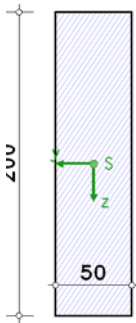


POS. 4: FIRE DESIGN EX. 4.1 (FLAT STEEL)

fire design EC 3-1-2 (12.10), NA: Deutschland

1. input report



steel

steel grade S235

geometry

section parameters (flat steel):

height $h = 200.0$ mm, thickness $t = 50.0$ mm

cross-section temperature

thermal action due to the standard curve, fire resistance time $t = 30$ min

section all sides flamed

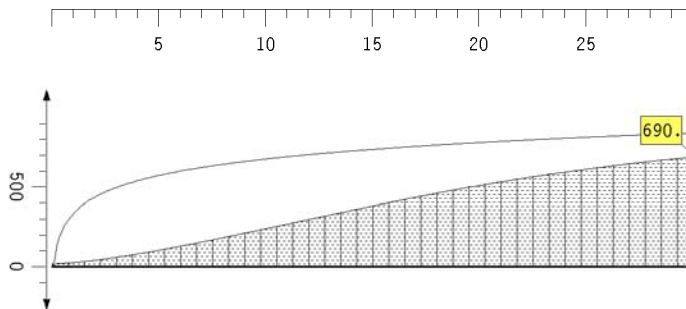
2. cross-section temperature

surface of the section exposed to fire $A_m = 500.0$ mm²/mm

section factor of the unprotected component $A_m/V = 500.0 / 10000.0 \cdot 10^3 = 50.0$ 1/m

correction factor $k_{sh} = 1.0$

temperature development:



temperature in °C

fire time in min

max $T_a = 690.5^\circ\text{C}$

max $t = 30$ min

cross-section temperature acc. to $t = 30$ min: $T_a = 690.5$ °C