15-12 $\tau = 5$ hod

$$(m_c + m_{AE}) = 0{,}8 \cdot (m_c + m_{A\Phi})$$

$w_{Ai} = 28{,}5$ hm%

$w_{Ac} = 20$ hm%

$w_A^* = 2{,}5$ hm%

$$W = \frac{m_A}{m_c} = \frac{w \cdot (m_A + m_c)}{(1-w) \cdot (m_A + m_c)} = \frac{w}{1-w}$$

$$W_{Ai} = \frac{0{,}285}{1-0{,}285} = 0{,}3986$$

$$W_{Ac} = \frac{0{,}2}{1-0{,}2} = 0{,}25$$

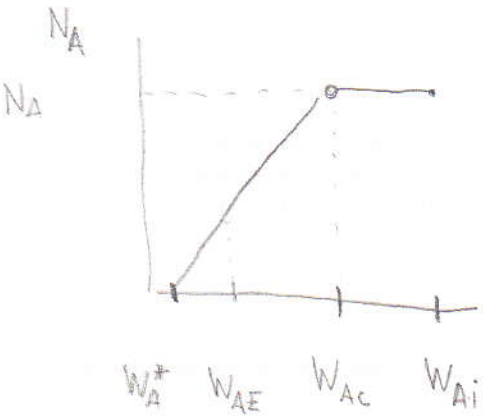
$$W_A^* = \frac{0{,}025}{1-0{,}025} = 0{,}02564$$

$$m_c + m_c \cdot W_{AE} = 0{,}8 \cdot (m_c + m_c \cdot W_{Ai})$$

$$1 + W_{AE} = 0{,}8 \cdot (1 + W_{Ai})$$

$$W_{AE} = 0{,}8 \cdot (1 + 0{,}3986) - 1$$

$$W_{AE} = 0{,}1189$$



N_A^{II} - $N_A = -\frac{dW_A}{d\tau}$

1. doba: $N_A^I = k_1$

2. doba: $N_A^{II} = k_2 \cdot (W_A - W_A^*)$

$W_A \equiv W_{Ac} \Rightarrow k_2 \cdot (W_{Ac} - W_A^*) = k_1$

$$\int_0^{\tau_1} N_A^I \, d\tau = \int_{W_{Ai}}^{W_{Ac}} -dW_A \qquad \int_{\tau_1}^{\tau_2} N_A^{II} \cdot d\tau = \int_{W_{Ac}}^{W_{AE}} -dW_A$$

$$k_1 \tau_1 = W_{Ai} - W_{Ac} \qquad k_2 \cdot (\tau_2 - \tau_1) = -\int_{W_{Ac}}^{W_{AE}} \frac{dW_A}{W_A - W_A^*}$$

$X \equiv W_A - W_A^*$

$dX \equiv dW_A$

$$k_2 \cdot (\tau_2 - \tau_1) = -\int_{W_{Ac}}^{W_{AE}} \frac{dX}{X} = -\left[\ln X\right] = \left[\ln (W_A - W_A^*)\right]_{W_{AE}}^{W_{Ac}}$$

15-12

str. 2.

① $k_1 \tau_1 = w_{Ai} - w_{AC}$

② $k_2 \cdot (w_{AC} - w_A^*) = k_1$

③ $k_2 (\tau_2 - \tau_1) = \ln \dfrac{w_{AC} - w_A^*}{w_{AE} - w_A^*}$

$$k_2 \cdot (w_{AC} - w_A^*) = \frac{w_{Ai} - w_{AC}}{\tau_1}$$

$$\frac{w_{Ai} - w_{AC}}{w_{AC} - w_A^*} \quad \frac{\tau_2 - \tau_1}{\tau_1} = \ln \frac{w_{AC} - w_A^*}{w_{AE} - w_A^*}$$

3. rovnice

4. ~~neznámé~~ proměnné k_1, k_2, τ_1, τ_2

známe: τ_2

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① $\tau_1 = \dfrac{w_{Ai} - w_{AC}}{k_1} = \dfrac{w_{Ai} - w_{AC}}{k_2 \cdot (w_{AC} - w_A^*)}$ ⇒ ①+②

①+② ③ $k_2 \cdot \tau_2 - k_2 \cdot \dfrac{w_{Ai} - w_{AC}}{k_2 (w_{AC} - w_A^*)} = \ln \dfrac{w_{AC} - w_A^*}{w_{AE} - w_A^*}$

$$k_2 = \frac{1}{\tau_2} \cdot \left[\ln \frac{w_{AC} - w_A^*}{w_{AE} - w_A^*} + \frac{w_{Ai} - w_{AC}}{w_{AC} - w_A^*} \right]$$

$$k_2 = \frac{1}{5h} \left[\ln \frac{0{,}25 - 0{,}02564}{0{,}11189 - 0{,}02564} + \frac{0{,}13986 - 0{,}25}{0{,}25 - 0{,}02564} \right] =$$

$$= \frac{1}{5} \cdot \left[0{,}87786 + 0{,}66232 \right] = \underline{0{,}30804 \ h^{-1}}$$

$$k_1 = 0{,}30804 \cdot (0{,}25 - 0{,}02564) = 0{,}06911 \ h^{-1}$$

$$\tau_1 = \frac{0{,}13986 - 0{,}25}{0{,}06911} = \underline{2{,}15 \ h}$$ (1 doba sušení)

po prodloužení o 2h $\tau_2 = 5 + 2 = 7h$

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③ → $0{,}30804 \cdot (7 - 2{,}15) = \ln \dfrac{0{,}25 - 0{,}02564}{w_{AE} - 0{,}02564} = 1{,}493994$

$0{,}22436 = 4{,}4548 \cdot (w_{AE} - 0{,}02564)$

$\underline{w_{AE} = 0{,}076}$

$w = \dfrac{W}{1+W} = 7 \ hm\%$