U.S. Strap
Wood Construction Connectors
Cut-to-Length Straps
(CTL14 / CTL16 / CTL18 / CTL20 / CTL22)

Description

US Strap Cut to Length (CTL) Straps are precision-engineered utility straps that can be trimmed to required lengths on site. Each strap is pre-punched with 0.156" diameter nail holes in two staggered rows at 2-1/16" spacing and made from G90 galvanized ASTM A653 Grade 50 steel. Designed for tension ties, chord splices, and drag struts in wood framing systems.

- Width: 1¼"
- Coil Lengths: CTL14 (100'), CTL16 (150'), CTL18 (200'), CTL20 (250'), CTL22 (300')
- Finish: G90 Galvanized, typical coating thickness 0.0008"
- Steel Yield Strength (Fy): 50 ksi
- Steel Tensile Strength (Fu): 60–65 ksi

Hole Pattern

- Rows: 2 staggered
- Hole Diameter: 0.156"
- Longitudinal Spacing: 2-1/16"
- Lateral Row-to-Row Spacing: ½"
  (See Figure 2 in Report 2412-111)

Figure 3. US Strap Cut to Length Straps – Total Cut Length

Packaging

- Coils shipped in labeled cartons with product ID and compliance markings.
- Custom lengths may be available. Contact the manufacturer for options.

Installation Guidelines

- Use all specified fasteners (see tables below).
- CTL straps must be anchored using 8d or 10d nails compliant with ASTM F1667.
- Minimum end length must match table values for rated load capacity.
- Clear span + 2 × End Length = Total Strap Cut Length.
- Fasteners must meet or exceed:
  - 8d (0.131" x 2.5") → Fyb ≥ 100,000 psi
  - 10d (0.148" x 3") → Fyb ≥ 90,000 psi

Typical Applications

- Floor-to-floor tie
- Roof diaphragm tie-down
- Wall chord tie

- Seismic and wind load transfer
  (For use on wood members minimum 2x nominal thickness)

Allowable Tension Loads (CD = 1.0)

Allowable loads assume common wire nails and are based on allowable stress design (ASD) for "Normal" 10-year load duration. CD factors up to 1.6 may apply for short-term loading (wind/seismic). Do not exceed strap steel capacity as defined in Table 2 of the report.

Table 2. Allowable Tension Loads per Strap[1]

US Strap Product ID	Steel Gauge	Minimum Coated Thickness (in)	Steel Grade	Allowable Tensile Strength (lb)
CTL22	22 gauge	0.0310	ASTM A653 SS Grade 50, Class 1	1,045
CTL20	20 gauge	0.0359	ASTM A653 HSLAS Grade 50	1,200
CTL18	18 gauge	0.0446	ASTM A653 HSLAS Grade 50	1,595
CTL16	16 gauge	0.0580	ASTM A653 SS Grade 50, Class 1	2,080
CTL14	14 gauge	0.0710	ASTM A653 SS Grade 50, Class 1	2,635

SI: 1 in = 25.4 mm, 1 lb = 4.45 N
1. G90 galvanized (typ. 0.0008 coating thickness)

Engineering Notes

- Evaluated in accordance with ANSI/AWC NDS, ASTM D1761, ASTM F1667.
- Testing conducted by ISO/IEC 17025-accredited laboratories.
- Designed under ASD principles and suitable for use under IBC 104.11, IRC R104.11, and related provisions.
- Evaluation Report: #2412-111 (Approval-equivalent in most U.S. jurisdictions).

Regulatory Acceptance

The US Strap CTL series is recognized for structural force transfer (wind/seismic) in accordance with accepted engineering practice and product approval legislation. Approved in or accepted by:

- *Florida Building Code*
- *Los Angeles Building Code*
- *Chicago Municipal Code*
- *NYC Building Code*
- *Miami-Dade County (NOA Equivalent)*
- *Canada via USMCA / GATT provisions*

Contact Information

U.S. Strap
Phone: 713-547-4447
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Email: info@us-strap.com
For additional span tables, engineering guidance, or special configurations, contact the manufacturer.

Additional Tables

Table 7. CTL14 Coiled Straps Allowable Tension Load

Fasteners		Minimum Required End Length[3] (in)	Allowable Tension Load[1] (lbs)					
			SP (0.55)		DF-L (0.50)		SPF (0.42)	
Size	Total Number of Fasteners		Load Duration Factor, C_D					
			1.0	1.6	1.0	1.6	1.0	1.6
8d Common (0.131 x 2.5")	4	4	545	870	545	870	550	880
	6	5	820	1,310	820	1,310	825	1,315
	8	6	1,090	1,745	1,090	1,745	1,100	1,755
	10	7	1,365	2,180	1,365	2,180	1,370	2,195
	12	8	1,635	2,615	1,635	2,615	1,645	2,635
	14	9	1,910	2,635	1,910	2,635	1,920	2,635
	16	10	2,180	2,635	2,180	2,635	2,195	2,635
	18	11	2,455	2,635	2,455	2,635	2,470	2,635
	20	12	2,635	2,635	2,635	2,635	2,635	2,635
10d Common (0.148 x 3")	4	4	855	1,370	855	1,370	780	1,250
	6	5	1,285	2,055	1,285	2,055	1,170	1,875
	8	6	1,715	2,635	1,715	2,635	1,560	2,500
	10	7	2,140	2,635	2,140	2,635	1,955	2,635
	12	8	2,570	2,635	2,570	2,635	2,345	2,635
	14	9	2,635	2,635	2,635	2,635	2,635	2,635

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. The total strap cut length is equal to the Clear Span + 2 x End Length. See **Figure 3** for more detail.

Table 6. CTL16 Coiled Straps Allowable Tension Load

Fasteners		Minimum Required End Length[3] (in)	Allowable Tension Load[1] (lbs)					
			SP (0.55)		DF-L (0.50)		SPF (0.42)	
Size	Total Number of Fasteners		Load Duration Factor, C_D					
			1.0	1.6	1.0	1.6	1.0	1.6
8d Common (0.131 x 2.5")	4	4	560	895	560	895	570	910
	6	5	840	1,345	840	1,345	855	1,365
	8	6	1,120	1,790	1,120	1,790	1,140	1,820
	10	7	1,400	2,080	1,400	2,080	1,420	2,080
	12	8	1,680	2,080	1,680	2,080	1,705	2,080
	14	9	1,960	2,080	1,960	2,080	1,990	2,080
	16	10	2,080	2,080	2,080	2,080	2,080	2,080
10d Common (0.148 x 3")	4	4	825	1,325	825	1,325	795	1,275
	6	5	1,240	1,985	1,240	1,985	1,195	1,910
	8	6	1,655	2,080	1,655	2,080	1,590	2,080
	10	7	2,070	2,080	2,070	2,080	1,990	2,080
	12	8	2,080	2,080	2,080	2,080	2,080	2,080

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. The total strap cut length is equal to the Clear Span + 2 x End Length. See **Figure 3** for more detail.

Table 5. CTL18 Coiled Straps Allowable Tension Load

Fasteners		Minimum Required End Length[3] (in)	Allowable Tension Load[1,2] (lbs)					
			SP (0.55)		DF-L (0.50)		SPF (0.42)	
Size	Total Number of Fasteners		Load Duration Factor, C_D					
			1.0	1.6	1.0	1.6	1.0	1.6
8d Common (0.131 x 2.5")	4	4	645	1,030	645	1,030	535	860
	6	5	965	1,545	965	1,545	805	1,285
	8	6	1,290	1,595	1,290	1,595	1,070	1,595
	10	7	1,595	1,595	1,595	1,595	1,340	1,595
	12	8	1,595	1,595	1,595	1,595	1,595	1,595
10d Common (0.148 x 3")	4	4	825	1,325	825	1,325	765	1,225
	6	5	1,240	1,595	1,240	1,595	1,150	1,595
	8	6	1,595	1,595	1,595	1,595	1,535	1,595
	10	7	1,595	1,595	1,595	1,595	1,595	1,595

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. The total strap cut length is equal to the Clear Span + 2 x End Length. See **Figure 3** for more detail.

Table 3. CTL22 Coiled Straps Allowable Tension Load

Fasteners		Minimum Required End Length[3] (in)	Allowable Tension Load[1] (lb)					
			SP (0.55)		DF-L (0.50)		SPF (0.42)	
Size	Total Number of Fasteners		Load Duration Factor, C_D					
			1.0	1.6	1.0	1.6	1.0	1.6
8d Common (0.131 x 2.5")	4	4	550	875	550	875	510	815
	6	5	825	1,045	825	1,045	765	1,045
	8	6	1,045	1,045	1,045	1,045	1,020	1,045
	10	7	1,045	1,045	1,045	1,045	1,045	1,045
10d Common (0.148 x 3")	4	4	635	1,015	635	1,015	695	1,045
	6	5	950	1,045	950	1,045	1,040	1,045
	8	6	1,045	1,045	1,045	1,045	1,045	1,045

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. The total strap cut length is equal to the Clear Span + 2 x End Length. See **Figure 3** for more detail.

Table 4. CTL20 Coiled Straps Allowable Tension Load

Fasteners		Minimum Required End Length[3] (in)	Allowable Tension Load[1] (lbs)					
			SP (0.55)		DF-L (0.50)		SPF (0.42)	
Size	Total Number of Fasteners		Load Duration Factor, C_D					
			1.0	1.6	1.0	1.6	1.0	1.6
8d Common (0.131 x 2.5")	4	4	540	865	540	865	510	820
	6	5	810	1,200	810	1,200	770	1,200
	8	6	1,080	1,200	1,080	1,200	1,025	1,200
	10	7	1,200	1,200	1,200	1,200	1,200	1,200
10d Common (0.148 x 3")	4	4	695	1,110	695	1,110	715	1,145
	6	5	1,040	1,200	1,040	1,200	1,075	1,200
	8	6	1,200	1,200	1,200	1,200	1,200	1,200

SI: 1 in = 25.4 mm, 1 lb = 4.45 N

1. The total strap cut length is equal to the Clear Span + 2 x End Length. See **Figure 3** for more detail.