



# BISCO GROUP TRAINING – 1 DAY (ENGLISH)

Online training  
27.09.2022 9.00-17.00h

For new BISCO-users or current BISCO-users who want to refresh their building physics background and increase productivity with BISCO by learning all functionalities & tricks

## 1. Introduction to heat transfer theory and implementation in the Physibel software

- Concepts of conduction – convection – radiation
- Link to the European standards (with focus on EN ISO 10077-2, EN ISO 12631 and EN ISO 6946)
- Implementation in the Physibel software: Colour types and conventions (Colour Database)

## 2. Geometric modelling in the Physibel software

- How to prepare a CAD-drawing for efficient input in BISCO?
- Program BiscoDxf : conversion of DXF > BMP
- Automatisations

## 3. Step-by-step exercises on window frame thermal transmittance $U_f$

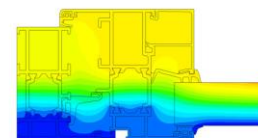
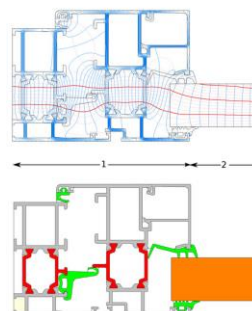
- Understanding the different parameters in the calculation of  $U_f$ -value according to EN ISO 10077-2 in BISCO:
  - Step-by-step manual procedure
  - Settings and Calculation
  - Graphic output
  - Text output
- Automatic procedure in BISCO:
  - from DXF to thermal report in 5 minutes
    - Colour database
    - EN ISO 10077-2 preparation
    - Automatic report functions
    - Batch calculations

## 4. Exercises on derived thermal properties and reporting (EN ISO 10077-1/2 and EN ISO 12631)

- Frame thermal transmittance ( $U_f$ )
- Glazing spacer linear thermal transmittance ( $\psi$ )
- Window thermal transmittance ( $U_w$ )
- Curtain wall thermal transmittance ( $U_{cw}$ )

## 5. Exercises on summer conditions and condensation

- Condensation zone – high relative humidity zone – temperature factor
  - Detailed radiation vs simplified radiation (BC\_SKY vs BC\_SIMPL)
- Summer behaviour of windows/curtain walls with BISCO



Thermal transmittance of frame (EN 10077-2)  
 $U_f = (Q/(t_i - t_e) - U_{p1} \cdot wp_1) / wf = 2.957 \text{ W/(m}^2 \cdot \text{K)}$   
 $Q = 10.320 \text{ W/m}$   
 $t_i = 20.00^\circ \text{C}$   
 $t_e = 0.00^\circ \text{C}$   
 $U_{p1} = 1.159 \text{ W/(m}^2 \cdot \text{K)}$  (right edge of bitmap)  
 $wp_1 = 0.1900 \text{ m}$  (distance no. 2)  
 $wf = 0.1000 \text{ m}$  (distance no. 1)



## REGISTRATION FORM

### TRAINING

Training: BISCO training – 1 day (ENGLISH)  
 Location: online  
 Scheduled day & time: 27.09.2022  
 9.00h – 12.30h and 13.30h-17.00h  
 Price (VAT not included) : 350.00 EUR

### PARTICIPANT INFORMATION:

PARTICIPANTS NAME: .....  
 MAIL ADDRESS:.....

### INVOICE INFORMATION:

COMPANY NAME: .....  
 REFERENCE (optional): .....  
 VAT-number (EU-based company's): .....  
 MAIL ADDRESS:.....  
 ADDRESS LINE 1: .....  
 ADDRESS LINE 2: .....  
 ADDRESS LINE 3: .....  
 ADDRESS LINE 4:.....  
 COUNTRY: .....

NAME/SIGNATURE or COMPANY STAMP

DATE

Please return this registration form to mail@physibel.be by **08/09/2022** at the latest.  
 You will receive an electrical invoice for the registration fee of 350.00 euros (per person) + VAT (if applicable).  
 When the payment is done, your registration is completed and you will receive the course information.

If the minimum number of participants is not attained the organizer reserves the right to postpone the training.  
 Registration can be transferred to another person at any time.