

Criteria for the classification of cladding systems (BR 135)

BS 8414 parts 1 and 2 specify test methods but not classification criteria. For this reason, the UK has introduced new guidance to support the classification of systems tested according to the key standards in question. The classification criteria and the procedure by which they are applied are laid out in standard BR 135: Fire performance of external thermal insulation for walls of multistorey buildings.

The tested system is assessed against three criteria:

- External fire spread
- Internal fire spread
- Mechanical performance

The classification only applies to the system as tested and detailed in the classification report. As such, the classification report can only cover the specific system features tested. To evaluate each of the various criteria, a range of parameters must be established and measured:

Fire-spread start time, t_s	Fire spread is measured by Type K thermocouples installed at levels 1 and 2. The fire-spread start time (t_s) is the first point at which any one of the external level 1 thermocouples registers a temperature that is 200°C or more higher than the t_s temperature and remains so for a period of at least 30 seconds. The t_s temperature is the average temperature reading taken by the level 1 thermocouples in the 5 minutes preceding the lighting of the combustion chamber.
External fire spread	There is deemed to have been a failure owing to external fire spread if any of the external level 2 thermocouples takes a temperature reading that remains more than 600°C higher than the t_s temperature for a period of at least 30 seconds, and this within 15 minutes of the start time (t_s).
Internal fire spread	There is deemed to have been a failure owing to internal fire spread if any of the internal level 2 thermocouples takes a temperature reading that remains more than 600°C higher than the t_s temperature for a period of at least 30 seconds, and this within 15 minutes of the start time (t_s). Furthermore, for systems tested under part 2 of the standard, there is deemed to have been a failure owing to internal fire spread if the system burns in such a way that the fire reaches the internal surface of the test piece and a continuous flame can be seen, for a period of at least 60 seconds, on the internal surface, at least 0.5m above the combustion chamber, and this within 15 minutes of the start time (t_s).
Mechanical performance	No failure criteria have been established for mechanical performance. However, the continued burning of the system following the extinction of the ignition source will be included in both the test and classification reports, together with details of any system collapse, detachment, delamination, flames, dripping, etc. Mechanical performance must be considered an integral part of the general risk assessment of the system under test.