

| Cross section of line conductor S [mm <sup>2</sup> ]                                                                                                                                                                                                                                                                                                                                                | Minimum cross section of the corresponding protective conductor [mm <sup>2</sup> ] |                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                     | If the protective conductor is of the same material as the line conductor          | If the protective conductor is not of the same material as the line conduct |
| S" 16                                                                                                                                                                                                                                                                                                                                                                                               | S                                                                                  | $\frac{k_1}{k_2} \cdot S$                                                   |
| 16 < S" 35                                                                                                                                                                                                                                                                                                                                                                                          | 16*                                                                                | $\frac{k_1}{k_2} \cdot 16$                                                  |
| S > 35                                                                                                                                                                                                                                                                                                                                                                                              | $\frac{S^*}{2}$                                                                    | $\frac{k_1}{k_2} \cdot \frac{S}{2}$                                         |
| <p>Where</p> <p>k<sub>1</sub> is the value of k for the line conductor, selected from Table 1 Chapter 1.4 according to the materials of the conductor and insulation;</p> <p>k<sub>2</sub> is the value of k for the protective conductor.</p> <p>* For a PEN conductor, the reduction of the cross section is permitted only in accordance with the rules for sizing of the neutral conductor.</p> |                                                                                    |                                                                             |

For a more accurate calculation and if the protective conductor is subjected to adiabatic heating from an initial known temperature to a final specified tem-perature (applicable for fault extinction time no longer than 5s), the minimum cross section of the protective conductor S<sub>PE</sub> can be obtained by using the following formula:

- where:
- S<sub>PE</sub> is the cross section of the protective conductor [mm<sup>2</sup>];
  - I is the r.m.s. current flowing through the protective conductor in the event of a fault with low impedance [A];
  - t is the trip time of the protective device [s];

Table 2: Cross section of the protective conductor