

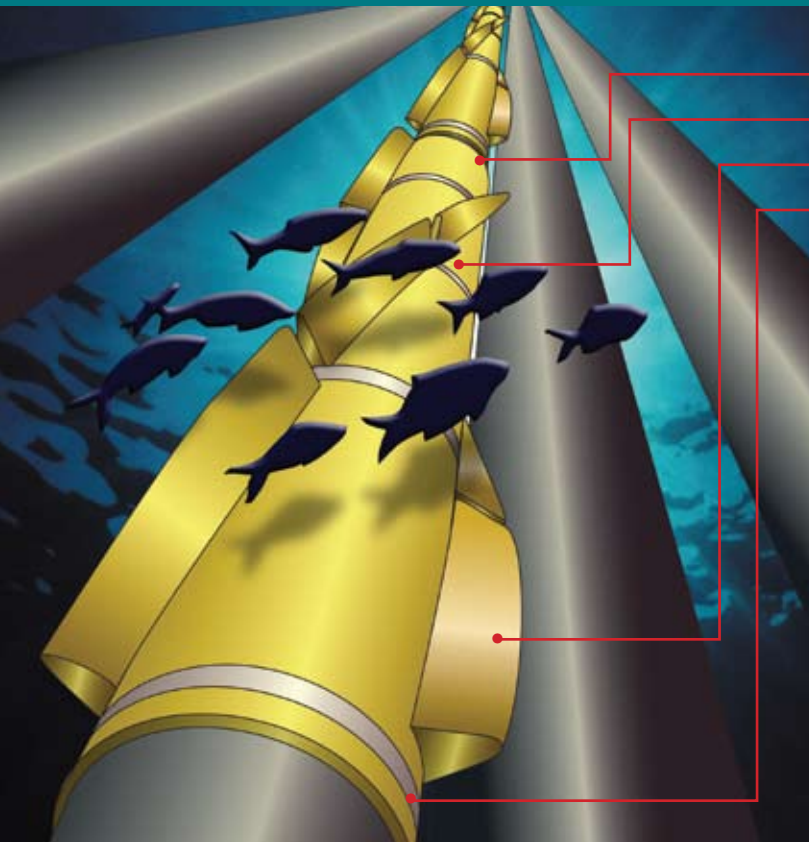


UREGUARD VIV™

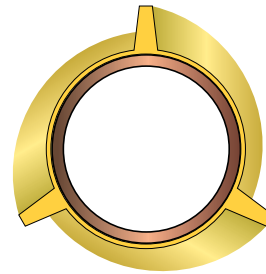


VORTEX-INDUCED VIBRATION SUPPRESSOR STRAKES

UREGUARD VIV™



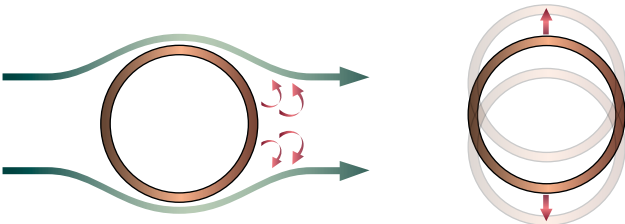
- Marine-grade polyurethane or polyethylene
- Foul-release coating prevents marine growth
- Strakes break up current path
- Inconel 625 strapping and seals



Mark's UreGuard VIV breaks up currents that cause vortex-induced vibrations.

STRONG CURRENTS PRESENT CHALLENGE FOR DEEPWATER DRILLING.

Drilling and production pipes used in deepwater applications are subject to a phenomenon known as Vortex-Induced Vibrations (VIV). As current flows around unsupported pipe, such as pipeline risers, it creates vortices behind the pipe. When these vortices break away from the pipe, they set up vibrations which will dynamically excite the riser and cause the pipe to fail prematurely. As the search for oil and gas moves to deeper waters, drilling in strong currents becomes a serious problem, especially as operators increasingly are using floatable and tension leg platforms.



Strong currents form vortices behind riser pipe, dynamically exciting the pipe.

THE SOLUTION: UREGUARD VIV

MARK was one of the first companies to develop elastomeric strakes for VIV, working with Shell Development in the 1980s. MARK's UreGuard VIV Suppressor Strakes are molded from a marine-grade polyurethane or polyethylene and are protected with a foul-release coating to prevent marine growth. The UreGuard VIV System is banded to the pipe using pre-cut Inconel 625 strapping and seals and can be applied both offshore or onshore. The strakes break up the current path, shedding the vortices away from the pipeline, thereby controlling VIV and preventing eddies.

DESIGN FEATURES:

- One piece design (3 ft. – 6 ft. long)
- One split line
- Low-unit weight and positive buoyancy
- High impact and abrasion-resistant
- UV-stable and ozone-resistant
- Fast, safe installation (5 minutes per section)
- Foul-release version available
- 25+ years of service life
- Can be recycled upon decommissioning

GEOMETRY (to customer specification):

- Strake Height (0.15 - 0.25 x diameter)
- Strake Pitch (12 – 18 x OD)



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