

Michael Crotty

From: Stephen Leatherman <leatherm@hotmail.com>
Sent: Wednesday, July 30, 2014 9:34 PM
To: Michael Crotty
Cc: flynnb@miamidade.gov
Subject: RE: Sand Compatibility

Michael,

Tim Kana's firm does many if not most of the beach nourishment projects in South Carolina and some in North Carolina. No helpful guidelines here.

Stephen

Date: Wed, 30 Jul 2014 15:41:40 -0400
From: tkana@coastalscience.com
To: leatherm@hotmail.com
Subject: Re: Sand Compatibility

Hi Stephen,

We hit a home run with the sand at Bridgehampton based on 55 borings (~1 per 12 acres) - "the beach 10,000 years ago."

To the best of my knowledge, SC hasn't codified a sediment standard - like NC did. But you can't get a permit from OCRM unless the sand is "compatible" and similar to native. We've never had any issues with that. As to color, we are not held to some 100% quartzite white standard given the admixtures of mineralogy and shells on the native beach, including significant percentages of mafics. Our 0.2 mm sand often looks muddy, but that's mainly because the majority of the subaerial profile is wet sand beach. The dry beach is generally pretty white because quartz is dominant and the shell material bleaches white. We also prefer coarse-skewed deposits or slightly coarser than native to give us better longevity.

In NC, you can put any sand size on the beach, but don't dare put mud or gravel that is 5% above ambient. That means you can legally place 0.1 mm sand (from, say, a bay channel) on Nags Head (0.4 mm). Watch that last!

Best,
Tim

On 7/30/2014 1:29 PM, Stephen Leatherman wrote:

Tim,

I understand from Aram that your beach nourishment project in Sagaponack went very well.

I am working with the Town of Surfside in Florida, and they are interested in knowing what sort of standards are applied to nourishment material in terms of sand color and size. I would appreciate receiving information regarding the requirements for the State of South Carolina.

Many thanks,

Stephen

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Tim Kana PhD

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Michael Crotty

From: Stephen Leatherman <leatherm@hotmail.com>
Sent: Thursday, July 31, 2014 4:32 PM
To: Michael Crotty
Subject: Sand Compatibility

Michael,

I talked with a number of beach managers and contractors (e.g., coastal engineering firms) regarding sand compatibility.

The two major beaches in Alabama--Gulf Shores and Orange Beach have no ordinances, just expectations that good, white quartz sand will be found and used for beach nourishment. It is really a cost exercise in terms of the borrow sites that are used--with the more distant ones costing much more money than nearby sites.

Pensacola Beach has undertaken two nourishments with another one forthcoming. They have strict guidelines on sand color:

Munsell Color Scale: 10 YR Hue, 9.25 Value, 0.5 Chroma

The value of 9.25 is off the scale for the Munsell Color Chart (e.g., the highest number is 8) so another chart termed the Munsell Nearly Whites Fan Deck is used.

There is no set grain size or grain size distribution that is specified, only that it nearly match the mean grain size on the beach (0.32 mm) and be well sorted with a range of 0.23 mm to 0.40 mm. Fines (silt, clay and organics) have to be below 2% by weight. Fortunately, there is great quality sand just offshore in large shoals and from Pensacola Pass, which washed off Pensacola Beach. Shell fragments/shell hash should be avoided in order to maintain the powder white crystalline quartz sand.

Best regards,

Stephen