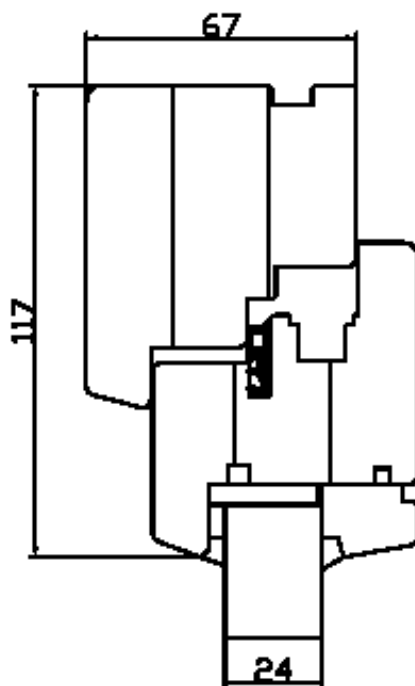


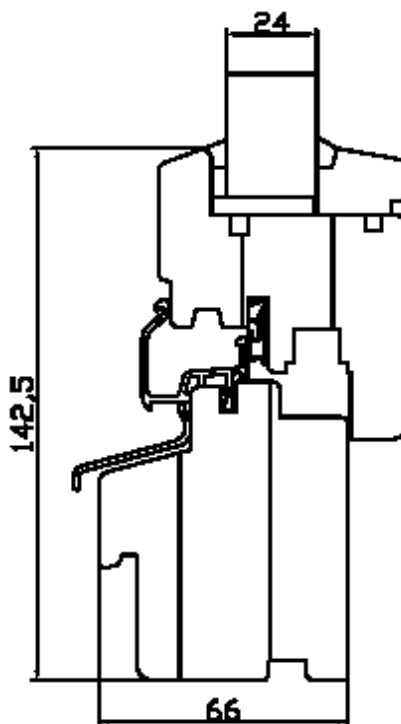
04. Dezember 2012

## 1. Profil IV 68

Profil oben / seitlich

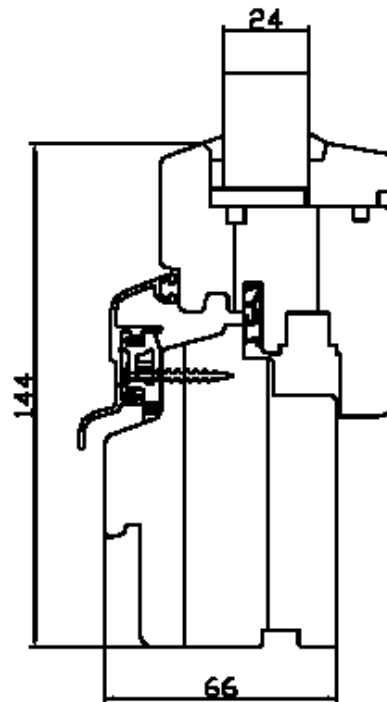


Profil unten mit Wetterschutzschiene thermisch unwirksam



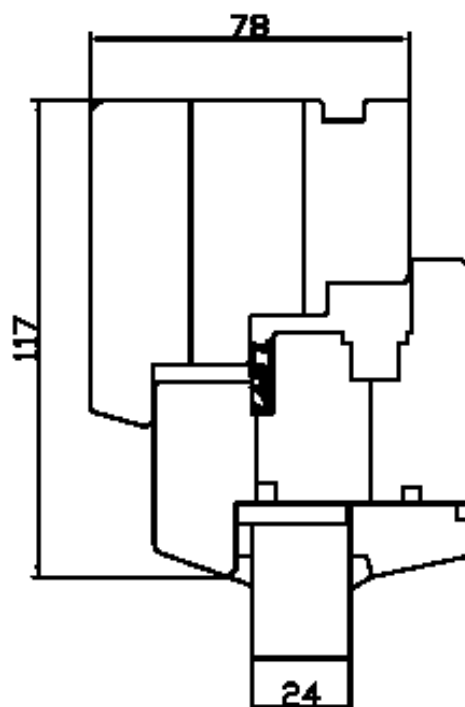
04. Dezember 2012

**Profil unten mit Wetterschutzschiene thermisch wirksam**



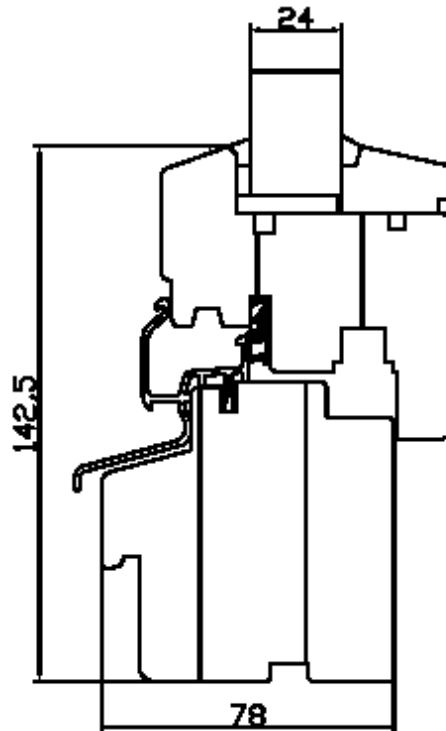
**2. Profil IV 78 3 facher Kantelaufbau**

**Profil oben / seitlich**

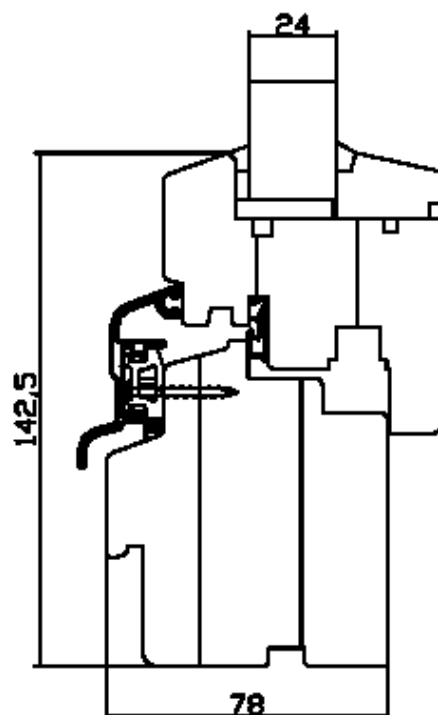


04. Dezember 2012

**Profil unten mit Wetterschutzschiene thermisch unwirksam**

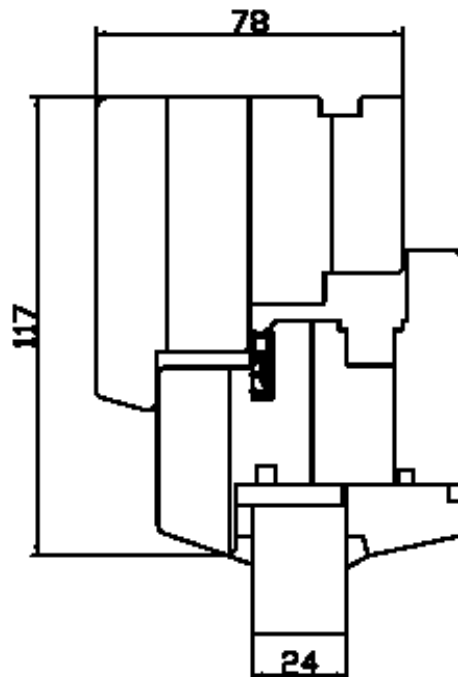


**Profil unten mit Wetterschutzschiene thermisch wirksam**

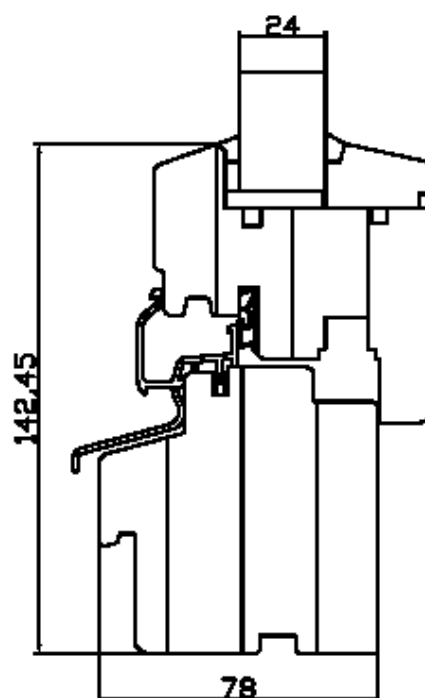


### 3. Profil IV 78 4 facher Kantelaufbau

Profil oben / seitlich

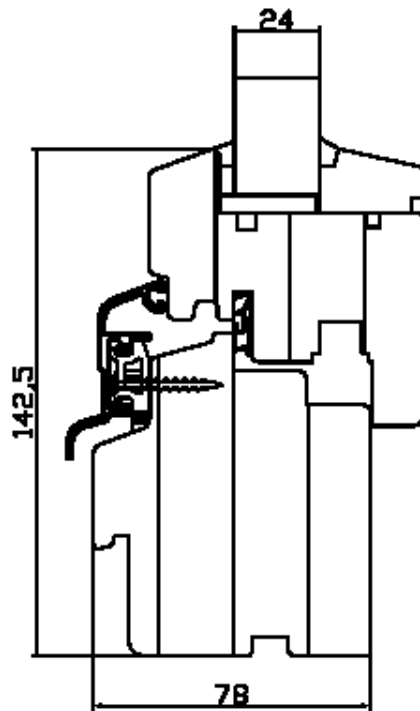


Profil unten mit Wetterschutzschiene thermisch unwirksam



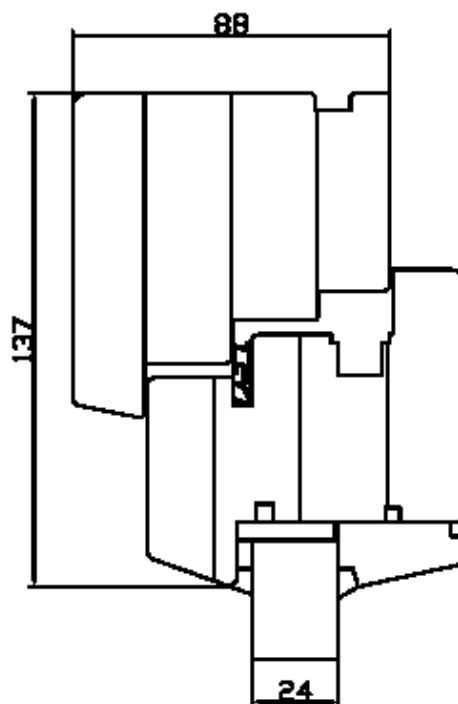
04. Dezember 2012

**Profil unten mit Wetterschutzschiene thermisch wirksam**



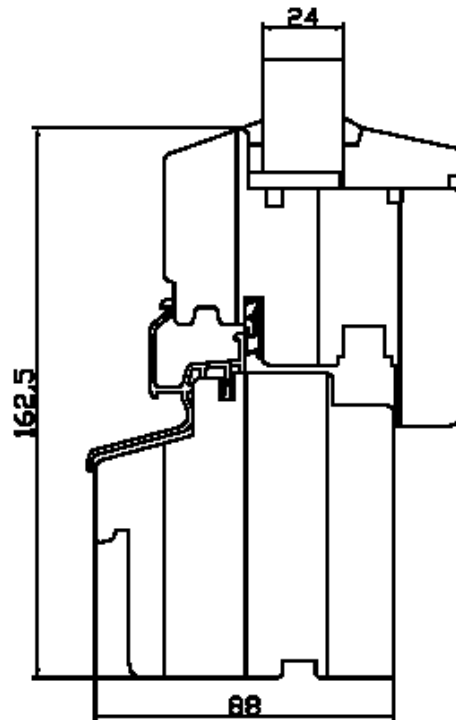
**4. Profil IV 88**

**Profil oben / seitlich**

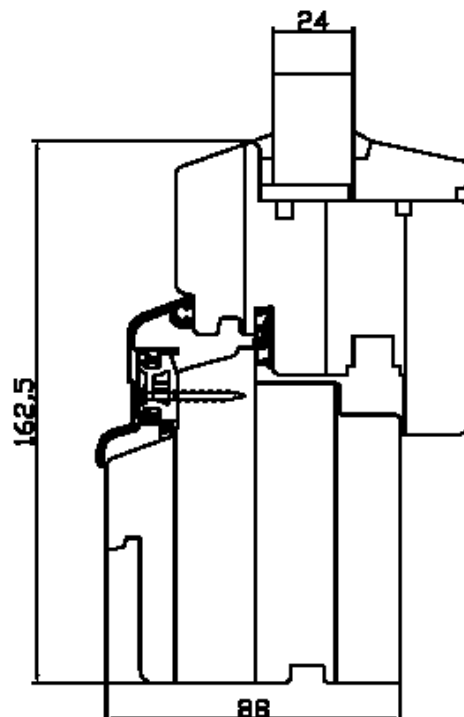


04. Dezember 2012

**Profil unten mit Wetterschutzschiene thermisch unwirksam**





















**Profil unten mit Wetterschutzschiene thermisch wirksam**



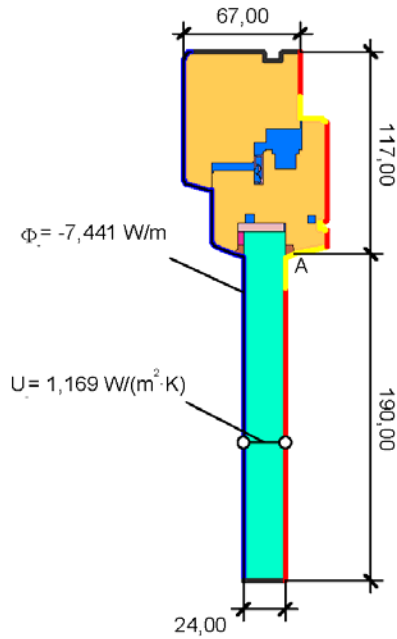
04. Dezember 2012

## 1. Materialangaben und Randbedingungen

Material	$\lambda$ [W/(m·K)]
 Accoya	0,120
 Aluminium (Si-Legierungen)	160,000
 EPDM (Ethylen Propylen Dien Monomer)	0,250
 Fichte	0,110
 Kiefer	0,130
 Leicht belüftete Hohlräume	Eps=0,9/0,9
 Maske	0,035
 Moosgummi	0,050
 Rein-Silikon	0,350
 Schraube (Edelstahl), 3D äquivalent S1 6-300	0,378
 Schraube (Edelstahl), 3D äquivalent S2 6-300	0,378
 Unbelüftete Hohlräume	Eps=0,9/0,9
 Verglasungsklotz (PVC) / Unbelüftete Hohlräume, 3D äquivalent R 100-300	0,057
 Wetterschienenbefestigung (PVC) / Leicht belüftete Hohlräume, 3D äquivalent R 50-300	0,028

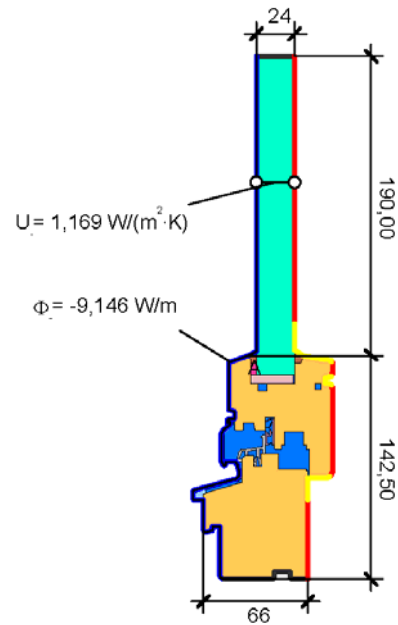
Randbedingung	$q$ [W/m <sup>2</sup> ]	$\theta$ [°C]	$R$ [(m <sup>2</sup> ·K)/W]	$\varepsilon$
 Aussen Fenster		0,000		0,040
 Innen Fensterrahmen Reduziert		20,000		0,200
 Innen Fensterrahmen Standard		20,000		0,130
 Symmetrie/Bauteilschnitt	0,000			

**2.1 Profil IV 68 La Vita Accoya Pure  
Kantelaufbau 3-fach Accoya  
Profil oben / seitlich**



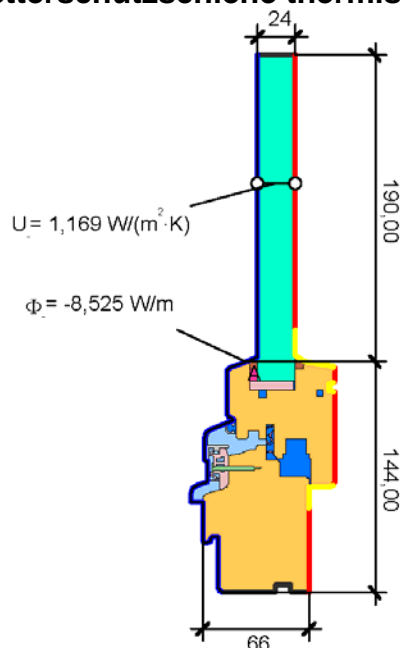
$$U_{s,i} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_p}{b_i} = \frac{\frac{7,441}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch  
unwirksam**



$$U_{s,i} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_p}{b_i} = \frac{\frac{9,146}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,7 \text{ W/(m}^2 \cdot \text{K)}$$

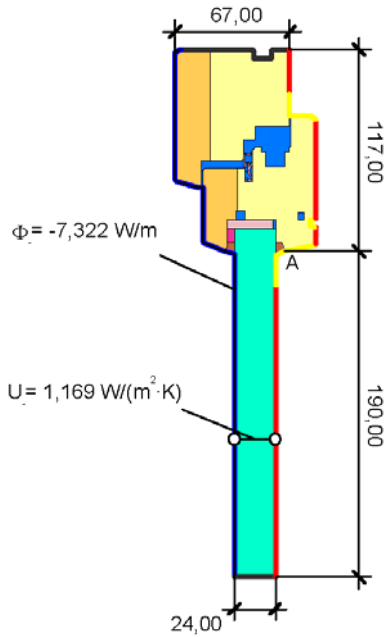
**Profil unten  
Wetterschutzschiene thermisch  
wirksam**



$$U_{s,i} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_p}{b_i} = \frac{\frac{8,525}{20,000} - 1,169 \cdot 0,190}{0,144} = 1,4 \text{ W/(m}^2 \cdot \text{K)}$$

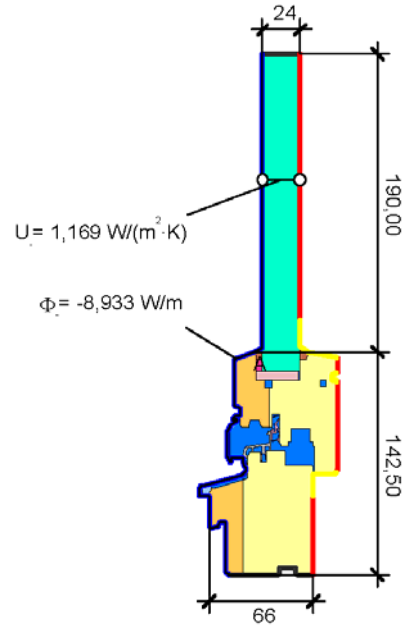


**2.2 Profil IV 68 La Vita Accoya Eurospruce**  
**Kantelaufbau Accoya / Fichte / Fichte**  
**Profil oben / seitlich**



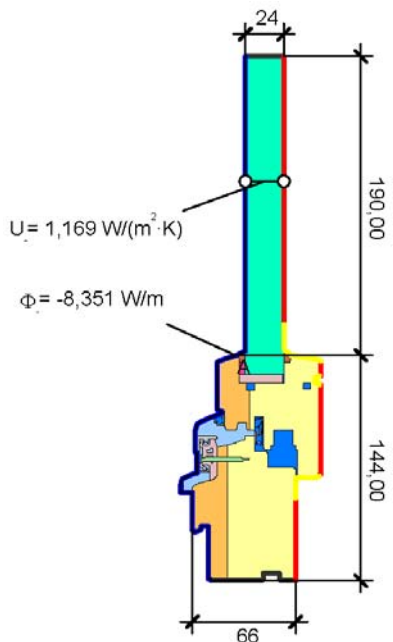
$$U_{s, \text{unwirksam}} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_l} = \frac{\frac{7,322}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



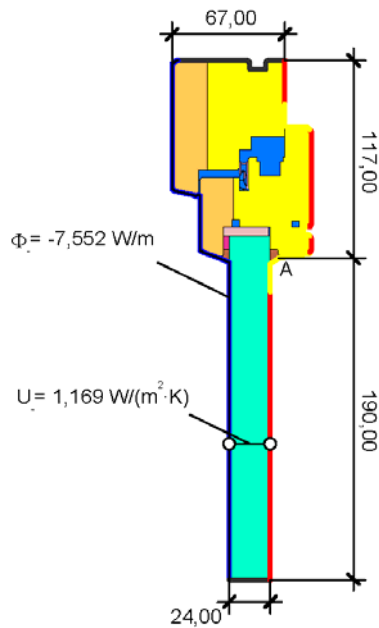
$$U_{s, \text{unwirksam}} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_l} = \frac{\frac{8,933}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,6 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch wirksam**



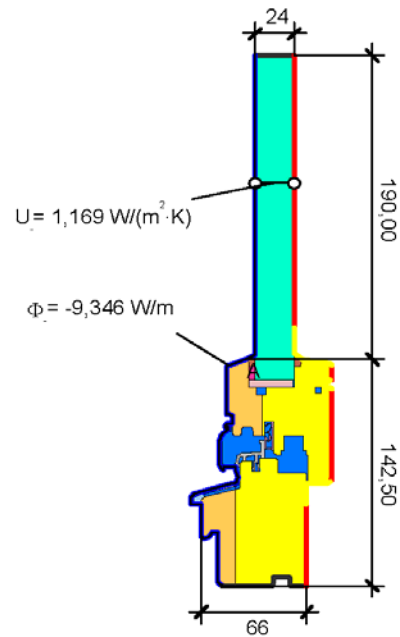
$$U_{s, \text{wirksam}} = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_l} = \frac{\frac{8,351}{20,000} - 1,169 \cdot 0,190}{0,144} = 1,4 \text{ W/(m}^2 \cdot \text{K)}$$

**2.3 Profil IV 68 La Vita Accoya Europine**  
**Kantelaufbau Accoya / Kiefer / Kiefer**  
**Profil oben / seitlich**



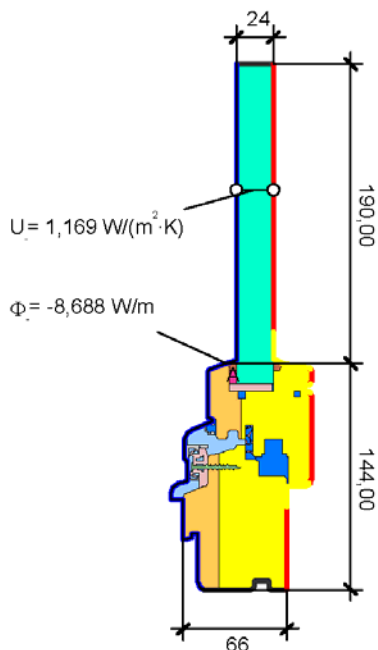
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_i} = \frac{\frac{7,552}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch**  
**unwirksam**



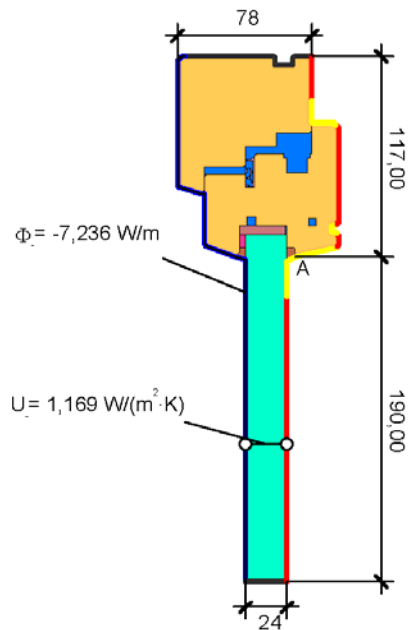
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_i} = \frac{\frac{9,346}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,7 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch**  
**wirksam**



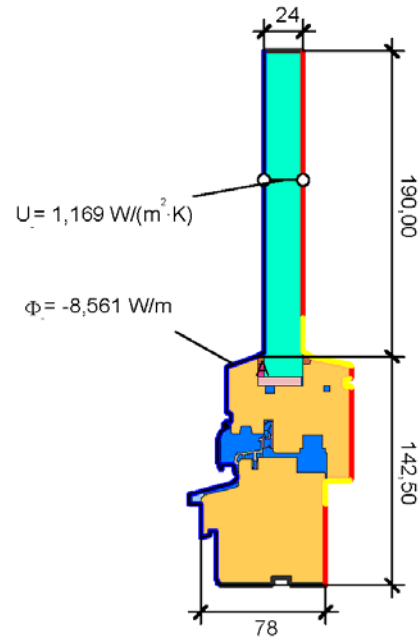
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_i} = \frac{\frac{8,688}{20,000} - 1,169 \cdot 0,190}{0,144} = 1,5 \text{ W/(m}^2 \cdot \text{K)}$$

**3.1 Profil IV 78 La Vita Accoya Pure  
Kantelaufbau 3-fach Accoya  
Profil oben / seitlich**



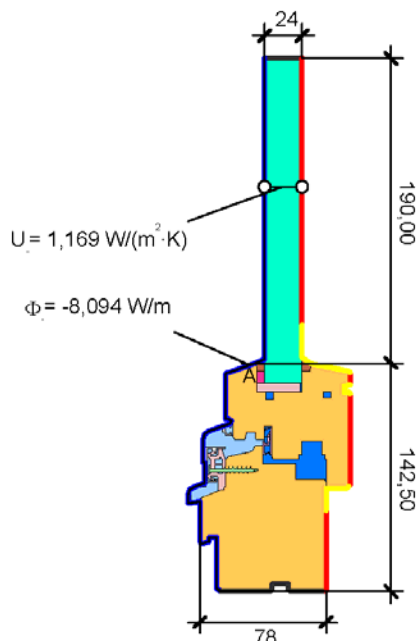
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{7,236}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch  
unwirksam**



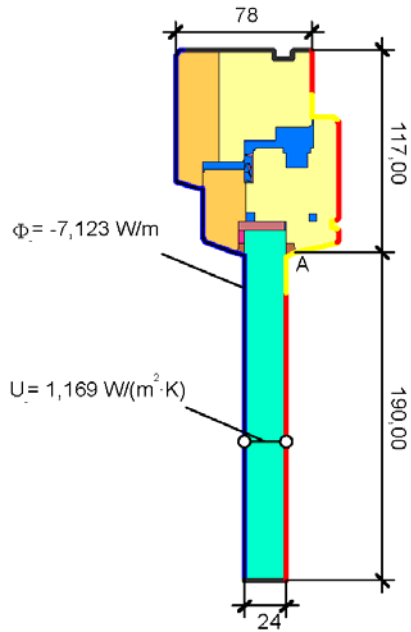
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{8,561}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,4 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch wirksam**



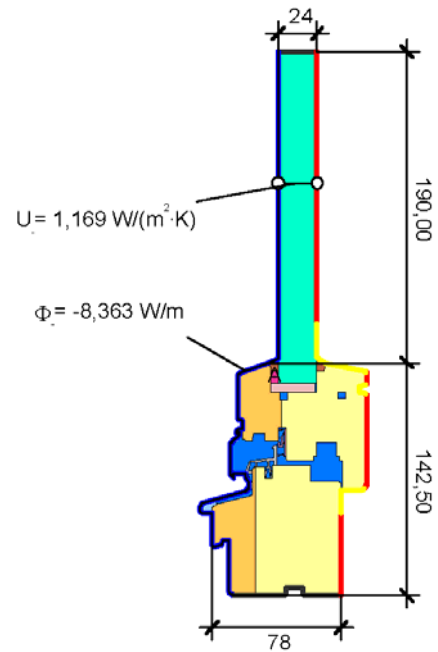
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{8,094}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

**3.2 Profil IV 78 La Vita Accoya Eurospruce**  
**Kantelaufbau Accoya / Fichte / Fichte**  
**Profil oben / seitlich**



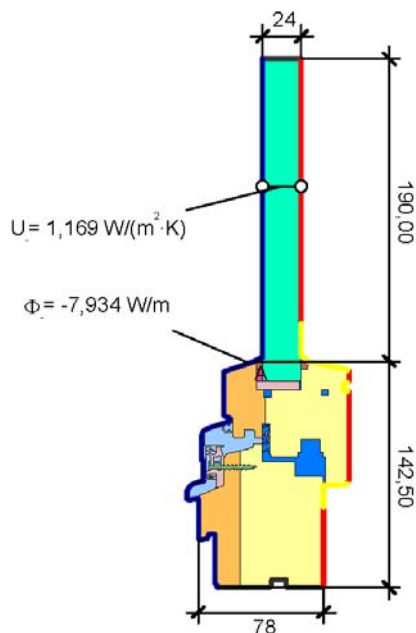
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_r \cdot b_r}{b_l} = \frac{\frac{7,123}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,1 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



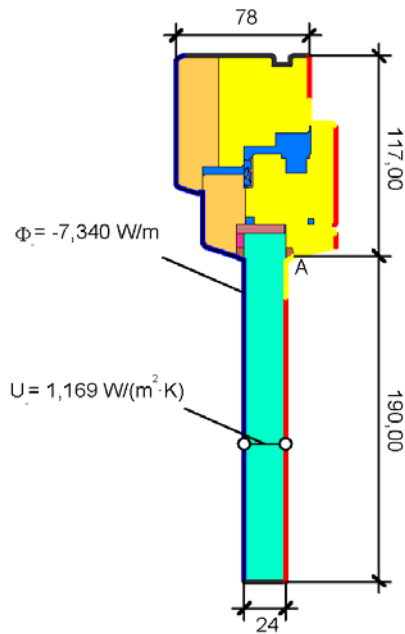
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_r \cdot b_r}{b_l} = \frac{\frac{8,363}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,4 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch wirksam**



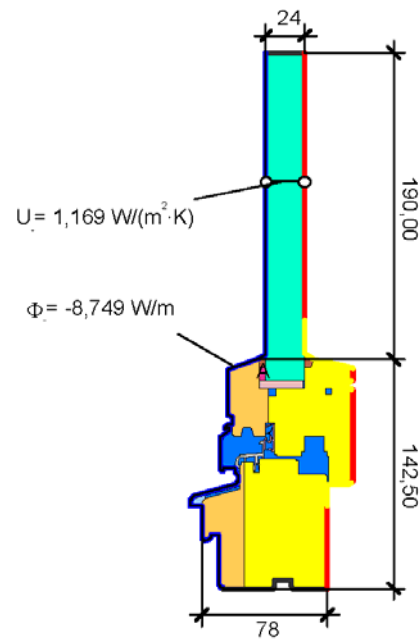
$$U_a = \frac{\frac{\Phi}{\Delta T} - U_r \cdot b_r}{b_l} = \frac{\frac{7,934}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**3.3 Profil IV 78 La Vita Accoya Europine**  
**Kantelaufbau Accoya / Kiefer / Kiefer**  
**Profil oben / seitlich**



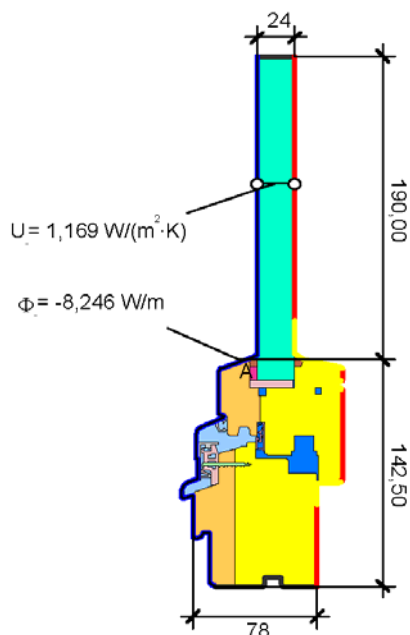
$$U_{s,1} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_s}{b_s} = \frac{\frac{7,340}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



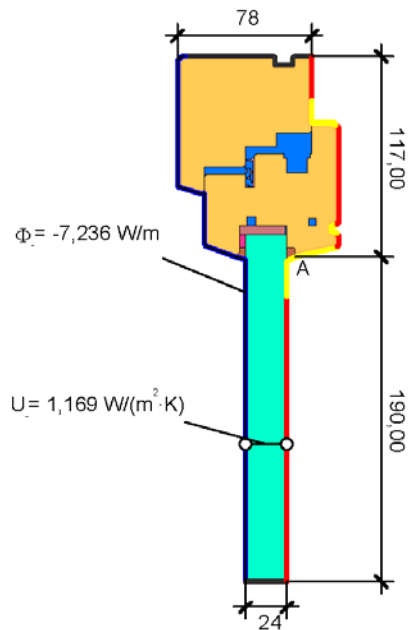
$$U_{s,2} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_s}{b_s} = \frac{\frac{8,749}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,5 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch wirksam**



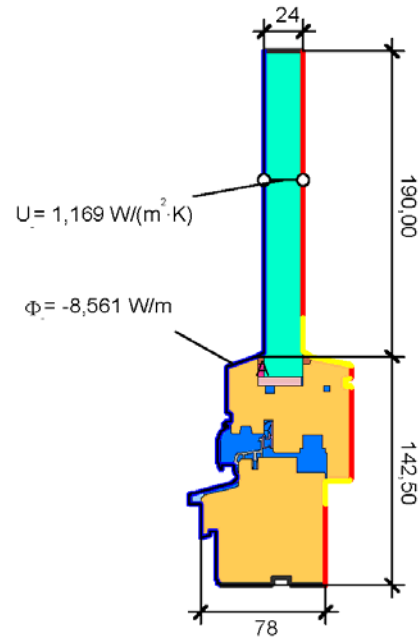
$$U_{s,3} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_s}{b_s} = \frac{\frac{8,246}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

**4.1 Profil IV 78 La Vita Accoya Pure  
Kantelaufbau 4-fach Accoya  
Profil oben / seitlich**



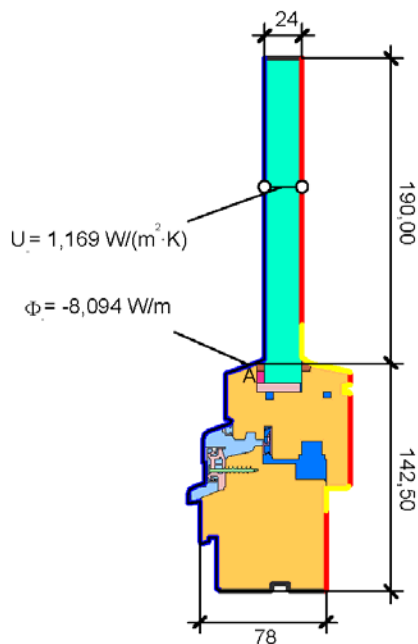
$$U_{s, \text{unwirksam}} = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{7,236}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch  
unwirksam**



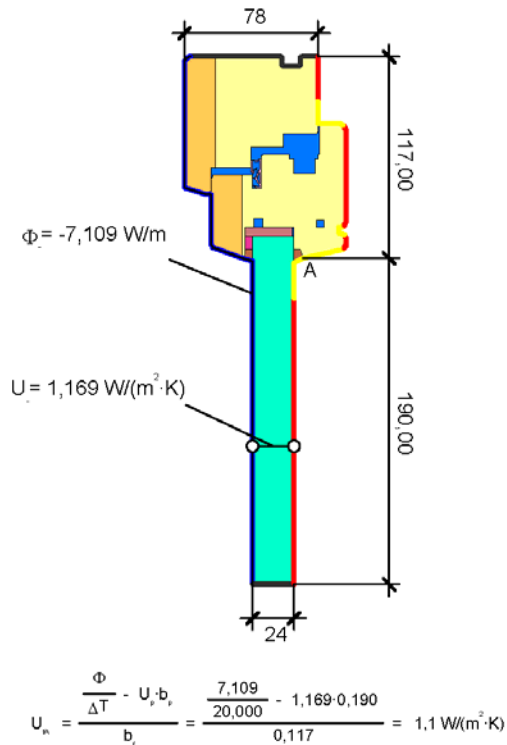
$$U_{s, \text{unwirksam}} = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{8,561}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,4 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch  
wirksam**

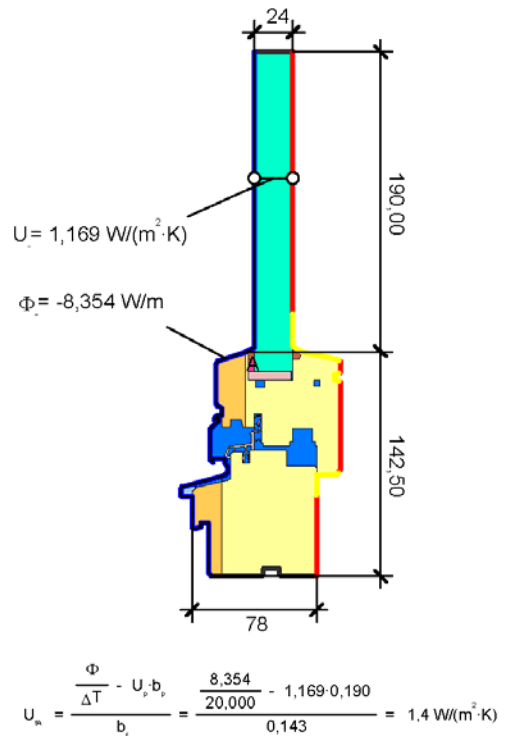


$$U_{s, \text{wirksam}} = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{8,094}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

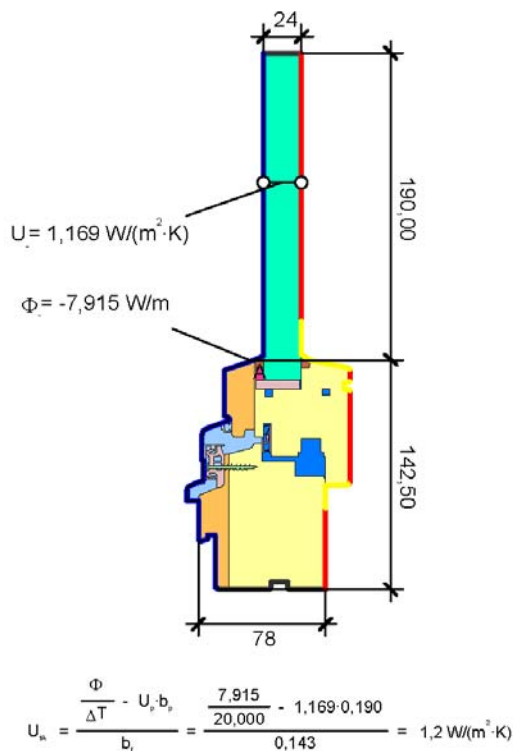
**4.2 Profil IV 78 La Vita Accoya Eurospruce**  
**Kantelaufbau Accoya / Fichte / Fichte / Fichte**  
**Profil oben / seitlich**



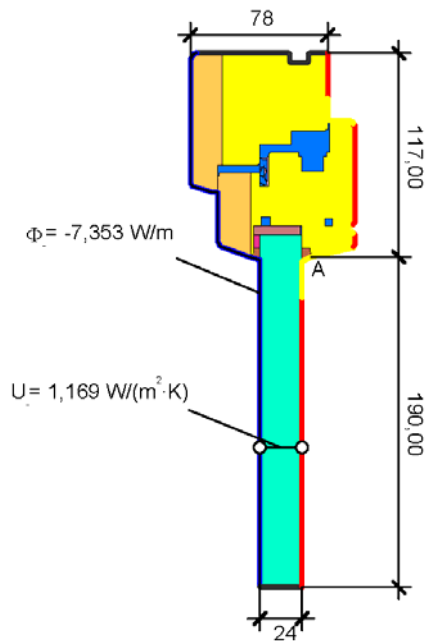
**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



**Profil unten**  
**Wetterschutzschiene thermisch wirksam**

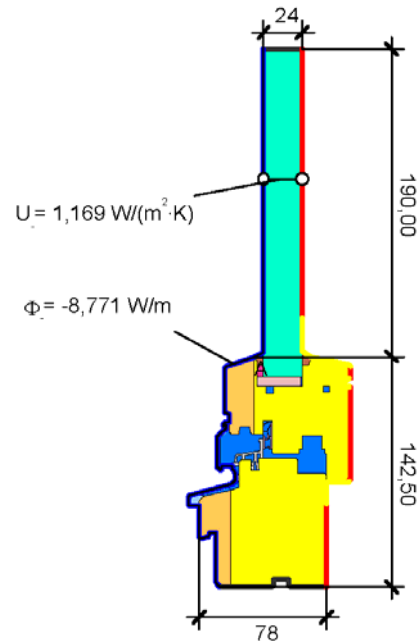


**4.3 Profil IV 78 La Vita Accoya Europine**  
**Kantelaufbau Accoya / Kiefer / Kiefer / Kiefer**  
**Profil oben / seitlich**



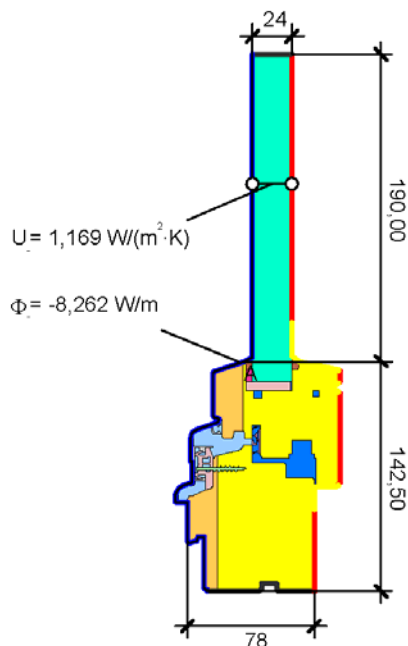
$$U_{\text{in}} = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{7,353}{20,000} - 1,169 \cdot 0,190}{0,117} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



$$U_{\text{in}} = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{8,771}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,5 \text{ W/(m}^2 \cdot \text{K)}$$

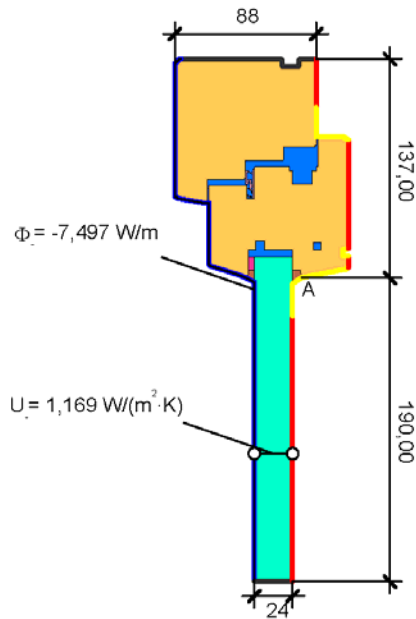
**Profil unten**  
**Wetterschutzschiene thermisch wirksam**



$$U_{\text{in}} = \frac{\frac{\Phi}{\Delta T} - U_s \cdot b_s}{b_i} = \frac{\frac{8,262}{20,000} - 1,169 \cdot 0,190}{0,143} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

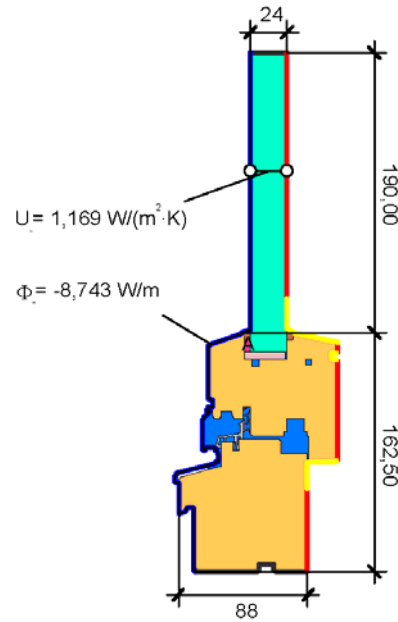


**5.1 Profil IV 88 La Vita Accoya Pure  
Kantelaufbau 4-fach Accoya  
Profil oben / seitlich**



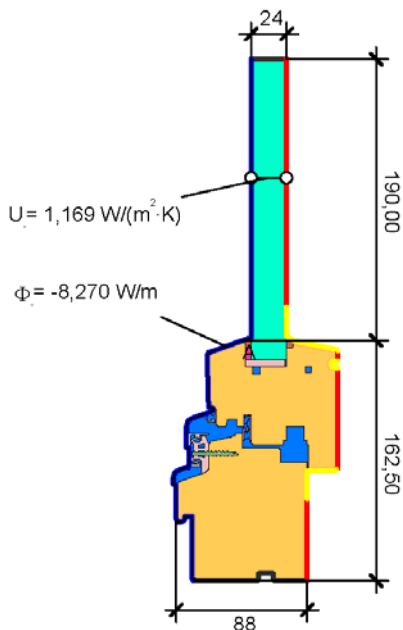
$$U_n = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_l} = \frac{\frac{7,497}{20,000} - 1,169 \cdot 0,190}{0,137} = 1,1 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch  
unwirksam**



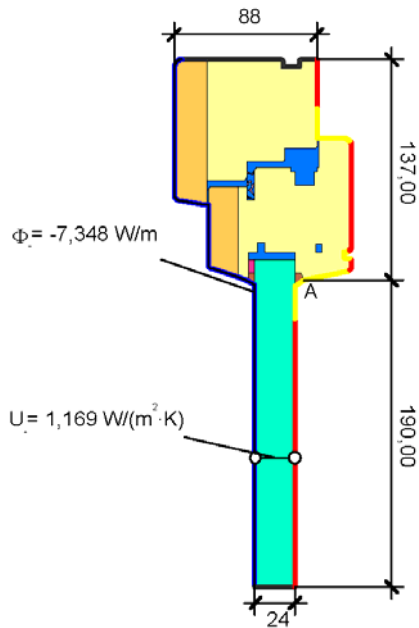
$$U_n = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_l} = \frac{\frac{8,743}{20,000} - 1,169 \cdot 0,190}{0,163} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten  
Wetterschutzschiene thermisch wirksam**



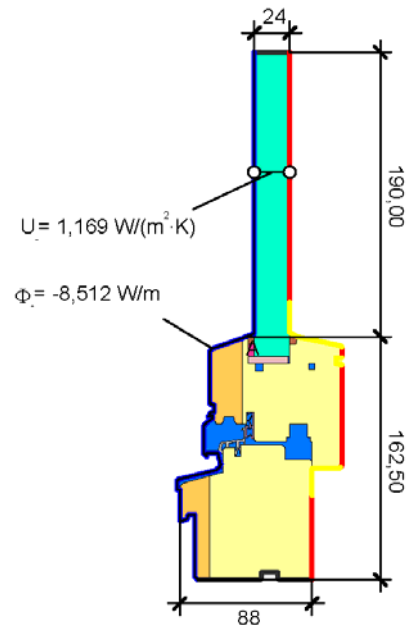
$$U_n = \frac{\frac{\Phi}{\Delta T} - U_p \cdot b_p}{b_l} = \frac{\frac{8,270}{20,000} - 1,169 \cdot 0,190}{0,163} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**5.2 Profil IV 88 La Vita Accoya Eurospruce**  
**Kantelaufbau Accoya / Fichte / Fichte / Fichte**  
**Profil oben / seitlich**



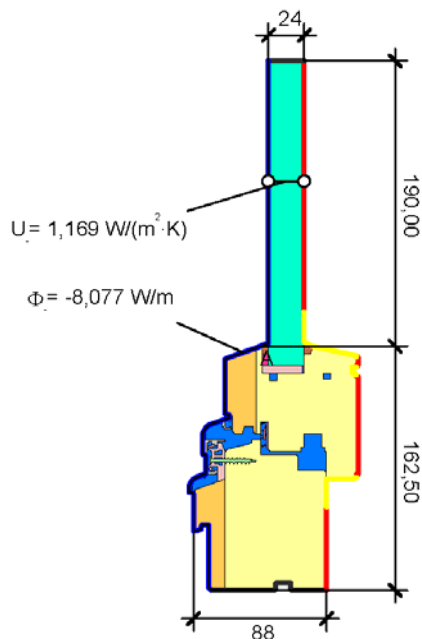
$$U_{\kappa} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_i}{b_i} = \frac{\frac{7,348}{20,000} - 1,169 \cdot 0,190}{0,137} = 1,1 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



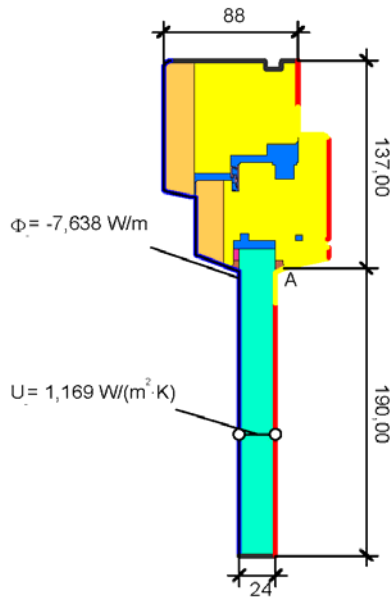
$$U_{\kappa} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_i}{b_i} = \frac{\frac{8,512}{20,000} - 1,169 \cdot 0,190}{0,163} = 1,3 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch wirksam**



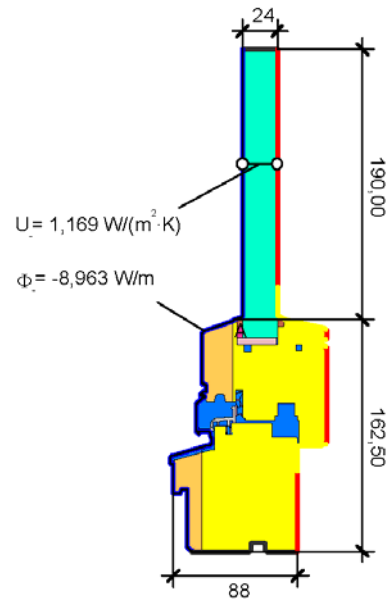
$$U_{\kappa} = \frac{\frac{\Phi}{\Delta T} - U_i \cdot b_i}{b_i} = \frac{\frac{8,077}{20,000} - 1,169 \cdot 0,190}{0,163} = 1,1 \text{ W/(m}^2 \cdot \text{K)}$$

**3.1 Profil IV 88 La Vita Accoya Europine**  
**Kantelaufbau Accoya / Kiefer / Kiefer / Kiefer**  
**Profil oben / seitlich**



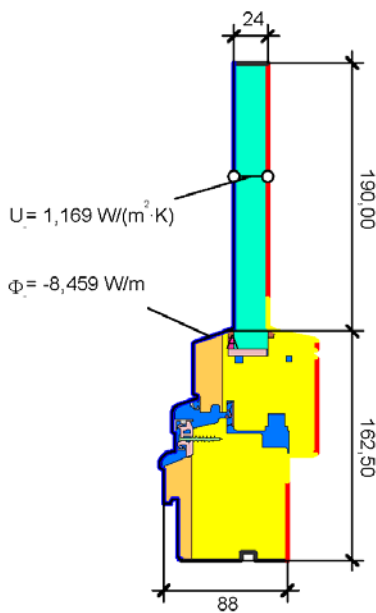
$$U_{s,1} = \frac{\frac{\Phi}{\Delta T} - U_v \cdot b_v}{b_s} = \frac{\frac{7,638}{20,000} - 1,169 \cdot 0,190}{0,137} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch unwirksam**



$$U_{s,2} = \frac{\frac{\Phi}{\Delta T} - U_v \cdot b_v}{b_s} = \frac{\frac{8,963}{20,000} - 1,169 \cdot 0,190}{0,163} = 1,4 \text{ W/(m}^2 \cdot \text{K)}$$

**Profil unten**  
**Wetterschutzschiene thermisch wirksam**



$$U_{s,3} = \frac{\frac{\Phi}{\Delta T} - U_v \cdot b_v}{b_s} = \frac{\frac{8,459}{20,000} - 1,169 \cdot 0,190}{0,163} = 1,2 \text{ W/(m}^2 \cdot \text{K)}$$