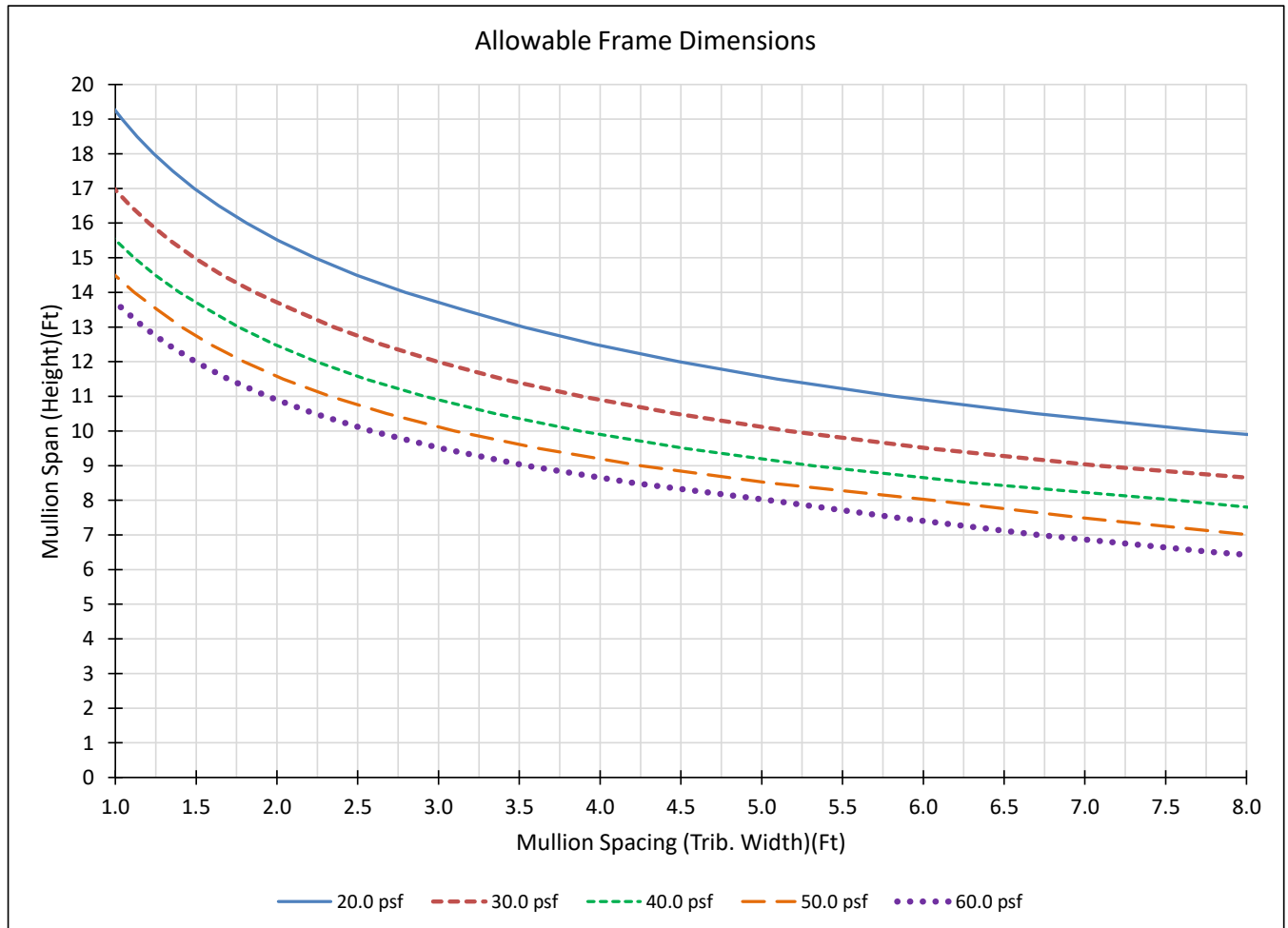
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.787 in <sup>2</sup>
I <sub>x, alum</sub> =	5.036 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.649 in
S <sub>x, alum</sub> =	1.993 in <sup>3</sup>	wt =	2.147 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	5.036 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1172	1172	1172



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-002      6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

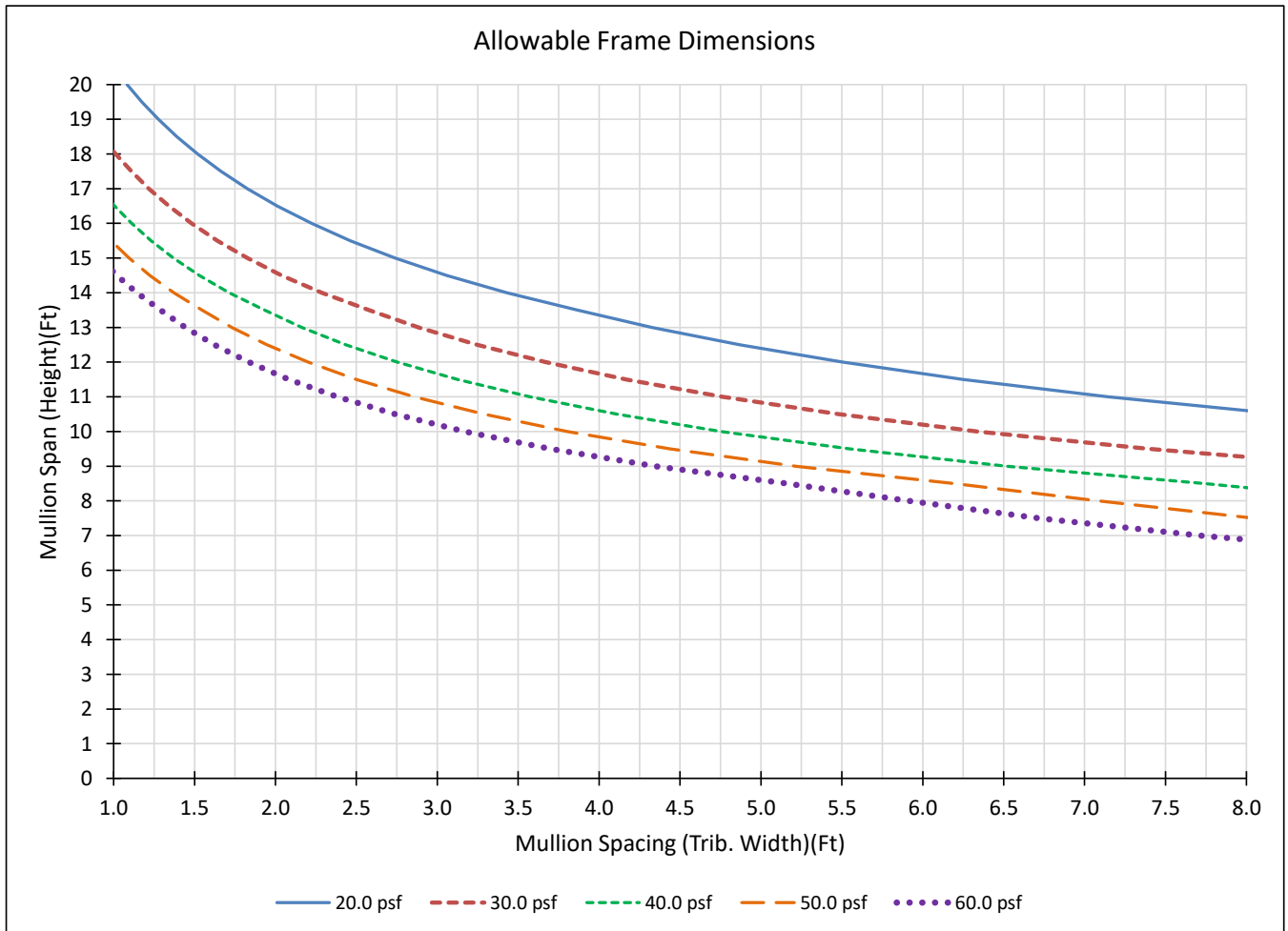
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.036 in <sup>2</sup>
I <sub>x, alum</sub> =	6.179 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.248 in
S <sub>x, alum</sub> =	2.265 in <sup>3</sup>	wt =	2.446 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	6.179 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1169	1169	1169



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-002 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

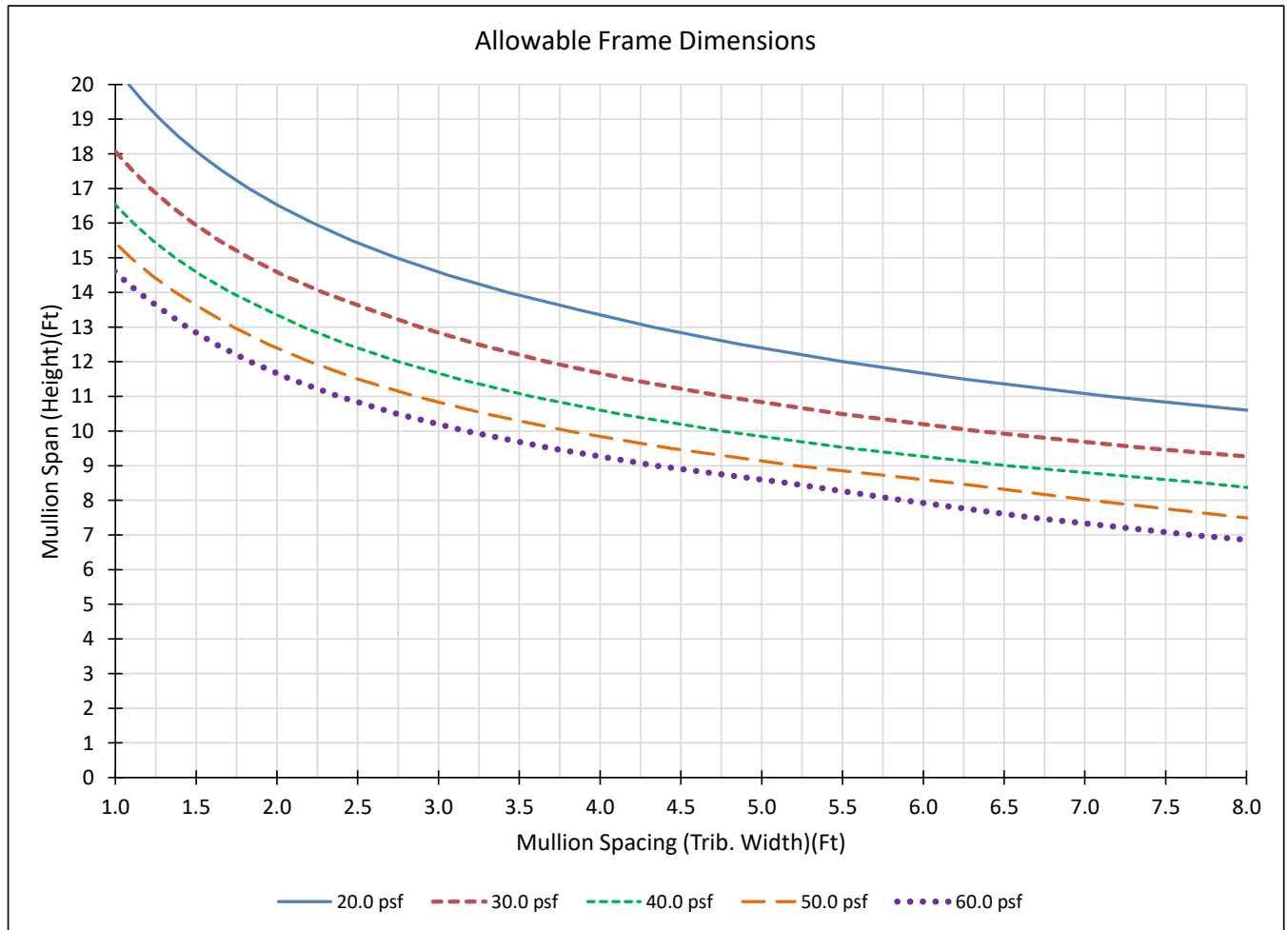
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.036 in <sup>2</sup>
I <sub>x, alum</sub> =	6.179 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.248 in
S <sub>x, alum</sub> =	2.265 in <sup>3</sup>	wt =	2.446 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	6.179 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1169	1169	1169



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-002 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

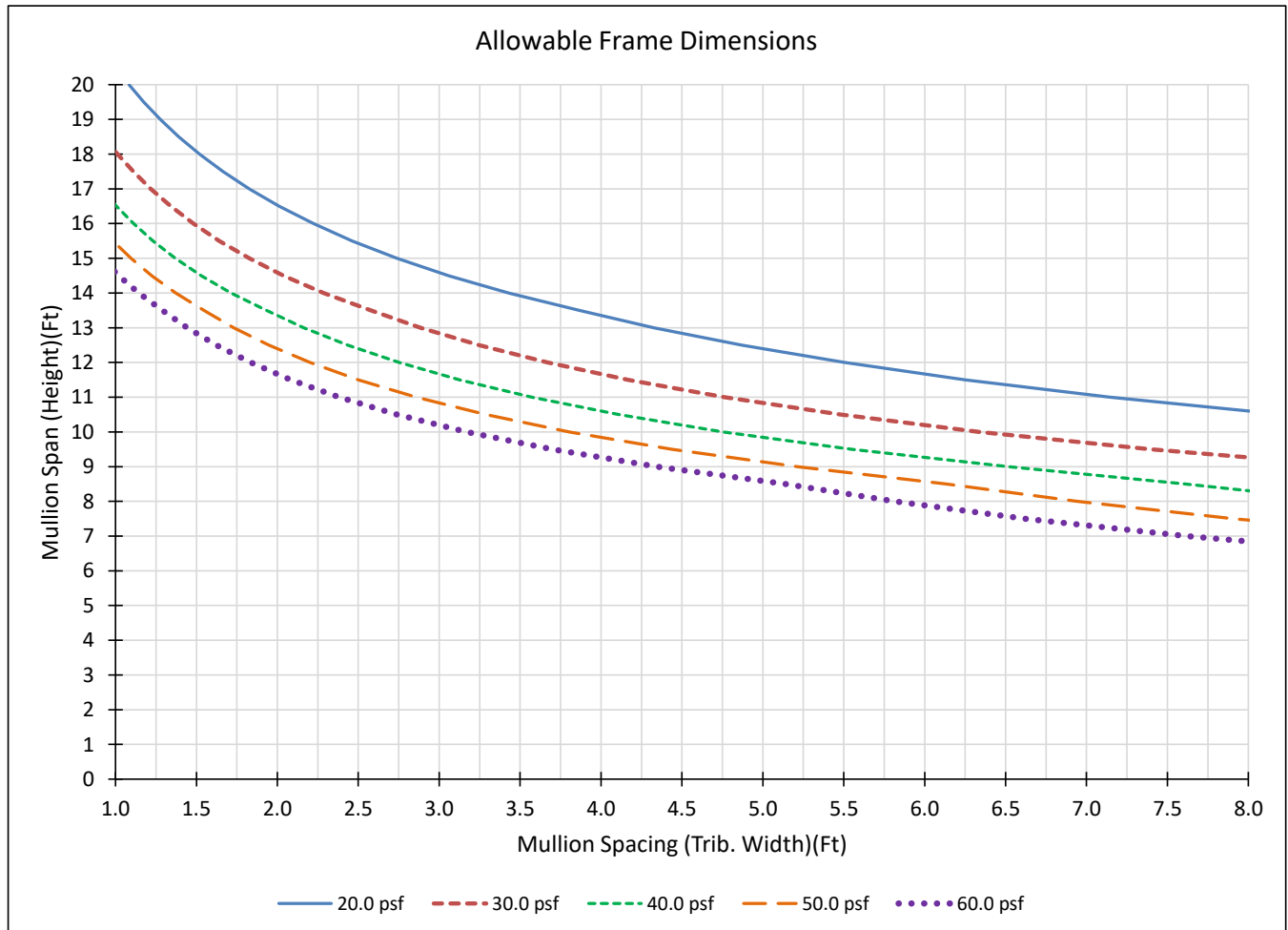
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.036 in <sup>2</sup>
I <sub>x, alum</sub> =	6.179 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.248 in
S <sub>x, alum</sub> =	2.265 in <sup>3</sup>	wt =	2.446 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	6.179 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1169	1169	1169



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-003 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

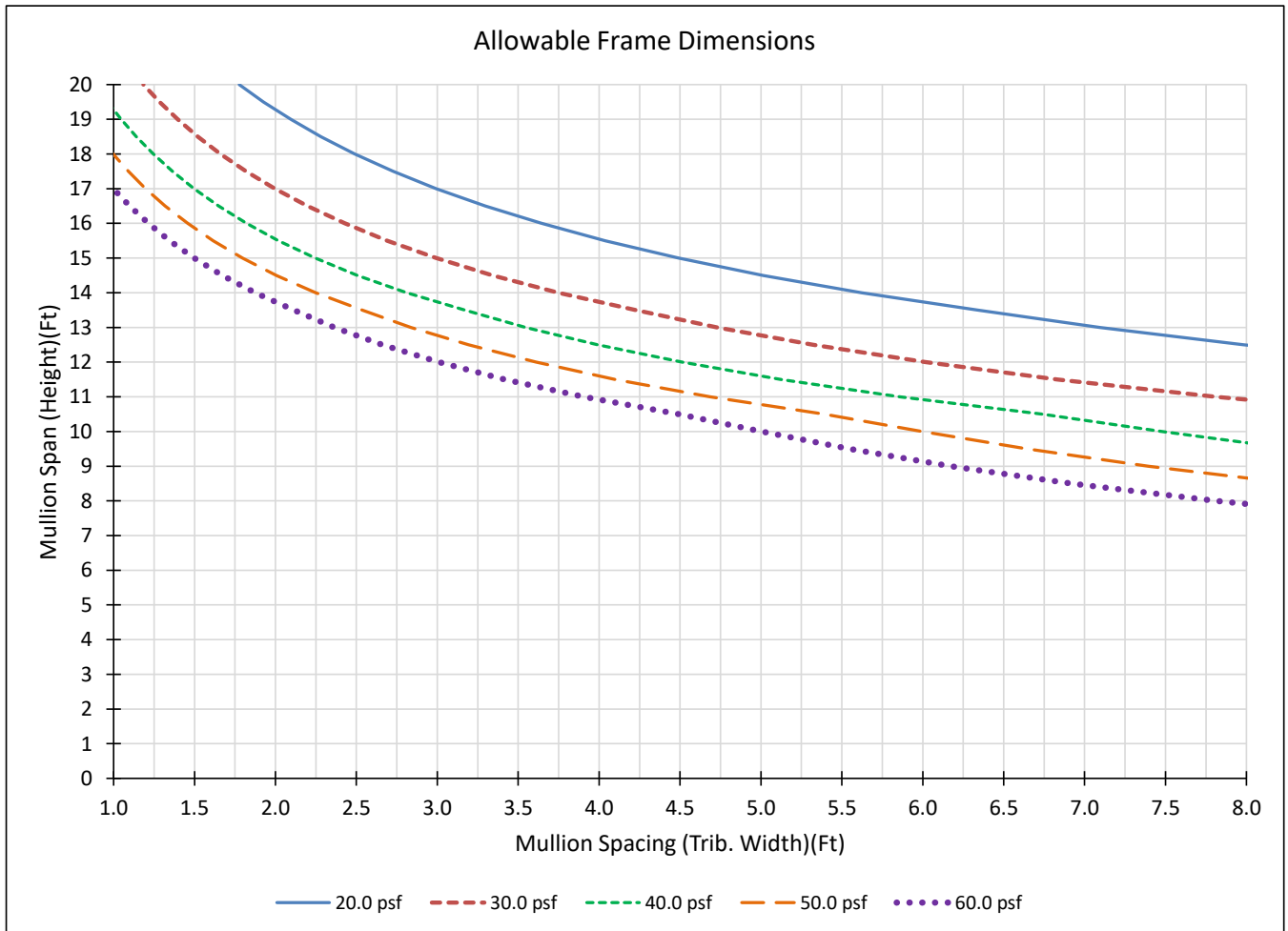
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.088 in <sup>2</sup>
I <sub>x, alum</sub> =	10.130 in <sup>4</sup>	Z <sub>x, alum</sub> =	4.103 in
S <sub>x, alum</sub> =	3.029 in <sup>3</sup>	wt =	2.509 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	10.130 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'6" or L/240 + 1/4" for L > 13'6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1509	1509	1509



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-003 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

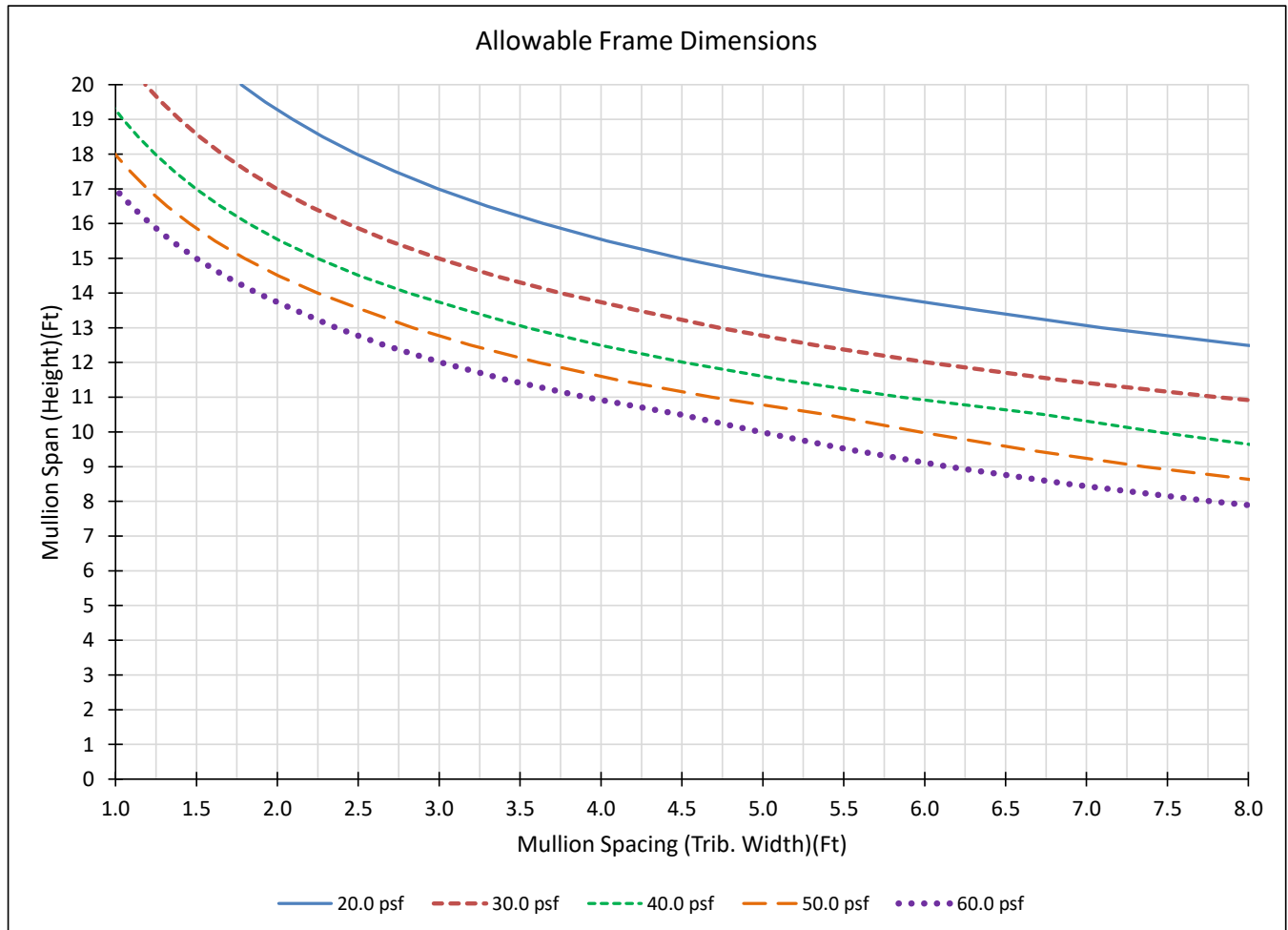
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.088 in <sup>2</sup>
I <sub>x, alum</sub> =	10.130 in <sup>4</sup>	Z <sub>x, alum</sub> =	4.103 in
S <sub>x, alum</sub> =	3.029 in <sup>3</sup>	wt =	2.509 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	10.130 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1509	1509	1509



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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-003 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

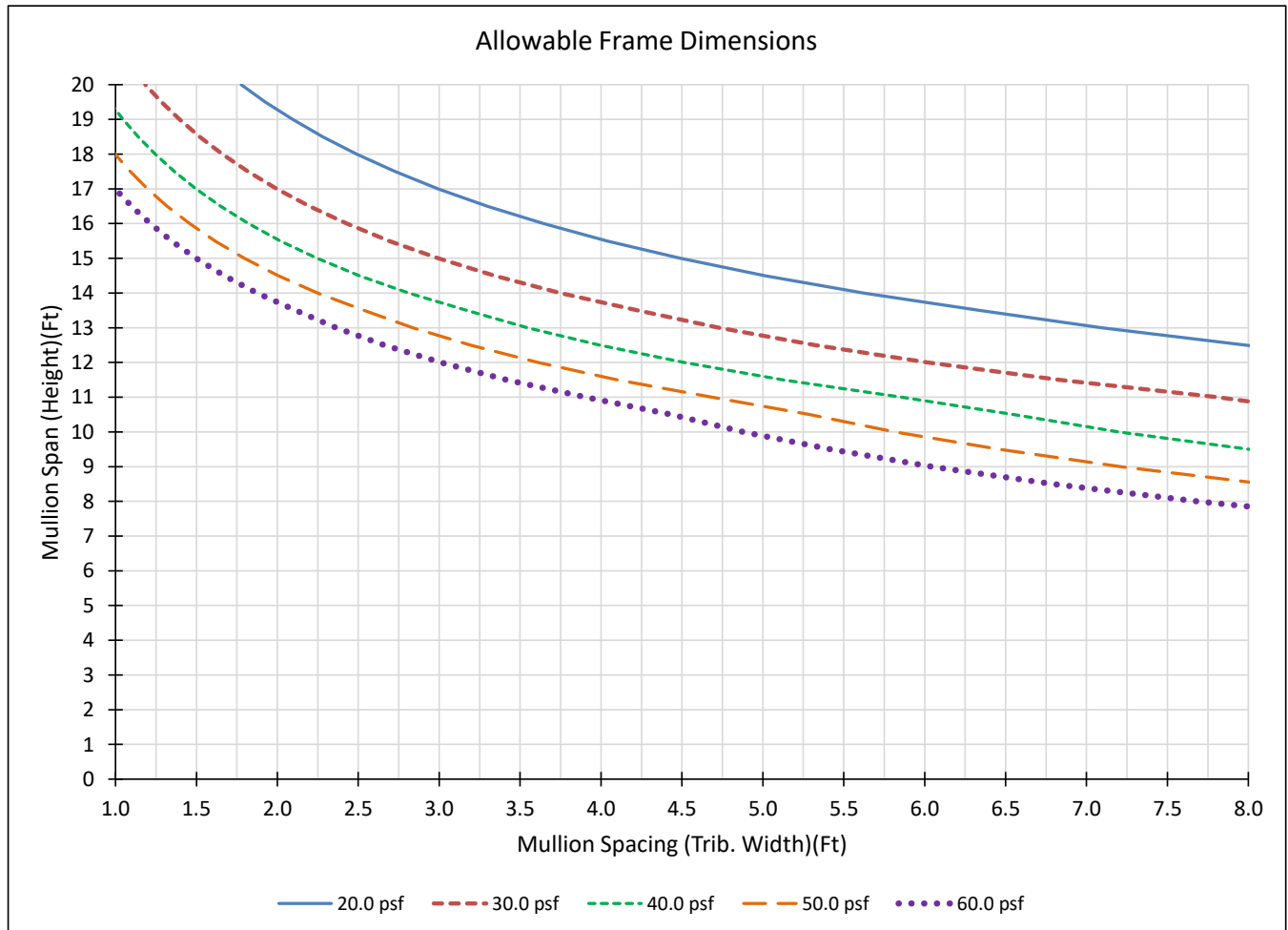
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.088 in <sup>2</sup>
I <sub>x, alum</sub> =	10.130 in <sup>4</sup>	Z <sub>x, alum</sub> =	4.103 in
S <sub>x, alum</sub> =	3.029 in <sup>3</sup>	wt =	2.509 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	10.130 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'6" or L/240 + 1/4" for L > 13'6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1509	1509	1509



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-004 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

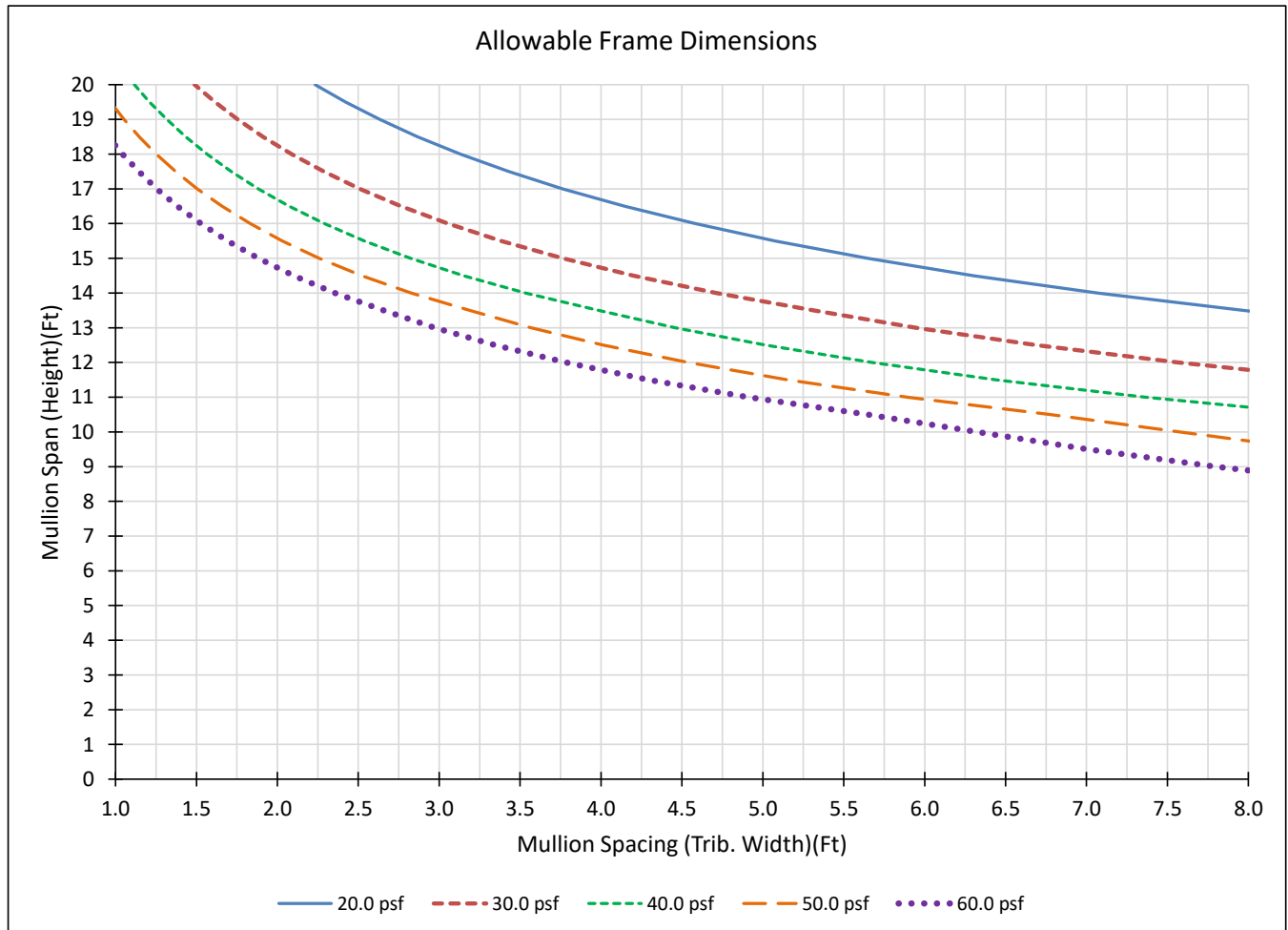
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.412 in <sup>2</sup>
I <sub>x, alum</sub> =	12.735 in <sup>4</sup>	Z <sub>x, alum</sub> =	5.052 in
S <sub>x, alum</sub> =	3.791 in <sup>3</sup>	wt =	2.898 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	12.735 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1652	1652	1652



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-004      6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

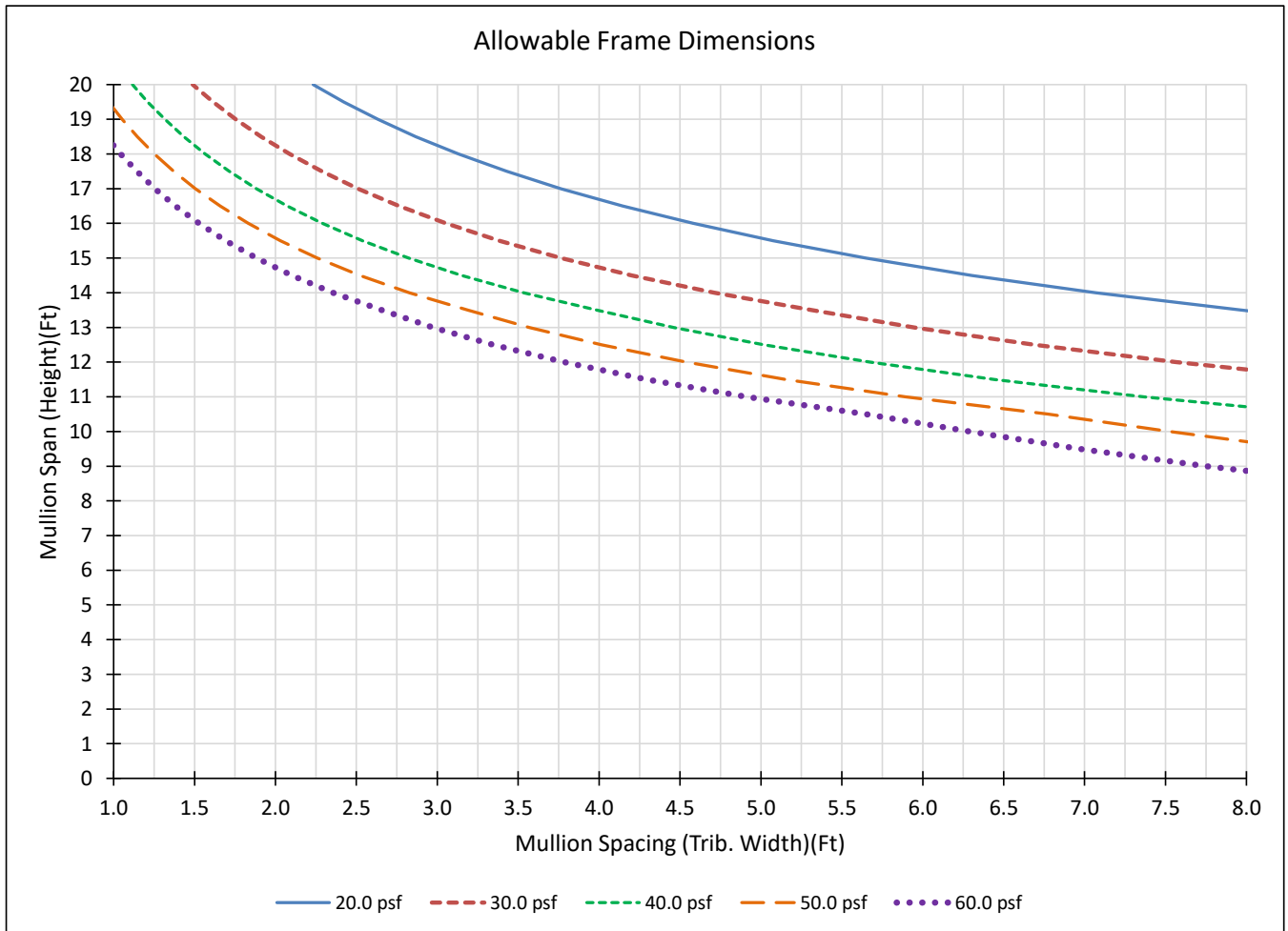
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.412 in <sup>2</sup>
I <sub>x, alum</sub> =	12.735 in <sup>4</sup>	Z <sub>x, alum</sub> =	5.052 in
S <sub>x, alum</sub> =	3.791 in <sup>3</sup>	wt =	2.898 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	12.735 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1652	1652	1652



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.





## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-004 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

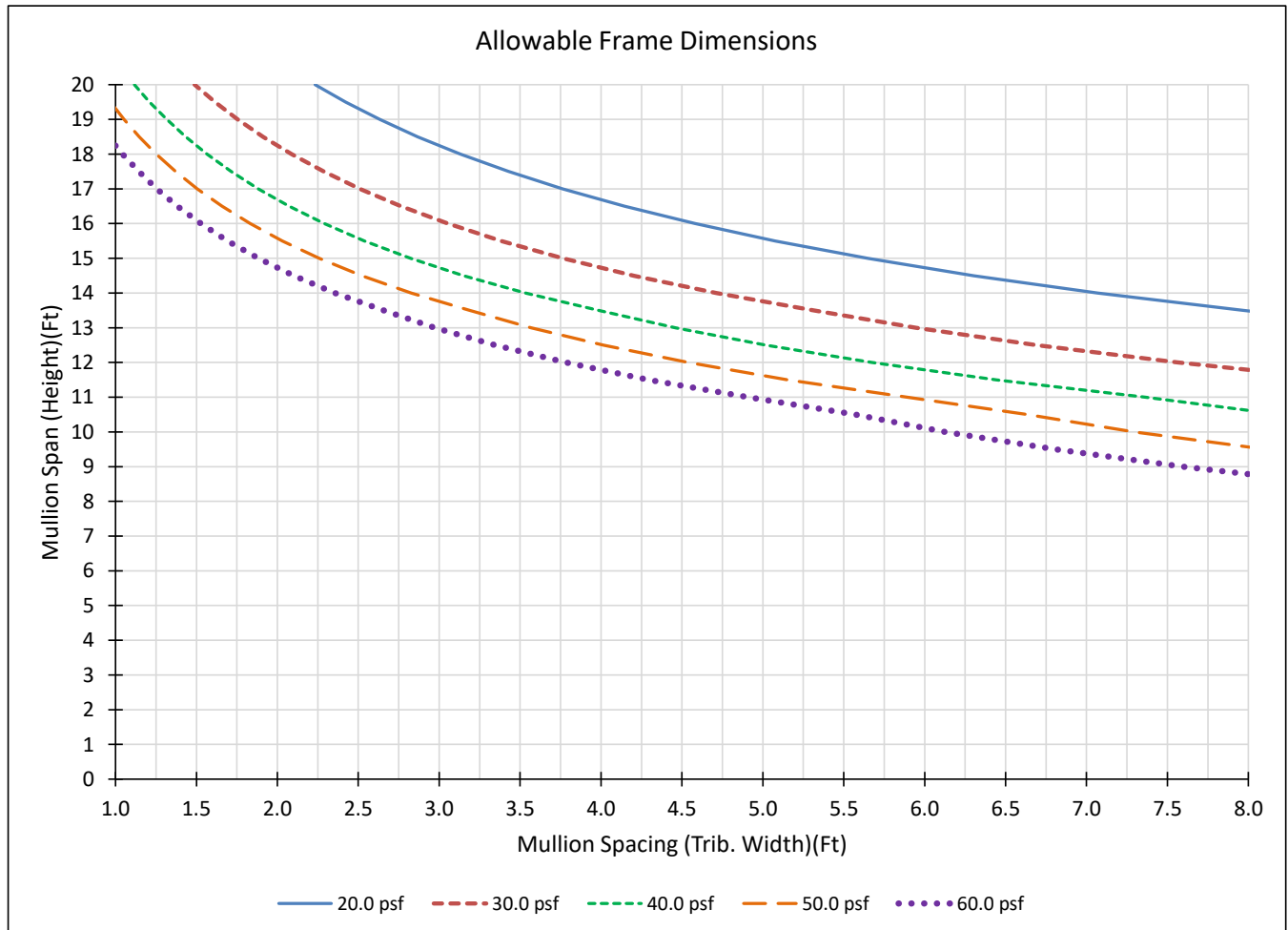
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	2.412 in <sup>2</sup>
I <sub>x, alum</sub> =	12.735 in <sup>4</sup>	Z <sub>x, alum</sub> =	5.052 in
S <sub>x, alum</sub> =	3.791 in <sup>3</sup>	wt =	2.898 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	12.735 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1652	1652	1652



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-025 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

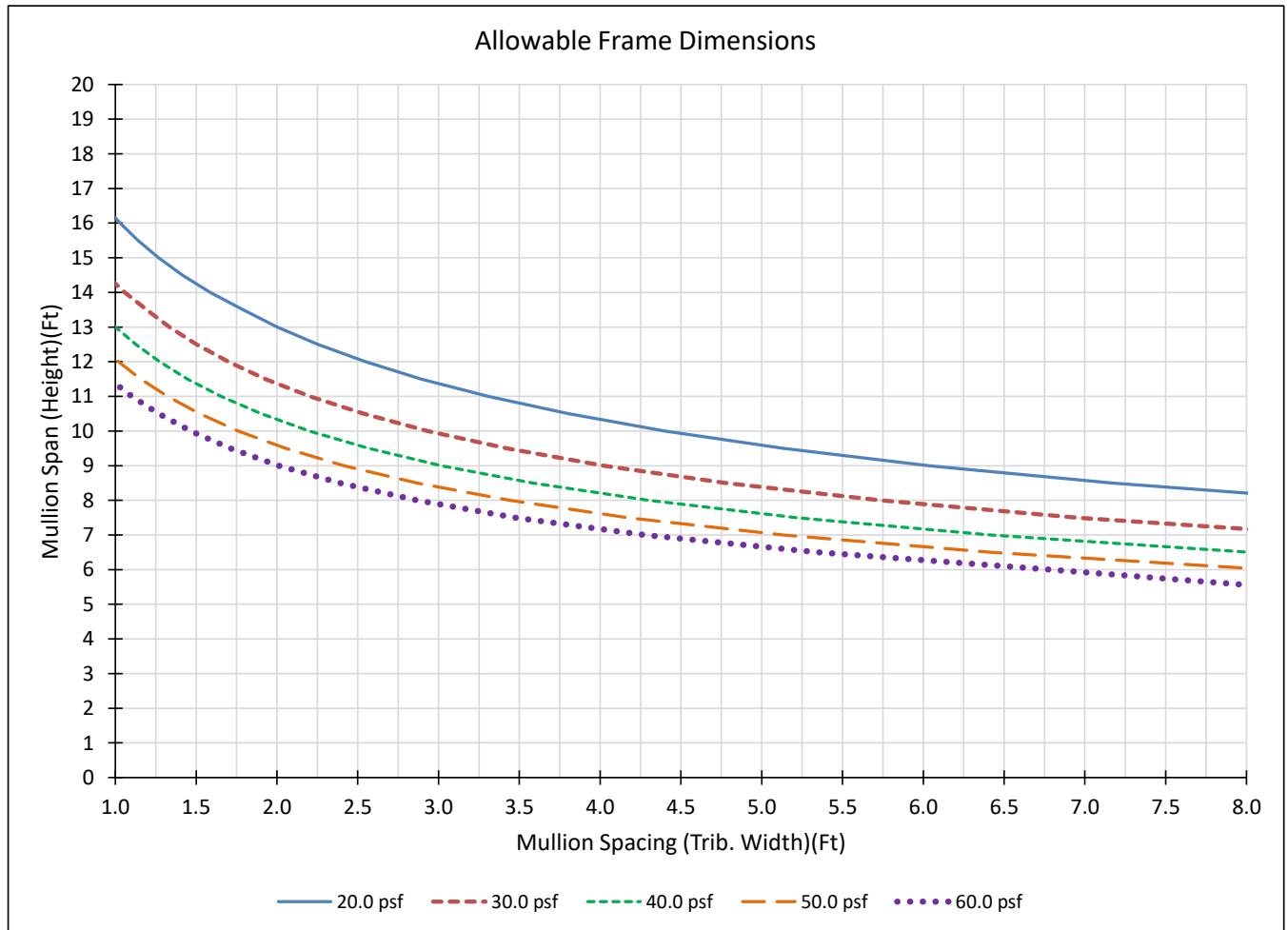
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.382 in <sup>2</sup>
I <sub>x, alum</sub> =	2.860 in <sup>4</sup>	Z <sub>x, alum</sub> =	1.819 in
S <sub>x, alum</sub> =	1.482 in <sup>3</sup>	wt =	1.660 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	2.860 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1127	1127	1127



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-025 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

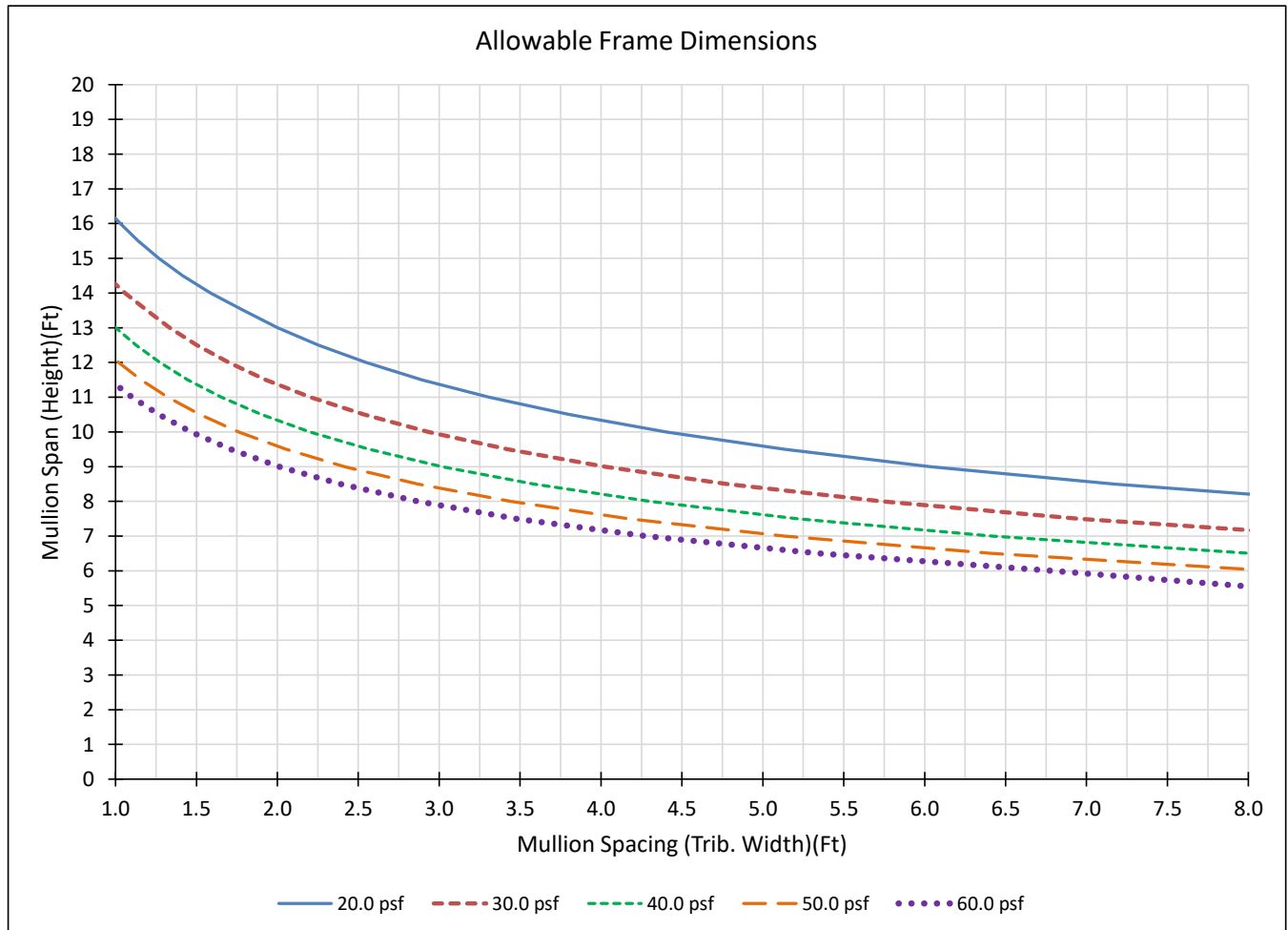
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E = 10100 ksi      A = 1.382 in<sup>2</sup>  
 $I_{x, \text{alum}}$  = 2.860 in<sup>4</sup>       $Z_{x, \text{alum}}$  = 1.819 in  
 $S_{x, \text{alum}}$  = 1.482 in<sup>3</sup>      wt = 1.660 lb/ft  
 Reinforcing: **No Reinforcing**  
 $I_{x, \text{steel}}$  = 0.000 in<sup>4</sup>       $S_{x, \text{steel}}$  = 0.000 in<sup>3</sup>  
 $I_{\text{combined}}$  = 2.860 in<sup>4</sup>

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1127	1127	1127



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-025      6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

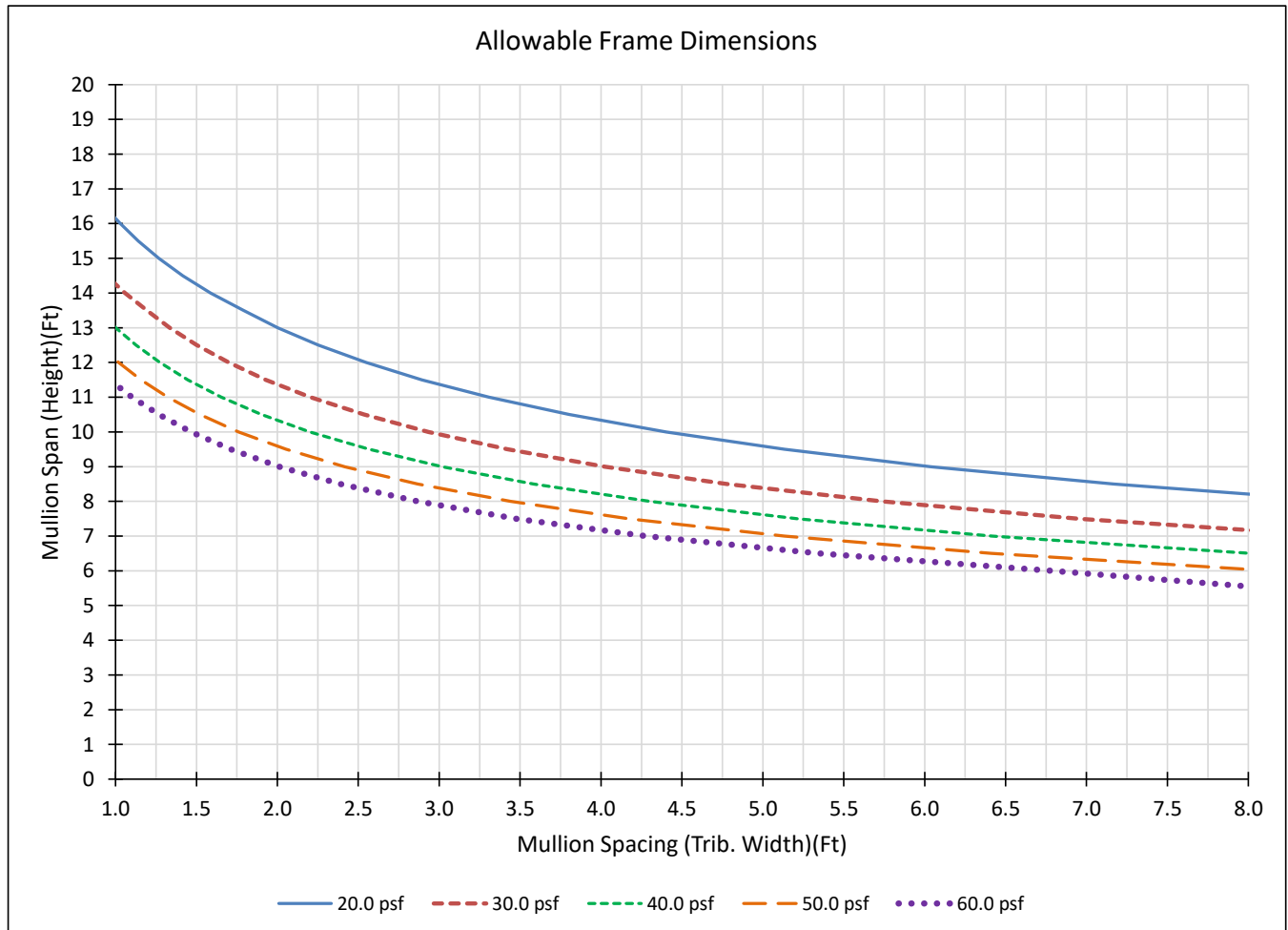
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.382 in <sup>2</sup>
I <sub>x, alum</sub> =	2.860 in <sup>4</sup>	Z <sub>x, alum</sub> =	1.819 in
S <sub>x, alum</sub> =	1.482 in <sup>3</sup>	wt =	1.660 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	2.860 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1127	1127	1127



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-026 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

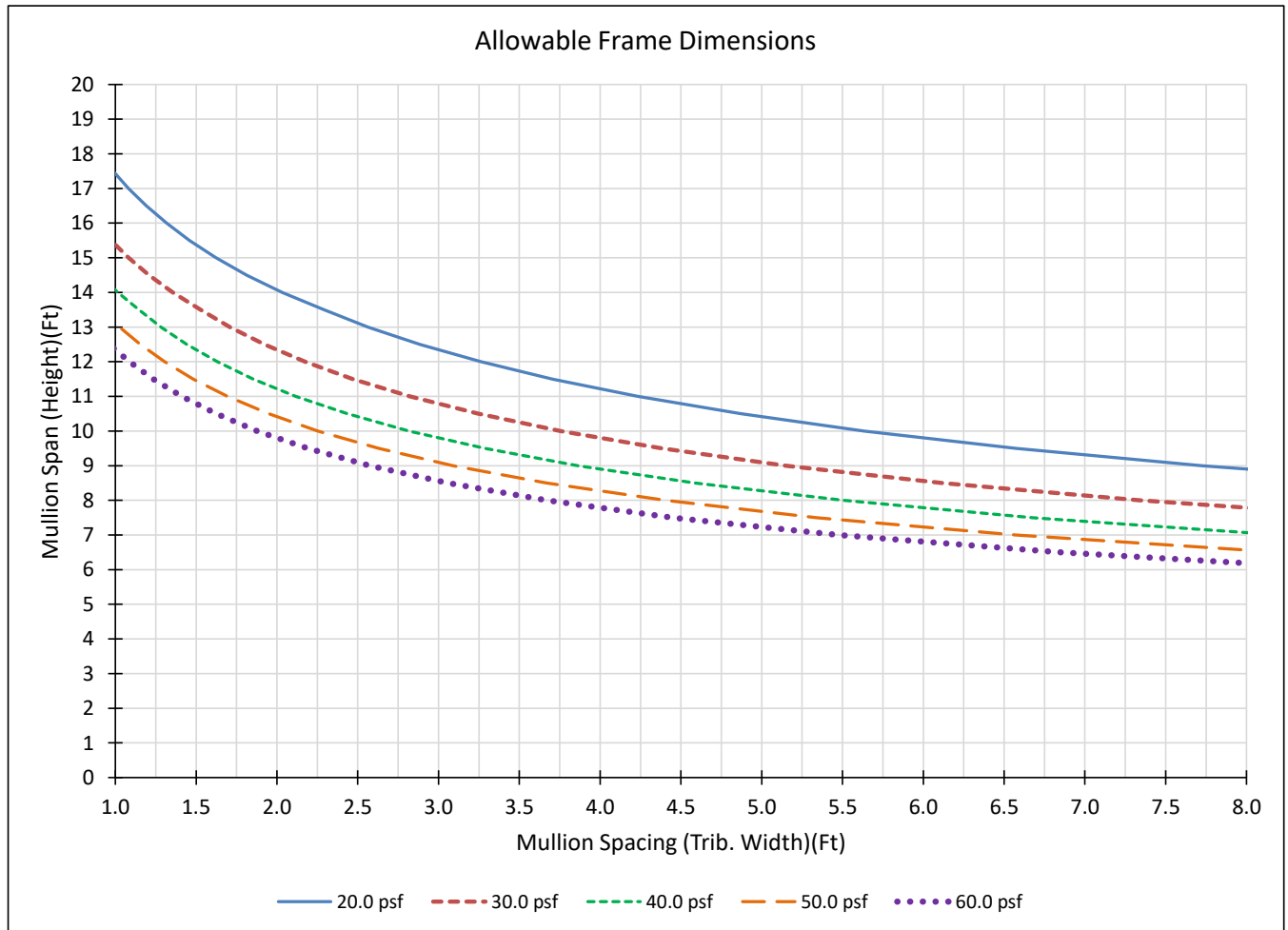
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E = 10100 ksi      A = 1.662 in<sup>2</sup>  
 $I_{x, \text{alum}}$  = 3.661 in<sup>4</sup>       $Z_{x, \text{alum}}$  = 2.288 in  
 $S_{x, \text{alum}}$  = 2.079 in<sup>3</sup>      wt = 1.997 lb/ft  
 Reinforcing: **No Reinforcing**  
 $I_{x, \text{steel}}$  = 0.000 in<sup>4</sup>       $S_{x, \text{steel}}$  = 0.000 in<sup>3</sup>  
 $I_{\text{combined}}$  = 3.661 in<sup>4</sup>

Curves are based on deflection limits of L/175 for L ≤ 13'6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1315	1312	1256



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-026 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

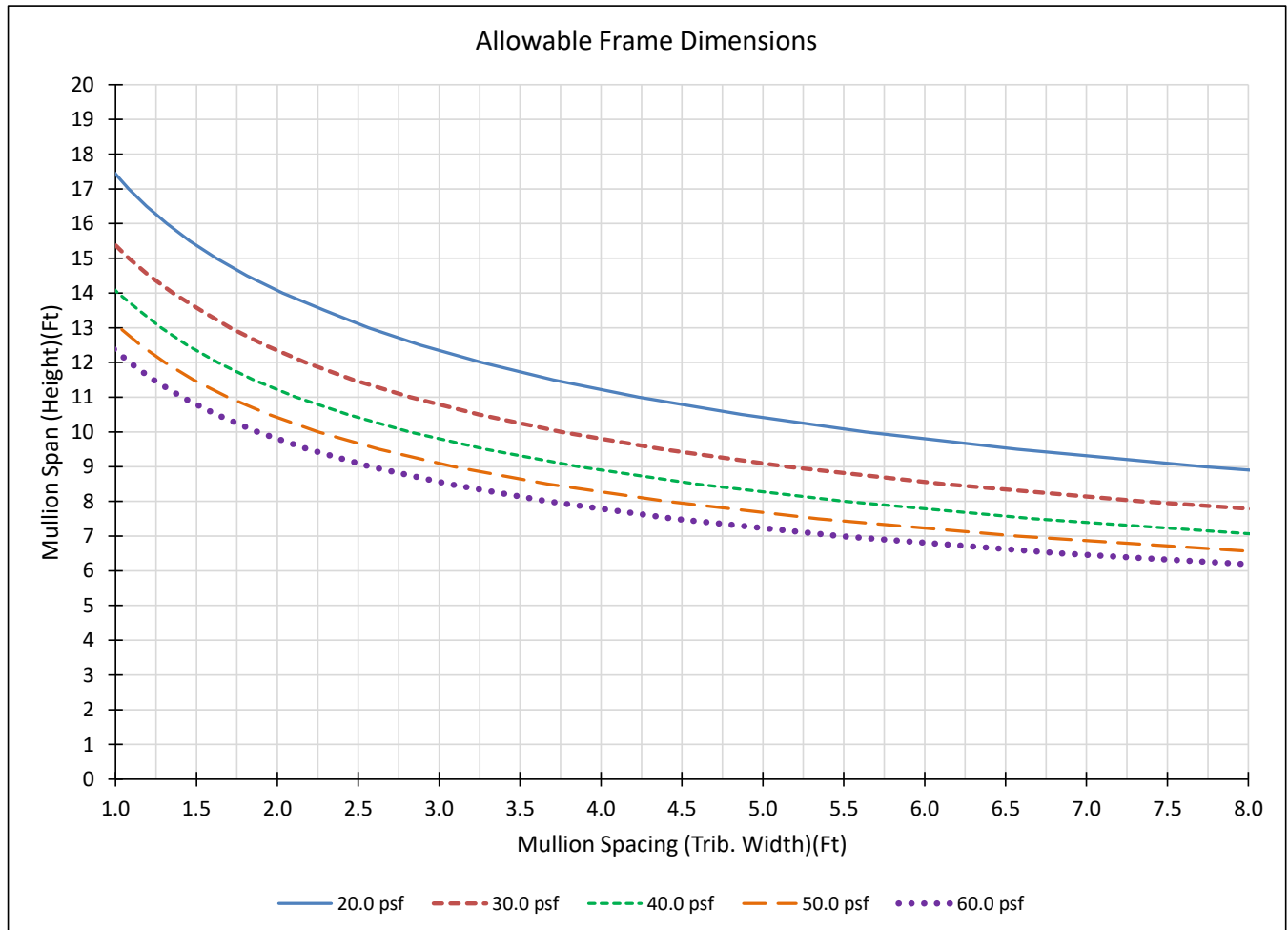
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.662 in <sup>2</sup>
I <sub>x, alum</sub> =	3.661 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.288 in
S <sub>x, alum</sub> =	2.079 in <sup>3</sup>	wt =	1.997 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	3.661 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1315	1312	1256



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-026 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

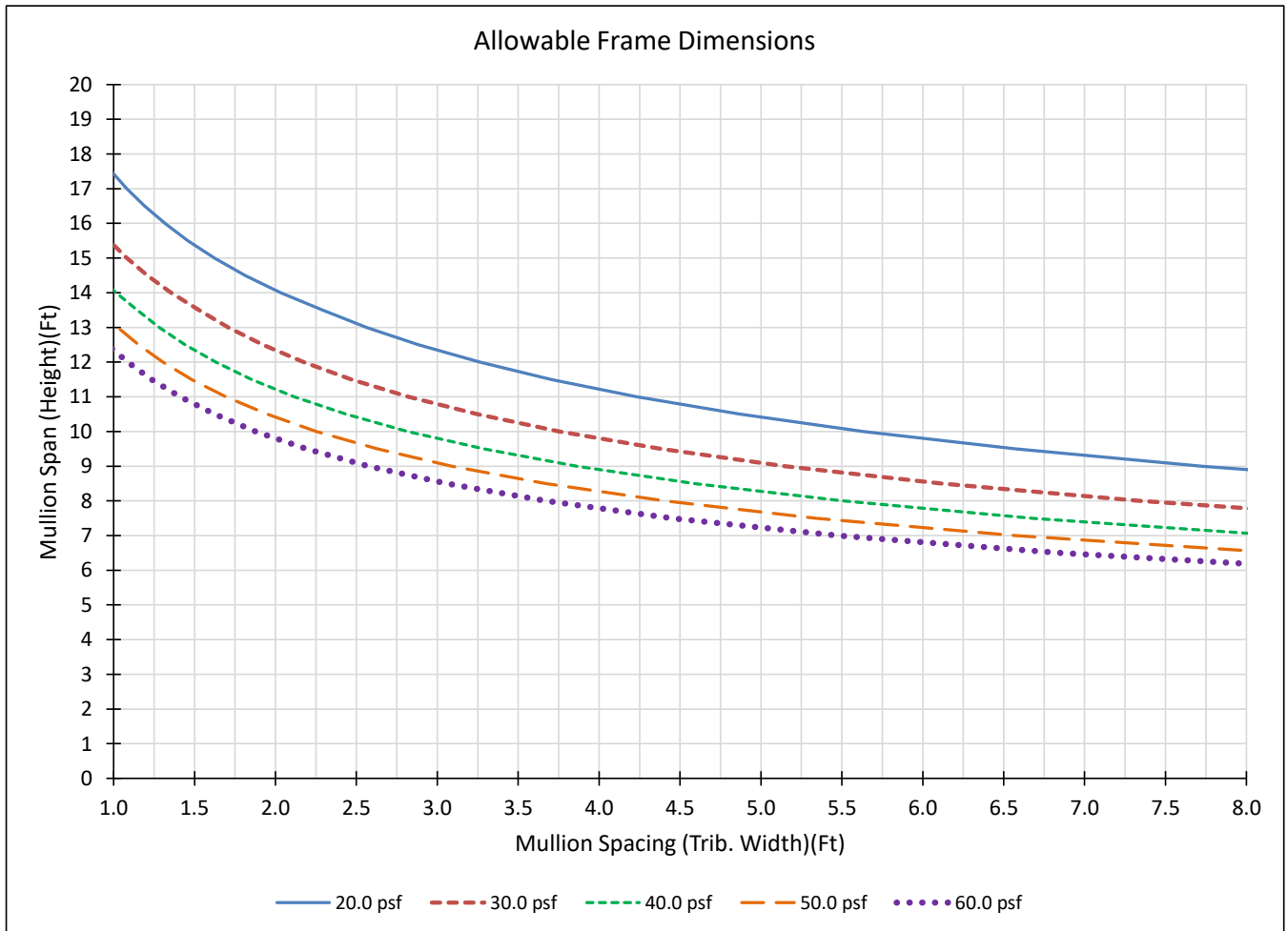
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

$E = 10100 \text{ ksi}$        $A = 1.662 \text{ in}^2$   
 $I_{x, \text{alum}} = 3.661 \text{ in}^4$        $Z_{x, \text{alum}} = 2.288 \text{ in}$   
 $S_{x, \text{alum}} = 2.079 \text{ in}^3$        $wt = 1.997 \text{ lb/ft}$   
 Reinforcing: **No Reinforcing**  
 $I_{x, \text{steel}} = 0.000 \text{ in}^4$        $S_{x, \text{steel}} = 0.000 \text{ in}^3$   
 $I_{\text{combined}} = 3.661 \text{ in}^4$

Curves are based on deflection limits of  $L/175$  for  $L \leq 13'6"$  or  $L/240 + 1/4"$  for  $L > 13'6"$  and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1315	1312	1256



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-027 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

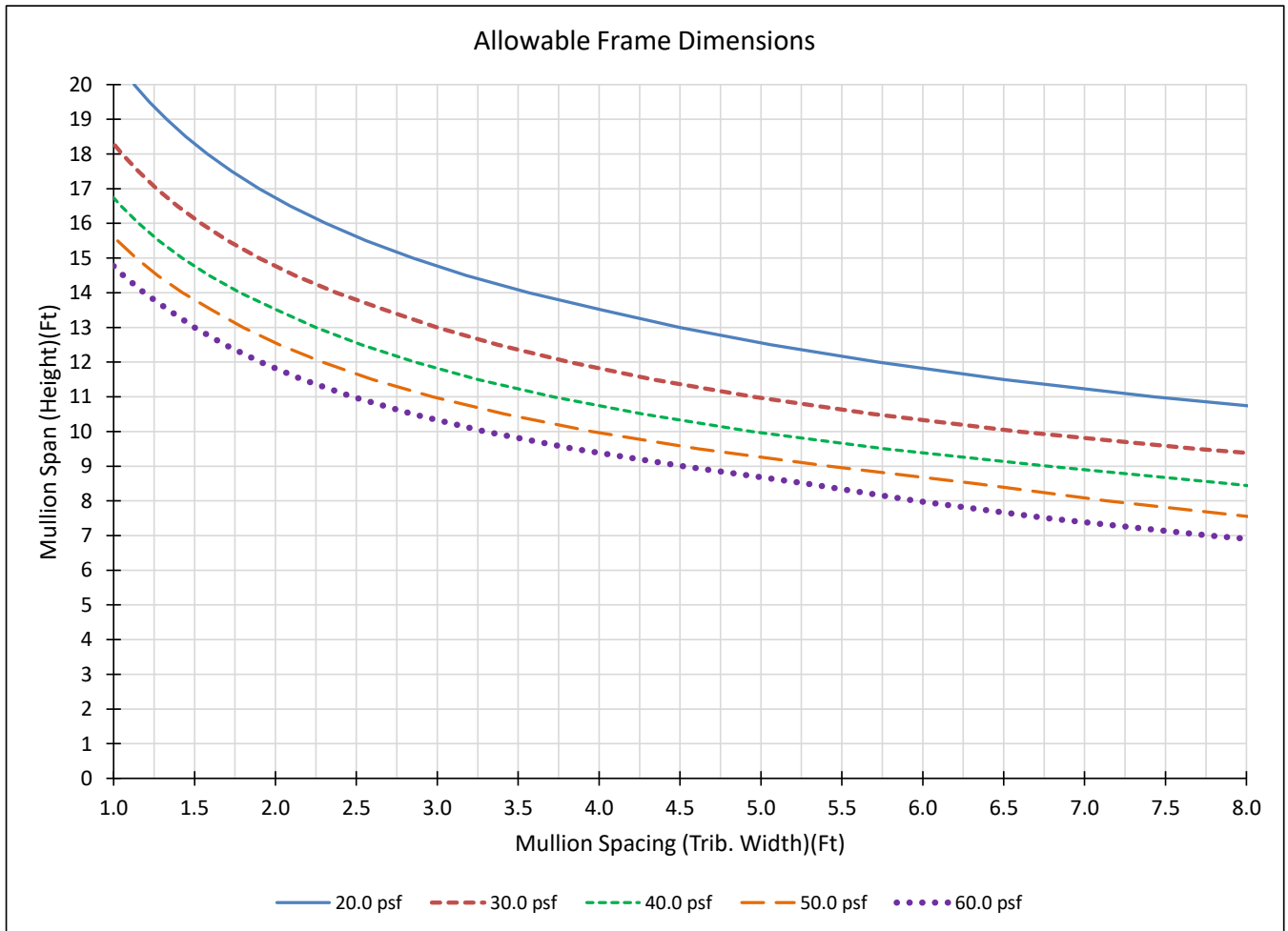
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.682 in <sup>2</sup>
I <sub>x, alum</sub> =	6.424 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.968 in
S <sub>x, alum</sub> =	2.385 in <sup>3</sup>	wt =	2.021 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	6.424 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1428	1428	1428



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.





## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-027 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

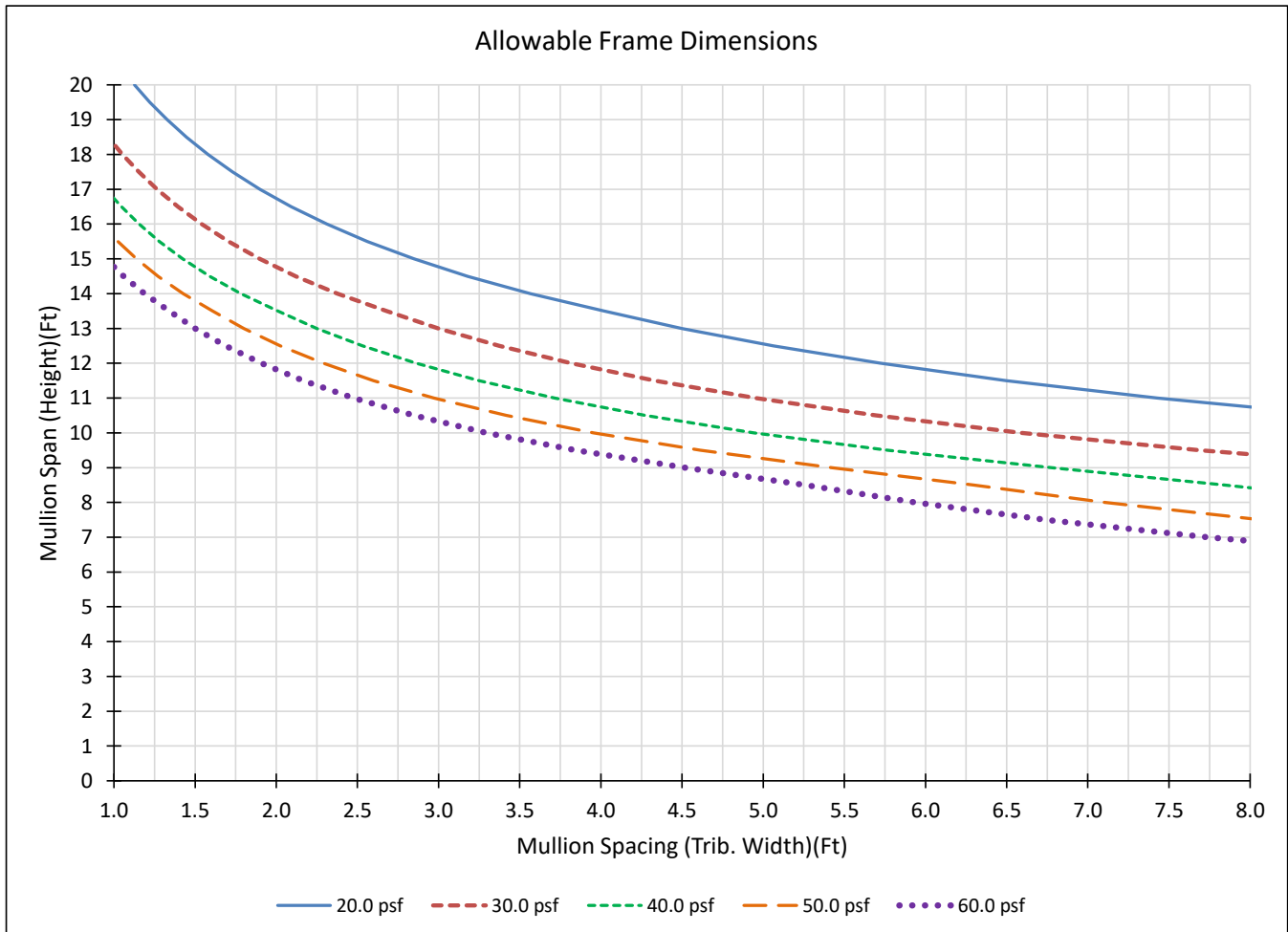
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.682 in <sup>2</sup>
I <sub>x, alum</sub> =	6.424 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.968 in
S <sub>x, alum</sub> =	2.385 in <sup>3</sup>	wt =	2.021 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	6.424 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1428	1428	1428



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-027 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

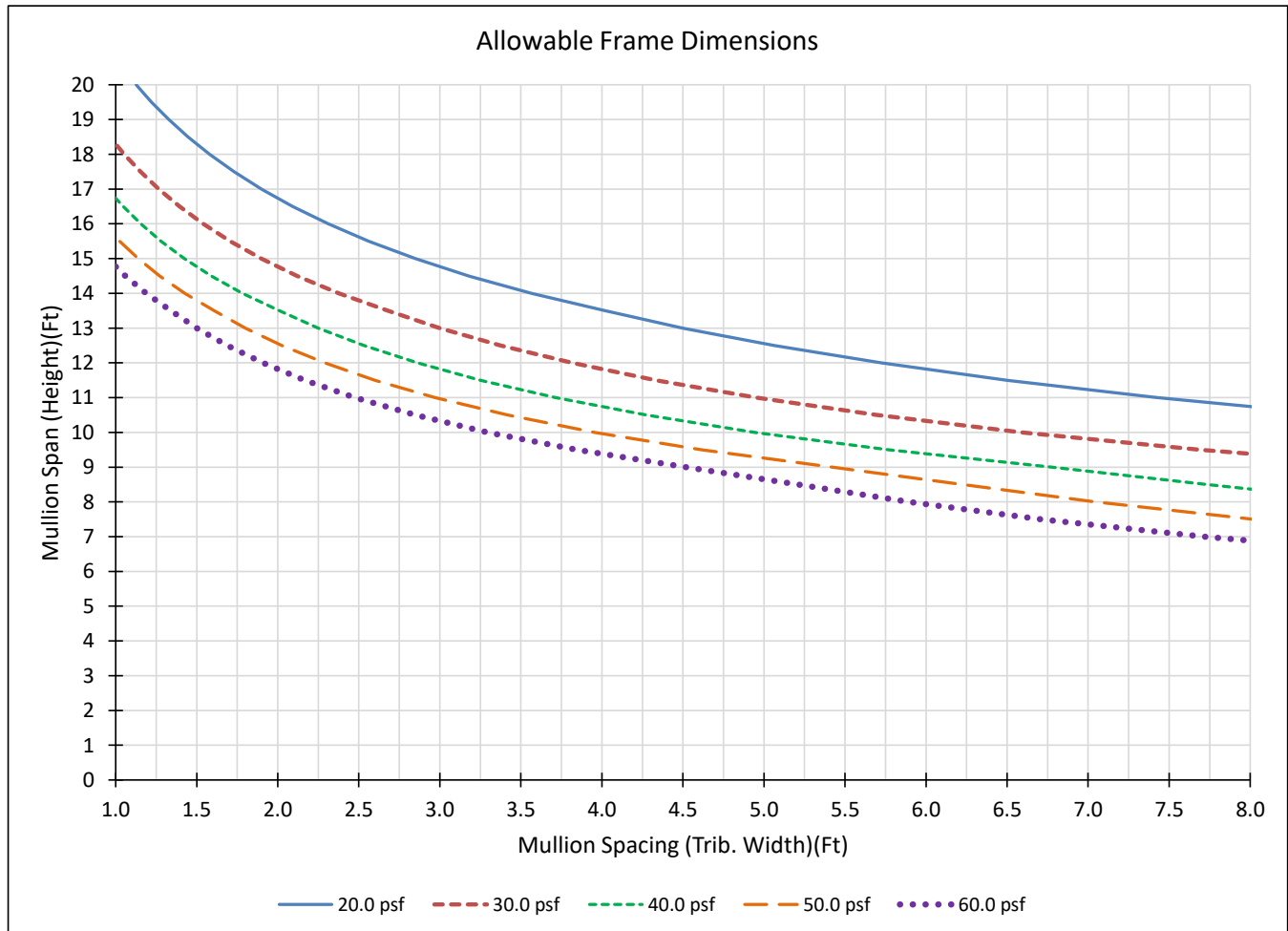
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.682 in <sup>2</sup>
I <sub>x, alum</sub> =	6.424 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.968 in
S <sub>x, alum</sub> =	2.385 in <sup>3</sup>	wt =	2.021 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	6.424 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1428	1428	1428



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-028 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

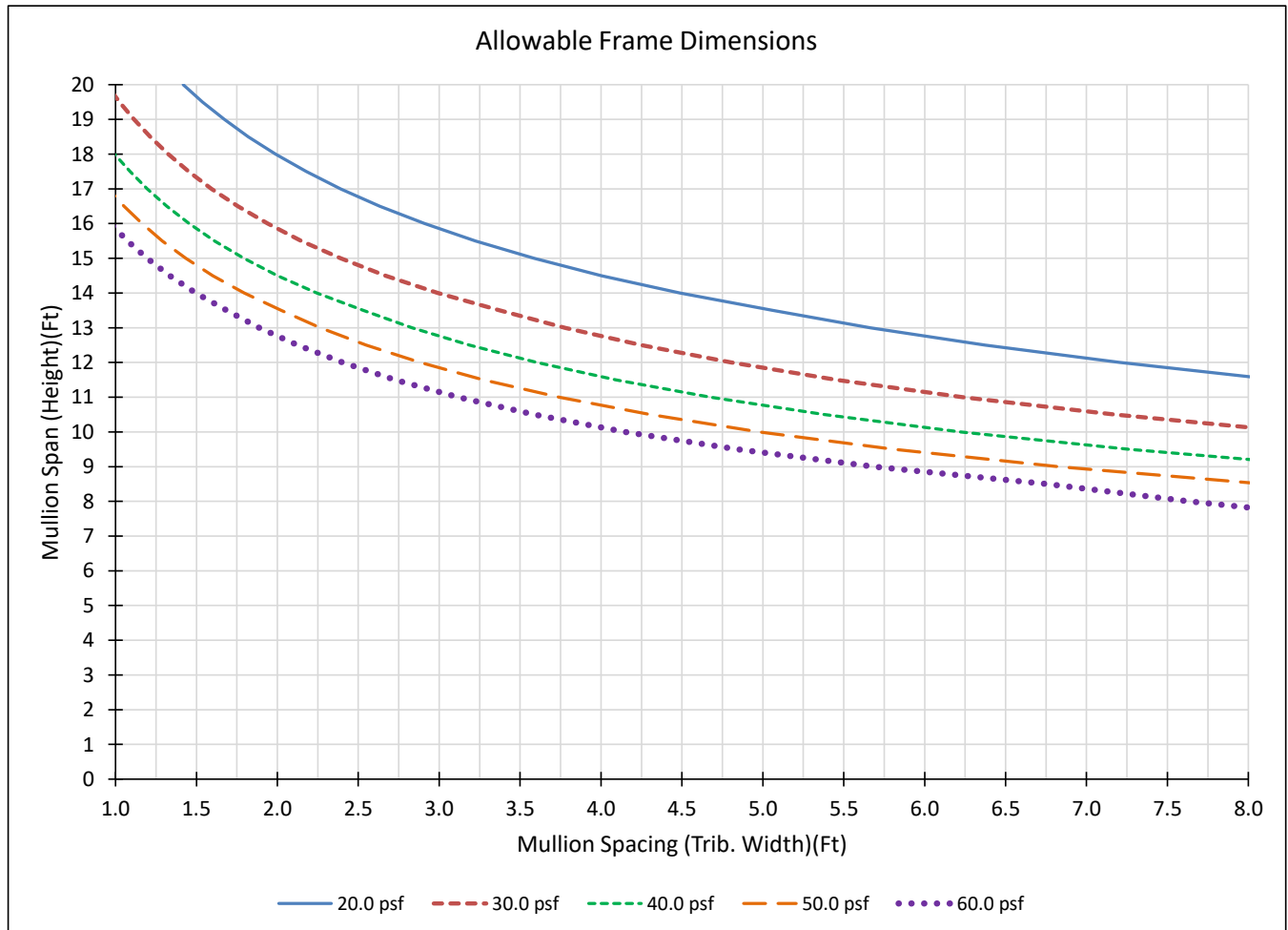
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E = 10100 ksi      A = 1.962 in<sup>2</sup>  
 $I_{x, \text{alum}}$  = 8.088 in<sup>4</sup>       $Z_{x, \text{alum}}$  = 3.647 in  
 $S_{x, \text{alum}}$  = 2.930 in<sup>3</sup>      wt = 2.357 lb/ft  
 Reinforcing: **No Reinforcing**  
 $I_{x, \text{steel}}$  = 0.000 in<sup>4</sup>       $S_{x, \text{steel}}$  = 0.000 in<sup>3</sup>  
 $I_{\text{combined}}$  = 8.088 in<sup>4</sup>

Curves are based on deflection limits of L/175 for L ≤ 13'6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1569	1569	1569



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-028 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

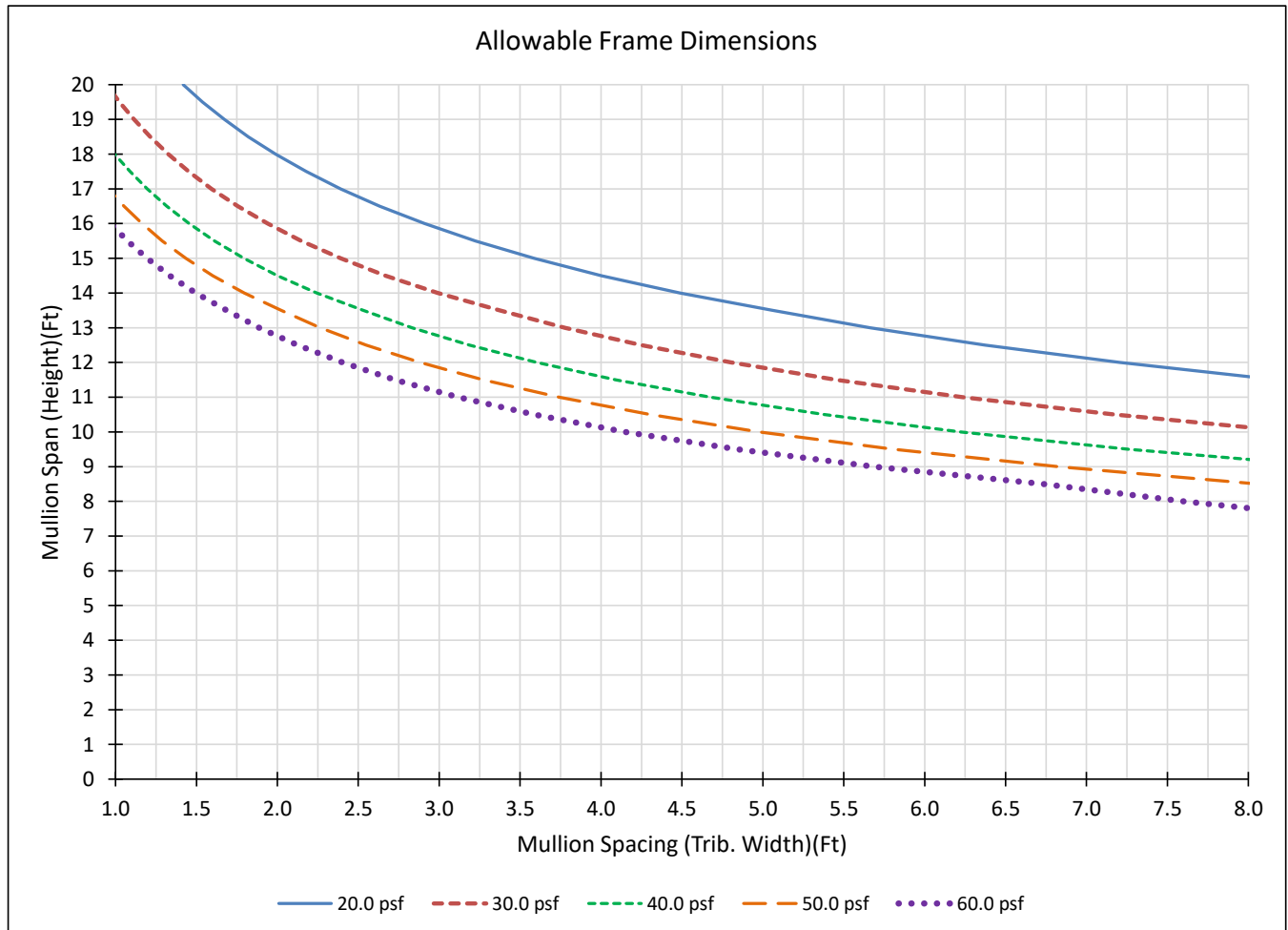
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.962 in <sup>2</sup>
I <sub>x, alum</sub> =	8.088 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.647 in
S <sub>x, alum</sub> =	2.930 in <sup>3</sup>	wt =	2.357 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	8.088 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1569	1569	1569



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-028 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

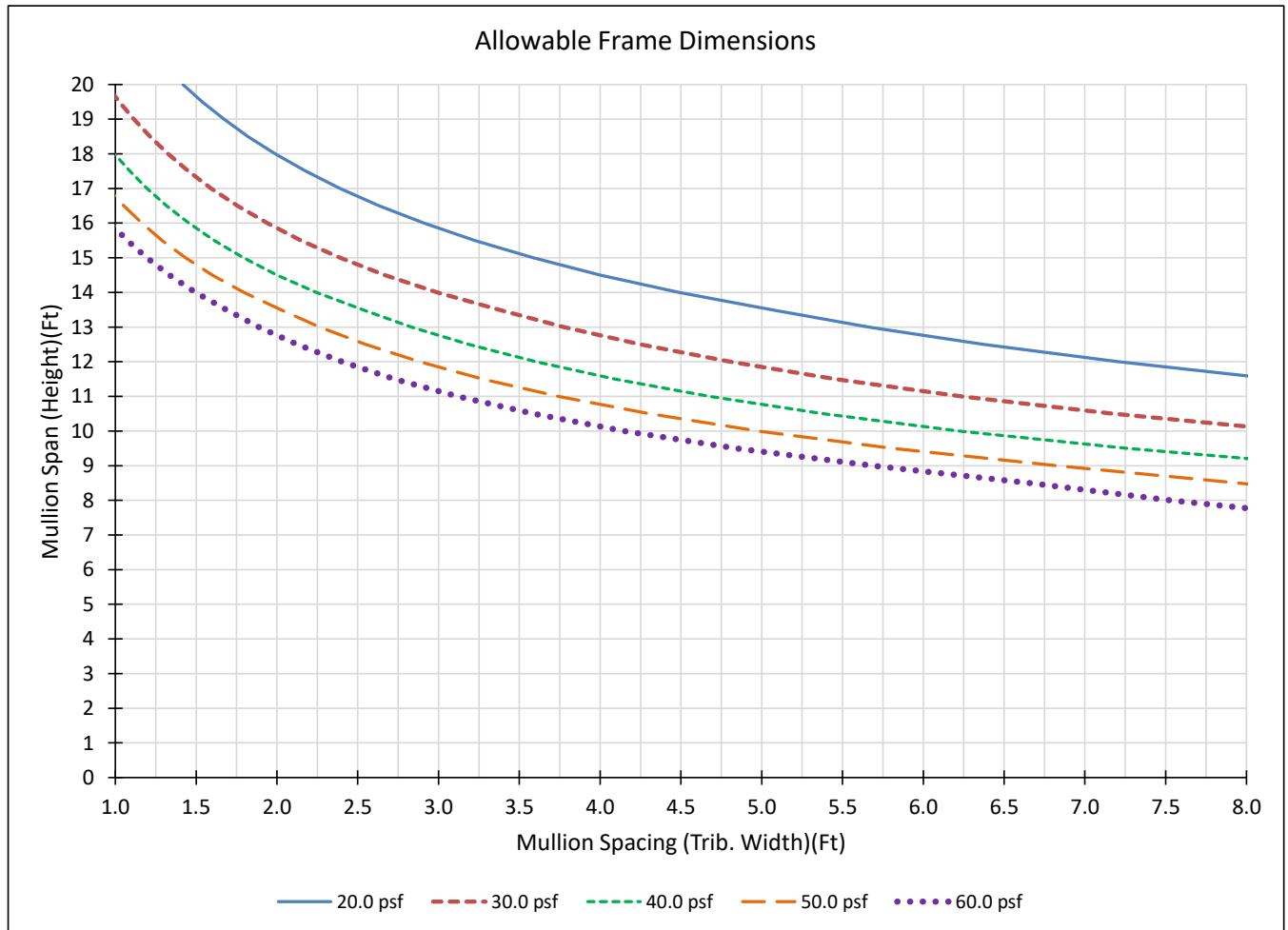
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.962 in <sup>2</sup>
I <sub>x, alum</sub> =	8.088 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.647 in
S <sub>x, alum</sub> =	2.930 in <sup>3</sup>	wt =	2.357 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	8.088 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1569	1569	1569



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-064      6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

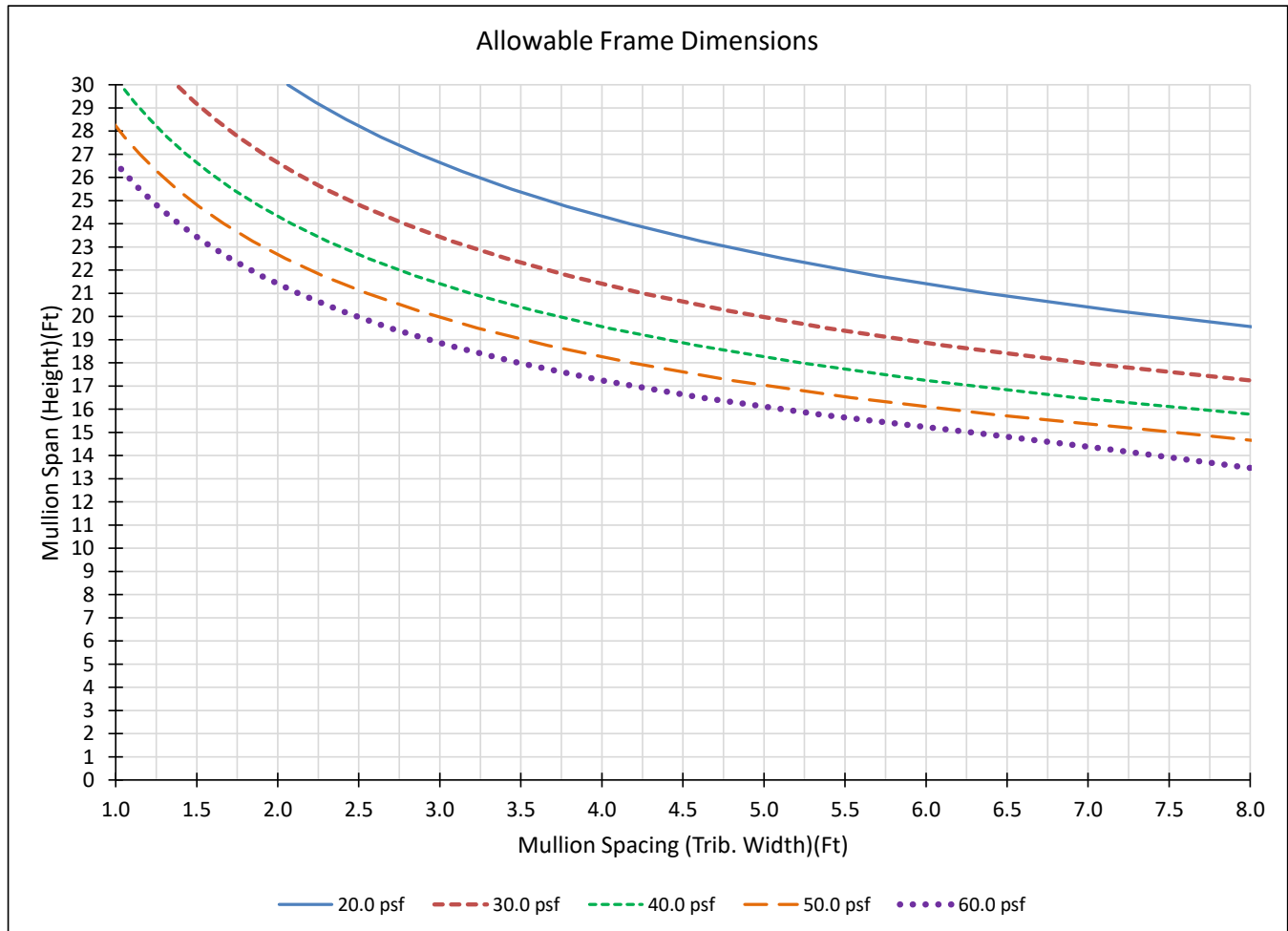
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	4.169 in <sup>2</sup>
I <sub>x, alum</sub> =	42.514 in <sup>4</sup>	Z <sub>x, alum</sub> =	11.913 in
S <sub>x, alum</sub> =	8.824 in <sup>3</sup>	wt =	5.009 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	42.514 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	2192	2192	2192



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

Disclaimer: This chart is not a replacement for review by a licensed structural engineer and shall not be used for final installation or in lieu of sealed engineering calculations. This chart is only valid for the manufacturer part number, aluminum alloy, ASCE7 version and Aluminum Design Manual version listed above. All project criteria must meet these criteria for the chart to be a valid estimating tool. Verify the listed mullion properties against manufacture's published values to verify validity prior to use of this chart.



## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-064 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

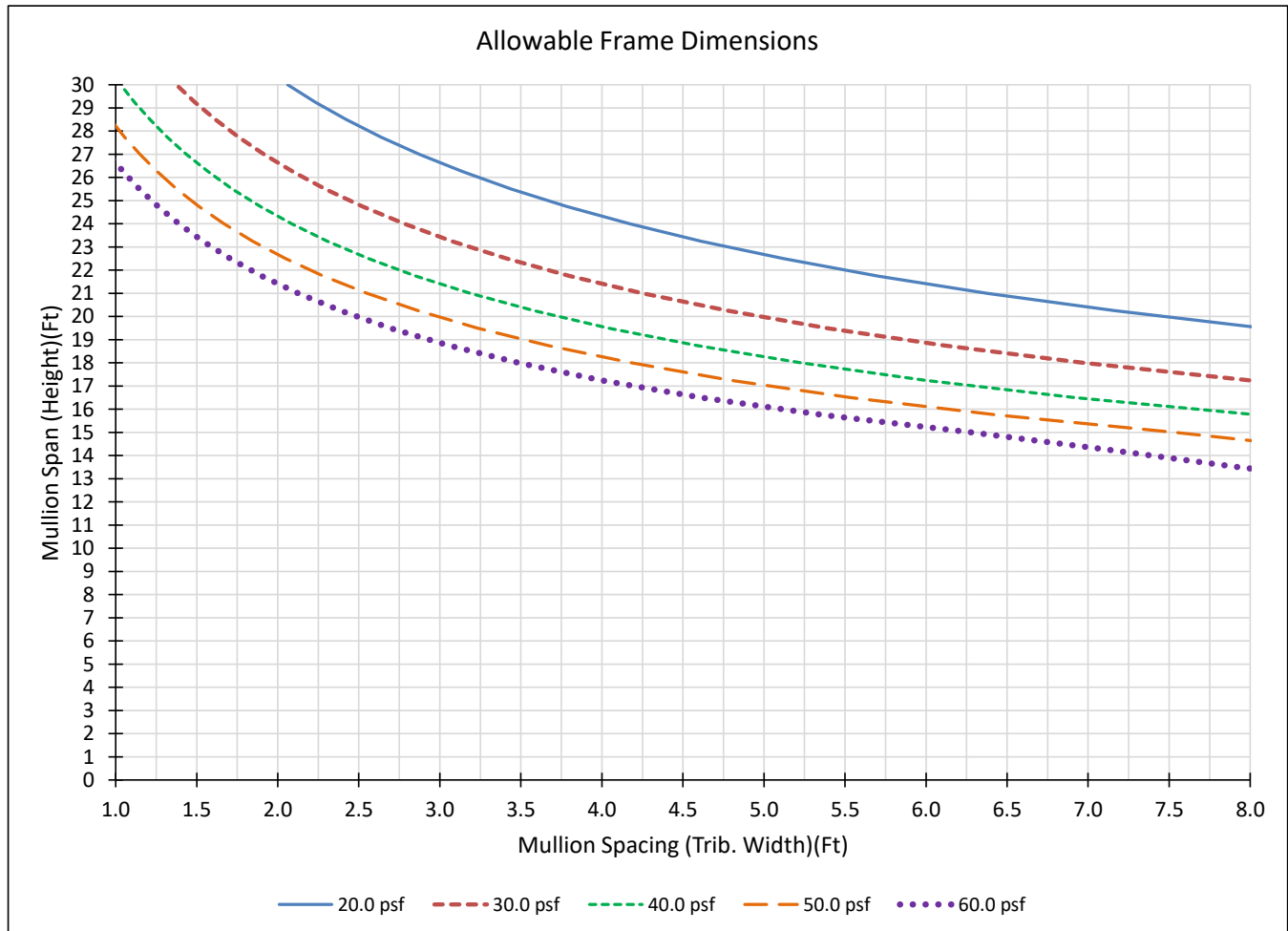
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	4.169 in <sup>2</sup>
I <sub>x, alum</sub> =	42.514 in <sup>4</sup>	Z <sub>x, alum</sub> =	11.913 in
S <sub>x, alum</sub> =	8.824 in <sup>3</sup>	wt =	5.009 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	42.514 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	2192	2192	2192



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-064 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

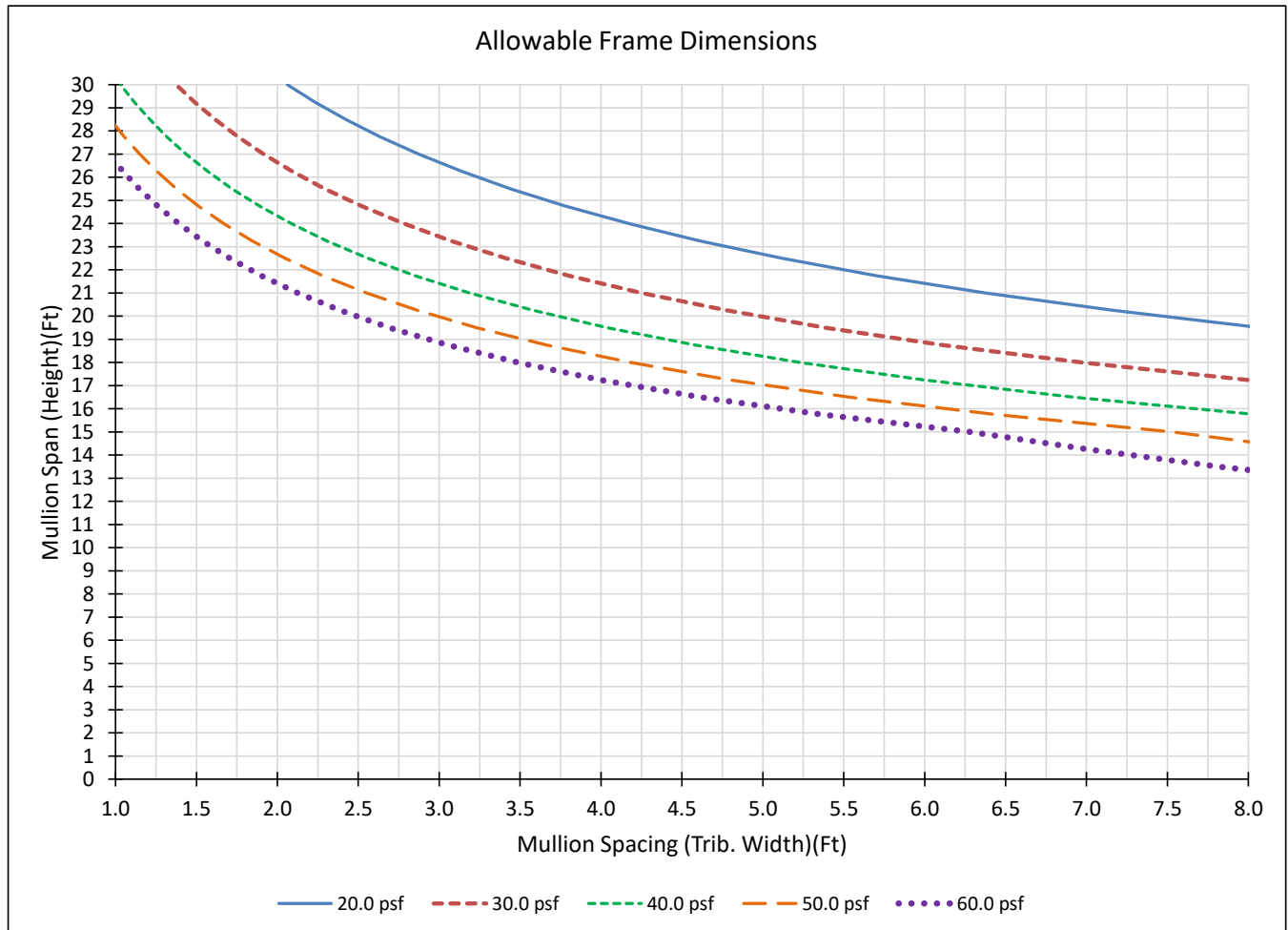
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	4.169 in <sup>2</sup>
I <sub>x, alum</sub> =	42.514 in <sup>4</sup>	Z <sub>x, alum</sub> =	11.913 in
S <sub>x, alum</sub> =	8.824 in <sup>3</sup>	wt =	5.009 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	42.514 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	2192	2192	2192



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-065 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

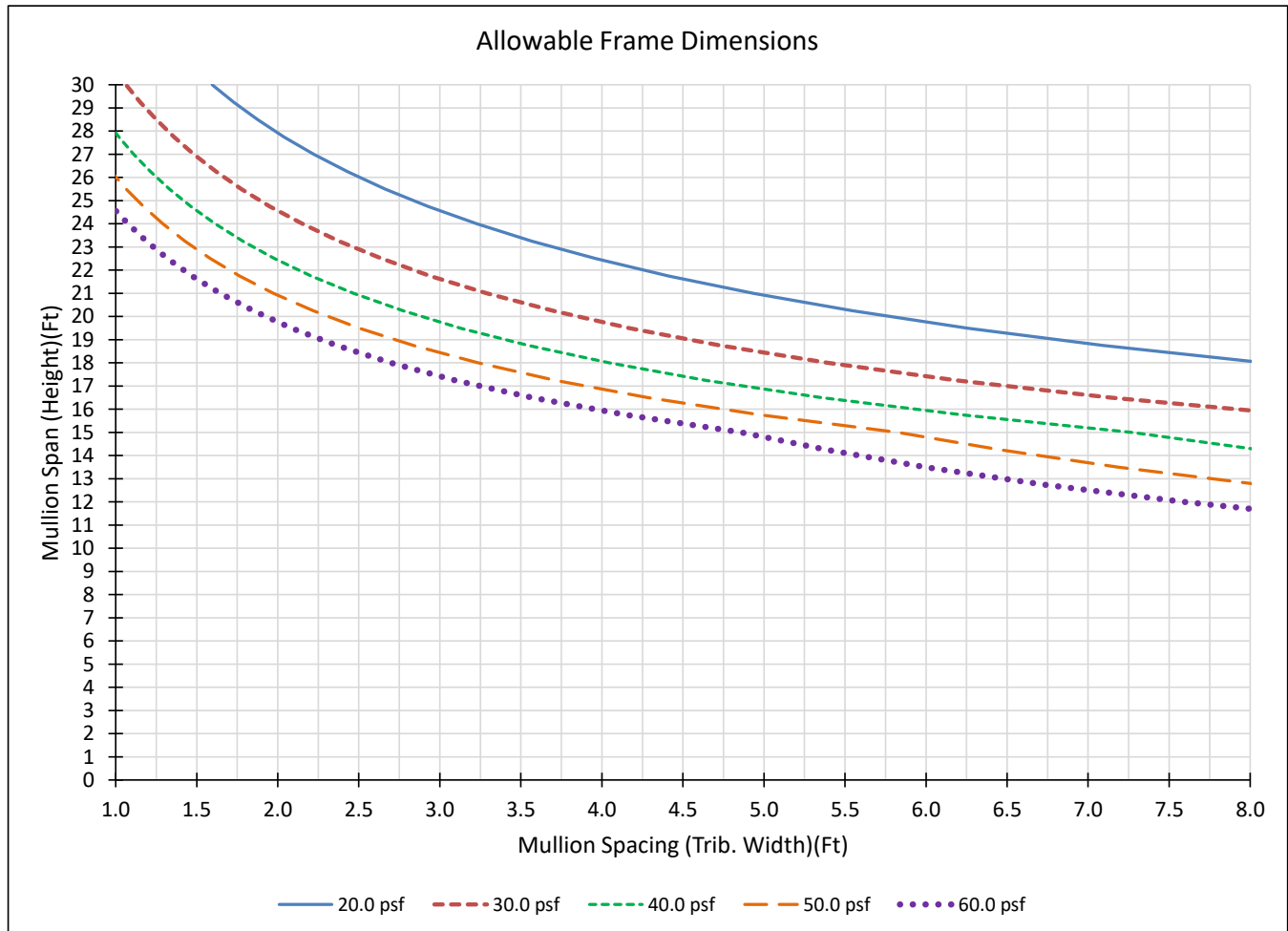
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	3.830 in <sup>2</sup>
I <sub>x, alum</sub> =	32.896 in <sup>4</sup>	Z <sub>x, alum</sub> =	10.046 in
S <sub>x, alum</sub> =	6.542 in <sup>3</sup>	wt =	4.601 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	32.896 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1795	1795	1795



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-065 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

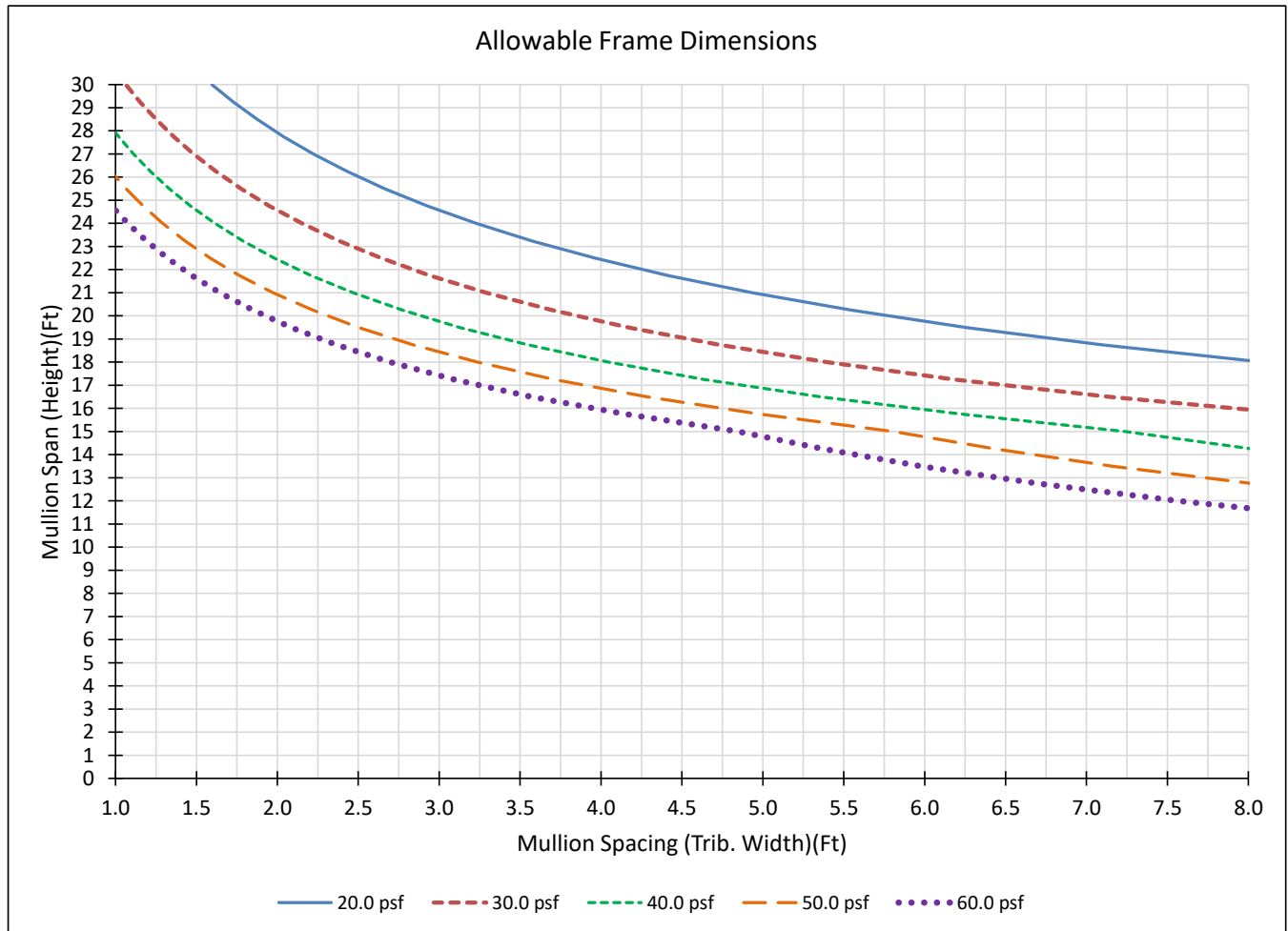
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	3.830 in <sup>2</sup>
I <sub>x, alum</sub> =	32.896 in <sup>4</sup>	Z <sub>x, alum</sub> =	10.046 in
S <sub>x, alum</sub> =	6.542 in <sup>3</sup>	wt =	4.601 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	32.896 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1795	1795	1795



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-065 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

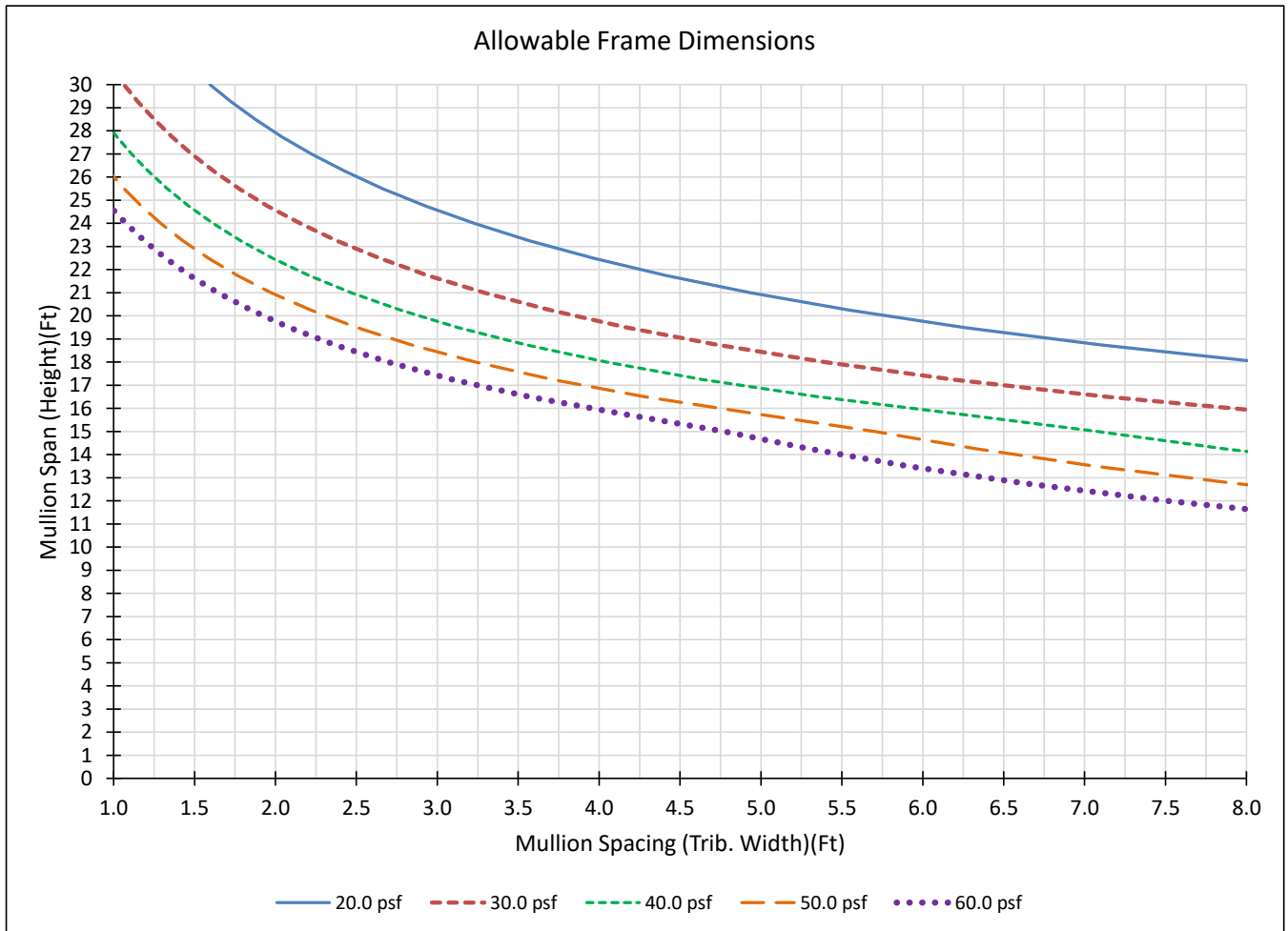
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	3.830 in <sup>2</sup>
I <sub>x, alum</sub> =	32.896 in <sup>4</sup>	Z <sub>x, alum</sub> =	10.046 in
S <sub>x, alum</sub> =	6.542 in <sup>3</sup>	wt =	4.601 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	32.896 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	1795	1795	1795



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-076 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

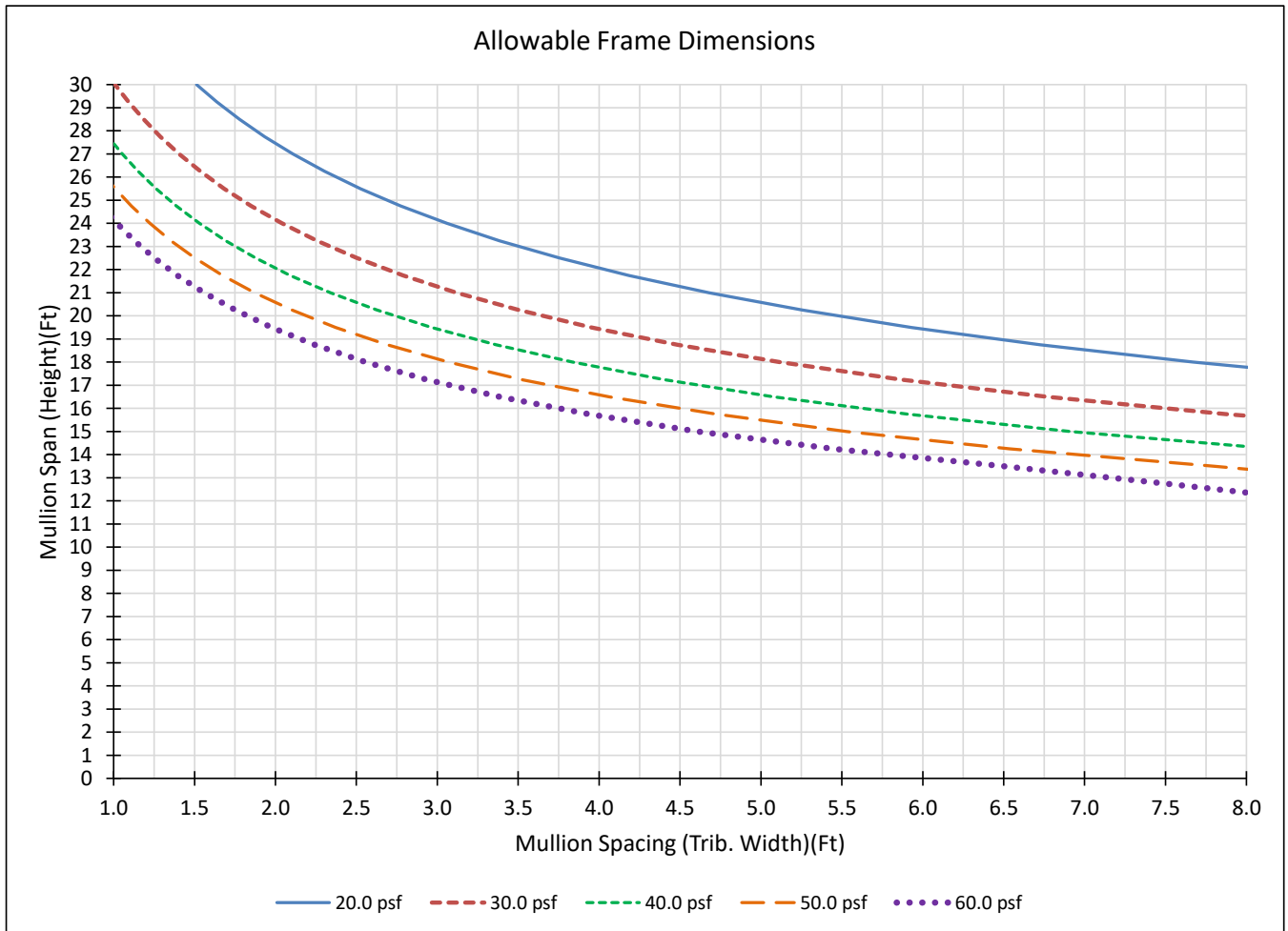
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	3.623 in <sup>2</sup>
I <sub>x, alum</sub> =	31.190 in <sup>4</sup>	Z <sub>x, alum</sub> =	9.479 in
S <sub>x, alum</sub> =	7.460 in <sup>3</sup>	wt =	4.353 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	31.190 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	2118	2118	2118



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-076 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

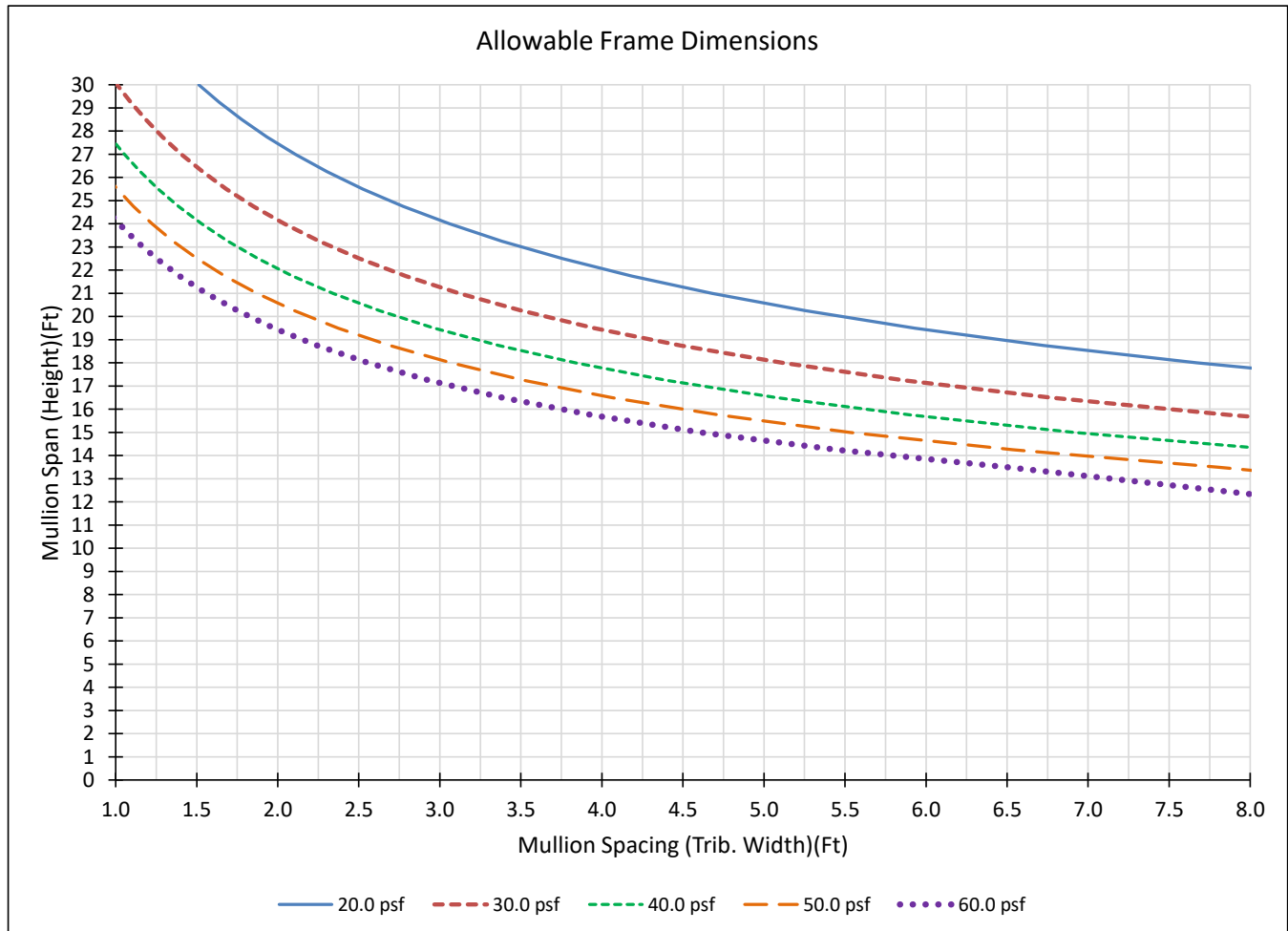
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	3.623 in <sup>2</sup>
I <sub>x, alum</sub> =	31.190 in <sup>4</sup>	Z <sub>x, alum</sub> =	9.479 in
S <sub>x, alum</sub> =	7.460 in <sup>3</sup>	wt =	4.353 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	31.190 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	2118	2118	2118



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-076 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

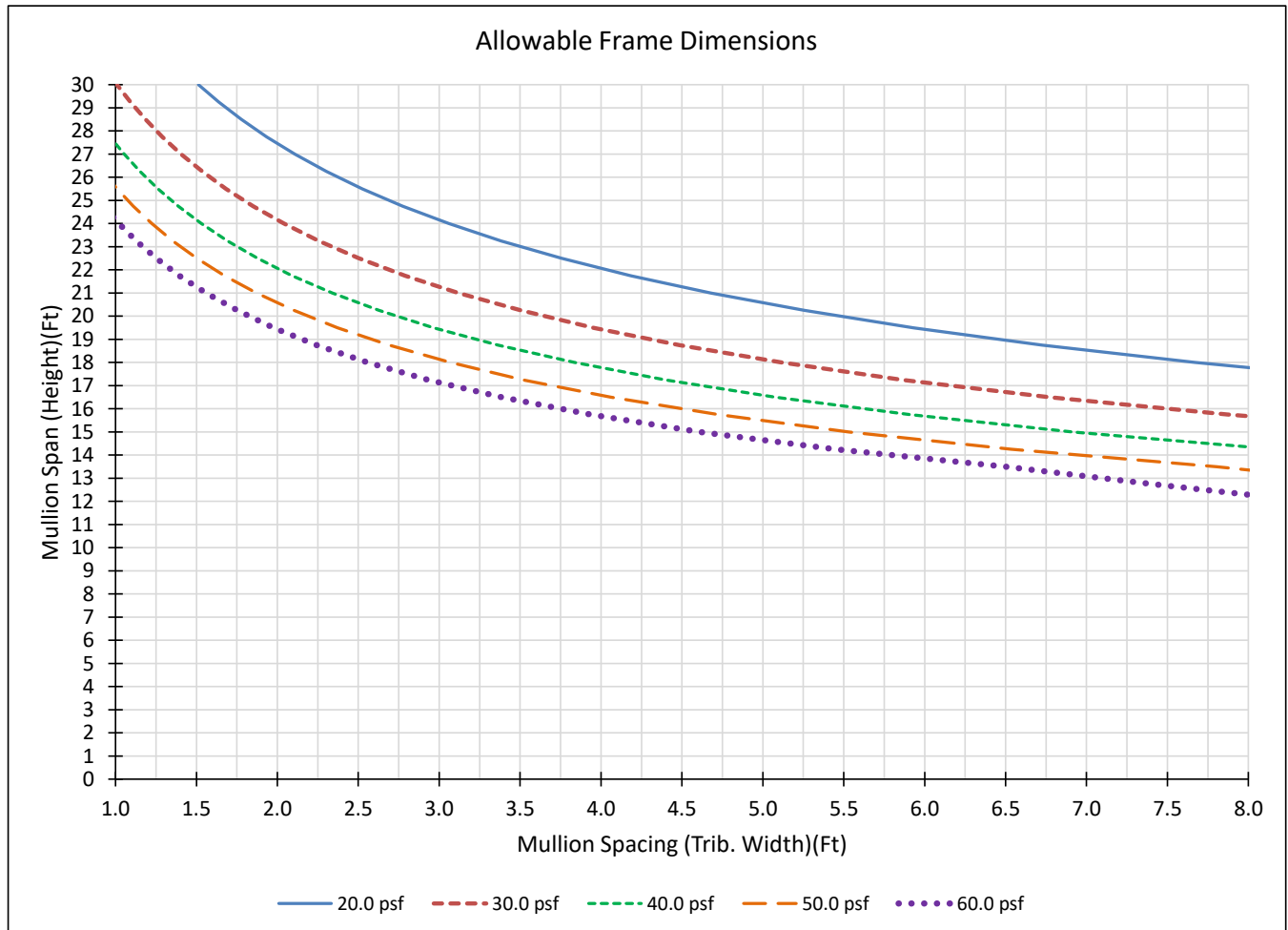
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	3.623 in <sup>2</sup>
I <sub>x, alum</sub> =	31.190 in <sup>4</sup>	Z <sub>x, alum</sub> =	9.479 in
S <sub>x, alum</sub> =	7.460 in <sup>3</sup>	wt =	4.353 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	31.190 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	2118	2118	2118



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-094 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

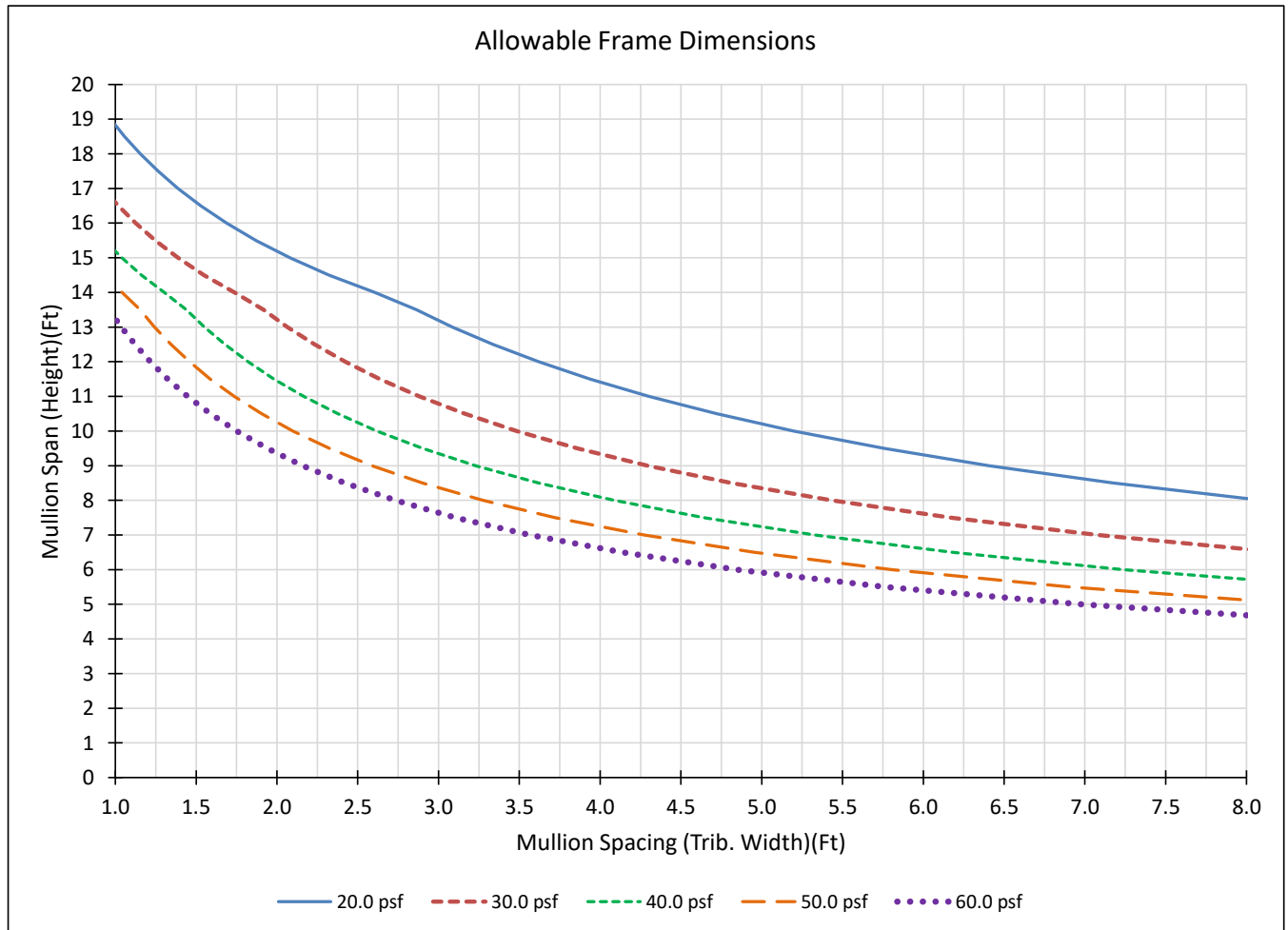
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.513 in <sup>2</sup>
I <sub>x, alum</sub> =	4.694 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.191 in
S <sub>x, alum</sub> =	1.725 in <sup>3</sup>	wt =	1.818 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	4.694 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	726	726	489



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-094 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

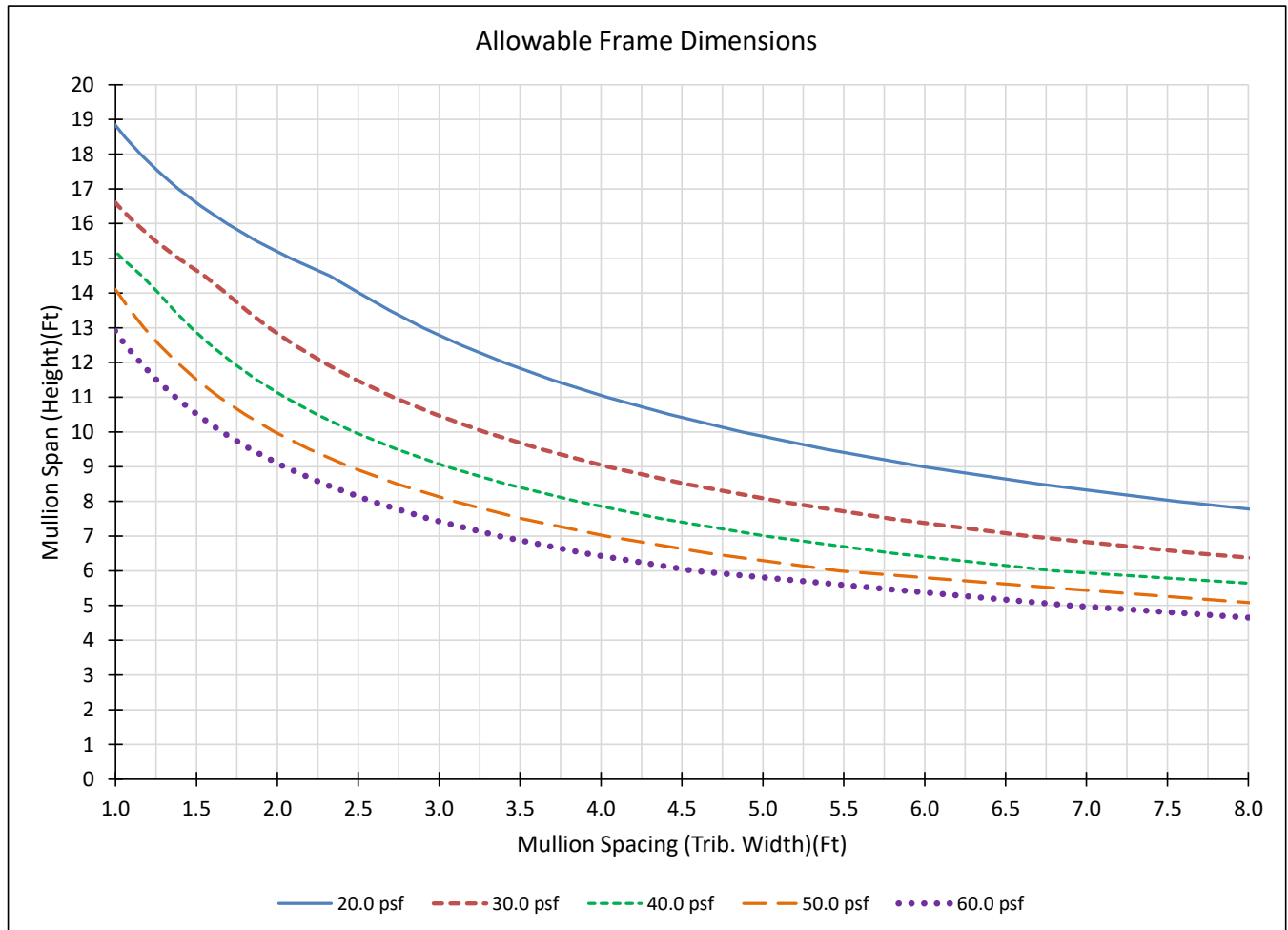
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.513 in <sup>2</sup>
I <sub>x, alum</sub> =	4.694 in <sup>4</sup>	Z <sub>x, alum</sub> =	2.191 in
S <sub>x, alum</sub> =	1.725 in <sup>3</sup>	wt =	1.818 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	4.694 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	726	726	489



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-094 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

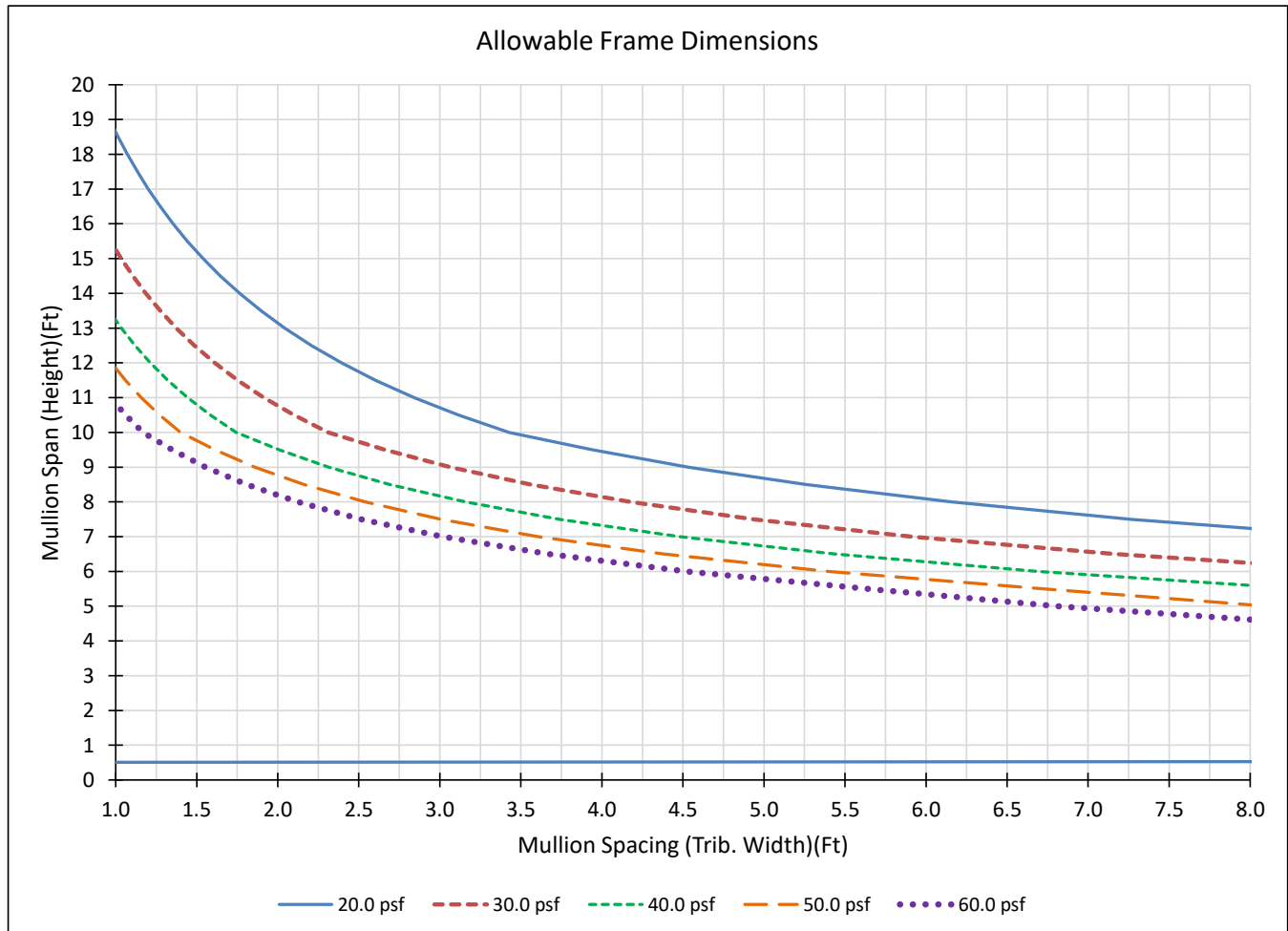
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

$E = 10100 \text{ ksi}$        $A = 1.513 \text{ in}^2$   
 $I_{x, \text{alum}} = 4.694 \text{ in}^4$        $Z_{x, \text{alum}} = 2.191 \text{ in}$   
 $S_{x, \text{alum}} = 1.725 \text{ in}^3$        $wt = 1.818 \text{ lb/ft}$   
 Reinforcing: **No Reinforcing**  
 $I_{x, \text{steel}} = 0.000 \text{ in}^4$        $S_{x, \text{steel}} = 0.000 \text{ in}^3$   
 $I_{\text{combined}} = 4.694 \text{ in}^4$

Curves are based on deflection limits of  $L/175$  for  $L \leq 13'6"$  or  $L/240 + 1/4"$  for  $L > 13'6"$  and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	726	726	489



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-095      6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 3'-0"**

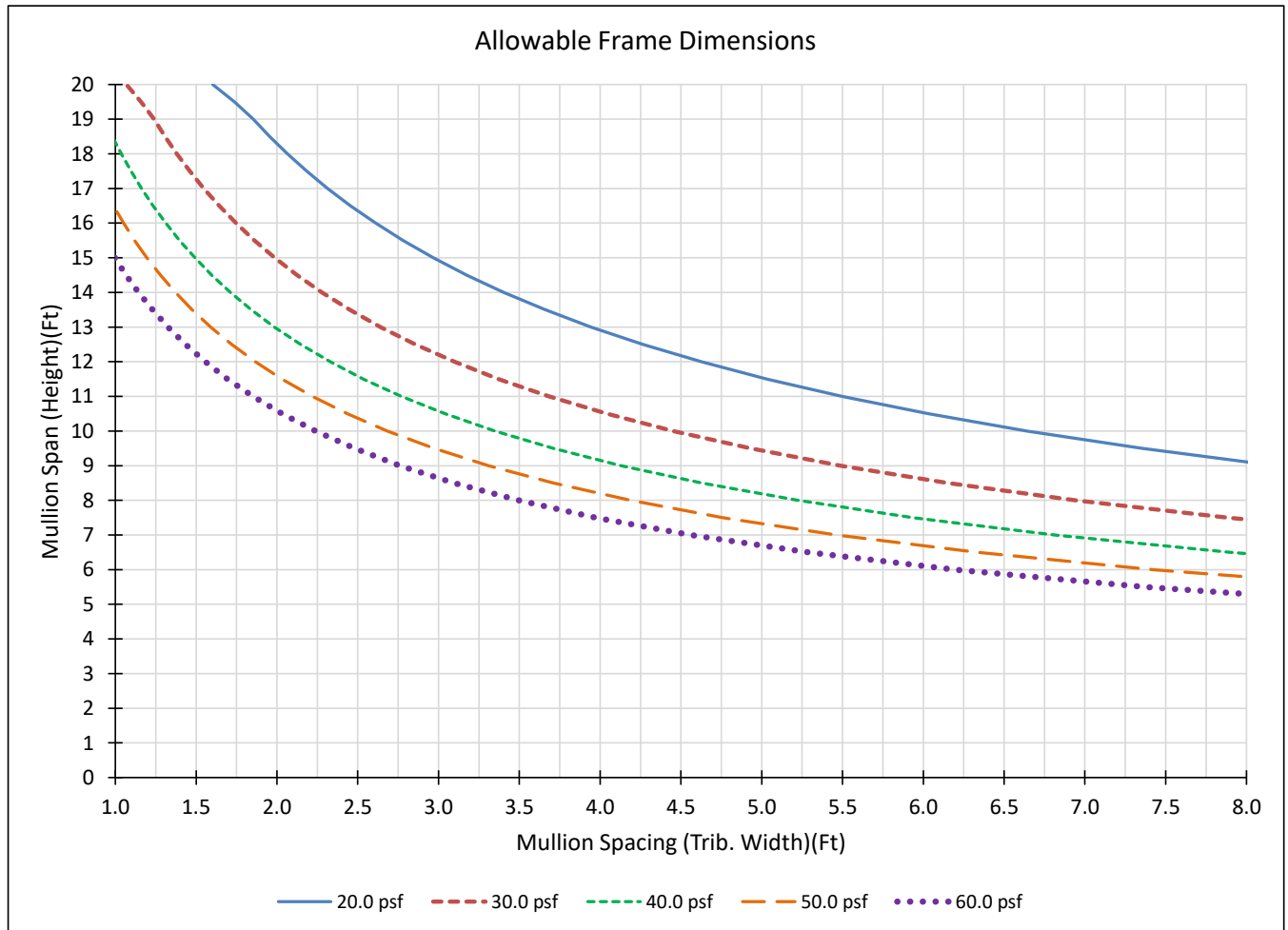
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.663 in <sup>2</sup>
I <sub>x, alum</sub> =	9.139 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.306 in
S <sub>x, alum</sub> =	2.521 in <sup>3</sup>	wt =	1.998 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	9.139 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	846	846	464



Using this chart: Plot the mullion height (span) and the intended mullion spacing. If mullion spacing is uneven, add the DLO width on each side of the mullion and divide by 2. Plotted points below a given curve are acceptable for that design pressure (PSF). Plotted points above a given curve will require a heavier mullion or reinforcing for that design pressure (PSF).

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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-095 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 6'-0"**

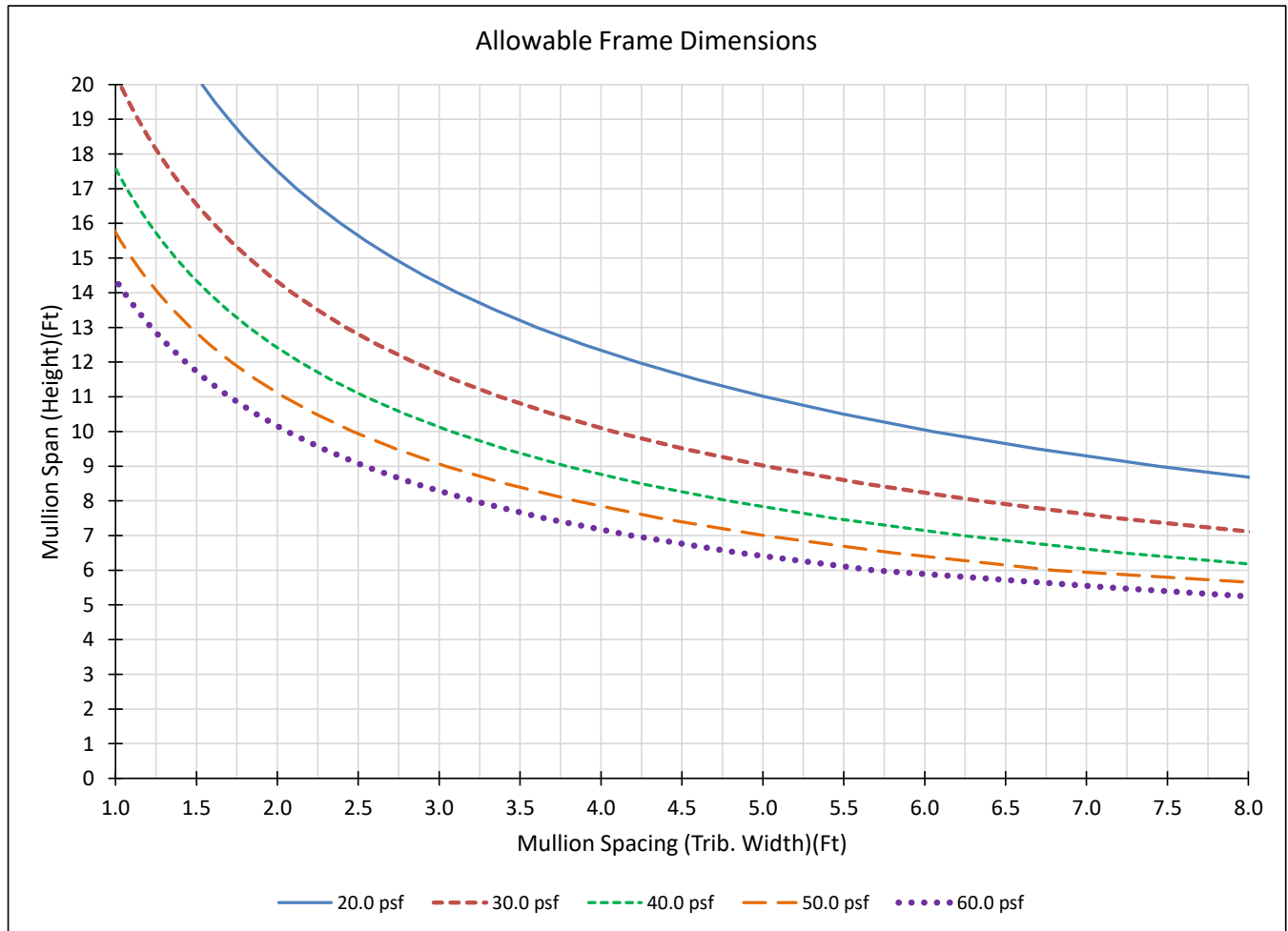
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.663 in <sup>2</sup>
I <sub>x, alum</sub> =	9.139 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.306 in
S <sub>x, alum</sub> =	2.521 in <sup>3</sup>	wt =	1.998 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	9.139 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

If mullion span < max horizontal spacing, horizontals are not required.

JEI Efficiency Number (Higher is better)	Horizontal Mullion Spacing (ft):	2.5 ft	5.0 ft	10.0 ft
	Efficiency Number:	846	846	464



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## Wind Load Chart including Unbraced Length Effects

**Kawneer 162-095 6063-T6 Aluminum**

**Maximum Horizontal Mullion Center Line Spacing (Unbraced Length) = 10'-0"**

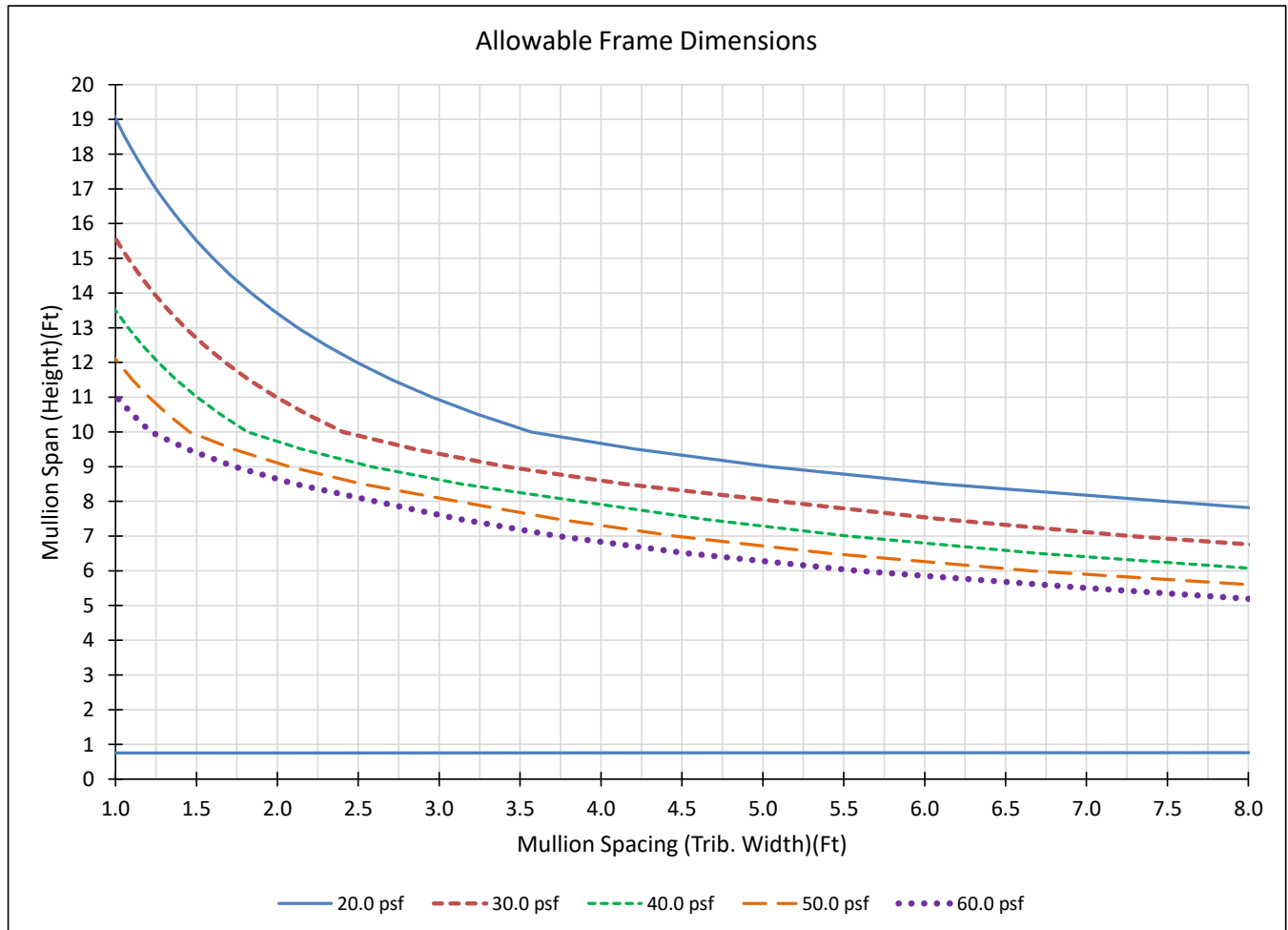
IBC 2015 - ASCE7-10 ASD - 2015 Aluminum Design Manual

E =	10100 ksi	A =	1.663 in <sup>2</sup>
I <sub>x, alum</sub> =	9.139 in <sup>4</sup>	Z <sub>x, alum</sub> =	3.306 in
S <sub>x, alum</sub> =	2.521 in <sup>3</sup>	wt =	1.998 lb/ft
Reinforcing:	No Reinforcing		
I <sub>x, steel</sub> =	0.000 in <sup>4</sup>	S <sub>x, steel</sub> =	0.000 in <sup>3</sup>
I <sub>combined</sub> =	9.139 in <sup>4</sup>		

Curves are based on deflection limits of L/175 for L ≤ 13'-6" or L/240 + 1/4" for L > 13'-6" and limiting stress (moment) according to Chapters B, C & F of the listed Aluminum Design Manual version.

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	Efficiency Number:	846	846	464



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