

# UltraSTEEL® drywall studs & track

## ClarkWestern UltraSTEEL framing's 25-gauge EQ stud physical and structural properties

Member designation	Base metal thickness (Inches)	Effective metal thickness (inches)	Weight (lbs/ft)	Gross section properties					Effective section properties		Allowable moment	Torsional section properties					
				Area (in <sup>2</sup> )	I <sub>x</sub> (in <sup>4</sup> )	r <sub>x</sub> (in)	I <sub>y</sub> (in <sup>4</sup> )	r <sub>y</sub> (in)	I <sub>xo</sub> (in <sup>4</sup> )	S <sub>xo</sub> (in <sup>3</sup> )		M <sub>o</sub> (in-lbs)	X <sub>o</sub> (in)	J (10 <sup>-6</sup> in <sup>4</sup> )	C <sub>w</sub> (in <sup>6</sup> )	R <sub>o</sub> (in)	Beta (degree)
Studs	162 UDS	0.015	0.034	0.237	0.070	0.033	0.689	0.015	0.460	0.029	0.024	578	-1.062	0.580	0.009	1.347	0.378
	250 UDS	0.015	0.034	0.284	0.084	0.087	1.020	0.017	0.452	0.078	0.045	1,087	-0.935	0.694	0.021	1.456	0.587
	362 UDS	0.015	0.034	0.345	0.101	0.204	1.418	0.019	0.435	0.189	0.057	1,363	-0.815	0.842	0.049	1.693	0.768
	400 UDS	0.015	0.034	0.365	0.107	0.256	1.546	0.020	0.429	0.233	0.063	1,509	-0.783	0.891	0.061	1.785	0.808
	600 UDS*	0.015	0.034	0.472	0.139	0.675	2.205	0.022	0.396	0.535	0.108	2,580	-0.648	1.154	0.153	2.332	0.923

## ClarkWestern UltraSTEEL framing's track 25-gauge EQ physical and structural properties

Member designation	Leg (in)	Mils	Base metal thickness (inches)	Effective metal thickness (inches)	Weight (lbs/ft)	Gross section properties							Effective section properties			Torsional section properties					
						Area (in <sup>2</sup> )	I <sub>x</sub> (in <sup>4</sup> )	S <sub>x</sub> (in <sup>3</sup> )	R <sub>x</sub> (in)	I <sub>y</sub> (in <sup>4</sup> )	S <sub>y</sub> (in <sup>3</sup> )	R <sub>y</sub> (in)	I <sub>xo</sub> (in <sup>4</sup> )	S <sub>xo</sub> (in <sup>3</sup> )	M <sub>xo</sub> (in-lb)	X <sub>o</sub> (in)	J*1000 (in <sup>6</sup> )	C <sub>w</sub> (in <sup>6</sup> )	R <sub>o</sub> (in)	B Beta	
Track	162 UDT 25EQ	1.25	15	0.015	0.035	0.219	0.064	0.032	0.038	0.702	0.011	0.013	0.412	0.020	0.017	400	-0.887	0.005	0.005	1.204	0.457
		2.00	15	0.015	0.035	0.300	0.088	0.048	0.058	0.736	0.039	0.047	0.662	0.025	0.016	389	-1.587	0.007	0.019	1.870	0.280
		3.00	15	0.015	0.035	0.407	0.120	0.069	0.083	0.759	0.115	0.139	0.980	0.027	0.017	410	-2.551	0.010	0.059	2.837	0.191
	250 UDT 25EQ	1.25	15	0.015	0.035	0.266	0.078	0.082	0.065	1.023	0.013	0.010	0.401	0.058	0.026	627	-0.776	0.007	0.014	1.345	0.668
		2.00	15	0.015	0.035	0.347	0.102	0.119	0.094	1.082	0.045	0.035	0.662	0.067	0.026	621	-1.437	0.008	0.050	1.917	0.438
		3.00	15	0.015	0.035	0.454	0.134	0.169	0.134	1.126	0.132	0.105	0.995	0.069	0.027	653	-2.371	0.011	0.153	2.807	0.287
	362 UDT 25EQ	1.25	15	0.015	0.035	0.327	0.096	0.191	0.105	1.411	0.014	0.008	0.382	0.133	0.038	920	-0.671	0.008	0.033	1.609	0.826
		2.00	15	0.015	0.035	0.407	0.120	0.270	0.148	1.501	0.050	0.028	0.649	0.144	0.039	923	-1.287	0.010	0.117	2.081	0.618
		3.00	15	0.015	0.035	0.515	0.151	0.374	0.205	1.573	0.150	0.082	0.995	0.154	0.039	939	-2.178	0.013	0.352	2.865	0.422
	400 UDT 25EQ	1.25	15	0.015	0.035	0.347	0.102	0.241	0.119	1.537	0.014	0.007	0.375	0.162	0.042	1018	-0.643	0.008	0.042	1.707	0.858
		2.00	15	0.015	0.035	0.428	0.126	0.336	0.167	1.636	0.052	0.026	0.643	0.177	0.043	1023	-1.244	0.010	0.147	2.153	0.666
		3.00	15	0.015	0.035	0.535	0.157	0.464	0.230	1.717	0.155	0.077	0.992	0.188	0.044	1053	-2.122	0.013	0.440	2.904	0.466
	600 UDT 25EQ*	1.25	15	0.015	0.035	0.454	0.134	0.636	0.211	2.182	0.016	0.005	0.343	—	—	—	-0.526	0.011	0.107	2.270	0.946
		2.00	15	0.015	0.035	0.535	0.157	0.850	0.282	2.325	0.058	0.019	0.609	—	—	—	-1.061	0.013	0.377	2.627	0.837
		3.00	15	0.015	0.035	0.643	0.189	1.136	0.377	2.452	0.176	0.058	0.966	—	—	—	-1.869	0.016	1.118	3.231	0.665

Notes: UltraSTEEL section properties were determined in accordance with AISI-NASPEC 2001. Section properties were conservatively calculated using the thickness and yield strength of the base material, prior to the UltraSTEEL framing process.

Effective properties and moment capacity did not incorporate stress increase as a result of cold work of forming. The term "Effective Thickness" was created by Underwriters Laboratory (UL®) to establish a minimum thickness measurement after the UltraSTEEL manufacturing process has occurred. Effective thickness is the measurement across the peaks of the dimples or the thickest part of the steel. The manufacturing, base steel and quality control process is verified by independent third-party UL® representatives, who make regular unannounced visits to manufacturing facilities to assure full compliance with UL® established quality control standards. Tested to ICC acceptance criteria AC86.

\* Depth over thickness ratio (h/t) is greater than 300.

# UltraSTEEL® drywall studs & track

## ClarkWestern UltraSTEEL framing's 20-gauge EQ stud physical and structural properties

	Member designation	Base metal thickness (inches)	Effective metal thickness (inches)	Weight (lbs/ft)	Gross section properties					Effective section properties		Allowable moment	Torsional section properties				
					Area (in <sup>2</sup> )	I <sub>x</sub> (in <sup>4</sup> )	r <sub>x</sub> (in)	I <sub>y</sub> (in <sup>4</sup> )	r <sub>y</sub> (in)	I <sub>xe</sub> (in <sup>4</sup> )	S <sub>xe</sub> (in <sup>3</sup> )		M <sub>a</sub> (in-lbs)	X <sub>o</sub> (in)	J (10 <sup>-6</sup> in <sup>4</sup> )	C <sub>w</sub> (in <sup>6</sup> )	R <sub>o</sub> (in)
Studs	162 UDS	0.025	0.055	0.391	0.115	0.054	0.685	0.024	0.455	0.052	0.048	1,157	-1.050	2.653	0.014	1.333	0.380
	250 UDS	0.025	0.055	0.469	0.138	0.142	1.015	0.028	0.447	0.136	0.090	2,166	-0.923	3.184	0.034	1.442	0.591
	362 UDS	0.025	0.055	0.570	0.168	0.334	1.412	0.031	0.430	0.320	0.119	2,841	-0.804	3.868	0.078	1.681	0.771
	400 UDS	0.025	0.055	0.604	0.177	0.421	1.540	0.032	0.423	0.403	0.132	3,155	-0.771	4.095	0.098	1.774	0.811
	600 UDS	0.025	0.055	0.782	0.230	1.111	2.197	0.035	0.391	1.017	0.234	5,593	-0.637	5.310	0.247	2.321	0.925

## ClarkWestern UltraSTEEL framing's track 20-gauge EQ physical and structural properties

	Member designation	Leg (in)	Mils	Base metal thickness (inches)	Effective metal thickness (inches)	Weight (lbs/ft)	Gross section properties						Effective section properties			Torsional section properties					
							Area (in <sup>2</sup> )	I <sub>x</sub> (in <sup>4</sup> )	S <sub>x</sub> (in <sup>3</sup> )	R <sub>x</sub> (in)	I <sub>y</sub> (in <sup>4</sup> )	S <sub>y</sub> (in <sup>3</sup> )	R <sub>y</sub> (in)	I <sub>xe</sub> (in <sup>4</sup> )	S <sub>xe</sub> (in <sup>3</sup> )	M <sub>xe</sub> (in-lb)	X <sub>o</sub> (in)	J*1000 (in <sup>4</sup> )	C <sub>w</sub> (in <sup>6</sup> )	R <sub>o</sub> (in)	B Beta
Track	162 UDT 20EQ	1.25	25	0.025	0.055	0.365	0.107	0.053	0.064	0.705	0.018	0.022	0.410	0.040	0.035	841	-0.881	0.025	0.009	1.201	0.462
		2.00	25	0.025	0.055	0.500	0.147	0.080	0.096	0.740	0.064	0.076	0.661	0.048	0.038	903	-1.580	0.034	0.032	1.866	0.283
		3.00	25	0.025	0.055	0.679	0.199	0.116	0.139	0.763	0.191	0.228	0.979	0.055	0.039	945	-2.545	0.046	0.100	2.831	0.192
	250 UDT 20EQ	1.25	25	0.025	0.055	0.444	0.130	0.137	0.108	1.026	0.021	0.016	0.399	0.106	0.065	1565	-0.770	0.030	0.023	1.344	0.671
		2.00	25	0.025	0.055	0.578	0.170	0.200	0.157	1.086	0.074	0.058	0.660	0.128	0.069	1658	-1.431	0.039	0.084	1.914	0.441
		3.00	25	0.025	0.055	0.757	0.222	0.284	0.223	1.130	0.220	0.172	0.994	0.150	0.067	1609	-2.364	0.051	0.256	2.803	0.288
	362 UDT 20EQ	1.25	25	0.025	0.055	0.544	0.160	0.320	0.174	1.414	0.023	0.013	0.380	0.259	0.104	2494	-0.666	0.037	0.055	1.608	0.828
		2.00	25	0.025	0.055	0.679	0.199	0.451	0.245	1.504	0.083	0.045	0.647	0.312	0.102	2443	-1.281	0.046	0.195	2.079	0.620
	400 UDT 20EQ	3.00	25	0.025	0.055	0.858	0.252	0.627	0.341	1.577	0.249	0.135	0.993	0.367	0.101	2408	-2.172	0.058	0.587	2.862	0.424
		1.25	25	0.025	0.055	0.578	0.170	0.402	0.198	1.539	0.024	0.012	0.373	0.330	0.114	2736	-0.638	0.039	0.069	1.707	0.860
		2.00	25	0.025	0.055	0.712	0.209	0.562	0.277	1.639	0.086	0.042	0.641	0.397	0.113	2702	-1.239	0.048	0.245	2.152	0.669
	600 UDT 20EQ	3.00	25	0.025	0.055	0.891	0.262	0.775	0.383	1.721	0.257	0.127	0.991	0.464	0.112	2675	-2.116	0.060	0.734	2.901	0.468
		1.25	25	0.025	0.055	0.757	0.222	1.060	0.350	2.183	0.026	0.009	0.341	0.800	0.163	3900	-0.522	0.051	0.177	2.271	0.947
		2.00	25	0.025	0.055	0.891	0.262	1.419	0.469	2.327	0.096	0.032	0.607	0.999	0.171	4093	-1.056	0.060	0.627	2.627	0.838
			3.00	25	0.025	0.055	1.070	0.315	1.897	0.627	2.455	0.292	0.097	0.964	0.170	4103	-1.864	0.073	1.862	3.230	0.667

Notes: UltraSTEEL section properties were determined in accordance with AISI-NASPEC 2001. Section properties were conservatively calculated using the thickness and yield strength of the base material, prior to the UltraSTEEL framing process.

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\* Depth over thickness ratio (h/t) is greater than 300.

For UltraSTEEL framing 20 STR-gauge EQ physical and structural properties, please contact Technical Services at 888-437-3244.