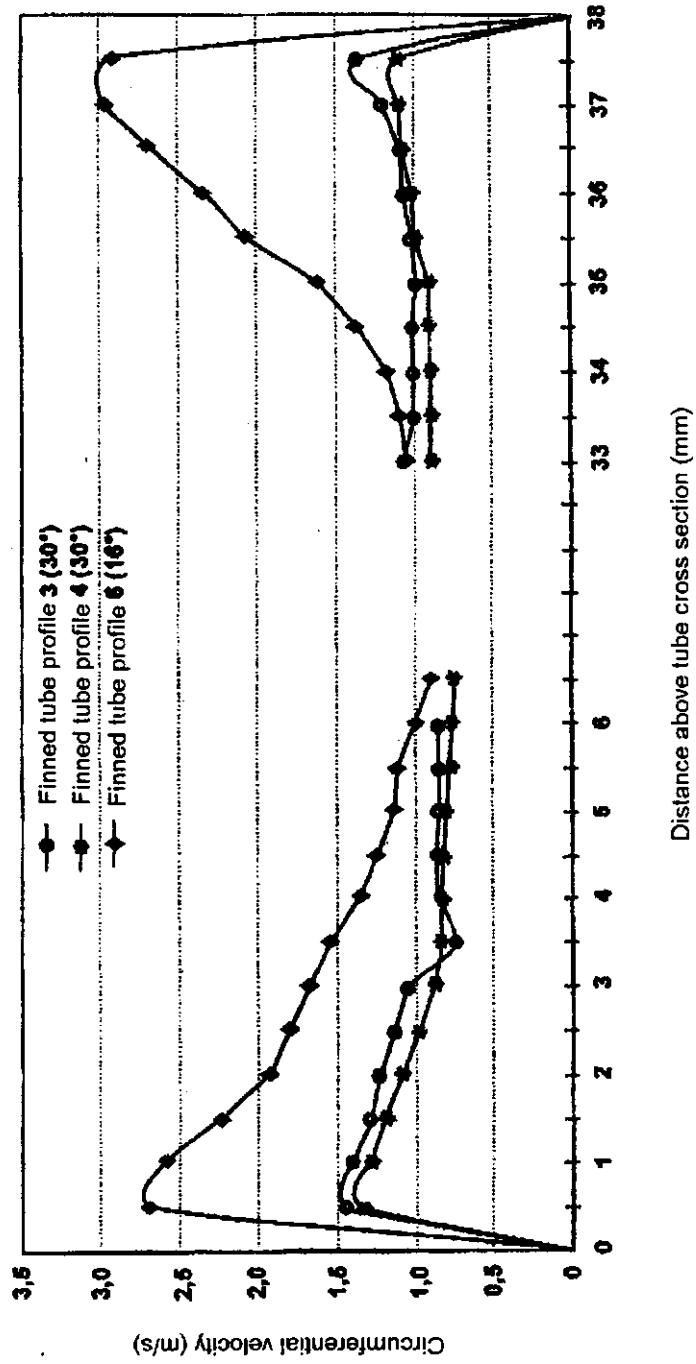




Circumferential velocities in profiles with differing inclination with respect to the tube axis

Fig. 1

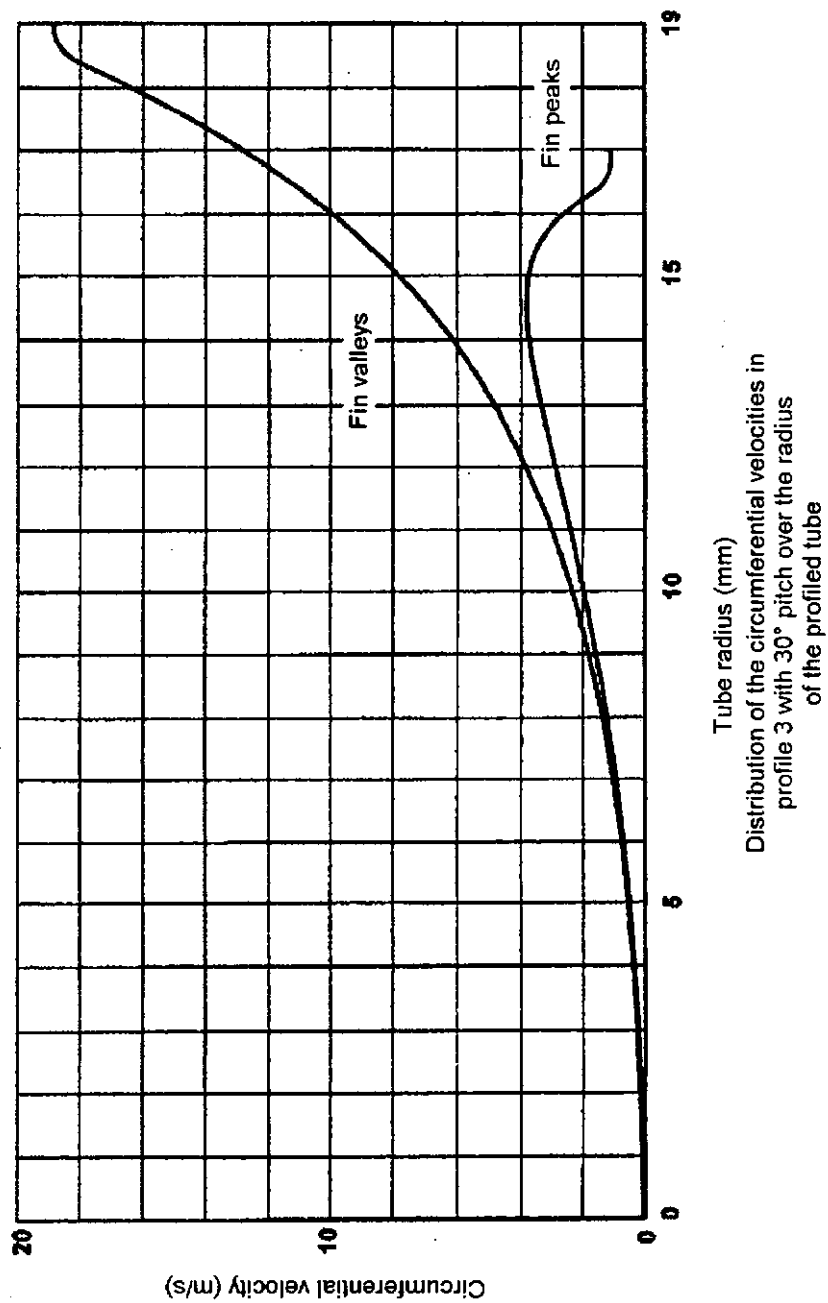
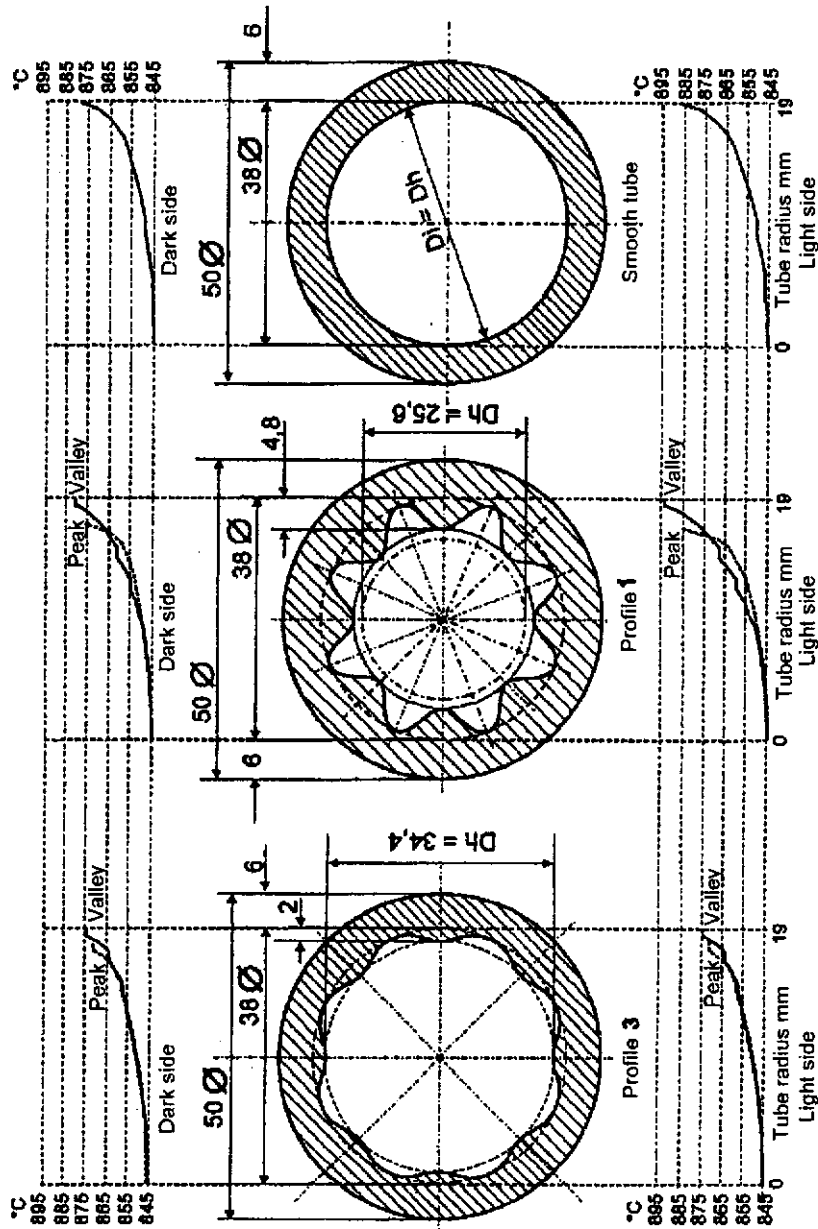
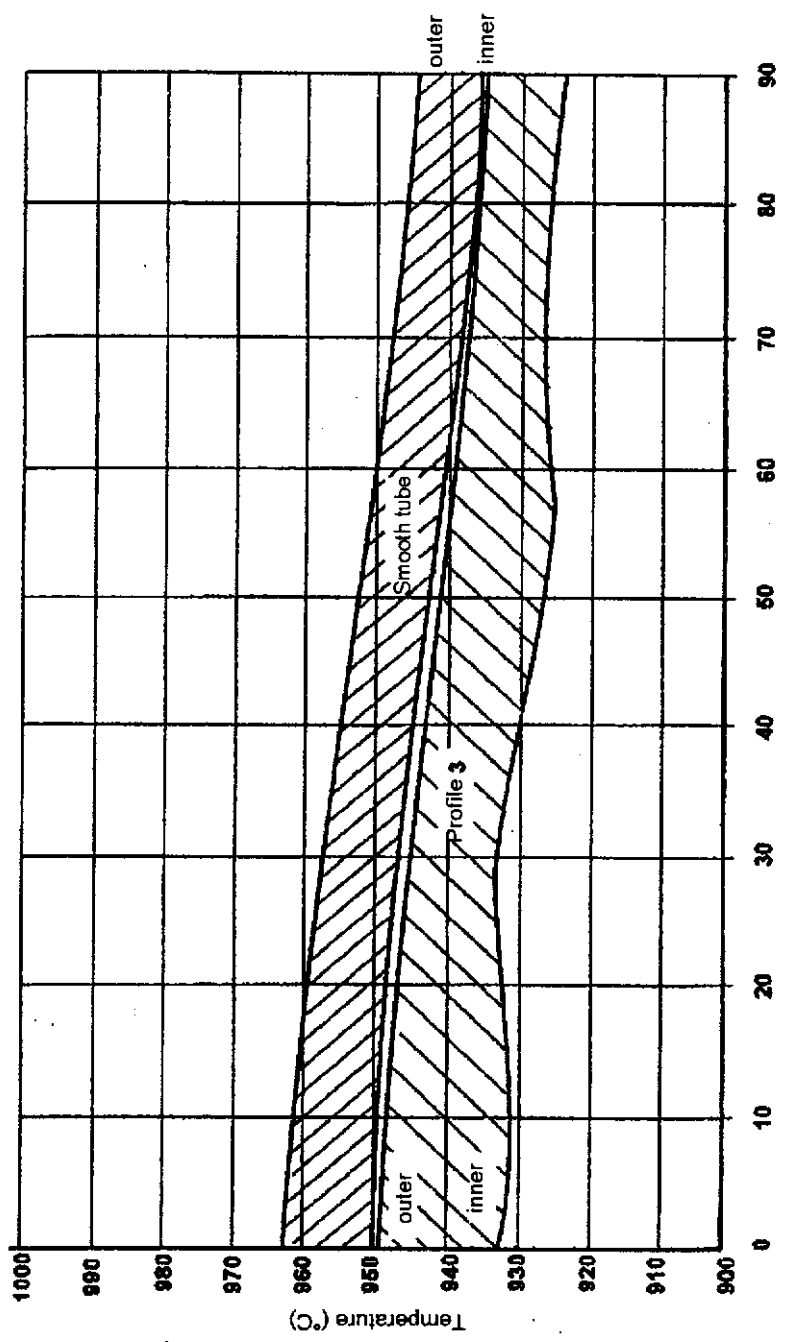


Fig. 2



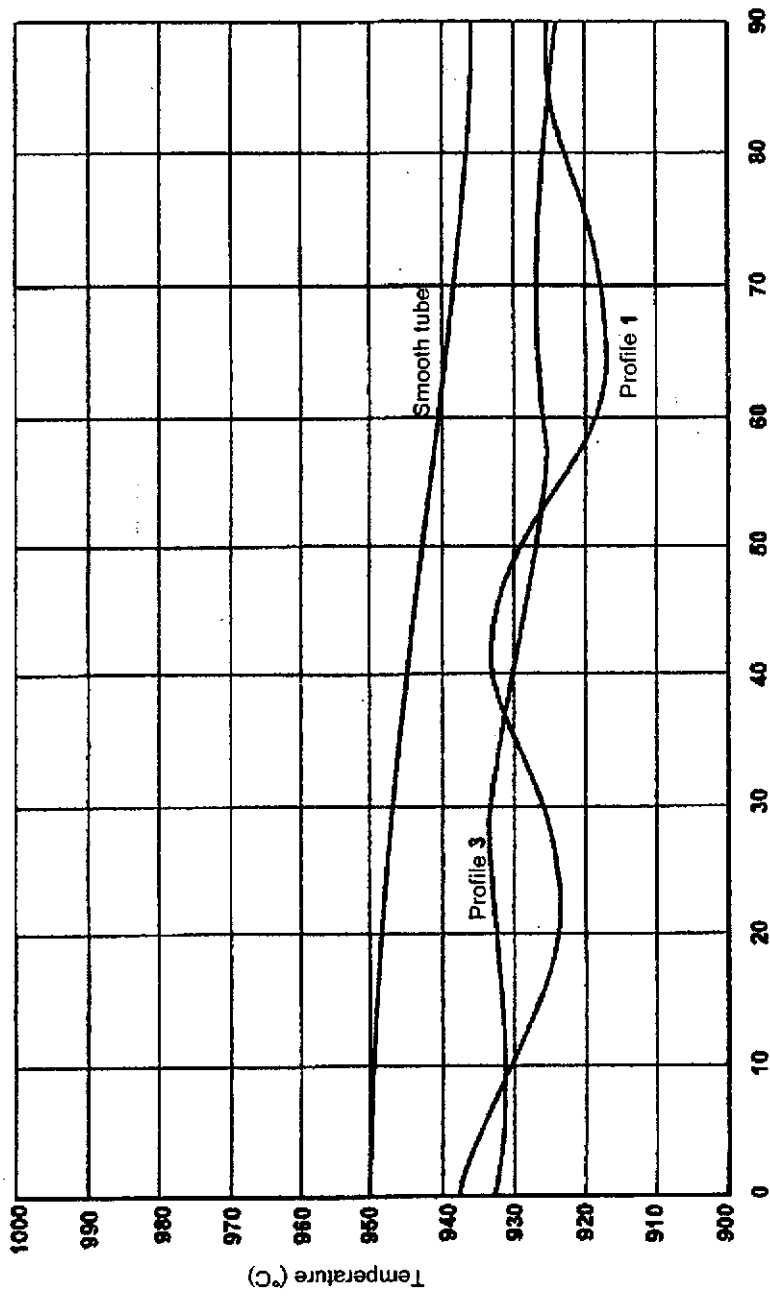
Profile shapes with temperature profile in the fluid (naphtha)
at 9950 mm plotted over a radius in the tube (peak = profile
peak, valley = profile valley)

Fig. 3



Tube circumference from the light side to the dark side (°)
Comparison of the tube metal temperatures

Fig. 4



Tube circumference from the light side to the dark side (°)
Temperature distribution on the tube inner wall at 9950 mm

Fig. 5

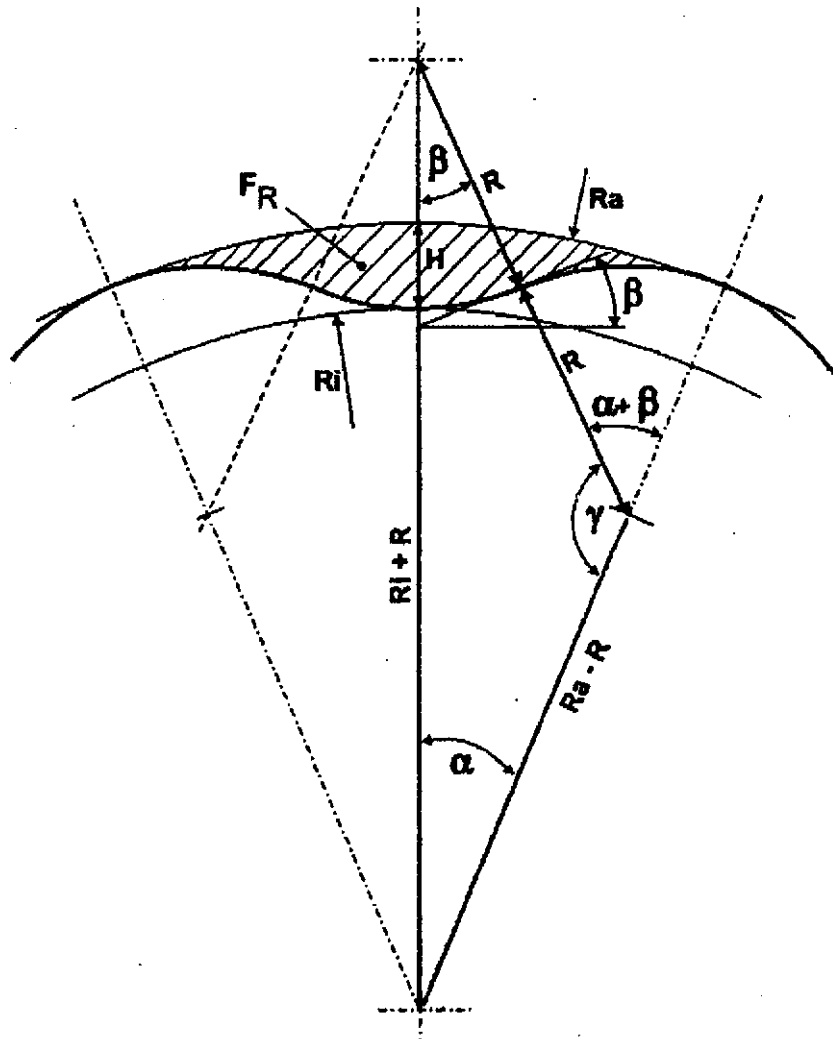
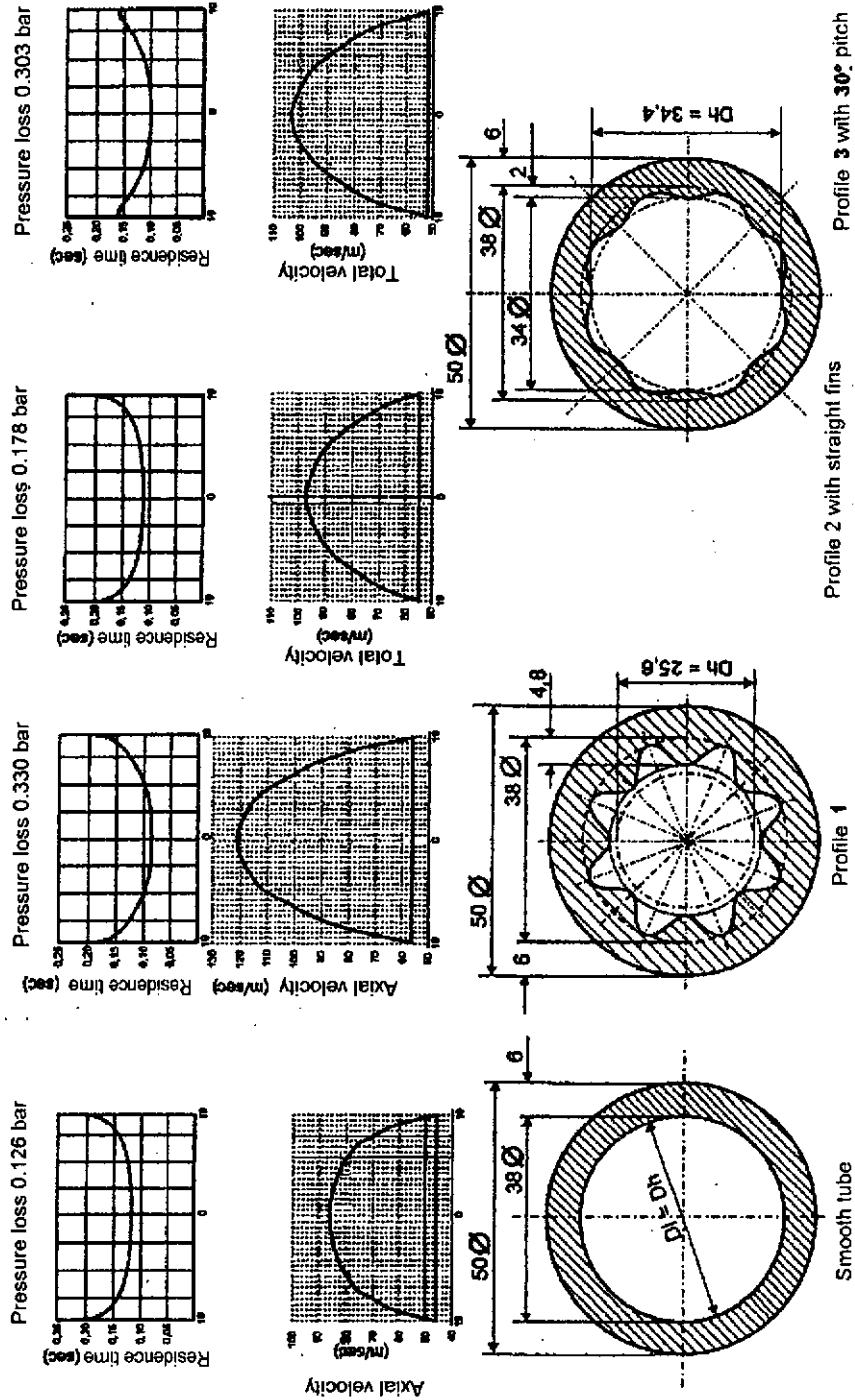


Illustration of a profile segment for
mathematical definition of flank angle (β) and profile radii (R)

Fig. 6



Comparison of the flow velocities, the residence times and the pressure losses for the same mass throughput after 9950 mm heated tube length

Fig. 7