



■ Domestic Buildings

Reference Details:

DSI Services External prestressing by 7-wire prestressing galvanized strands.



Barrier cable for parking structures

Engineers have several options in selecting barriers for parking structures:

- Precast walls
- Cast-in-place walls
- Galvanized pipe/steel construction
- Prestressed barrier cable.

A very popular choice is to use 7 wire prestressing galvanized strand as barrier cables.

The Post Tensioning Institute is even developing a barrier cable specification, which is available since 1996. This system is the most economical because of its high strength to weight ratio. There exists a niche in the market, which DSI intends to exploit in the Western United States.

DSI USA has been involved in several projects during the last few years. Since 1992 over 50 projects have been completed. The contractual values are usually not very large (up to \$ 50,000). These projects normally accompany an order to supply the monostrand tendons for the parking structure floor slabs and beams. Alternatively, DSI will supply and install only the barrier cable system.

The success of a barrier cable installation depends on the details. There are lots of Examples of existing structures with cables that sag and have very little tension.

The monostrand branch of DSI USA, Long Beach, has developed several details that ensure an efficient and aesthetically pleasing installation:

- Side-mounted end post: structural member that allows flexibility in design using cast-in-place or expansion type anchors. The architect has the choice of using caps or a cover angle plate to hide the strand ends
- Shear wall end post: a cast-in-place insert used when the barrier cable (running parallel to the shear wall) terminates at the end of the shear wall. A special stressing technique is required to stress the cable with this post.

A recent development was the use of the new DSI rubber taper tie to form the blockout in columns to receive the barrier cable barrel and wedge. Most California projects are performed using galvanized barrier strand coated as per ASTM A 475. Prestressed strand needs to be protected as it is in an exposed environment.

DSI has many different options that are available to suit the site-specific conditions. Normally, architects leave the details up to the contractor. DSI has tested the connections and most are fabricated in DSI's own facility. The galvanizing is performed by an outside source.