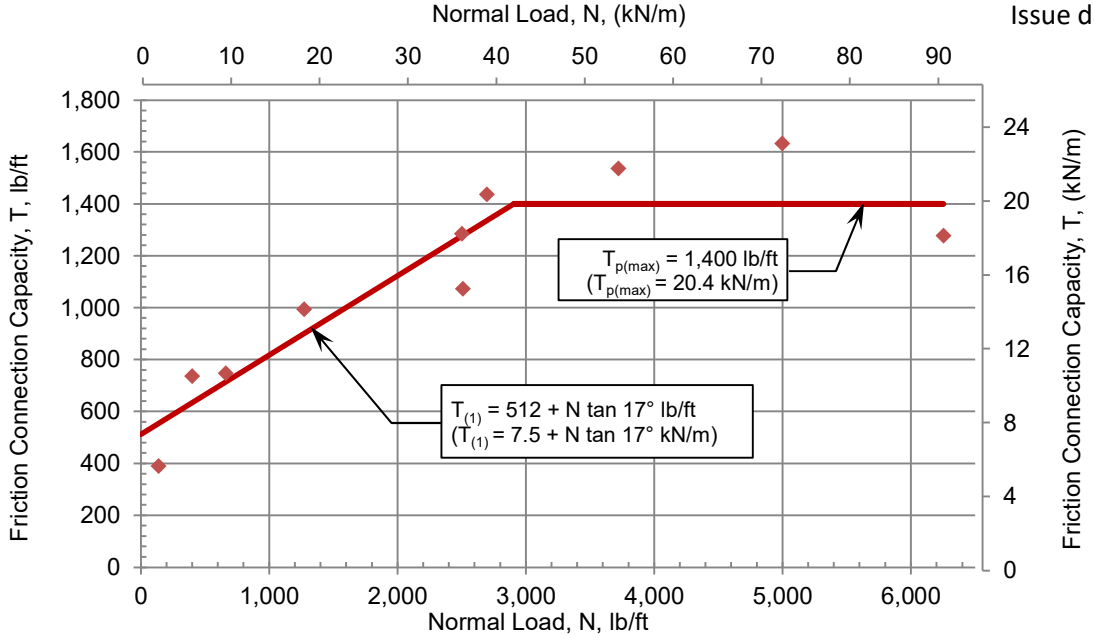
NOVUM WALL™ RETAINING BLOCK WITH MIRAFI MIRAGRID 5XT GEOGRID FRICTION CONNECTION STRENGTH DESIGN PARAMETERS

Test Method: ASTM D6638 | Tested by: Aster Brands | 05/07 - 05/21, 2024

FRICTION CONNECTION STRENGTH - Miragrid 5XT

Issue date: 08/08/2024



Peak Friction Connection Envelope:[(a)]

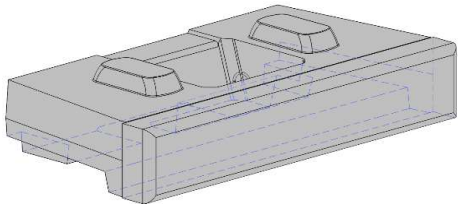
T_p = 512 lb/ft + N tan 17° ≤ 1,400 lb/ft

(T_p = 7.5 kN/m + N tan 17° ≤ 20.4 kN/m)

Inflection Point:

N = 2,905 lb/ft (42.4 kN/m) **T = 1,400 lb/ft (20.4 kN/m)**

NW-R NOVUM WALL RETAINING BLOCK WITH MIRAFI MIRAGRID 5XT GEOGRID INCLUSION



(a) The equations for peak friciton connection envelope using Miragrid 5XT 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 1,400 lb/ft (20.4 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 5XT											
1	1,273	18.6	995	14.5	Grid Rupture	6	6,255	91.3	1,279	18.7	Grid Rupture
2	661	9.7	749	10.9	Grid Rupture	7	4,997	72.9	1,634	23.9	Grid Rupture
3	137	2.0	391	5.7	Grid Pullout	8	2,510	36.6	1,074	15.7	Grid Rupture
4	2,502	36.5	1,286	18.8	Grid Rupture	9	400	5.8	738	10.8	Grid Pullout
5	3,721	54.3	1,537	22.4	Grid Rupture	10	2,696	36.4	1,438	21.0	Grid Rupture

Geogrid material used for these tests was Solmax Mirafi Miragrid 5XT Lot# 20240102-2-1, which has a minimum average roll value of 4,700 lb/ft (68.6 kN/m) and an index strength of 5,356 lb/ft (78.2 kN/m), as reported by the manufacturer. Test data provided in this summary is detailed in the test report Novum Wall Friction Connection Strength 5XT 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 5XT 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.