Summary

Regarding traction sheaves the traction coefficient is expressed by Eytelwein's or Euler's Formula. In this formula the virtual friction coefficient is of major importance. The ratio between virtual and actual friction coefficient is often refered to as the 'groove factor'.
Using a piëzo electric force transducer the contact forces are determined between a 32 mm. Warrington Seale 8X19 steal wire rope and a round groove. After that the same is done for an undercut groove.
A discrete model is formed to approximate the actual forces between sheave and cable. Together with the forces measured, this model gives us the groove factor. This groove factor turned out to be lower than predicted with the continuous theory, which is normally used in such cases.
Furthermore the measurements clearly point out that contact spots that bear the highest loads (at the bottom of a round groove, and right next to the edge of an undercut groove) take relatively less load at higher cable tensions.