

## Development of HMPE fiber for permanent deep water offshore mooring

M. Vlasblom, J. Boesten, S. Leite, P. Davies

OTC 23333, Offshore Technology Conference, 2012

### Abstract

For a number of years, the creep performance of standard High Modulus Polyethylene (HMPE) fiber types has limited their use in synthetic offshore mooring systems. In 2003, a low creep HMPE fiber was introduced and qualified for semi-permanent MODU moorings. This paper reports on the introduction of a new High Modulus Polyethylene fiber type with significantly improved creep properties compared to other HMPE fiber types, which, for the first time, allows its use in permanent offshore mooring systems, for example for deep water FPSO moorings.

Industry guidelines and standards mentioning HMPE creep are briefly discussed, and results on fiber and rope creep experiments reported. Laboratory testing has shown that ropes made with the new fiber type retain the properties characteristic of HMPE such as high static strength and stiffness and yarn-on-yarn abrasion resistance.

Link to download paper:

<https://www.onepetro.org/conference-paper/OTC-23333-MS>