

DHP and DHPS Half Pipe fixing on Stay Cables

Since the stiffness of our half pipes is higher than a same-size HDPE solid pipe SDR 33/26 stiffness, our half pipes are generally suitable for all the same system fixings as designed for solid pipes, so both deck and pylon fixing.

FEM Static Calculation

The design is optimized by FEM static calculation for strongest climate conditions based on the cable stay project in Shantou Bridge (max cable length 273 meter), located in the typhoon area of southeast China. (see details in document TI 130-6)

References

- For very short repair sections our half pipes have also been clamped successfully at both ends.
- For mid sizes cable length up to 100 m both deck and pylon fixing have been used.
- For long stay cables of more than 100 m, so far for installation purposes only pylon fixing has been used and showed successful application since decades. This does not exclude considerations for deck fixing also for long cables, but we just do not have references for the same so far.

Practical Considerations related deck fixing of long cables

Key issue for the half pipe performance on a stay cable can be considered the welding quality related to the min/max longitudinal non-alignment from half pipe to next half pipe section. The welding quality might be influence as well if the half pipes are fused in horizontal conditions or directly at inclined cables. If perfect alignment can be achieved, we believe that also a deck fixing of long cables is successful, same as with solid pipes. If perfect welding alignment cannot be secured, the forces of the overall cable lengths weight in more than 20-50 weldings (120-300m) may have to be reconsidered. For shorter cables up to 100 m this has not shown to be of any negative effects.

Recommendation

For fixing our DHP half pipes on cables, we recommend all kind of fixing for very short cables, deck or pylon fixing for mid sizes cables (<100m) and pylon fixing for long cables (100-300m).