

VERSATILE, REUSABLE, ECONOMICAL

Use the Telespar System to fill your building needs in almost any application: racks, shelving, ceiling grids, conveyor systems, interior partitions, adjustable platforms, material handling devices, scaffolds, strapping machines, hangers, support members, protective railings, sign supports, etc. No special welding, tools or assembly procedures are necessary with the Telespar System.

One of the secrets to Telespar's versatility is its ability to telescope. Smaller sizes fit smoothly and snugly into the next larger size. This is made possible by the latest in high-speed roll-forming technology with high-frequency resistance welding. This produces smooth corner welds within very close tolerances, reducing your fabrication costs.


Telespar standard perforated tubing comes in eight sizes, from 1" to 2½" square, in 10 and 12 gauge. Perforated holes are 7/16" spaced on 1" centers, except for 1" and 1¼" which have 11/32" holes on 1" centers. Sections without holes are available in all sizes.

Telespar comes in two standard finishes: Pre-Galv Plus™ and plain (lightly oiled) surface. The Telespar System includes a complete line of zinc-electroplated fittings, fasteners and accessories for splicing, extending and reinforcing.



COMPONENTS

FITTINGS DIMENSIONS

Fittings*	Tube Size	Cutting Dimensions**	Fittings*	Tube Size	Cutting Dimensions**
 T-Fitting	1½" sq.	1¾"	 90° Offset Fitting	1½" sq.	1¾"
	1¾" sq.	1⅞"		1¾" sq.	1⅞"
	2" sq.	15/16"		2" sq.	15/16"
	2¼" sq.	13/16"		2¼" sq.	13/16"
	2½" sq.	11/16"		2½" sq.	11/16"
 L-Fitting	1½" sq.	1¾"	 Lock Pin	1½" sq.	N/A
	1¾" sq.	1⅞"		1¾" sq.	
	2" sq.	15/16"		2" sq.	
	2¼" sq.	13/16"		2¼" sq.	
	2½" sq.	11/16"		2½" sq.	
 Straight Fitting	1½" sq.	N/A	 Anti-Rotation Fitting	1½" sq.	1"
	1¾" sq.			1"	
	2" sq.			1"	
	2¼" sq.			1"	
	2½" sq.			1"	

* Standard Unistrut® channel fittings will not work on Telespar®
 ** Distance from end of tube to center of first hole

† Both tubes must be same size.

CONNECTING BOLTS

Part No.	Description	Use with Tube Sizes
TLCB516S	Corner Bolt	1½", 1¾", 2"
TLCB516M	Corner Bolt	2¼", 2½"
TLJNH516	5/16" Heavy Hex Jam Nut	All
TL090EG	5/16" Lock Pin	1", 1½", 1¾"
TL092EG	3/8" Lock Pin	1½", 1¾", 2"
TL094EG	3/8" Lock Pin	2¼", 2½"
TLXDR3678	Drive Rivet	All

Tubing holes are 7/16" diameter, one inch on center, which accommodates standard 5/16" or 3/8" bolts. All corner bolts are 5/16" diameter.



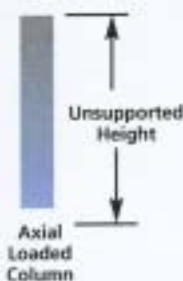
ELEMENTS OF SECTION I-Moment of Inertia S-Section Modulus r-Radius of Gyration K-Torsional Factor

Tube Size	Non-Perforated										Perforated							
	Wall Thickness U.S. Std. Gauge	Part No.	Area Sq. In.	Wt./Ft. Lbs.	I In. ⁴	S In. ³	r In.	K	Allowable Moment in Lbs.	Part No.	Area Sq. In.	Wt./Ft. Lbs.	I In. ⁴	S In. ³	r In.	Allowable Moment in Lbs.		
1" x 1"	12 (.105)	11F10	0.354	1.203	0.040	0.080	0.336	0.075	2,634	11F12	0.210	1.070	0.026	0.052	0.352	1,712		
1½" X 1½"	12 (.105)	12F10	0.459	1.560	0.093	0.148	0.450	0.158	4,874	12F12	0.315	1.427	0.070	0.112	0.472	3,688		
1½" x 1½"	12 (.105)	14F10	0.564	1.917	0.175	0.234	0.557	0.285	7,706	14F12	0.380	1.702	0.129	0.172	0.582	5,664		
1¾" x 1¾"	12 (.105)	16F10	0.669	2.274	0.294	0.336	0.663	0.467	11,065	16F12	0.485	2.060	0.231	0.264	0.690	8,694		
2" x 2"	12 (.105)	20F10	0.774	2.631	0.456	0.456	0.768	0.715	15,018	20F12	0.590	2.416	0.372	0.372	0.794	12,251		
2¼" x 2¼"	12 (.105)	22F10	0.879	2.988	0.668	0.594	0.872	1.036	19,563	22F12	0.695	2.773	0.561	0.499	0.898	16,434		
2½" x 2½"	12 (.105)	24F10	0.987	3.356	0.937	0.749	0.974	1.443	24,667	24F12	0.803	3.141	0.804	0.643	1.001	21,176		
2" x 3"	12 (.105)	2030F10	0.987	3.356	MAJOR AXIS				2030F12	.711	3.034	MAJOR AXIS						
					1.217	.811	1.110	1.319				20,709	.976	.651	1.172	21,440		
					MINOR AXIS							MINOR AXIS						
					.647	.647	.810	1.319	21,308						.480	.480	.822	15,808
2¼" x 2¼"	10 (.135)	21H10	1.077	3.662	0.731	0.668	0.824	1.167	22,000	21H12	0.841	3.432	0.605	0.590	0.848	19,431		
2½" x 2½"	10 (.135)	24H10	1.248	4.236	1.146	0.917	0.959	1.786	30,200	24H12	1.010	4.006	0.979	0.783	0.985	25,787		

CALCULATION OF TELESCOPED BEAM LOADING

Example: 12 Gauge Tubing

When consecutive size tubes are telescoped one inside another, beam loads from charts on pages 2-3 are additive. Deflections for spans 5 feet and over will be approximately the same as for the larger tube. Deflections for shorter spans will show a slight increase.



Beam Loads: Allowable uniformly distributed loads are listed for various simple spans (beam on two supports). If load is concentrated at center of span, multiply load from table by 0.5 and corresponding deflection by 0.8

Allowable Loads— Calculated per the American Iron and Steel Institute *Specification for the Design of Cold-Formed Steel Structural Members*.

Deflection 1/240 Span— Recommended for use where the amount of deflection is required to be imperceptible.

Column Loads: Column loadings are for allowable axial loads for the unsupported heights listed. Eccentric loads should be reduced according to standard practice.



	Size	Span Feet	Uniform Beam Load- Lbs.	Deflection Inches
Tubing with perforation	1½" Sq.	8	478	1.23
	1¾" Sq.	8	730	
	1½" & 1¾" telescoped	8	1208	1.23
Tubing with no perforation	1½" Sq.	10	517	1.69
	1¾" Sq.	10	744	
	2" Sq.	10	1009	
	1½" & 1¾" & 2" Sq. telescoped	10	2270	1.69

BEAM & COLUMN DATA - 10 GAUGE [.135] WALL THICKNESS

Beam Span or Column Unsupported Height	Tube Size	Non-Perforated				Perforated			
		Maximum Allowable Uniform Load Pounds	Deflection at Uniform Load Inches	Uniform Load @ Max. Defl. 1/240 Span	Maximum Column Load	Maximum Allowable Uniform Load Pounds	Deflection at Uniform Load Inches	Uniform Load @ Max. Defl. 1/240 Span	Maximum Column Load
18"	2 ¼" x 2 ¼"	9,734	0.03	-	20,200	8,591	0.03	-	15,800
18"	2 ½" x 2 ½"	13,361	0.03	-	23,600	11,403	0.03	-	19,200
24"	2 ¼" x 2 ¼"	7,305	0.06	-	19,800	6,450	0.06	-	15,500
24"	2 ½" x 2 ½"	10,023	0.05	-	23,200	8,562	0.05	-	18,800
30"	2 ¼" x 2 ¼"	5,832	0.10	-	19,300	5,163	0.10	-	15,100
30"	2 ½" x 2 ½"	8,014	0.09	-	22,800	6,844	0.09	-	18,500
36"	2 ¼" x 2 ¼"	4,861	0.14	-	18,700	4,295	0.15	-	14,700
36"	2 ½" x 2 ½"	6,674	0.12	-	22,200	5,701	0.12	-	18,000
42"	2 ¼" x 2 ¼"	4,165	0.18	3,912	18,200	3,678	0.20	3,240	14,200
42"	2 ½" x 2 ½"	5,728	0.17	-	21,700	4,887	0.17	-	17,600
48"	2 ¼" x 2 ¼"	3,652	0.24	2,995	17,600	3,218	0.26	2,480	13,800
48"	2 ½" x 2 ½"	5,005	0.21	4,695	21,100	4,283	0.21	4,010	17,200
60"	2 ¼" x 2 ¼"	2,916	0.38	1,916	16,200	2,575	0.40	1,590	12,700
60"	2 ½" x 2 ½"	4,007	0.33	3,005	19,800	3,416	0.33	2,570	16,200
72"	2 ¼" x 2 ¼"	2,431	0.55	1,330	14,700	2,154	0.58	1,100	11,700
72"	2 ½" x 2 ½"	3,336	0.48	2,090	18,500	2,850	0.48	1,780	15,200
84"	2 ¼" x 2 ¼"	2,089	0.75	980	13,100	1,839	0.79	810	10,500
84"	2 ½" x 2 ½"	2,864	0.65	1,530	16,900	2,444	0.65	1,310	14,000
96"	2 ¼" x 2 ¼"	1,828	0.97	750	11,200	1,616	1.04	620	9,100
96"	2 ½" x 2 ½"	2,509	0.85	1,170	15,400	2,141	0.85	1,000	12,800
108"	2 ¼" x 2 ¼"	1,616	1.23	690	9,300	1,432	1.31	490	7,700
108"	2 ½" x 2 ½"	2,220	1.08	930	13,600	1,905	1.08	790	11,300
120"	2 ¼" x 2 ¼"	1,458	1.52	480	7,500	1,288	1.62	400	6,200
120"	2 ½" x 2 ½"	2,010	1.33	750	11,800	1,708	1.33	640	9,900

BEAM & COLUMN DATA - 12 GAUGE [.105] WALL THICKNESS

Beam Span or Column Unsupported Height	Tube Size	Non-Perforated				Perforated			
		Maximum Allowable Uniform Load Pounds	Deflection at Uniform Load Inches	Uniform Load @ Max. Defl. 1/240 Span	Maximum Column Load	Maximum Allowable Uniform Load Pounds	Deflection at Uniform Load Inches	Uniform Load @ Max. Defl. 1/240 Span	Maximum Column Load
18"	1" x 1"	1,182	0.07	1,160	5,905	768	0.07	760	-
18"	1 ½" x 1 ½"	2,178	0.06	-	8,130	1,634	0.06	-	-
18"	1 ¾" x 1 ¾"	3,439	0.05	-	10,255	2,537	0.05	-	6,950
18"	1 ¾" x 1 ¾"	4,954	0.04	-	12,365	3,891	0.04	-	9,000
18"	2" x 2"	6,719	0.04	-	14,480	5,485	0.04	-	11,070
18"	2 ¼" x 2 ¼"	8,751	0.03	-	16,595	7,344	0.03	-	13,155
18"	2 ½" x 2 ½"	11,036	0.03	-	18,780	9,469	0.03	-	15,200
24"	1" x 1"	890	0.14	650	5,365	578	0.14	425	-
24"	1 ½" x 1 ½"	1,634	0.10	1,530	7,855	1,225	0.10	1,150	-
24"	1 ¾" x 1 ¾"	2,590	0.09	-	9,830	1,899	0.09	-	6,680
24"	1 ¾" x 1 ¾"	3,705	0.08	-	11,990	2,822	0.08	-	8,750
24"	2" x 2"	5,033	0.06	-	14,120	4,103	0.06	-	10,800
24"	2 ¼" x 2 ¼"	6,560	0.06	-	16,245	5,511	0.06	-	12,890
24"	2 ½" x 2 ½"	8,274	0.06	-	18,420	7,105	0.06	-	14,970

BEAM & COLUMN DATA - 12 GAUGE [.105] WALL THICKNESS

Beam Span or Column Unsupported Height	Non-Perforated					Perforated				
	Tube Size	Maximum Allowable Uniform Load Pounds	Deflection at Uniform Load Inches	Uniform Load @ Max. Defl. 1/240 Span	Maximum Column Load	Maximum Allowable Uniform Load Pounds	Deflection at Uniform Load Inches	Uniform Load @ Max. Defl. 1/240 Span	Maximum Column Load	
30"	1" x 1"	704	0.21	420	4,755	458	0.21	275	-	
30"	1½" x 1½"	1,302	0.17	975	7,165	977	0.17	735	-	
30"	1½" x 1½"	2,072	0.14	1,840	9,410	1,514	0.14	1,350	6,400	
30"	1½" x 1½"	2,974	0.12	-	11,570	2,338	0.12	-	8,450	
30"	2" x 2"	4,024	0.10	-	13,710	3,294	0.10	-	10,530	
30"	2½" x 2½"	5,246	0.10	-	15,920	4,409	0.10	-	12,590	
30"	2½" x 2½"	6,614	0.08	-	18,060	5,684	0.09	-	14,890	
36"	1" x 1"	584	0.30	290	4,070	379	0.30	190	-	
36"	1½" x 1½"	1,089	0.24	680	6,620	617	0.24	510	-	
36"	1½" x 1½"	1,726	0.20	1,275	8,900	1,262	0.20	940	6,090	
36"	1½" x 1½"	2,470	0.18	2,140	11,105	1,939	0.18	1,680	8,130	
36"	2" x 2"	3,360	0.15	3,320	13,330	2,736	0.15	2,710	10,200	
36"	2½" x 2½"	4,369	0.14	-	15,500	3,678	0.14	-	12,300	
36"	2½" x 2½"	5,511	0.12	-	17,690	4,741	0.12	-	14,380	
42"	1" x 1"	505	0.42	210	3,350	328	0.42	140	-	
42"	1½" x 1½"	930	0.33	500	5,980	698	0.33	375	-	
42"	1½" x 1½"	1,474	0.27	940	8,350	1,089	0.27	690	5,760	
42"	1½" x 1½"	2,125	0.23	1,570	10,610	1,660	0.23	1,240	7,820	
42"	2" x 2"	2,882	0.21	2,440	12,860	2,350	0.21	1,990	9,890	
42"	2½" x 2½"	3,745	0.18	3,575	15,060	3,147	0.18	3,000	11,970	
42"	2½" x 2½"	4,728	0.17	-	17,270	4,064	0.17	-	14,060	
48"	1" x 1"	438	0.54	160	2,580	285	0.54	105	-	
48"	1½" x 1½"	823	0.43	380	5,330	618	0.43	285	-	
48"	1½" x 1½"	1,288	0.36	720	7,750	956	0.36	530	5,370	
48"	1½" x 1½"	1,859	0.31	1,200	10,080	1,461	0.31	950	7,440	
48"	2" x 2"	2,523	0.27	1,670	12,350	2,058	0.27	1,520	9,510	
48"	2½" x 2½"	3,280	0.24	2,735	14,590	2,762	0.24	2,300	11,600	
48"	2½" x 2½"	4,130	0.22	3,840	16,850	3,546	0.22	3,290	13,710	
60"	1" x 1"	358	0.66	100	1,650	233	0.66	70	-	
60"	1½" x 1½"	650	0.66	240	3,820	488	0.66	185	-	
60"	1½" x 1½"	1,036	0.56	460	6,490	757	0.56	340	4,580	
60"	1½" x 1½"	1,487	0.48	770	8,920	1,169	0.48	610	6,660	
60"	2" x 2"	2,018	0.42	1,200	11,230	1,646	0.42	980	8,730	
60"	2½" x 2½"	2,630	0.38	1,750	13,560	2,205	0.38	1,470	10,850	
60"	2½" x 2½"	3,306	0.34	2,460	15,820	2,842	0.34	2,110	12,960	
72"	1" x 1"	292	1.20	70	-	190	1.20	50	-	
72"	1½" x 1½"	545	0.96	170	2,680	409	0.96	125	-	
72"	1½" x 1½"	863	0.81	320	4,980	638	0.82	230	3,640	
72"	1½" x 1½"	1,235	0.69	540	7,615	970	0.69	420	5,740	
72"	2" x 2"	1,674	0.60	830	10,080	1,368	0.61	680	7,870	
72"	2½" x 2½"	2,191	0.54	1,220	12,420	1,833	0.54	1,020	9,950	
72"	2½" x 2½"	2,762	0.49	1,710	14,740	2,364	0.48	1,480	12,130	
84"	1" x 1"	252	1.65	50	-	163	1.65	35	-	
84"	1½" x 1½"	465	1.30	120	1,960	349	1.31	95	-	
84"	1½" x 1½"	744	1.11	230	3,690	545	1.10	170	2,740	
84"	1½" x 1½"	1,062	0.94	390	6,170	837	0.94	310	4,770	
84"	2" x 2"	1,434	0.82	610	8,720	1,169	0.82	500	6,920	
84"	2½" x 2½"	1,873	0.74	890	11,260	1,580	0.74	750	9,050	
84"	2½" x 2½"	2,363	0.66	1,250	13,680	2,032	0.66	1,080	11,220	
96"	1" x 1"	226	2.20	40	-	146	2.20	25	-	
96"	1½" x 1½"	412	1.73	100	-	310	1.74	70	-	
96"	1½" x 1½"	650	1.45	180	2,810	478	1.45	130	2,090	
96"	1½" x 1½"	930	1.23	300	4,750	730	1.23	240	3,750	
96"	2" x 2"	1,262	1.08	470	7,330	1,029	1.08	380	5,880	
96"	2½" x 2½"	1,646	0.96	680	9,900	1,383	0.96	570	8,070	
96"	2½" x 2½"	2,071	0.86	960	12,325	1,779	0.86	820	10,250	
108"	1" x 1"	199	2.77	30	-	129	2.77	20	-	
108"	1½" x 1½"	358	2.14	80	-	269	2.14	55	-	
108"	1½" x 1½"	571	1.81	140	2,240	425	1.83	100	1,660	
108"	1½" x 1½"	823	1.55	240	3,760	650	1.56	190	2,940	
108"	2" x 2"	1,115	1.36	370	5,810	916	1.37	300	4,760	
108"	2½" x 2½"	1,461	1.22	540	8,430	1,222	1.21	450	7,010	
108"	2½" x 2½"	1,833	1.09	760	11,000	1,580	1.09	650	9,200	
120"	1" x 1"	173	3.29	30	-	112	3.29	15	-	
120"	1½" x 1½"	332	2.72	60	-	250	2.72	45	-	
120"	1½" x 1½"	518	2.26	110	-	385	2.27	80	-	
120"	1½" x 1½"	744	1.93	190	3,050	584	1.93	150	2,390	
120"	2" x 2"	1,010	1.69	300	4,850	823	1.69	240	3,810	
120"	2½" x 2½"	1,314	1.50	440	6,890	1,102	1.50	370	5,780	
120"	2½" x 2½"	1,660	1.35	610	9,590	1,421	1.34	530	8,070	

SPECIFICATIONS

Tubing shall be TELESPAR® tubing conforming to manufacturers' standards. Tubing shall be corner welded by high-frequency resistance welding and externally scarfed to agree with corner radii.

MATERIALS

Tubing with plain finish is roll formed from 10 gauge (.135) and 12 gauge (.105 U.S.S. Gauge) hot rolled steel, ASTM Des. A-1011 Grade 50, pickled and oiled. Galvanized finish, roll formed from 10 gauge (.135) and 12 gauge (.105 U.S.S. Gauge) hot rolled steel, galvanized material ASTM A-653 Grade 50. Average minimum yield strength after cold forming is 60,000 PSI.

STANDARD FINISHES

Plain – Material has oiled finish as the material comes from the rolling mills. Tubes must be thoroughly cleaned before protective finishes are applied.

Pre-Galv Plus™ – Galvanized conforming to ASTM specification A-653 des. G-90. Corner weld is zinc coated after scarfing operation. Tubing then receives a conversion coating and a clear organic polymer topcoat.



tyco

Electrical &
Metal Products

SQUARENESS OF SIDES AND TWIST

Nominal Outside Dimension, Inches	Squareness Tolerance, Inch*	Twist Permissible in 3 Ft., inch†
1" x 1"	± .006	.050
1¼" x 1¼"	± .007	.050
1½" x 1½"	± .009	.050
1¾" x 1¾"	± .010	.062
2" x 2"	± .012	.062
2¼" x 2¼"	± .014	.062
2½" x 2½"	± .014	.062
2¾" x 2¾"	± .015	.075
3" x 3"	± .018	.075

* TELESPAR tubing may have its sides failing to be 90° to each other by the tolerance listed.

† Twist is measured by holding down the edge of one end of a square tube on a surface plate with the bottom side of the tube parallel to the surface plate and noting the height that either corner on the opposite end of the bottom side is above the surface plate.

TOLERANCES

Tolerance on size

Nominal Outside Dimension, Inches	Outside Tolerance for All Sides at Corners, Inch
1" x 1"	± .005
1¼" x 1¼"	± .006
1½" x 1½"	± .006
1¾" x 1¾"	± .008
2" x 2"	± .008
2¼" x 2¼"	± .010
2½" x 2½"	± .010
2¾" x 2¾"	± .010
3" x 3"	± .010

Wall thickness tolerance – Permissible variation in wall thickness is + .011, -.005 inches.

Convexity and concavity – Measured in the center of the flat side, tolerance is ± .010 inch applied to the specific size determined at the corner.

Straightness tolerance – Permissible variation in straightness is 1/16" in 3 feet.

Corner radii – Standard corner radius is 5/32" ± 1/64".

Weld Flash – Weld flash on corner welded square tubing shall permit 9/64" radius gauge to be placed in the corner.

Telescoping – Using 10 gauge (.135) or 12 gauge (.105) square tube, consecutive size tubes shall telescope freely for ten feet.

Length tolerance – To allow for subsequent cutting – tubes without holes – standard length members are 3/8" ± 1/8" longer. Tubes with holes – standard length members are 2" ± 1/8" longer. Tubes can be furnished in special lengths. Standard pre-galvanized lengths are 20' and 24', standard plain finish length is 24'.

Hole tolerance – Tolerance on hole size is ± 1/64" on a 7/16" hole size. Tolerance on hole spacing ± 1/8" in 10 feet.

START SOLVING PRODUCT DESIGN AND IN-PLANT CONSTRUCTION PROBLEMS TODAY...

Telespar Telescopic Tubing is among the world's best known and most trusted engineering support systems...and for good reason. It's a complete system, designed and manufactured to exacting quality standards. For more information call your nearest Telespar tubing representative.

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