

T27 Selection Table

T27: Calorific values calculation of cables and wires

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Regarding evaluation of limitation of the risk in case of fire inside of buildings, actually each country does have its own codes and requirements. In Germany we do have federal regulations and safety standards about fire aspects of public buildings. There are certain limits regarding acceptable grouping of combustable construction materials including cables and wires attached to the building. More details see appendix 1 of VDE 0108 part 1.

Flexible cables are not intended for building wiring purpose. Nevertheless its specific fire load is also calculable and can be done as follows:

- Take cables weight (in kg/km) of the relevant LAPP Catalogue page.
- Subtract "Copper weight" (kg/km) from this value.
- Given difference in kg/km represents the value of combustable material of that cable or wire in kg/km.
- Divide that value by factor "1000" shows the value in kg/m.
- Now multiply that value by its specific fire load/calorific value in kWh/kg or MJ/kg shown by table 27-1.

The result shows cables specific fire load value in kWh/m or in MJ/m.

Basic material type	Fire load/calorific value in kWh/kg Average	Fire load/calorific 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: This calculation is applicable to cables and wires made of one common type of a combustable insulation and sheathing material and copper only. Charts about article relevant fire load values are available for ÖLFLEX® CLASSIC 100H, ÖLFLEX® CLASSIC 110H, ÖLFLEX® CLASSIC 110 CH, ÖLFLEX® 120 H, ÖLFLEX® 120 CH, ÖLFLEX® FD 820 H and ÖLFLEX® FD 820 CH by demand. Conversion factors: 1kWh/m = ca. 3.6MJ/m; 1MJ/m = ca. 0.277 kWh/m.

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