

4.1.3. Glazing library

The TRNSYS 18 package includes now a glazing systems library based on the “add-on” library of TRNSYS 17. The glazing data base contains over 230 different glazing systems (e.g. heat or solar protection glazing, double or triple glazing) based on detailed spectral provided by manufactures.

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The glazing systems library was generated with the program Window 7.4.6.0 of the Lawrence Berkeley National Laboratory (<http://windows.lbl.gov/>). Therefore, the new standard files of TRNSYS 18 (TRNSYS18.std and TRNSYS18_evis.ssp) were used. In these files, the integral characteristic of transmittance and reflectance for the visible range is based on the energy spectrum required by the 2 band solar radiation model of Type 56. For most other standard files available for the program Window, these integral characteristics for the visible wave lengths do not represent the entire visible range, owing to spectral sensitivity of the human eye.

For the new glazing data base the syntax of the glazing property data is extended to include the used standard file and the visible transmittance owing to spectral sensitivity of the human eye which can be helpful for selecting the radiance material for daylight simulation.

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BERKELEY LAB WINDOW v7.4.6.0 DOE-2 Data File : Multi Band Calculation : generated with TRNSYS18.std
Unit System : SI
Name       : DOE-2 WINDOW LIB
Desc      : GU_ClimaGuard_N_#3_Ar90
Window ID : 3201
Tilt      : 90.0
Glazings  : 2
...
...
SHGC      0.660  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/A  N/A
Tvis_daylight: 0.800

Layer ID#      33000      33009      0      0      0      0

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Figure 2: Glazing system property data syntax

It is possible to use data from glazing data bases which weren't created with the TRNSYS18 standard. However, using two glazing properties which were generated with different standards in one zone isn't allowed. The reason for introducing a TRNSYS18 standard file is to allow a more accurate simulation of solar radiation of two windows with high selective glazing properties (e.g. sun protection glazing) in series.

The “Description” of a glazing system (e.g. GU_ClimaGuard_N_#3_Ar90 in Figure 2) in the library is made up of the following composition:

YY_name_NN_filling

YY - Manufacturer code
(GU...Guardian, IP...Interpane, SG...SaintGobain, GT Glas Trösch)

name - Glazing system name

NN - Coating position e.g #3 (numeration starts on the outer face)

filling - Filling between glass panels