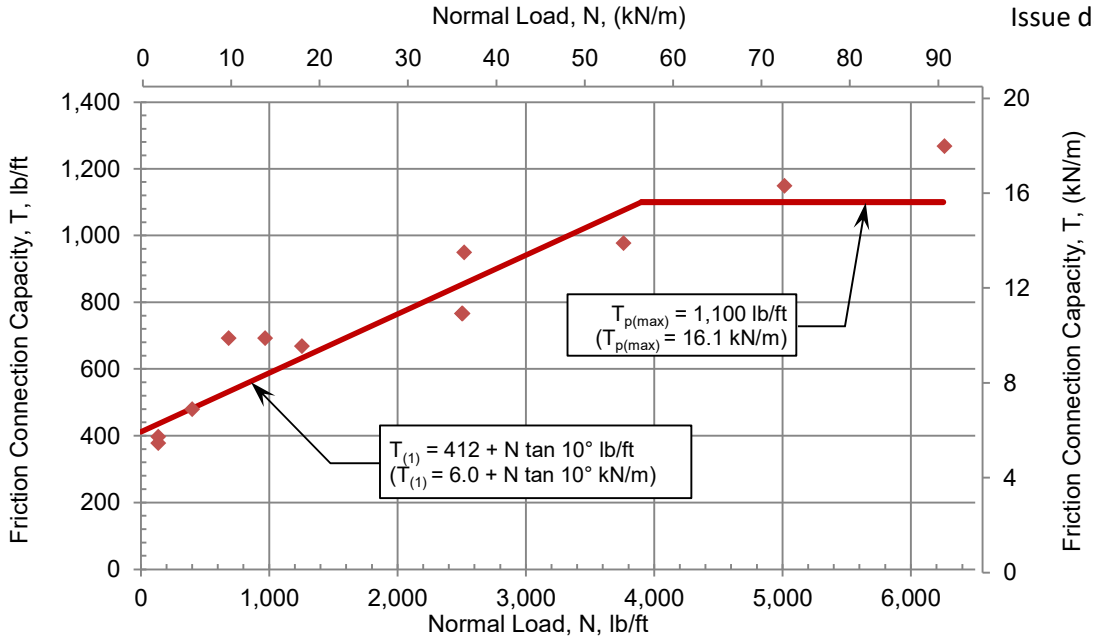
NOVUM WALL™ RETAINING BLOCK WITH MIRAFI MIRAGRID 3XT GEOGRID FRICTION CONNECTION STRENGTH DESIGN PARAMETERS

Test Method: ASTM D6638 | Tested by: Aster Brands | 06/21 - 06/26, 2024

FRICTION CONNECTION STRENGTH - Miragrid 3XT

Issue date: 08/08/2024



Peak Friction Connection Envelope:[(a)]

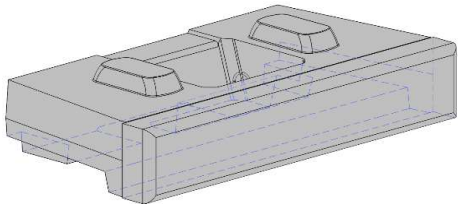
T_p = 412 lb/ft + N tan 10° ≤ 1,100 lb/ft

(T_p = 6.0 kN/m + N tan 10° ≤ 16.1 kN/m)

Inflection Point:

N = 3,900 lb/ft (56.9 kN/m) **T = 1,100 lb/ft (16.1 kN/m)**

NW-R NOVUM WALL RETAINING BLOCK WITH MIRAFI MIRAGRID 3XT GEOGRID INCLUSION



(a) The equations for peak friciton connection envelope using Miragrid 3XT geogrid represent the slope of the trend line of the raw data. Because the data points at larger normal loads showed some variability, a maximum friction connection capacity of 1,100 lb/ft (16.1 kN/m) was selected. No further adjustments have been made. Appropriate factors of safety for design should be added. Values should not be used for other geogrids without verification through full scale testing.

Friction Connection Strength Data

Test No.	Normal Load		Peak Tension		Observed Failure	Test No.	Normal Load		Peak Tension		Observed Failure
	lb/ft	kN/m	lb/ft	kN/m			lb/ft	kN/m	lb/ft	kN/m	
Mirafi 3XT											
1	135	2.0	398	5.8	Grid Pullout	7	2,503	36.5	767	11.2	Grid Rupture
2	1,256	18.5	669	9.7	Grid Rupture	8	6,263	91.4	1,269	18.5	Grid Rupture
3	2,507	36.6	767	11.2	Grid Rupture	9	5,016	73.2	1,150	16.8	Grid Rupture
4	399	5.8	481	7.0	Grid Pullout	10	2,519	36.7	950	13.9	Grid Rupture
5	685	10.0	693	10.1	Grid Rupture	11	135	2.0	379	5.5	Grid Pullout
6	3,761	54.6	978	14.3	Grid Rupture	12	969	14.1	693	10.1	Grid Pullout

Geogrid material used for these tests was Solmax Mirafi Miragrid 3XT Lot# 20240120-2-1, which has a minimum average roll value of 3,500 lb/ft (51.1 kN/m) and an index strength of 4,097 lb/ft (59.8 kN/m), as reported by the manufacturer. Test data provided in this summary is detailed in the test report Novum Wall Friction Connection Strength 3XT Test Report available on the Novum Wall website, www.novumwall.com.

The information contained in this report has been compiled by Aster Brands as a recommendation of peak friciton connection envelope with Mirafi Miragrid 3XT geogrid inclusion. It is accurate to the best of our knowledge as of the date of its issue. However, final determination of the suitability of any design information and the appropriateness of this data for a given design purpose is the sole responsibility of the user. No warranty of performance is expressed or implied by the publishing of the foregoing laboratory test results.