

SMARTFence 42

HIGH-TENSILE/HIGH-MODULUS WOVEN GEOTEXTILE SEDIMENT FENCE

SMARTFence 42 is a heavy duty high-tensile/high-modulus woven geotextile sediment fence. It is designed to replace all welded or woven wire and chain link backed (i.e..super silt fence) silt fence. It is also designed to replace proprietary silt fences with attached reinforcing elements.

SMARTFence 42 is specifically designed and fabricated to resist structural failure due to high tensile stresses, excessive material elongation, material deflection, ripping, sagging, and overturning as hydrostatic and hydrodynamic forces associated with excessive backwater depths move against the fence.

SMARTFence 42 is a value engineering approach, providing a strong siltation fence equivalent in strength and stiffness to that of metal backed sediment fences for less cost, significantly lower carbon emissions during manufacturing and less waste produced at the end of the service life.

Table 1 is a comparison between the structural properties of 12.5 and 9 gauge chain link metal fence versus the same structural properties of **SMARTFence 42**

Table 2 is the MARV for **SMARTFence 42**

Table 3 is a comparison of the Factors Of Safety between 12.5 gauge and 9 gauge metal chain link supported silt fence and **SMARTFence 42**

TABLE 1	SMARTFence 42	SUPER SILT FENCE 9-GAUGE CHAIN- LINK FENCE (2-3/8” mesh)	12.5 - GAUGE WIRE FENCE (2-3/8” mesh)
PROPERTY			
Breaking Tensile Strength (lb./ft.)	5,125 (MARV)	4,100 (Average)	1,930 (Average)
*Modulus of Elasticity (lb./ft.)	>48,000 MD	21,100 **MD	9,422 MD

*Modulus of Elasticity = measure of stiffness = Tensile force / strain

** MD = Machine Direction

"MARV" = Minimum Avg. Roll Value = Measured Value - 2 x Std. Deviation

"Average" = Average values shown for chain-link backing.

Table 2: MARV

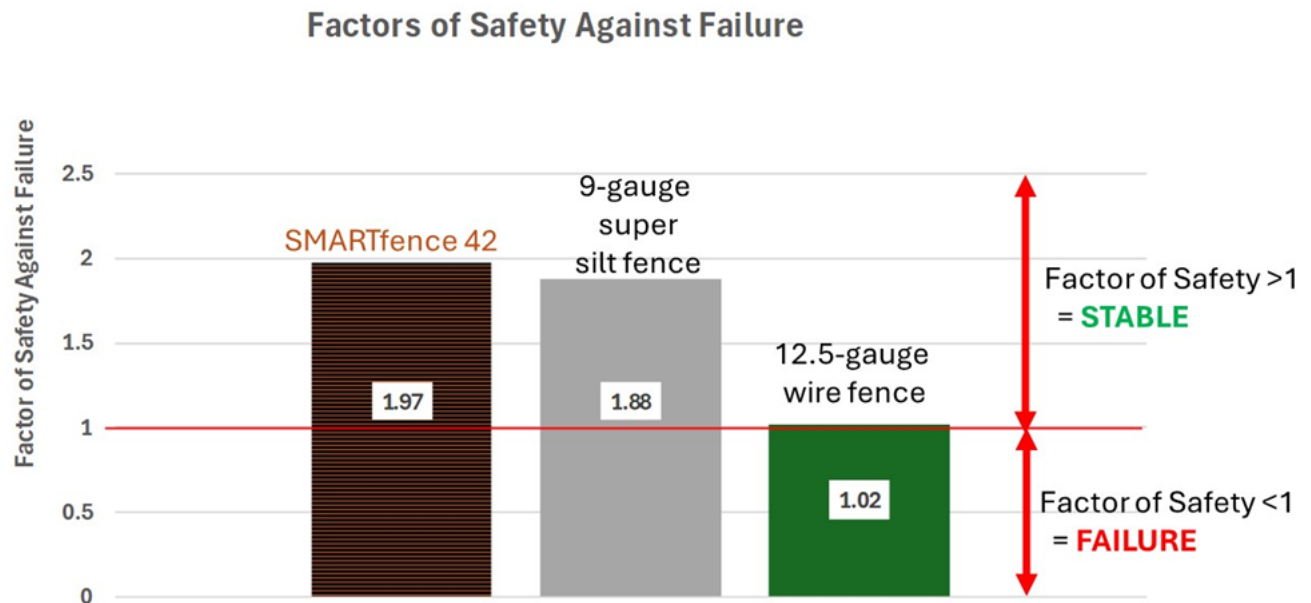
SMARTfence®42	
<u>Test Method</u>	<u>Minimum Average Roll Values (MARV)</u>
Wide Width Tensile Strength (ASTM D 4595)	5,125 lbs./ft.-MD x 4,275 lbs./ft. -TD
Wide Width Test Elongation (ASTM D 4595)	10% - MD x 7% - TD
Grab Tensile Strength (ASTM D 4632)	545 lbs. MD x 410 TD
Trapezoidal Tear (ASTM D4533)	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

FILTER EFFICIENCY PER ASTM D 5141 TESTING = 92.6%

***SMARTFence 42 is 100% American-made**

***SMARTFence 42 complies with the requirements of ASTM D6461**

Table 3: FACTOR OF SAFETY AGAINST FAILURE

1. Assumes 6 ft. post spacing and backwater to top of fence just before overtopping (32 inches depth)
2. Factors of safety calculated relative to required tensile strength for stability
3. Calculations based on Bell and Hicks (1984).

Reference: Bell, J.R. and R.C. Hicks, 1984, "Evaluation of Test Methods and Use Criteria for Geotechnical Fabrics in Highway Applications," Final Report, FHWA, Contract No. DOT-FH-119353. Oregon State University, Corvallis, Oregon.

WHAT SILT FENCE ARE YOU USING?
DO YOU KNOW IF YOUR SILT FENCE WILL FAIL?