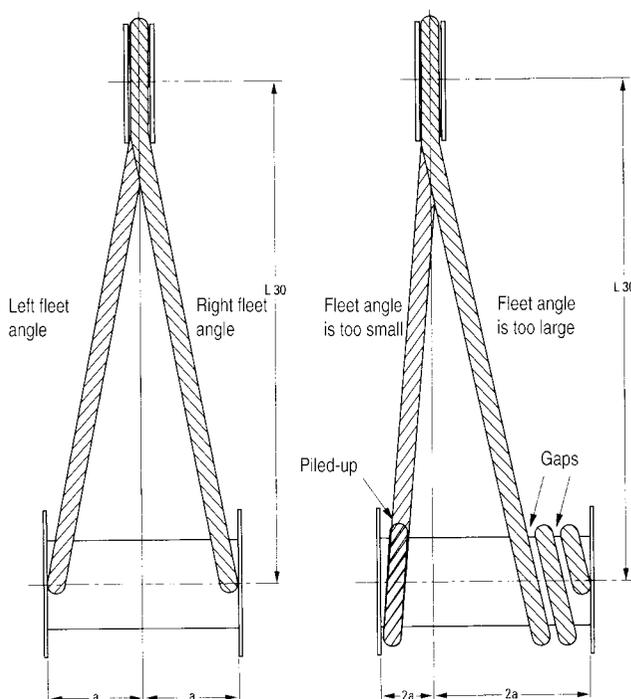


FLEET ANGLE

When ropes are wound on drums, attention must be paid to the fleet angle, that is the included angle between the rope running to or from the extreme left or right of the drum and an imaginary line drawn from the centre of the sheave normal to the axis of the drum. When this angle is too large, the rope in this extreme position will be pressed with great force against the flange of the sheave which causes undue friction and wear of both the rope and travel too fast from the side to the centre of the drum thereby leaving gaps between the wraps. When winding a second layer, the rope is forced into these gaps which results in serious deterioration. When, on the other hand, the rope is wound past the centre of the drum, a too large fleet angle will cause the next wrap to scrub against the preceding wrap as the rope runs more towards the side of the drum.

If the fleet angle is too small, the rope does not travel fast enough towards the centre of the drum and, apart from scrubbing, at a certain moment the wraps will pile up i.e. the next wrap is laid on top of the preceding one and is then pressed to the side of the preceding wrap with great force. This has a detrimental effect on the rope and the equipment on which it is used (shock loads).

For plain faced drums a maximum fleet angle of $1\frac{1}{2}$ degree is recommended. For grooved drums this figure is 2 degrees maximum. In terms of length these figures correspond to a minimum distance between sheave and drum of $40 \times 'a'$ (a = half the drum width) for faced drums and minimum $30 \times 'a'$ for grooved drums (approximate values). Hence, for a grooved drum, 1 metre in width, the distance between sheave and drum should be $30 \times 'a' = 15$ metres minimum, or conversely, if the distance between drum and sheave is 7 metres, the maximum drum width should be $(7:30) \times 2 =$ approx. 47cm.



In case two sheaves are not in line, attention must be paid to the fleet angle. Depending on the construction a maximum fleet angle is given:

- special non rotating (35x7) : $1\frac{1}{2}$ degree
- special multi strand (8,9 and 10 strands) : 2 degrees
- 6 strand rope : 3 degrees

These values are approximate and based on a throat angle of 45 degrees.