Changes to Argos version 4.12
24 January 2006

Glass breakage model in Argos

A simple model for the breakage of glass (windows) has been added to the program. Note that the breakage of windows due to fire is a very complicated process. ***Patrick Pagni***[1] *has given a* good review of this subject.

A window will fully open if the smoke layer is below the upper rim of the window and the temperature in the smoke layer is above the fail criterion given for the window.

The fail criterion for a window is the set under **Components → Building components**, see figure 1. The field is already in Argos, but it has not been used until now. Currently there are 2 windows in the database, unless you have created more windows. The fail criterion for both windows is set to 140°C, but we would recommend using a higher value for fire simulations. A value of 300°C could be used.
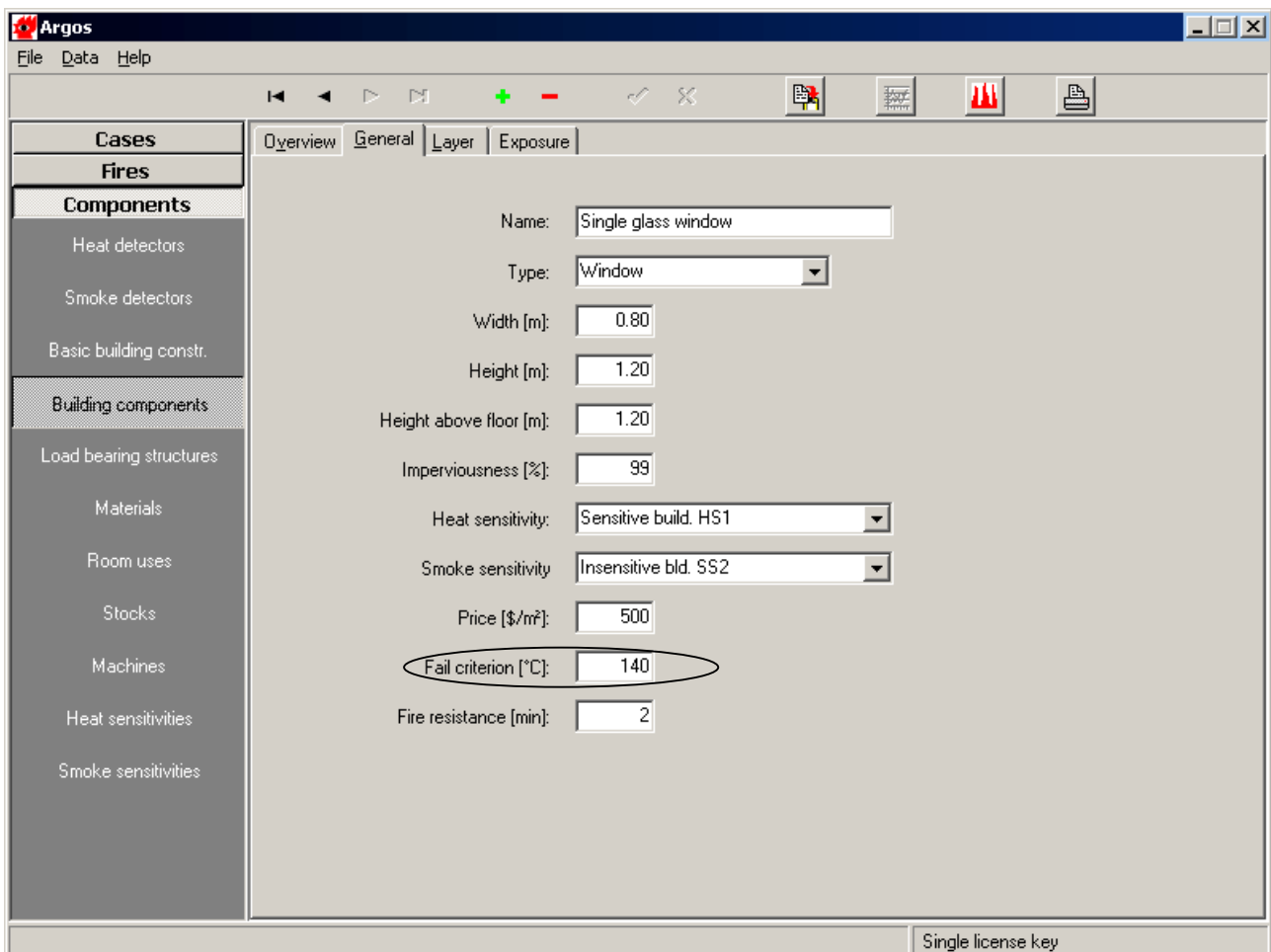

Figure 1 Setting the fail criterion for a window

The other types of building component also have a fail criterion, but only windows will open during a simulation due to temperature. **Please be aware** that existing scenarios where windows were

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[1] Patrick Pagni, Thermal glass breakage. The International Association of Fire Safety Science - Proceedings of the seventh international symposium, pp. 3-22, 16-21 June 2002, Worcester, MA, USA..

defined could be affected by this change to the program. If you want to avoid that any windows will open at all, set the fail criterion to 5000°C for all windows.

A typical message when the window breaks is shown in figure 2. If the window breaks it is similar to an opening.
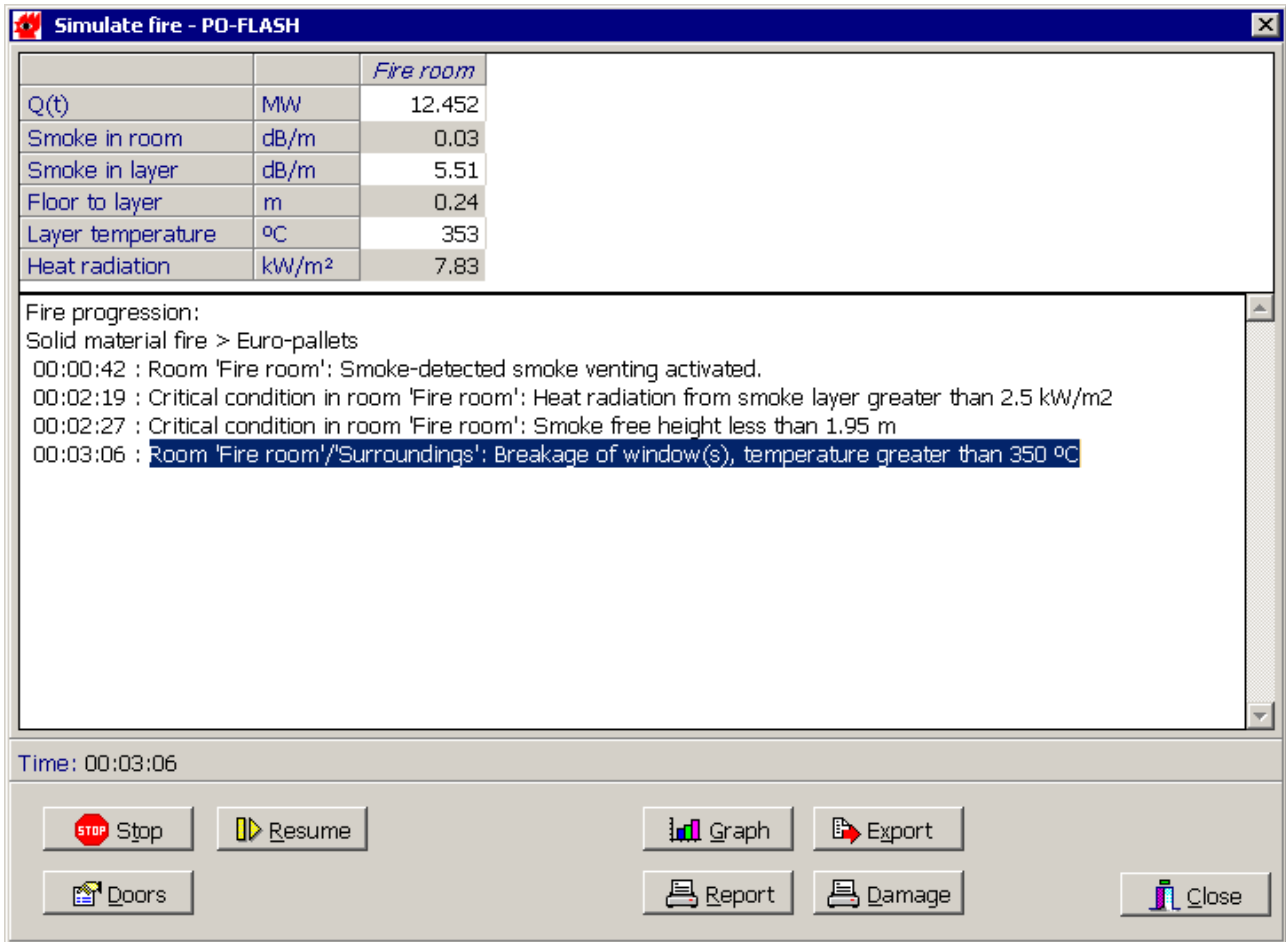

Figure 2 Windows breaks after 3.06 minutes due to high temperature in smoke layer

Bug fixes

On some computers with hyper threading processor Argos could freeze during a calculation if "Stop on event" was turned on. This problem has been solved.

We recommend you to install this version of Argos if you have a hyper threading processor in your machine (see the next page)

We also recommend you to replace Interbase with Firebird, if you have a hyper threading processor, as this will speed up the running of Argos. Look for an icon in the Windows Control panel to see which version is installed. To install Firebird, first uninstall Interbase and then reinstall Firebird from the Argos CD or the installation file on our web-site. Remember to back-up **argos.gdb** before doing any changes (see page 155 in the Argos User's Guide)

How do I determine if my processor single threaded or hyper threaded?

Open the task manager in windows by right-clicking on the taskbar and then click on Task Manager (for non English version of Windows the names are different, e.g. "Aktivitetshanteraren" in Swedish)

Click on the third tab, performance. If you get a window similar to figure 1, you computer is single threaded. If you get a window similar to figure 2, you processor is hyper treaded. This is also the case if you have more than 1 processor in your machine.
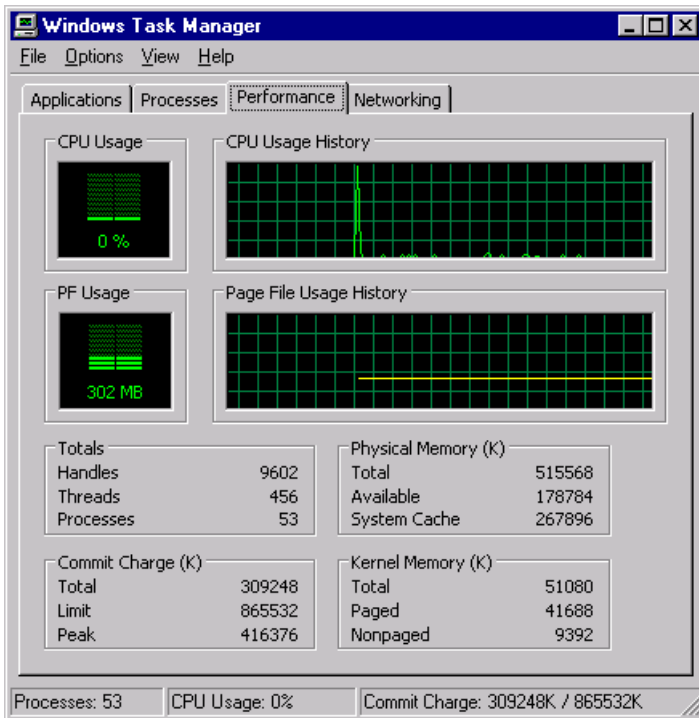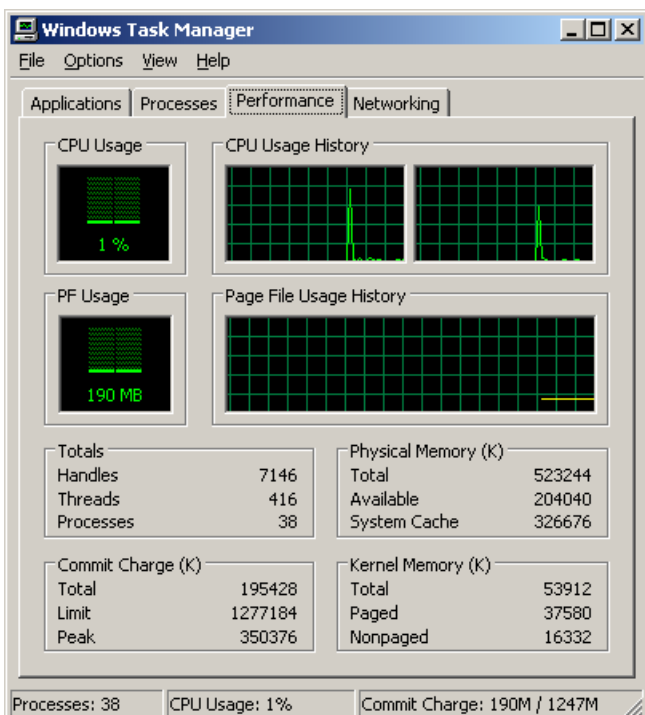

Figure 1. Single threaded processor

Figure 2. Hyper threaded processor