

Fire load values of cables

Inclusion in the calculation of fire loads on and in buildings

Current regulations and standards governing the assessment and restriction of consequential fire risks vary from country to country. In Germany, the valid state building regulations stipulate the inclusion of specific thresholds with regard to the accumulation of combustible parts of the building installation – which also includes cables – directly connected to the building.

Flexible cables are not intended for fixed installation in buildings. However, the approximate fire load of such cables can be calculated as follows:

- look up the “Approx. weight in kg/km” in the ordering table on the relevant product page of the catalogue and
- subtract the copper content (see column “Copper index in kg/km” in the catalogue) from this value. This results in the mass of the combustible insulation and sheathing material for the relevant article in kg/km,
- divide this value by a factor of 1000 to obtain the combustible mass in kg/m,
- multiply this value by the material-specific calorimetric value (in kWh/m or MJ/m) of the cable or wire as per table below.

RESULT: Average fire load value of this cable in kWh/m or MJ/m:

Material type	Fire load value in kWh/kg Average	Fire load value in MJ/kg Average
PVC	5.8	21
PE	12.2	44
PS	11.5	42
PA	8.1	26
PP	12.8	46
PUR	6.4	23
TPE-E	6.3	23
TPE-O	7.1	26
NR	6.4	23
SIR	5.0	18
EPR	6.4	23
EVA	5.9	21
CR	4.6	17
CSM	5.9	21
PVDF	4.2	15
ETFE	3.9	14
FEP	1.4	5
PFA	1.4	5
PTFE	1.4	5
HFFR	4.8	17
HFFR cross-linked	4.2	15

NOTE: The above calculation can only be used for cables of which the combustible content is made up entirely of the same material type and which contain no additional metals other than the copper content. Specific fire load values for the following products are available in tabular format on request: ÖLFLEX® CLASSIC 100 H, ÖLFLEX® CLASSIC 110 H, ÖLFLEX® CLASSIC 110 CH, ÖLFLEX® CLASSIC 130 H, ÖLFLEX® CLASSIC 135 CH. Conversions: 1 kWh/m = approx. 3.6 MJ/m; 1 MJ/m = approx. 0.277 kWh/m.