
*TYPICAL STIFFNESS VALUES
AS MEASURED WITH
THE HUMBOLDT GEOGAUGE*

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This document contains values of stiffness as measured in the field with the Humboldt GeoGauge on a range of materials from a number of sources. For purposes of comparison, consider each value to be representative of an approximately 8 inch (210 mm) thick lift, compacted to ~ 95% modified Proctor and at optimum moisture content. These values are intended as a general guide as to what may be expected in actual construction. This document will be revised as more values become available.

Stiffness: Experienced 2σ Variations

MN/m
(klbf/in)
Date

Material	MD/SHA		FDOT			Kansas City Power & Light Co.	CME Test & Engineering	Fluid Sciences	GeoMetrics	CNA	Koch Performance Roads		
Serpentine Stone Base	20.1 to 25.9 (114.8 to 147.9) 11/02												
Cement Treated Aggregate Base	26.1 to 45.6 (149.0 to 260.4) 9/01	27.2 to 50.0 (155.3 to 285.5) 5/02					45 to 65 (257.0 to 371.2) 8/01 to 1/02						
Soil-Cement-Fly Ash Base	19.7 to 35.7 (112.5 to 203.9) 4/01												
MnDOT Class 7 Base (Recycled Concrete)									10.9 to 12.2 (62.3 to 69.7) 3/02				
Lime Rock Base			11.4 to 20.7 (65.1 to 118.2) 9/02	11.2 to 15.0 (64.0 to 85.7) 9/02	9.0 to 13.0 (51.4 to 74.2) 2/01								
Polymer Stabilized Aggregate Base								20 to 25 (114.2 to 142.8) 7/99					
A-2-4 Subgrade	5.4 to 19.0 (30.8 to 108.5) 4/01	8.8 to 9.3 (50.0 to 53.0) 7/03	6.5 to 10.3 (37.1 to 58.8) 9/02	7.6 to 9.7 (43.4 to 53.4) 9/02	7.5 to 8.8 (43.0 to 50.0) 2/03 & 5/03								
A-3-4 Subgrade									25.0 to 35.6 (142.8 to 203.3) 5/01				
Lime Stabilized Sandy Clay Subgrade										11.8 to 17.3 (67.4 to 98.8) 12/01	15.4 to 21.2 (87.9 to 121.1) 8/02	16.3 to 28.7 (93.1 to 163.9) 9/00	
Reclaimed Poned Fly Ash Embankment						5.3 to 5.8 (30.3 to 33.1) 3/01							

Stiffness: Experienced 2σ Variations

MN/m
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Date

Material	TXDOT		MDOT			LADOTD		NVDOT	INEEL	Seminole Nation	MODOT	Wal-Mart REO	FDOT
Serpentine Stone Base													
Cement Treated Aggregate Base													
Soil-Cement-Fly Ash Base													
Sandy Clay													9.6 to 10.0 (54.6 to 56.8) 1/03
Lime Rock Base	13.6 to 17.2 (77.7 to 89.3) 12/02												
Mexican Limestone Base						10.0 to 11.0 (57.0 to 62.4) 8/03	4.7 to 7.1 (26.8 to 40.5) 8/03						
A-2-4 Subgrade		5.8 to 6.3 (33.0 to 36.0) 8/03						8.5 to 12.9 (48.5 to 73.6) 8/03	8.2 to 10.0 (46.8 to 57.0) 3/03	5.8 to 6.8 (31.4 to 38.8) 6/02	5.7 to 12.9 (32.5 to 73.6) 8/00		
Fly Ash Stabilized A-2-4 Subgrade												9.3 to 13.3 (53.0 to 75.9) 4/02	
A-4 Subgrade						7.1 to 7.5 (40.5 to 42.8) 4/03							
Cement Treated Clayey Silt						23.8 to 27.5 (136.0 to 157.1) 12/02							