OMCOSTRUT™-XD

MANUFACTURED FROM

<u>50 KSI</u> MINIMUM YIELD STRENGTH STEEL

ADVANTAGES INCLUDE:

- ***Greater Safety Factor***
- ***Higher Loading Capacity***
- ***Lower Weight and Cost Options***

OMCOSTRUT™-XD

OMCOSTRUT™-XD is the newest addition to the strut channel market. Like other strut channel available on the market, **OMCOSTRUT-XD** is cold rolled into the same familiar cross-sectional shape that is used in so many industries and applications around the world. Therefore, **OMCOSTRUT-XD** accepts all standard strut accessory items used with any other manufacturer's strut channel. But what's different about **OMCOSTRUT-XD** channel is the steel itself. **OMCOSTRUT-XD** is made from high strength steel which has a minimum yield strength of 50,000 psi where the industry norm is 33,000 psi. This substantial increase in the steel's minimum yield strength provides a number of potential benefits to the end user. These benefits can include 1) Higher Safety Factor; 2) Greater Load Carrying Capacity; 3) Lighter Weight; or 4) Lower Cost. Best of all, **OMCOSTRUT-XD** delivers all of these benefits at prices that are very competitive with industry standard strut.

OMCOSTRUT™-XD ADVANTAGES	DETAILS
Higher Safety Factor	If you use the same size strut channel (25,000 psi design limit) as you would if you used another manufacturer's strut channel, your Safety Factor increases dramatically with **OMCOSTRUT-XD**.
Lighter Weight	Utilizing XD-STRUT's higher strength (35,000 psi design limit) may permit the use of a lighter gauge or lower profile **OMCOSTRUT-XD** channel thus reducing the weight of the project along with the shipping costs.
Lower Cost	Lighter gauge versions of **OMCOSTRUT-XD** may provide equal strength as compared to competitors' heavier gauge strut. This can result in substantial cost savings for the end user.

PERMANENT IDENTIFICATION

Due to its unique characteristics in the marketplace, **OMCOSTRUT-XD** is permanently identified with "**OMCOSTRUT-XD**" embossed on the outside of the strut, along with an alpha-numeric identifier embossed on the inside of the strut. The alpha numerical identifier allows traceability of each piece of strut back to the specific heat number of the metal used to produce it.

MATERIALS & FINISHES

OMCOSTRUT-XD is a premium product manufactured from top quality structural grade materials.

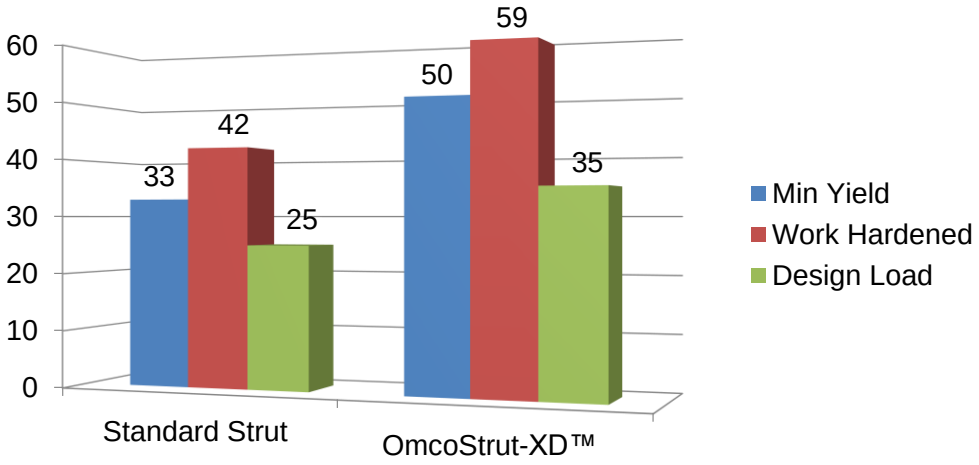
Code	Description	Specification
PG	Pre-Galvanized Steel (G90 coating)	ASTM A653 (50,000 psi min yield)
PL	Plain Steel	ASTM A1011 (50,000 psi min yield)
GR	Powder Coated (Green)	ASTM A1011 (50,000 psi min yield)
SS4	Stainless Steel Type 304	ASTM A240
SS6	Stainless Steel Type 316	ASTM A240

HIGH STRENGTH STEEL

OMCOSTRUT-XD breaks new ground in the strut channel field. Other strut channel on the market utilizes 33,000 psi minimum yield strength steel, and assumes a 9,000 psi improvement in strength due to work hardening while being rolled into shape. The estimated resulting strength of 42,000 psi is then reduced by a safety factor of 1.68 to establish a recommended design load limit of 25,000 psi.

In comparison, **OMCOSTRUT-XD** is made from steel with a minimum yield strength of 50,000 psi, which is an increase of 17,000 psi or 51.5% as compared to the industry standard. Adding the same 9,000 psi increase due to work hardening to the steel's guaranteed minimum yield strength of 50,000 psi yields a resulting strength of 59,000 psi. Reducing this value by the same 1.68 safety factor brings the recommended design load limit for **OMCOSTRUT-XD** up to **35,000 psi**, which is a **40% increase** over the industry standard of 25,000 psi. Of course, a designer can use **OMCOSTRUT-XD** in the same manner as regular strut and utilize the 25,000 psi load limit. The benefit is knowing that they now have a 2.00 Safety Factor as compared to just the minimum yield strength of the steel.

Whether a designer uses the guaranteed minimum yield strength of the steel only, or the higher work hardened value as the basis for determining the maximum design load, **OMCOSTRUT-XD** provides a superior product at a competitive price.



	Standard Strut	OMCOSTRUT-XD	OMCOSTRUT -XD Advantage
Original Base Metal – Minimum Yield	33,000 psi	**50,000 psi**	**17,000 psi (51%)**
Work Hardened Metal – Minimum Yield	42,000 psi	**59,000 psi**	**17,000 psi (40%)**
Design Load Limit at a 1.68 Safety Factor	25,000 psi	**35,000 psi**	**10,000 psi (40%)**
Design Load Limit vs. Original Base Metal	8,000 psi	**15,000 psi**	**7,000 psi (87%)**
	WHICH STRUT WOULD YOU CHOOSE?		

TECHNICAL DATA

The following information is meant as a general guide in the use of strut channels as structural members. Since strut channels are used as a major component in the design of a structure, support, brace, etc., a qualified engineer should always be consulted to ensure that all loads (expected and unexpected), safety factor considerations, and connections are thoroughly understood and accounted for in the total design. **OMCOSTRUT-XD** is manufactured to meet or exceed established industry standards for strut channel.

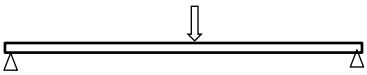
BEAMS

Structural members that are loaded at right angles to their length are considered beams. Most beams are oriented horizontally but vertical members subjected to lateral loading would also function as a beam. The maximum bending moment developed in a beam will determine its ultimate loading capacity and is dependent upon (1) the amount of the load (including gravity), (2) the type of load (concentrated or distributed), and (3) the type of support used.

BEAM LOADS

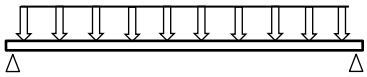
POINT LOAD

A load that is concentrated at a relatively small portion of the overall length of a beam is considered a point load.



UNIFORM LOAD

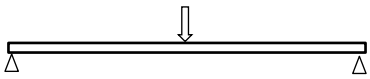
A load that is evenly distributed over the entire length of the beam or a relatively long portion of the beam is considered a uniform load. **NOTE:** Unless otherwise stated, the loading data provided in this document assumes a **uniform load** spread across the **entire span** of the beam. Point loads or combination loads need to be analyzed for each specific application. Actual beam loads often manifest themselves as a combination of point and uniform loads.



SUPPORT CONDITIONS

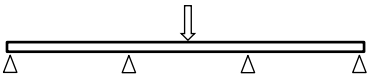
SIMPLE BEAM

A simple beam is supported at both ends such that the beam is restricted from moving vertically or horizontally but is allowed to rotate naturally at the connection point. Most bolted strut connections closely mimic these conditions. **All loading table data listed for OMCOSTRUT-XD™ assumes this type of support connection unless noted otherwise.**



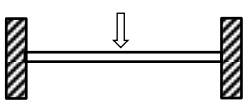
CONTINUOUS BEAM

A continuous beam exists when a simple beam is supported at one or more intermediate points along the length of the beam.



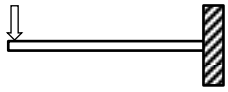
FIXED-END BEAM

A fixed beam exists when both ends of the beam are connected to a rigid support such that the ends of the beam are restricted from rotating or moving. This type of connection increases the load capacity and decreases the deflection of a beam as compared to a simple beam arrangement. An example of a fixed end beam is a strut channel welded to a rigid support.

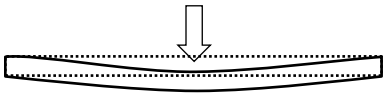


CANTILEVER BEAM

A cantilever beam is supported by a fixed, rigid connection at one end only. The other end is unsupported.



DEFLECTION



Whenever a beam is subjected to a load there will be some deflection. The amount of deflection depends on a number of variables such as;

(a) the amount, type and location of all applied loads
(b) type of beam support
(c) the stiffness of the material used to manufacture the beam (*Modulus of Elasticity*)
(d) the stiffness due to the beam's cross-sectional shape (*Moment of Inertia*)

MOMENT OF INERTIA (I)

A beam's Moment of Inertia is determined by its cross-sectional shape. The higher the Moment of Inertia, the stiffer the beam and the less it will deflect. Strut channel will have a different Moment of Inertia depending upon which axis is considered. Values for both the "x-x" and "y-y" axis are provided.

MODULUS OF ELASTICITY (E)

The Modulus of Elasticity (E) is a measure of a material's inherent stiffness. The higher the value, the stiffer the material is and the less it will deflect.

SAFETY FACTOR

The industry standard approach for determining the loading capacity of strut channel utilizes a simple beam configuration and limits the allowable stress to 25,000 psi. This allowable stress value was established based upon the steel having a minimum yield stress of 33,000 psi, then being cold worked while roll forming to an average yield stress of 42,000 psi and applying a 1.68 Safety Factor (i.e. 42,000 psi / 1.68 = 25,000 psi).

OMCOSTRUT-XD utilizes virgin steel having a minimum yield strength of 50,000 psi. Using the same approach as noted above, the cold worked steel's minimum yield climbs to 59,000 psi. Therefore, a Safety Factor of 1.68 places the allowable stress limit at 35,000 psi for **OMCOSTRUT-XD** (which is still 15,000 psi below the virgin steel's minimum yield strength).

Users may also utilize the same 25,000 psi load limit as standard strut channels for **OMCOSTRUT-XD** and enjoy a substantial increase in Safety Factor (over 2.00). For that reason, the **OMCOSTRUT-XD** data tables include Uniform Load Limits and Deflection Values for both the 35,000 psi and the 25,000 psi stress limits for various beam spans.

COLUMNS

Columns are vertical members that are subjected to compressive loads. The compressive loads on a column will try to cause the column to bow in a direction perpendicular to the length of the column. The load carrying capacity of the column is altered by the manner in which the ends of the column are attached. Different connection methods cause different "K" values which change the calculated load rating of the column.

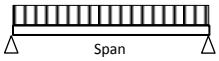
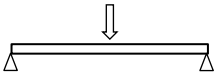
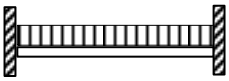
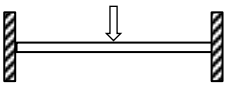
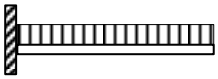
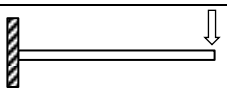
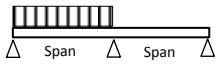
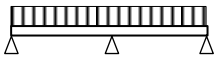
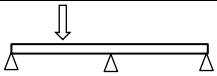
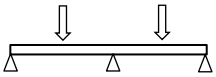
Connection Type	Description
Pinned	End can rotate but not move
Fixed	End cannot rotate nor move
Free	End can move laterally, but not rotate.

Top Connection	Bottom Connection	Resulting "K" Value
Pinned	Fixed	0.80
Pinned	Pinned	1.00
Fixed	Fixed	0.65
Free	Fixed	1.20

The maximum column loading data listed in the **OMCOSTRUT-XD** tables utilizes a K value of 1.0 and assumes that the load is concentric to the channel's center of gravity. The Radius of Gyration is provided for use by qualified structural engineers to evaluate the effect of eccentric loads on the channel.

BEAM LOADING FACTORS

The data provided in this publication related to the loading capacity and deflection of a beam is based upon a uniform load equally distributed across the entire span of a simple beam configuration. For other situations, these values need to be multiplied by a "Factor" as defined in the following table.

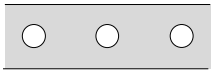
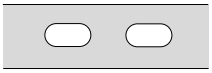
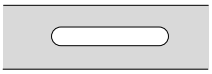
SUPPORT CONDITION	TYPE OF LOAD	DIAGRAM	LOAD FACTOR	DEFLECTION FACTOR
Simple Beam	Uniform Load		1.00	1.00
Simple Beam	Concentrated Load at Center		.50	.80
Simple Beam	Two Equal Concentrated Loads at 1/4 Points		1.00	1.10
Beam Fixed at Both Ends	Uniform Load		1.50	.30
Beam Fixed at Both Ends	Concentrated Load at Center		1.00	.40
Cantilever Beam	Uniform Load		.25	2.40
Cantilever Beam	Concentrated Load at End		.12	3.20
Continuous Beam – Two Equal Spans	Uniform Load on One Span		1.30	.92
Continuous Beam – Two Equal Spans	Uniform Load on Both Spans		1.00	.42
Continuous Beam – Two Equal Spans	Concentrated Load at Center of One Span		.62	.71
Continuous Beam – Two Equal Spans	Concentrated Load at Center of Both Spans		.67	.48

All of the calculations shown in the above table are specific to those specific situations and conditions. Remember that the load due to the weight of the strut and the entire structure need to be accounted for in addition to all other external loads. Therefore, many applications are more complicated that those depicted in the above table. Consult with a qualified engineer capable of analyzing all of the loads and forces involved in any structural design.

BEAM LOADING FACTORS (Cont'd)

ADJUSTING FOR HOLE & SLOT PATTERNS

All beam uniform load data provided in the data tables for each strut channel profile is calculated for a solid strut channel under a simple beam configuration. When using strut channel with hole or slot patterns, the uniform load data must be adjusted. Following is a table containing the standard available hole or slot patterns available along with an associated "Beam Uniform Load Percentage". Multiply the uniform load data for the solid strut by this percentage to obtain a recommended load limit for the strut channel with the associated hole/slot pattern.

HOLES / SLOTS	DIMENSIONS	DIAGRAM	BEAM UNIFORM LOAD PERCENTAGE
Round Holes (RH)	9/16" Holes on 1-7/8" Centers		88%
Half Slot (HS)	9/16" x 1-1/8" Slots on 2" Centers		85%
Full Slot (FS)	7/16" x 3" Slots on 4" Centers		85%

ALTERNATE METALS

Similar to the adjustment required for strut channel with holes or slots, the uniform load data must also be adjusted when utilizing a metal other than OMCOSTRUT-XD's standard 50,000 psi steel. Refer to the table below for a general guide in making adjustments to the load limits shown in the strut channel data tables. Multiply the uniform load data at the 25,000 psi limit for the solid beam by the percentage shown to obtain a recommended load limit for the strut channel made from the specified metal.

DO NOT USE ANY LOADING DATA BASED UPON OUR 50,000 PSI STEEL (35,000 PSI LOAD LIMIT IN DATA TABLES)!

ALTERNATIVE METAL	TYPICAL MINIMUM YIELD STRENGTH	TYPICAL MODULUS OF ELASTICITY	BEAM UNIFORM LOAD @ 25,000 psi Limit x PERCENTAGE (Stress / Deflection)
Stainless Steel	35,000 psi	28.3×10^6 psi	100% / 97%

ATTENTION!

ALWAYS CONSULT WITH A CERTIFIED AND QUALIFIED STRUCTURAL ENGINEER REGARDING THE PROPER SELECTION AND APPLICATION OF ALL COMPONENTS INTENDED FOR USE IN STRUCTURAL FRAMING.

PRODUCT LINE & DATA TABLES

PRODUCT PROFILES

PRODUCT #	WIDTH	HEIGHT	GAUGE
XD12	1-5/8”	13/16”	12
XD14	1-5/8”	13/16”	14
XD22	1-5/8”	1”	12
XD24	1-5/8”	1”	14
XD42	1-5/8”	1-5/8”	12
XD44	1-5/8”	1-5/8”	14
XD52	1-5/8”	2-7/16”	12

STANDARD CHANNEL LENGTHS

OPTIONS	LENGTH
10 Foot (120)	120 inches
20 Foot (240)	240 inches

MATERIAL SPECIFICATIONS

MATERIAL	STEEL SPECIFICATIONS	NOTES
Pre-Galvanized (PG)	ASTM A653 (50,000 psi min yield)	G90 Coating
Plain (PL)	ASTM A1011 (50,000 psi min yield)	
Green Powder Coat (GR)	ASTM A1011 (50,000 psi min yield)	Powder Paint
Stainless Steel (SS4, SS6)	ASTM A240 (304 or 316 Stainless)	

HOLE PATTERNS

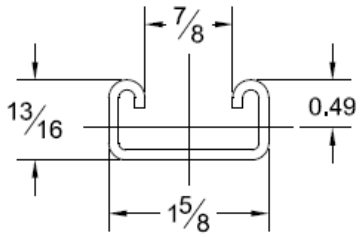
OPTIONS	DIMENSIONS
Round Holes (RH)	9/16” Holes on 1-7/8” centers
Half-Slot (HS)	9/16” x 1-1/8” Slots on 2” centers
Full Slot (FS)	7/16” x 3” Slots on 4” centers

PART NUMBERING METHODOLOGY

PRODUCT PROFILE	HOLES	LENGTH	FINISH
1-5/8” X 1-5/8”; 12 GA	*Half-Slot*	*120 inches*	*Pre-Galv*
XD42	**HS**	**120**	**PG**
Resulting Part Number: XD42HS-120PG			

XD12 Channel

13/16" X 1-5/8"
(12 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD12	1.24	0.364	0.029	0.059	0.281	0.131	0.161	0.599

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

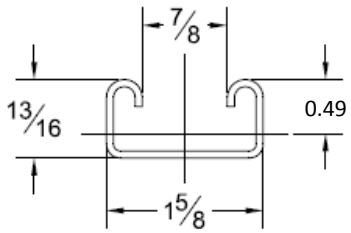
BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[>2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD12	18	915	0.084	654	0.060	819	5,875
	24	686	0.149	490	0.106	461	3,855
	30	549	0.233	392	0.166	295	2,243
	36	458	0.335	327	0.239	205	1,844
	42	392	0.456	280	0.326	150	1,354
	48	343	0.596	245	0.426	115	1,037
	54	305	0.754	218	0.539	91	819
	60	275	0.931	196	0.665	74	**
	72	229	1.340	163	0.957	51	**
	84	196	1.824	140	1.303	38	**
	96	172	2.383	123	1.702	29	**
	108	153	3.016	109	2.154	23	**
	120	137	3.723	98	2.660	18	**

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29×10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

XD14 Channel

13/16" X 1-5/8"
(14 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD14	0.93	0.275	0.023	0.048	0.291	0.101	0.125	0.607

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

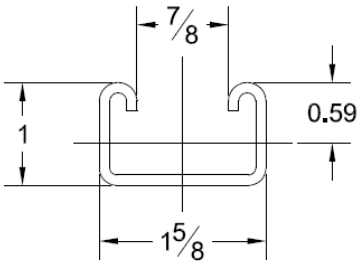
BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi *[= 1.68 S.F.]*	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[> 2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD14	18	747	0.084	534	0.060	667	4,617
	24	560	0.149	400	0.107	375	3,122
	30	448	0.233	320	0.167	240	1,888
	36	374	0.336	267	0.240	167	1,501
	42	320	0.457	229	0.327	123	1,103
	48	280	0.597	200	0.427	94	844
	54	249	0.756	178	0.540	74	667
	60	224	0.933	160	0.667	60	**
	72	187	1.344	133	0.960	42	**
	84	160	1.829	114	1.306	31	**
	96	140	2.389	100	1.706	23	**
	108	125	3.023	89	2.160	19	**
	120	112	3.733	80	2.666	15	**

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29 x 10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

XD22 Channel

1" X 1-5/8"
(12 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD22	1.37	0.402	0.050	0.085	0.353	0.153	0.188	0.617

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

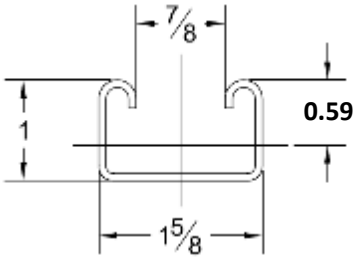
BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi *[= 1.68 S.F.]*	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[> 2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD22	18	1,323	0.069	945	0.049	1,323	7,938
	24	992	0.123	709	0.088	809	6,084
	30	794	0.192	567	0.137	518	4,322
	36	661	0.276	472	0.197	359	2,845
	42	567	0.376	405	0.268	264	2,374
	48	496	0.491	354	0.350	202	1,817
	54	441	0.621	315	0.444	160	1,436
	60	397	0.767	283	0.548	129	1,163
	72	331	1.104	236	0.788	90	**
	84	283	1.502	202	1.073	66	**
	96	248	1.962	177	1.402	51	**
	108	220	2.484	157	1.774	40	**
	120	198	3.066	142	2.190	32	**

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29×10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

XD24 Channel

1" X 1-5/8"
(14 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD24	1.03	0.302	0.040	0.068	0.363	0.118	0.145	0.625

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

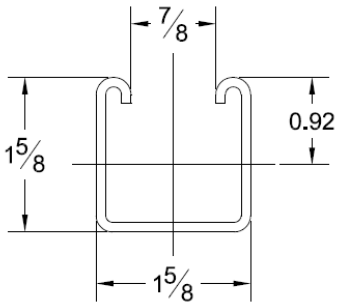
BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi *[= 1.68 S.F.]*	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[> 2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD24	18	1,053	0.069	752	0.050	1,053	6,069
	24	790	0.124	564	0.088	640	4,716
	30	632	0.193	451	0.138	409	3,410
	36	527	0.278	376	0.198	284	2,294
	42	451	0.378	322	0.270	209	1,880
	48	395	0.494	282	0.353	160	1,440
	54	351	0.625	251	0.447	126	1,137
	60	316	0.772	226	0.551	102	921
	72	263	1.112	188	0.794	71	640
	84	226	1.513	161	1.081	52	**
	96	197	1.976	141	1.412	40	**
	108	176	2.501	125	1.786	32	**
	120	158	3.088	113	2.206	26	**

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29×10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

XD42 Channel

1-5/8" X 1-5/8"
(12 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD42	1.80	0.529	0.175	0.190	0.576	0.226	0.279	0.655

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

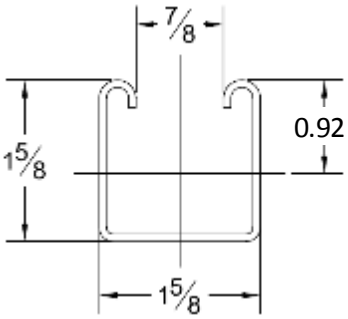
BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi *[= 1.68 S.F.]*	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[> 2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD42	18	2,956	0.044	2,111	0.032	2,956	12,909
	24	2,217	0.079	1,583	0.056	2,217	11,679
	30	1,773	0.123	1,267	0.088	1,773	10,268
	36	1,478	0.177	1,056	0.126	1,254	8,773
	42	1,267	0.241	905	0.172	921	7,284
	48	1,108	0.314	792	0.225	705	5,878
	54	985	0.398	704	0.284	557	4,609
	60	887	0.491	633	0.351	451	3,512
	72	739	0.707	528	0.505	313	2,819
	84	633	0.963	452	0.688	230	2,071
	96	554	1.257	396	0.898	176	1,586
	108	493	1.591	352	1.137	139	1,253
	120	443	1.965	317	1.403	113	**

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29×10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

XD44 Channel

1-5/8" X 1-5/8"
(14 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD44	1.34	0.394	0.135	0.148	0.586	0.173	0.213	0.663

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

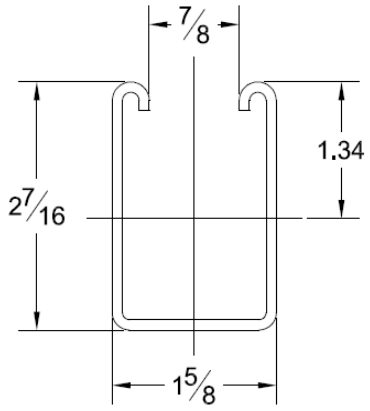
BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi *[= 1.68 S.F.]*	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[> 2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD44	18	2,299	0.044	1,642	0.032	2,299	9,656
	24	1,724	0.079	1,231	0.056	1,724	8,768
	30	1,379	0.124	985	0.088	1,379	7,745
	36	1,149	0.178	821	0.127	969	6,656
	42	985	0.242	704	0.173	712	5,565
	48	863	0.317	616	0.226	545	4,525
	54	766	0.400	547	0.286	431	3,580
	60	690	0.494	493	0.353	349	2,756
	72	575	0.712	410	0.508	242	2,179
	84	493	0.969	352	0.692	178	1,601
	96	431	1.265	308	0.904	136	1,226
	108	383	1.602	274	1.144	108	968
	120	345	1.977	246	1.412	87	**

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29×10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

XD52 Channel

2-7/16" X 1-5/8"
(12 Ga)



STRUT CHANNEL SECTION DATA								
Part #	Weight (lbs/ft)	Area (in^2)	X - X Axis			Y - Y Axis		
			I (in^4)	S (in^3)	R (in)	I (in^4)	S (in^3)	R (in)
XD52	2.35	0.691	0.491	0.367	0.843	0.321	0.395	0.682

I = Moment of Inertia S = Section Modulus R = Radius of Gyration

BEAM AND COLUMN LOADING DATA							
	A	B	C	D	E	F	G
	BEAM SPAN OR UNBRACED COLUMN HEIGHT	UNIFORM LOAD at Stress of 35000 psi *[= 1.68 S.F.]*	DEFLECTION at Stress of 35000 psi *[= 1.68 S.F.]*	UNIFORM LOAD at Stress of 25000 psi *[> 2.0 S.F.]*	DEFLECTION at Stress of 25000 psi *[> 2.0 S.F.]*	UNIFORM LOAD when Deflection = span/240	MAXIMUM ALLOWABLE LOAD ON COLUMN @ CG
	(inches)	(lbs)	(inches)	(lbs)	(inches)	(lbs)	(lbs)
XD52	18	5,713	0.030	4,080	0.022	5,713	18,082
	24	4,285	0.054	3,060	0.039	4,285	17,258
	30	3,428	0.085	2,448	0.060	3,428	16,253
	36	2,856	0.122	2,040	0.087	2,856	15,104
	42	2,448	0.166	1,749	0.118	2,448	13,850
	48	2,142	0.217	1,530	0.155	1,979	12,532
	54	1,904	0.274	1,360	0.196	1,564	11,190
	60	1,714	0.338	1,224	0.242	1,266	9,859
	72	1,428	0.487	1,020	0.348	879	7,353
	84	1,224	0.663	874	0.474	646	5,199
	96	1,071	0.866	765	0.619	495	4,450
	108	952	1.096	680	0.783	391	3,516
	120	857	1.353	612	0.967	317	2,848

BEAM LOADS: All loads listed are for the total load uniformly distributed across beam.
To utilize capability of higher strength OMCOStrut-XD and if deflection is not a factor, use data from columns B and C.
For maximum Safety Factor using OMCOStrut-XD and when deflection is not a factor, use data from columns D and E.
When deflection is a factor, refer to load data in column F (span/240).

COLUMN LOADS: Load data listed is for unbraced height, K=1.0 ** Indicates KL/r > 200 Modulus of Elasticity = 29×10^6 psi
Loading data based on NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.

NOTES:

ATTENTION!

ALWAYS CONSULT WITH A CERTIFIED AND QUALIFIED STRUCTURAL ENGINEER REGARDING THE PROPER SELECTION AND APPLICATION OF ALL COMPONENTS INTENDED FOR USE IN STRUCTURAL FRAMING.

OMCO
30396 Lakeland Blvd.
Wickliffe, OH 44092

Ph: 440-944-2100
Fx: 440-944-8309

www.omcoform.com