

SMARTfence® 42

HIGH-TENSILE/HIGH-MODULUS WOVEN GEOTEXTILE SEDIMENT FENCE

SMARTfence® 42 is a heavy-duty High-Tensile/High-Modulus woven geotextile sediment fence designed to replace silt fencing with wire or chain-link backed (**Super Silt Fence**) supports and replace proprietary silt fences with attached reinforcing elements. SMARTfence® 42 is designed to resist structural failure due to hydraulic overtopping of the fence. The woven geotextile is specifically designed and fabricated to withstand high-tensile stresses and prevent excessive material elongation and strain. The fence system will resist fence deflection and ultimate failure due to ripping, sagging, or overturning as hydrostatic and hydrodynamic forces associated with excessive backwater depths, debris flows and overtopping move against the fence.

The SMARTfence® 42 is a value engineering approach, providing a strong siltation fence equivalent in strength and stiffness to that of wire and chain-link backed sediment fencing for less cost, significantly lower carbon emissions during materials manufacturing, and less material waste produced at the end of the service life of the fence. SMARTfence® 42 is also a 100% American-Made product.

Table 1 is a comparison of 14-gauge wire-backing and 9-gauge chain-link fence structural characteristics versus the same structural properties for the SMARTfence® 42. The Modulus of Elasticity is a measure of material stiffness. Table 2 shows the MARV properties.

Table 1. Structural comparisons between wire and chain-link (Super Silt Fence) backing versus SMARTfence® 42

PROPERTY	14-GAUGE WIRE FENCE (2" x 4" mesh)	SUPER SILT FENCE 9-GAUGE CHAIN- LINK FENCE (2-3/8" mesh)	SMARTfence® 42 (MARV)
Breaking Tensile Strength (lb./ft.)	710 (Average)	4,100 (Average)	5,125 (MARV)
Modulus of Elasticity (lb./ft.)	2,600 lengthwise 19,400 widthwise	21,100 lengthwise 21,700 widthwise	> 48,000 lengthwise > 38,000 widthwise

Table 2: MARV Table for SMARTfence 42 (Updated: November 2023)

SMARTfence® 42	
<u>Test Method</u>	<u>Minimum Average Roll Values (MARV)</u>
Wide Width Tensile Strength (ASTM D 4595)	5,125 lbs./ft.-MD x 4,275 lbs./ft. -TD
Wide Width Test Elongation (ASTM D 4595)	10% - MD x 7% - TD
Grab Tensile Strength (ASTM D 4632)	545 lbs. MD x 410 TD
Trapezoidal Tear (ASTM D4533)	210 lbs. -MD x 195 lbs. -TD
Apparent Opening Size (ASTM D 4751)	Sieve No. 70 (MaxARV)
Water Flux (ASTM D 4491)	32 gpm/ft.²
UV Stability (ASTM D 4355)	>90% Strength Retained

MD = Machine Direction; TD=Transverse Direction; SMARTfence is a Woven Geotextile and is 100% American Made