

Technical guidance

Testing

MCT Brattberg Cable Transits are tested against fire resistance to both A and H Classification.

Test procedure

The temperature regime in the furnace during an A-Class fire is similar to that of a cellulose fire and during an H-Class fire similar to that of an oil fire. In a H-Class fire the increase in temperature is much faster than that of an A-Class fire. The cable penetration must be tested both Vertically and Horizontally in order to be approved for general usage by the leading certifying authorities.

Location of thermocouples

The temperature is constantly measured at different points on the cables and on the face of the penetration during the fire test. How many thermocouples, what kind and their position on the test specimen is regulated by the standards.

Integrity

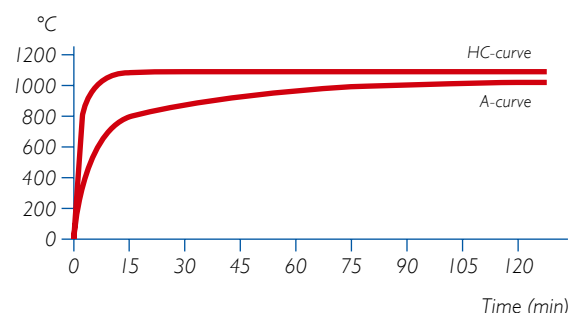
The integrity of the cable penetration must be maintained throughout the test period (A-Class 60 Minutes, H-Class 120 Minutes). The occurrence of flaming on the unexposed face or ignition of a cotton wool pad applied to any gap or fissure that appears in the test specimen constitutes a loss of integrity.

Insulation

The limit of temperature increase on the non fire side of the penetration is stipulated in EN 1366-3 or IMO A754(18).

The maximum acceptable temperature increase at any point on the penetration during the test is 180 °C.

An approved fire test gives the penetration a classification where the fire is specified (A-H-Class Fire) and the time for which the penetration was able to resist the fire in respect of the maximum allowed temperature increase on the non fire side of the penetration (180 °C).



For example, a penetration that withstands an H-Class fire for 120 minutes is classed as H120 and a penetration that withstands an A-Class fire for 60 minutes is classed A60.

Fire classes

If the 180 °C temperature increase is not exceeded during the stipulated time the penetration is approved and can be classified.

| Class | Test requirements attained | |
|------------|----------------------------|----------------------|
| | Integrity (minutes) | Insulation (minutes) |
| A0 | 60 | 0* |
| A15 | 60 | 15 |
| A30 | 60 | 30 |
| A60 | 60 | 60 |
| H0 | 120 | 0* |
| H0-400 °C | 120 | 120* |
| H60 | 120 | 60 |
| H120 | 120 | 120 |
| JET | | |
| J15 | 60 | 15 |
| J30 | 60 | 30 |
| J45 | 60 | 45 |
| J60 | 60 | 60 |

* A0 and H0 relates to no temperature restriction on the non-fire side. H0-400 °C relates to a restriction of 400 °C maximum temperature increase on the non-fire side. A0-H0 and H0-400 °C must also meet the division integrity requirements, not allowing cracks or opening to develop through which flames or hot gasses can pass.