



Case Study

application | **Slope Reinforcement**
location | **Crystal Cove, Newport Coast, CA**
product | **Miragrid® 10XT, 20XT, 22XT**

job owner
engineer
contractor

Irvine Company
Leighton Associates
Sukut Construction Inc.

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

Develop pricey Southern California coastal property along a golf course in an area riddled by landslides, tight property lines, steep slopes, and poor soils. The use of high strength geogrids allowed The Irvine Company to develop very steep high slopes that did not compromise the views of the adjacent golf course or Pacific Ocean. Miragrid® made it possible for the construction of premium lots in areas encompassed by ancient landslides. The north side of the project borders the renowned Pelican Hills Golf Course where a majority of the geogrid was installed.

THE DESIGN

Miragrid® 20XT and 22XT were used in the design of a 200' high MSE slope on the north side of the project. The toe of the slope encroached upon an existing slide plane. The slope was designed to withstand a large displacement of the adjacent slumping landslide material along the property line. The very high strengths of Miragrid® 20XT and 22XT were required to stabilize this very high slope and achieve acceptable design factors of safety.

THE CONSTRUCTION

The reinforced slope is over 200' high and over 500' wide. TenCate Geosynthetics supplied the contractor master rolls of geogrid, some rolls weighing in excess of 3000 lbs. The contractor placed the large rolls on a spool and unrolled the geogrid at the face of the slope, then moved the spool into position for the next cut. The contractor was surprised on how easy the "very heavy" material was to install. The contractor was able to install over 5,000 SY of Miragrid®

geogrids a day. The geogrid was placed at 1' intervals and was imbedded up to 200' (As evidenced in the photo). The contractor placed 250,000 SY of 22XT, 98,000 SY of 20XT, and over 45,000 SY of 10XT.

THE PERFORMANCE

TenCate's Miragrid® geogrids are all functioning as designed. The north-facing slope is now vegetated and blends in with the natural look of the hills of Newport Coast. Miragrid® geogrids, made it possible to create premium view lots in an area that was considered to be unbuildable. The expense of building this slope was significantly less than the value of the premium view lots atop the reinforced slope.



Over 400,000 yds² of Miragrid® geogrids were used to reinforce this development.



The contractor was able to install 5,000 yds² of Miragrid® geogrids a day.



The slopes are now vegetated and look natural to the environment.



These premium lots were considered unbuildable. Miragrid® geogrids made it possible to develop this valuable property.

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