



DSI References



Reference Details

Owner Emerald Star Group, Natchez, Mississippi, USA +++

General Contractor Yates Construction, Biloxi, Mississippi, USA +++

Subcontractor Hayward Baker, Alpharetta, Georgia, USA

DSI Unit DSI USA, BU Geotechnics, Arlington, Texas, USA

DSI Scope Supply of 6,716 DYWI[®] Drill Hollow Bar Anchors, Types R50 N and R50



Sandy Mississippi Bluffs Turned into Quay Wall Using DYWI[®] Drill Hollow Bar Anchors

Emerald Star Casino Project, Natchez, MS, USA

The new "Grand Soleil" Casino owned and managed by Emerald Star Group is located in a three deck ship on the Mississippi River. The casino is anchored near Natchez, approximately 200km north of New Orleans. From mid 2008 on, visitors will be able to play at numerous slot machines and gaming tables in an area of approximately 9,200m².

To accommodate this facility, the Mississippi bluffs along the ship's berth had to be extensively stabilized. The new 400m long retaining wall is used as a quay, while simultaneously serving to stabilize parking spaces in the immediate vicinity of the river bank. At the same time, the wall secures a railroad nearby that had to be burrowed under to accommodate the Casino's access road.

Unstable soil conditions in the area have repeatedly caused landslides, making a stabilization of the river banks difficult in itself. Around the anchorage of the "Grand Soleil" casino, sand concentration in the soil is extremely high, thus creating an additional challenge during the construction of the retaining wall.

The sand considerably complicated normal retaining wall construction using soil nails installed from the top down. A construction technique consisting of shotcrete and reinforced steel was chosen that was tied back using 50mm DYWI[®] Drill Hollow Bar Anchors. In areas where the sand falls were strong, an additional layer of shotcrete was applied.

DYWI[®] Drill Hollow Bar Anchors are appropriate for use in soft, unstable soils. Since DYWI[®] Drill Hollow Bar Anchors are self-drilling, pilot holes are unnecessary. In addition, drilling and grouting is done in a single step since grout is injected during the drilling procedure through the anchor's hollow core. This feature significantly increased productivity during anchor installation. In many cases, water was pumped through the hollow bars to liquefy the sand, making drilling far easier. The bars were grouted after this installation procedure.

From their factory in Arlington, Texas, and from DSI facilities across the USA, DSI USA supplied a total of 6,716 DYWI[®] Drill Hollow Bar Anchors for reinforcing the quay wall for the "Grand Soleil" casino ship.

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