



## Report of Extruded Rail Load / Deflection Testing

**Client:** Precision Wall Systems, Inc., dba Gridworx    **Report No.:** 13920-211  
**Project:** Extruded Starter "J" Anchor 211    **Date of Service:** 5/1/2020  
**Project No.:** 20-00157-900-01

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Construction Testing Sciences (CTS) was retained by Gridworx, Ltd. to perform compression load / deflection testing on a continuous intermediate "J" anchor, identified as Extruded Starter 211. This test program consisted of a steel frame with three vertical members at 16" o.c., simulating metal studs. DensGlass sheathing was secured to the frame, followed by installation of the anchor, which measured 34" long. The anchor was secured to the frame with 5/16" Ø hex head screws. A rigid steel loading bar, simulating kerfed stone, was placed on the anchor through which to apply a compression load. Dial gauges were installed at each end of the the anchor to measure deflection under load. Initially, load was applied in 25 lbs. increments up to 300 lbf., followed by loading in 50 lbs. increments up to 2100 lbf. Deflection was recorded at each increment throughout the test. A total of five anchors were tested in this manner. Results of these tests are given on the following pages.

We trust the information provided is acceptable for your use. If you have any questions or require additional information please contact us.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Jack Gary".

Jack Gary  
General Manager



**Gridworx Extruded Rail Compression Loading**  
**Sample ID: Extruded Starter J Anchor 211**  
**Sample #: 1**

**Date of Service: 5/1/2020**  
**Report Number: 13920-211**

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
25	0.001	0.001	<b>0.001</b>
50	0.004	0.003	<b>0.004</b>
75	0.004	0.002	<b>0.003</b>
100	0.006	0.004	<b>0.005</b>
125	0.007	0.005	<b>0.006</b>
150	0.009	0.008	<b>0.009</b>
175	0.011	0.010	<b>0.011</b>
200	0.014	0.012	<b>0.013</b>
225	0.016	0.014	<b>0.015</b>
250	0.018	0.017	<b>0.018</b>
275	0.020	0.019	<b>0.020</b>
300	0.022	0.021	<b>0.022</b>
350	0.025	0.025	<b>0.025</b>
400	0.029	0.029	<b>0.029</b>
450	0.032	0.032	<b>0.032</b>
500	0.034	0.035	<b>0.035</b>
550	0.037	0.038	<b>0.038</b>
600	0.039	0.042	<b>0.041</b>
650	0.041	0.044	<b>0.043</b>
700	0.043	0.047	<b>0.045</b>
750	0.044	0.049	<b>0.047</b>
800	0.046	0.051	<b>0.049</b>
850	0.048	0.054	<b>0.051</b>
900	0.049	0.056	<b>0.053</b>

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
950	0.051	0.058	<b>0.055</b>
1000	0.053	0.060	<b>0.057</b>
1050	0.054	0.061	<b>0.058</b>
1100	0.057	0.065	<b>0.061</b>
1150	0.058	0.066	<b>0.062</b>
1200	0.059	0.068	<b>0.064</b>
1250	0.061	0.070	<b>0.066</b>
1300	0.063	0.071	<b>0.067</b>
1350	0.065	0.072	<b>0.069</b>
1400	0.066	0.074	<b>0.070</b>
1450	0.068	0.076	<b>0.072</b>
1500	0.070	0.077	<b>0.074</b>
1550	0.071	0.078	<b>0.075</b>
1600	0.073	0.080	<b>0.077</b>
1650	0.076	0.083	<b>0.080</b>
1700	0.076	0.084	<b>0.080</b>
1750	0.078	0.085	<b>0.082</b>
1800	0.080	0.086	<b>0.083</b>
1850	0.082	0.088	<b>0.085</b>
1900	0.085	0.091	<b>0.088</b>
1950	0.085	0.092	<b>0.089</b>
2000	0.086	0.093	<b>0.090</b>
2050	0.088	0.094	<b>0.091</b>
2100	0.090	0.096	<b>0.093</b>



**Gridworx Extruded Rail Compression Loading**  
**Sample ID: Extruded Starter J Anchor 211**  
**Sample #: 2**

**Date of Service: 5/1/2020**  
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Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
25	0.002	0.001	<b>0.002</b>
50	0.003	0.003	<b>0.003</b>
75	0.005	0.004	<b>0.005</b>
100	0.006	0.005	<b>0.006</b>
125	0.007	0.006	<b>0.007</b>
150	0.008	0.007	<b>0.008</b>
175	0.009	0.008	<b>0.009</b>
200	0.010	0.009	<b>0.010</b>
225	0.011	0.010	<b>0.011</b>
250	0.011	0.011	<b>0.011</b>
275	0.012	0.012	<b>0.012</b>
300	0.013	0.013	<b>0.013</b>
350	0.015	0.015	<b>0.015</b>
400	0.017	0.018	<b>0.018</b>
450	0.019	0.020	<b>0.020</b>
500	0.022	0.023	<b>0.023</b>
550	0.025	0.025	<b>0.025</b>
600	0.027	0.029	<b>0.028</b>
650	0.029	0.031	<b>0.030</b>
700	0.031	0.034	<b>0.033</b>
750	0.032	0.036	<b>0.034</b>
800	0.034	0.039	<b>0.037</b>
850	0.036	0.041	<b>0.039</b>
900	0.038	0.043	<b>0.041</b>

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
950	0.039	0.045	<b>0.042</b>
1000	0.041	0.048	<b>0.045</b>
1050	0.042	0.050	<b>0.046</b>
1100	0.045	0.054	<b>0.050</b>
1150	0.046	0.054	<b>0.050</b>
1200	0.047	0.057	<b>0.052</b>
1250	0.049	0.059	<b>0.054</b>
1300	0.051	0.061	<b>0.056</b>
1350	0.052	0.063	<b>0.058</b>
1400	0.053	0.064	<b>0.059</b>
1450	0.055	0.066	<b>0.061</b>
1500	0.057	0.068	<b>0.063</b>
1550	0.058	0.070	<b>0.064</b>
1600	0.060	0.072	<b>0.066</b>
1650	0.063	0.075	<b>0.069</b>
1700	0.064	0.076	<b>0.070</b>
1750	0.065	0.077	<b>0.071</b>
1800	0.067	0.079	<b>0.073</b>
1850	0.069	0.081	<b>0.075</b>
1900	0.070	0.082	<b>0.076</b>
1950	0.072	0.084	<b>0.078</b>
2000	0.074	0.086	<b>0.080</b>
2050	0.075	0.087	<b>0.081</b>
2100	0.077	0.089	<b>0.083</b>



**Gridworx Extruded Rail Compression Loading**  
**Sample ID: Extruded Starter J Anchor 211**  
**Sample #: 3**

**Date of Service: 5/1/2020**  
**Report Number: 13920-211**

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
25	0.001	0.001	<b>0.001</b>
50	0.004	0.002	<b>0.003</b>
75	0.007	0.004	<b>0.006</b>
100	0.010	0.006	<b>0.008</b>
125	0.013	0.008	<b>0.011</b>
150	0.015	0.010	<b>0.013</b>
175	0.017	0.011	<b>0.014</b>
200	0.018	0.013	<b>0.016</b>
225	0.020	0.015	<b>0.018</b>
250	0.022	0.016	<b>0.019</b>
275	0.023	0.018	<b>0.021</b>
300	0.025	0.019	<b>0.022</b>
350	0.028	0.022	<b>0.025</b>
400	0.032	0.024	<b>0.028</b>
450	0.035	0.027	<b>0.031</b>
500	0.039	0.030	<b>0.035</b>
550	0.042	0.032	<b>0.037</b>
600	0.046	0.035	<b>0.041</b>
650	0.049	0.037	<b>0.043</b>
700	0.053	0.040	<b>0.047</b>
750	0.056	0.042	<b>0.049</b>
800	0.060	0.045	<b>0.053</b>
850	0.064	0.048	<b>0.056</b>
900	0.067	0.050	<b>0.059</b>

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
950	0.069	0.053	<b>0.061</b>
1000	0.072	0.055	<b>0.064</b>
1050	0.074	0.058	<b>0.066</b>
1100	0.078	0.063	<b>0.071</b>
1150	0.079	0.064	<b>0.072</b>
1200	0.082	0.068	<b>0.075</b>
1250	0.084	0.070	<b>0.077</b>
1300	0.086	0.073	<b>0.080</b>
1350	0.088	0.076	<b>0.082</b>
1400	0.090	0.080	<b>0.085</b>
1450	0.093	0.083	<b>0.088</b>
1500	0.095	0.087	<b>0.091</b>
1550	0.097	0.091	<b>0.094</b>
1600	0.098	0.094	<b>0.096</b>
1650	0.100	0.097	<b>0.099</b>
1700	0.102	0.100	<b>0.101</b>
1750	0.104	0.103	<b>0.104</b>
1800	0.106	0.106	<b>0.106</b>
1850	0.108	0.108	<b>0.108</b>
1900	0.110	0.112	<b>0.111</b>
1950	0.112	0.115	<b>0.114</b>
2000	0.114	0.118	<b>0.116</b>
2050	0.116	0.121	<b>0.119</b>
2100	0.118	0.125	<b>0.122</b>



**Gridworx Extruded Rail Compression Loading**  
**Sample ID: Extruded Starter J Anchor 211**  
**Sample #: 4**

**Date of Service: 5/1/2020**  
**Report Number: 13920-211**

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
25	0.001	0.000	<b>0.001</b>
50	0.001	0.001	<b>0.001</b>
75	0.001	0.001	<b>0.001</b>
100	0.002	0.002	<b>0.002</b>
125	0.002	0.002	<b>0.002</b>
150	0.002	0.003	<b>0.003</b>
175	0.003	0.003	<b>0.003</b>
200	0.003	0.004	<b>0.004</b>
225	0.003	0.004	<b>0.004</b>
250	0.004	0.005	<b>0.005</b>
275	0.004	0.005	<b>0.005</b>
300	0.004	0.005	<b>0.005</b>
350	0.007	0.007	<b>0.007</b>
400	0.008	0.009	<b>0.009</b>
450	0.011	0.011	<b>0.011</b>
500	0.014	0.013	<b>0.014</b>
550	0.017	0.016	<b>0.017</b>
600	0.019	0.018	<b>0.019</b>
650	0.022	0.020	<b>0.021</b>
700	0.025	0.023	<b>0.024</b>
750	0.027	0.025	<b>0.026</b>
800	0.030	0.027	<b>0.029</b>
850	0.031	0.029	<b>0.030</b>
900	0.033	0.031	<b>0.032</b>

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
950	0.035	0.034	<b>0.035</b>
1000	0.037	0.036	<b>0.037</b>
1050	0.038	0.038	<b>0.038</b>
1100	0.042	0.042	<b>0.042</b>
1150	0.042	0.042	<b>0.042</b>
1200	0.044	0.044	<b>0.044</b>
1250	0.046	0.046	<b>0.046</b>
1300	0.048	0.048	<b>0.048</b>
1350	0.049	0.049	<b>0.049</b>
1400	0.051	0.051	<b>0.051</b>
1450	0.053	0.054	<b>0.054</b>
1500	0.054	0.055	<b>0.055</b>
1550	0.056	0.058	<b>0.057</b>
1600	0.058	0.060	<b>0.059</b>
1650	0.060	0.061	<b>0.061</b>
1700	0.061	0.064	<b>0.063</b>
1750	0.063	0.066	<b>0.065</b>
1800	0.065	0.068	<b>0.067</b>
1850	0.067	0.069	<b>0.068</b>
1900	0.068	0.071	<b>0.070</b>
1950	0.070	0.073	<b>0.072</b>
2000	0.072	0.075	<b>0.074</b>
2050	0.074	0.077	<b>0.076</b>
2100	0.076	0.079	<b>0.078</b>



**Gridworx Extruded Rail Compression Loading**  
**Sample ID: Extruded Starter J Anchor 211**  
**Sample #: 5**

**Date of Service: 5/1/2020**  
**Report Number: 13920-211**

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
25	0.001	0.000	<b>0.001</b>
50	0.003	0.001	<b>0.002</b>
75	0.005	0.002	<b>0.004</b>
100	0.007	0.003	<b>0.005</b>
125	0.008	0.004	<b>0.006</b>
150	0.009	0.005	<b>0.007</b>
175	0.010	0.006	<b>0.008</b>
200	0.010	0.006	<b>0.008</b>
225	0.011	0.007	<b>0.009</b>
250	0.012	0.008	<b>0.010</b>
275	0.012	0.008	<b>0.010</b>
300	0.013	0.009	<b>0.011</b>
350	0.015	0.011	<b>0.013</b>
400	0.019	0.013	<b>0.016</b>
450	0.022	0.016	<b>0.019</b>
500	0.025	0.018	<b>0.022</b>
550	0.029	0.020	<b>0.025</b>
600	0.033	0.023	<b>0.028</b>
650	0.036	0.025	<b>0.031</b>
700	0.040	0.027	<b>0.034</b>
750	0.043	0.029	<b>0.036</b>
800	0.047	0.031	<b>0.039</b>
850	0.051	0.033	<b>0.042</b>
900	0.054	0.035	<b>0.045</b>

Load (lbs)	Deflection (inches)		
	Gauge 1	Gauge 2	Avg.
950	0.051	0.037	<b>0.044</b>
1000	0.059	0.040	<b>0.050</b>
1050	0.061	0.041	<b>0.051</b>
1100	0.064	0.044	<b>0.054</b>
1150	0.065	0.045	<b>0.055</b>
1200	0.067	0.047	<b>0.057</b>
1250	0.070	0.049	<b>0.060</b>
1300	0.072	0.051	<b>0.062</b>
1350	0.074	0.052	<b>0.063</b>
1400	0.076	0.054	<b>0.065</b>
1450	0.078	0.056	<b>0.067</b>
1500	0.080	0.058	<b>0.069</b>
1550	0.082	0.060	<b>0.071</b>
1600	0.084	0.062	<b>0.073</b>
1650	0.086	0.064	<b>0.075</b>
1700	0.088	0.066	<b>0.077</b>
1750	0.090	0.068	<b>0.079</b>
1800	0.093	0.070	<b>0.082</b>
1850	0.094	0.072	<b>0.083</b>
1900	0.096	0.075	<b>0.086</b>
1950	0.099	0.077	<b>0.088</b>
2000	0.101	0.078	<b>0.090</b>
2050	0.103	0.080	<b>0.092</b>
2100	0.105	0.082	<b>0.094</b>