NOTIUNI GENERALE PRIVIND:

COEFICIENTUL DE TRANSFER TERMIC AL FERESTREI U_W

Definitie:

Cantitatea de căldură care este transmisă printr-un 1mp al unui element de construcţie, în decursul unei ore, dacă între aerul existent, pe cele două părţi, există o diferenţă de temperatură de 1K.

Calculul se realizeaza conform standardului DIN EN ISO 10077-1 cu urmatoarea formula:

$$U_W = \frac{A_g \cdot U_g + A_f \cdot U_f + l_g \cdot \psi_g}{A_g + A_f}$$

A_g = suprafata vizibila a geamului in m^2

U_g = coeficient de transfer termic al vitrarii [W/m²K]

A_f = suprafata totala vizibila a ramei/canat in m^2

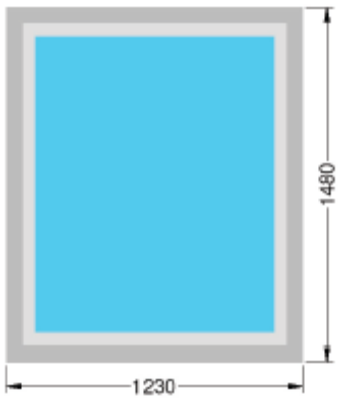
U_f = coeficient de transfer termic al profilului (rama/canat) [W/m²K]

l_g = lungimea muchiei(vizibile) a geamului in m,

Ψg = coeficient de transfer termic liniar, la trecerea dintre geam si profil, in W/mK(este influentat de materialul baghetei distantier, dintre foile de sticla.Ex.aluminiu-Ψg=0.06-0.08)

OBS. Valoarea U_g(inclusiv val.Ψ) se obtine de la furnizorul de sticla termoizolanta
Valoarea U_f se obtine de la furnizorul sistemelor de profile

Exemplu:
Dimensiunea exterioara ferestrei: 1230 x 1480 (1.23m x 1.48m)
Brillant-Design cu U_f =1.3 W/m² K , vitrare cu U_g = 1,1 W/m² K,
Rama 68/canat Z 60,
Latime vizibila PVC(rama+canat) : 120 mm(0.12m)

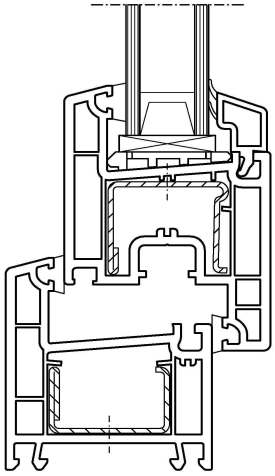


$A_f = 2 \cdot (1{,}48\ m \cdot 0{,}12\ m) + 2 \cdot (0{,}99\ m \cdot 0{,}12\ m) = 0{,}59\ m^2$,
$U_f = 1{,}3\ W/m^2K$,
$A_g = (1{,}23\ m \cdot 1{,}48\ m) - 0{,}59\ m^2 = 1{,}23\ m^2$,
$U_g = 1{,}1\ W/m^2K$,
$l_g = 4{,}46\ m$,
$\psi_g = 0{,}06\ W/mK$.

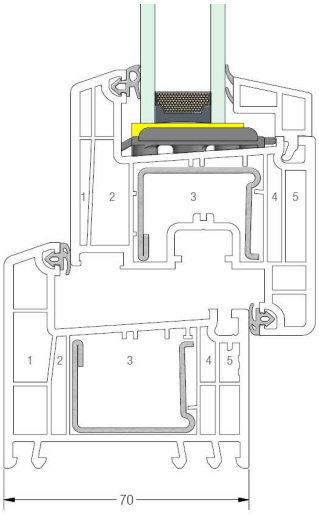
$$U_W = \frac{1{,}23 \cdot 1{,}1 + 0{,}59 \cdot 1{,}3 + 4{,}46 \cdot 0{,}06}{1{,}23 + 0{,}59}$$

$U_W = 1{,}3\ W/m^2K$

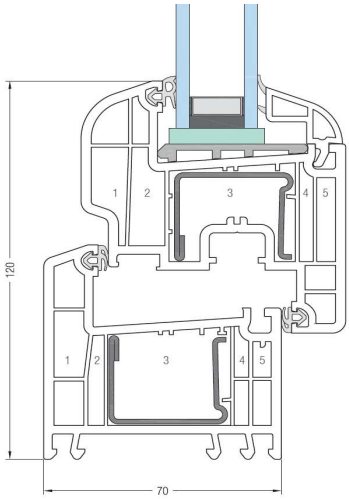
VALORI GENERALE ALE COEFICIENTULUI DE TRANSFER TERMIC IN PROFIL : U_f



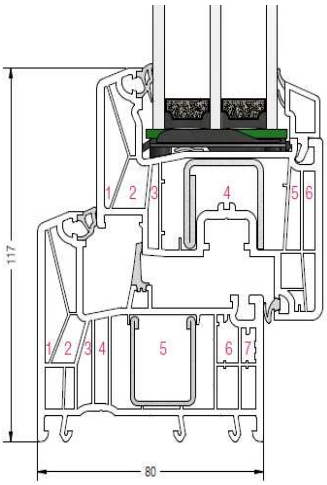
Euro Design 60
U_f = 1,6 W/m²K



Euro Design 70
U_f = 1,3 W/m²K

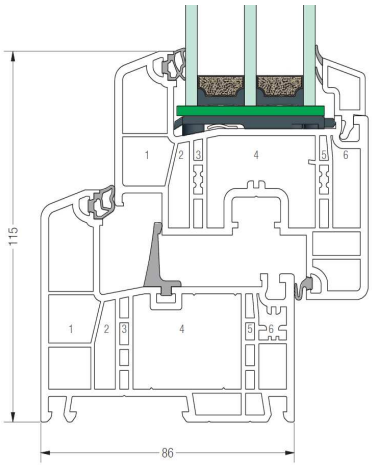


Brillant Design
U_f = 1,3 W/m²K



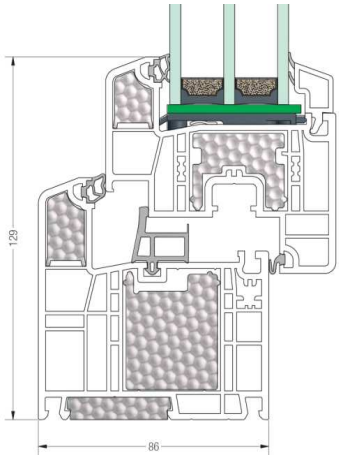
SYNEGO MD/AD

Garnitura mediana(MD)
$U_f \leq$ 1,0 W/m²K
Fara garnitura mediana (AD)
$U_f \geq$ 1.1 W/m²K



GENEO

Fara armare
U_f =1.0 W/m²K
Cu thermomodul(in camera armaturii)
U_f =0.86 W/m²K
Cu armare
U_f =1.1 W/m²K



GENEO PHZ

U_f = 0.8 W/m²K