



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONY J. TATA
SECRETARY

January 30, 2013

Bobby L. Starling, Jr.
VP-Engineered Products
Hanes Geo Components
815 Buxton Street
Winston Salem, NC 27101

Subject: Approval of Hanes Geogrids

Dear Mr. Starling:

The Materials and Tests Unit has reviewed the submittal dated August 7, 2012 for Hanes geogrids in accordance with the "NCDOT Guidelines for the Geogrid Evaluation Program". In addition to the August 7, 2012 submittal, final updated information was received on January 11, 2013. Based on this information, Hanes geogrids listed in the table below are approved for provisional use on North Carolina Department of Transportation projects in accordance with the applicable contract and the following:

Geogrid and Direction (MD, CD)	Polymer (PET, HDPE, PP)	Aperture Size (inches)	T _{ult} ¹ (lb/ft)	T _{2%} ¹ (lb/ft)	T _{5%} ¹ (lb/ft)	X _{Jave} ¹ (lb)	J ¹ (m-N/deg)	RF _{CR}			RF _D
								3-yr	75-yr	100-yr	
RX1100 (MDxCD)	PP	1.0x1.4	850x1300	280x450	580x920	790x1200	0.32				
RX1200 (MDxCD)	PP	1.0x1.4	1310x1970	410x620	810x1340	1215x1830	0.65				
EGRID1616 (MDxCD)	PP	1.6x1.6	1095x1095	395x395	795x795	1040x1040					
EGRID2020 (MDxCD)	PP	1.6x1.6	1370x1370	520x520	1045x1045	1300x1300					
EGRID3030 (MDxCD)	PP	1.6x1.6	2055x2055	750x750	1480x1480	1950x1950					

MAILING ADDRESS: NC Department of Transportation Materials and Tests Unit 1563 Mail Service Center Raleigh, NC 27699-1563	TELEPHONE: 919-329-4150 FAX: 919-733-8742 https://connect.ncdot.gov/resources/Materials/Pages/default.aspx	LOCATION: 1801 Blue Ridge Road Raleigh, NC 27607
--	---	---

Geogrid and Direction (MD, CD)	Borrow ($\phi = 30^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	ρ (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
RX1100 (MDxCD)								0.67	0.38	0.67	21
RX1200 (MDxCD)								0.67	0.38	0.67	21
EGRID1616 (MDxCD)								0.67	0.38	0.67	21
EGRID2020 (MDxCD)								0.67	0.38	0.67	21
EGRID3030 (MDxCD)								0.67	0.38	0.67	21
Geogrid and Direction (MD, CD)	Fine Aggregate ($\phi = 34^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	ρ (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
RX1100 (MDxCD)								0.67	0.45	0.67	24
RX1200 (MDxCD)								0.67	0.45	0.67	24
EGRID1616 (MDxCD)								0.67	0.45	0.67	24
EGRID2020 (MDxCD)								0.67	0.45	0.67	24
EGRID3030 (MDxCD)								0.67	0.45	0.67	24
Geogrid and Direction (MD, CD)	Coarse Aggregate ($\phi = 38^\circ$)										
	RF _{ID}	RF			T _{al} (lb/ft)			C _i	F*	C _{ds}	ρ (deg)
		3-yr	75-yr	100-yr	3-yr	75-yr	100-yr				
RX1100 (MDxCD)								0.67	0.52	0.67	27
RX1200 (MDxCD)								0.67	0.52	0.67	27
EGRID1616 (MDxCD)								0.67	0.52	0.67	27
EGRID2020 (MDxCD)								0.67	0.52	0.67	27
EGRID3030 (MDxCD)								0.67	0.52	0.67	27

[†] "Minimum Average Roll Values" (MARV) in accordance with ASTM D4439

If you have any questions, please contact C. K. Su at (919) 329-4150 or Jack Cowsert at (919) 329-4000.

Sincerely,



Christopher A. Peoples, P.E.
 State Materials Engineer