

The Innovative Hybrid Sheet Piling System

REINFORCED CONCRETE FILL	Units	800 Series
Factored Moment Capacities with 1, 2 and 4 rebar	See tables 1, 4 and 7 for data.	
Bending Stiffness with 1, 2 and 4 rebar	See tables 2, 5 and 8 for data	
Factored Shear Capacities	See tables 3, 6 and 9 for data	

WITHOUT CONCRETE FILL	Units	800 Series
Allowable Moment    apparent*	ft · lbs/ft	4,427
Allowable Shear**	lb/ft	6,313
Section Modulus    theoretical apparent*	in <sup>3</sup> /ft	34 16.6
Moment of Inertia    I <sup>t</sup> theoretical I <sup>a</sup> apparent*	in <sup>4</sup> /ft	136 66

GENERAL SPECIFICATIONS	Units	800 Series
U-Channel Section Depth	in	8
U-Channel Section Width	in	12
Nominal Thickness****	in	0.27
Weight	lbs/ft	7.1
Modulus of Elasticity	psi	380,000
Tensile Strength	psi	6,300
Design Strength***	psi	3,200
Impact Strength	in · lbs	850.2
<b>Material:</b> Proven, durable co-extruded rigid vinyl material formulated for exterior weatherability and high impact resistance. The outer layer is a UV-resistant virgin vinyl compound. The inner layer is post-industrial recycled vinyl. See page 5 for recycled data.		

No warranty of any kind is made as to the suitability of Truline for a particular application or the results obtained there from. Consult a professional engineer.

### Notes:

The tables that follow are the recommended values for factored structural moment capacities and corresponding bending stiffnesses of Truline sections filled with reinforced concrete. The tabulated values were computed for a range of concrete compressive strengths and reinforcement options. The factored moment capacities were determined from nonlinear moment vs. curvature behavior computed using LPile 2012 software. The nominal moment capacities were determined when the maximum compressive strain in the concrete reached .003 in/in. **The reported ultimate (factored) moment capacities were computed by multiplying the nominal moment capacity by a strength reduction factor of 0.65.** The reported bending stiffnesses are for moment levels equal to the ultimate moment capacity and are for cracked sections. This method for determining moment capacities for the Truline/Reinforced Concrete sections was validated by the actual lab test (page 7).

Factored shear capacity is nominal shear capacity of the concrete and the Truline form **reduced by a strength reduction factor of 0.75.**

Per ACI 318-08 Section 11.4.6.1 shear reinforcing steel is not typically required by the Truline system since the section depth is less than 10 inches and the walls typically have shear loads well under 50% of the factored shear capacity without steel. If in the rare case the shear load exceeds this threshold, minimum shear reinforcing steel should be added per ACI 318-08 standard.

\* Based on full scale performance test by Architectural Testing, Inc. Report #70174.01-122-44, not theoretical calculations (page 8).

Truline's allowable moment, for applications not filled with reinforced concrete, is based on section properties that were determined using full scale performance testing rather than theoretical calculations. This is a conservative approach that accounts for the viscoelastic behavior of the material that determines its mechanical properties. It results in a value that the design engineer can be confident in without applying excessive factors of safety.

\*\* All pile sections must be filled with gravel or other material such as soil, sand, pebble, etc. to ensure the web is fully supported and the shear load is transferred from flange to flange by the fill material. Shear load must be applied by continuous beam or waler on the face of the wall.

t I (theoretical) is moment of inertia as calculated for the shape and adjusted to a per foot basis.

a I (apparent) is moment of inertia determined experimentally by a full scale test and measuring the deflection of the wall. This is the value for moment of inertia that would predict the deflections that were measured across a range of known loads. This number is also adjusted to a per foot basis.

\*\*\* Based on published data by US Army Corps of Engineers Report #ERDC/CRREL LR-03-19

\*\*\*\* For comparative purposes, the total material wall thickness listed should be doubled due to the Truline double wall design.