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FEM working on guidance paper for safe use of fibre ropes in mobile crane applications

Fibre ropes in cranes and lifting equipment, originally made from natural fibres, have a long tradition going back to ancient Egypt. For the last century, however, steel wire ropes have dominated. Today, as increasing usage shows, modern fibre ropes, manufactured out of high performance synthetic fibres, are starting to be a promising alternative to the prevalent wire ropes, combining a possible weight reduction of above 80% with high strength comparable to wire ropes. In addition, modern high performance synthetic fibre ropes do not need to be greased (which benefits the environment) and are easy to handle.

For wire ropes, substantial experience over many decades exists, which can be found in international standards (e.g. ISO 4309, etc.). Currently there is no standard regarding design and discard criteria for high performance synthetic fibre rope used on mobile cranes. Therefore the Technical Committee of FEM Mobile Cranes decided to develop a FEM guideline about the safe use of high performance synthetic fibre rope on mobile cranes.

In October 2015 and March 2016, the FEM Product Group Cranes and Lifting Equipment hosted the first two workshops at VDMA in Frankfurt of a planned series workshop, bringing together experts from universities, mobile crane and rope manufacturers. At these workshops, the participants identified the items needing special attention, such as safety measures for design, environmental (e.g. UV-light, high temperatures) and external (e.g. cutting damage) influences, and discussed the issues surrounding care and maintenance as well as inspection and replacement of fibre ropes.

In conclusion, FEM Mobile Crane President Klaus Meissner said: *“Modern fibre ropes offer very attractive technical properties for mobile cranes, nevertheless, there are a number of points which crane operators need to consider when switching from wire to fibre ropes. At the FEM workshops on Fibre Ropes we made great progress in identifying the necessary steps to promote safe use of fibre ropes in mobile crane. From ancient Egypt until today – in the words of the 20 year old movie title – it could soon be ‘Back to the Future’ for fibre ropes used in mobile cranes.”*

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