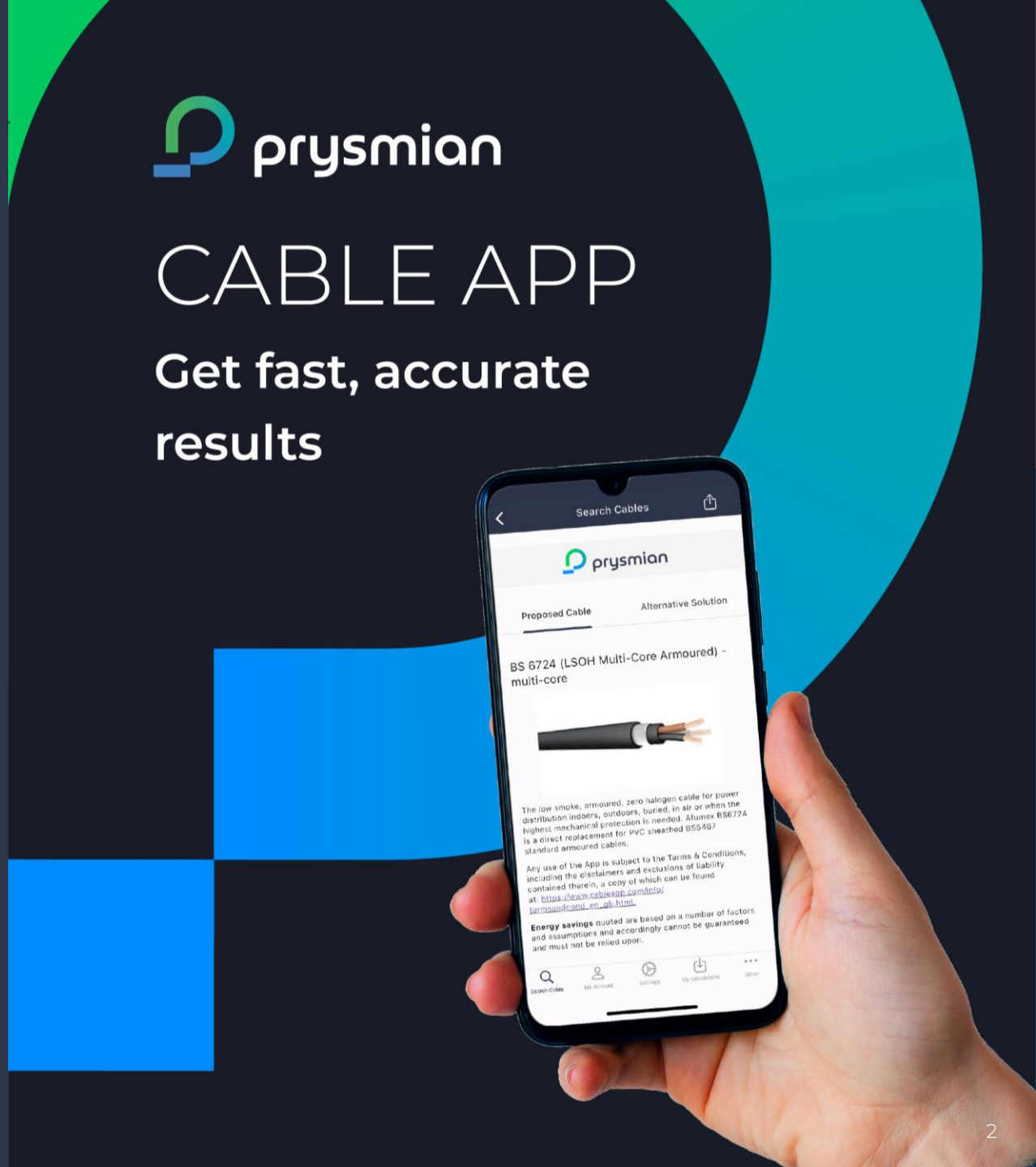
CableApp

How to Select the Right Cable

What is CableApp?

CableApp helps you quickly select the correct cable based on your installation.

- Fully compliant with the latest wiring regulations including BS 7671 (18th Edition Amendment 4)
- Two cable calculation methods
  - **By cable type** - where you can choose the product family, voltage, installation method, etc.,
  - **Cable Calculator -** select the installation parameters and CableApp suggests what cable to use – and the best alternative options
- Helps to calculate potential energy savings or annual CO2 emissions.

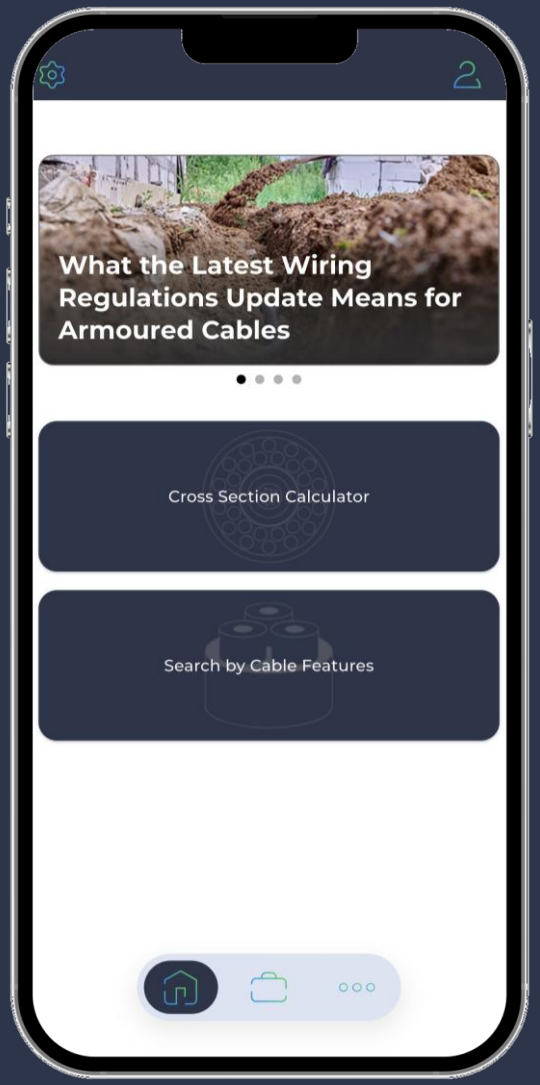


How to use CableApp

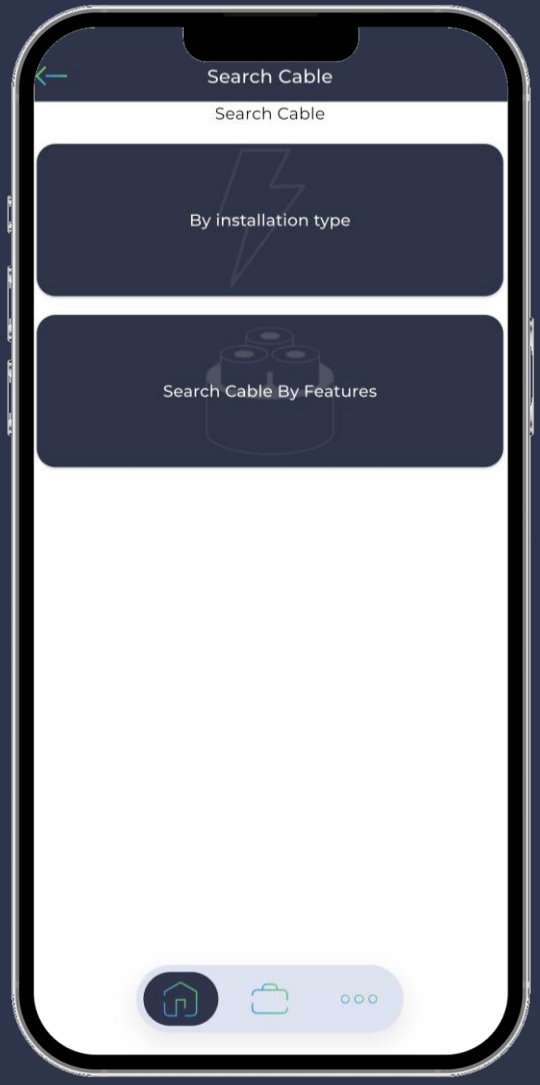
Step 1: Select your country

Choose your location to ensure calculations are aligned with local standards and regulations.

Step 2: Choose your calculation method



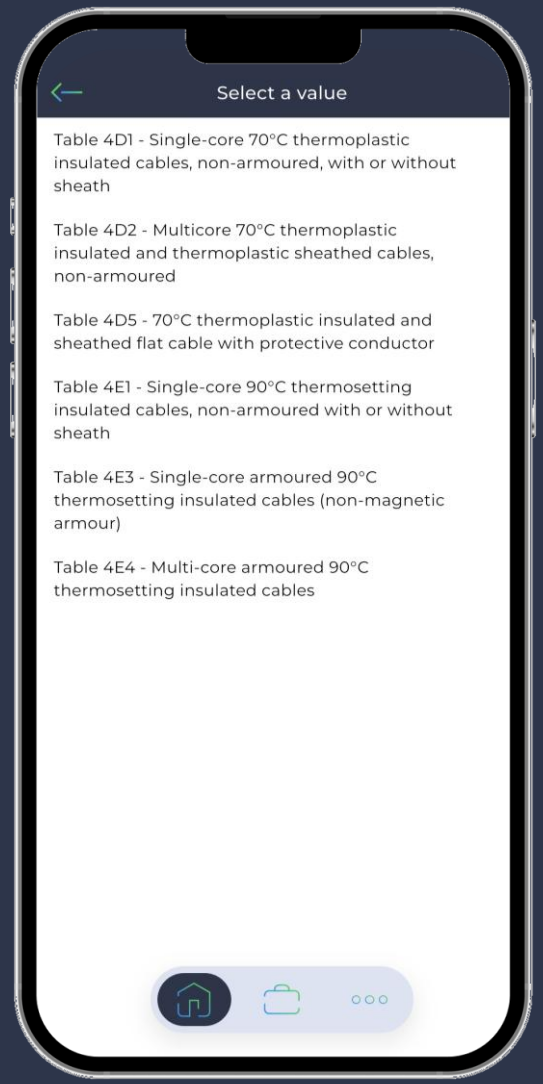
Cross Sections Calculator is preferred



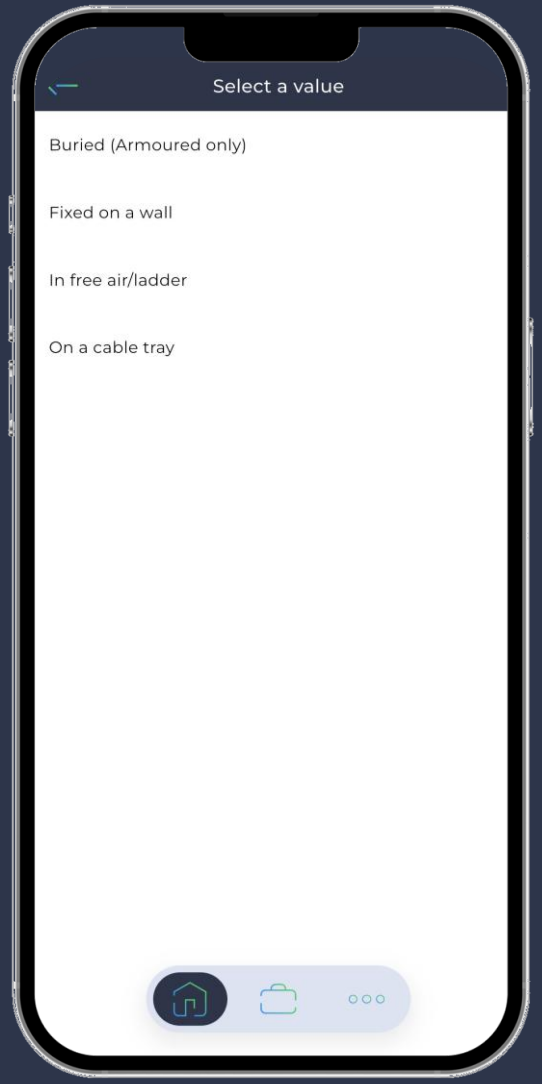
Then select By installation type

This ensures the most accurate cable selection based on real installation conditions.

Step 3: Select Installation Parameters



1 - Select the current rating table

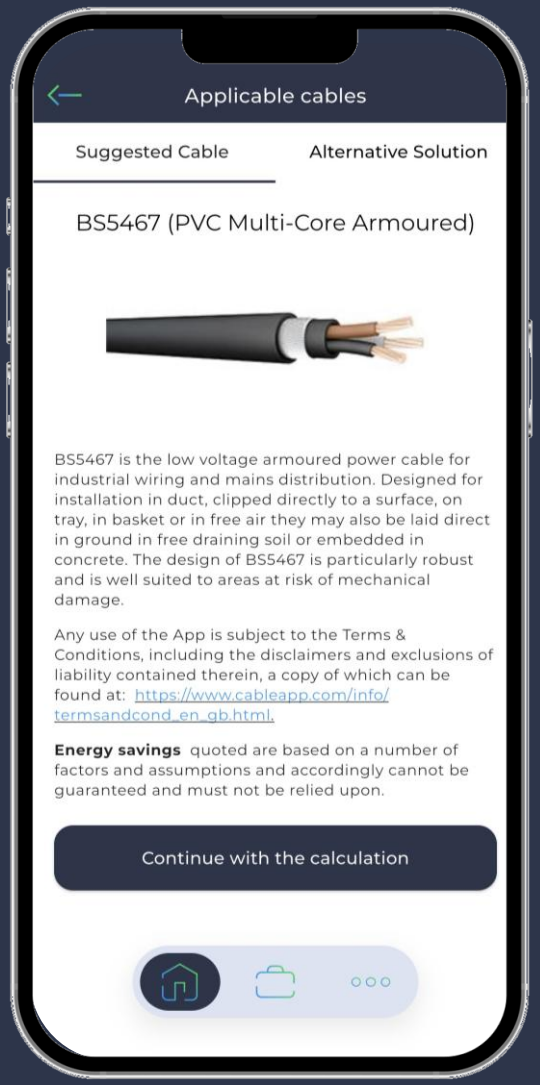


2 - Select the installation method

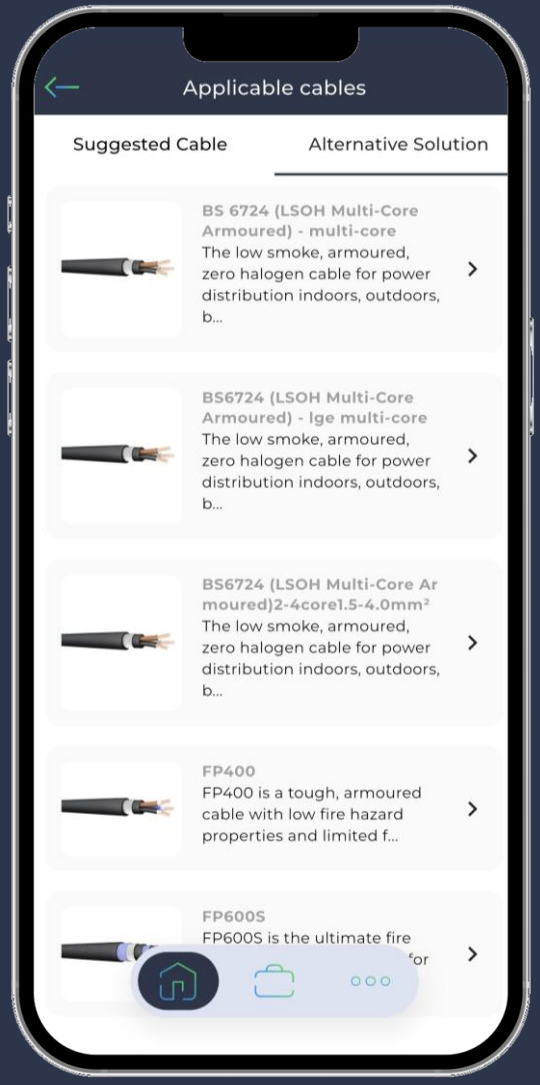
3 - Select the Reference Method

These selections determine how the cable performs in real conditions.

Step 4: Select the Right Cable



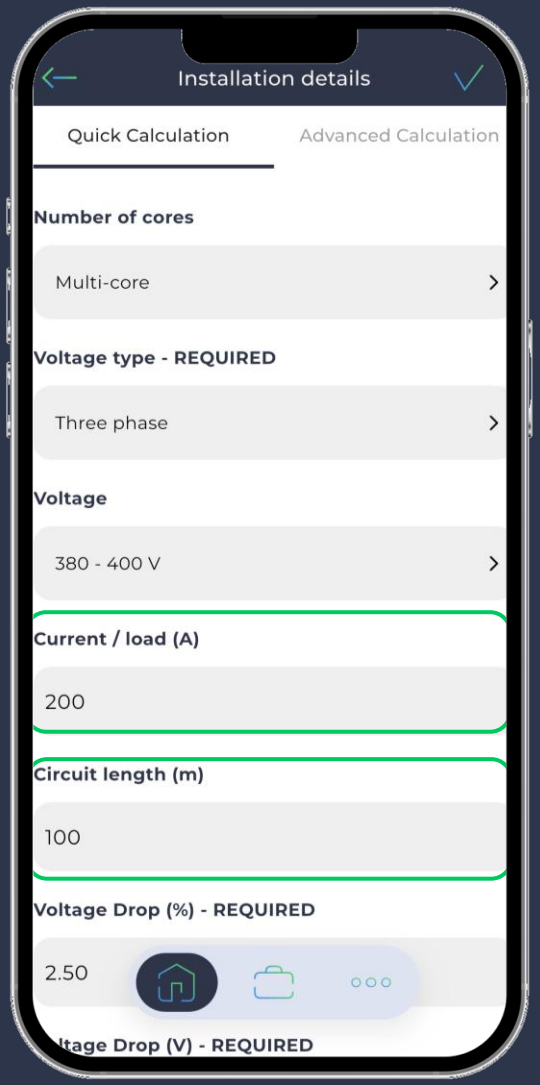
Review the suggested cable

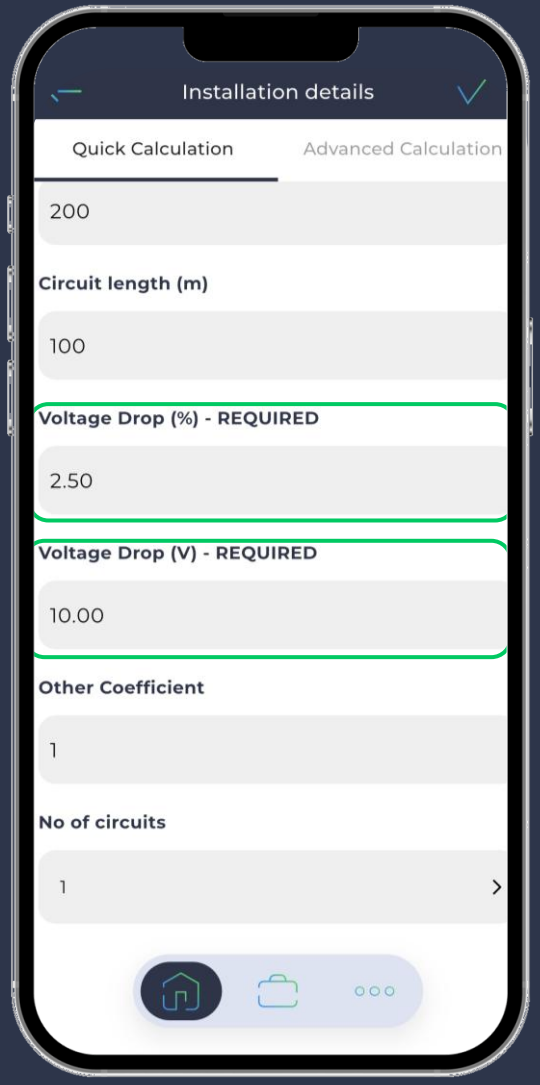


Review the alternative cables

CableApp will recommend the most suitable cable based on your inputs.

Step 5: Enter Installation Details

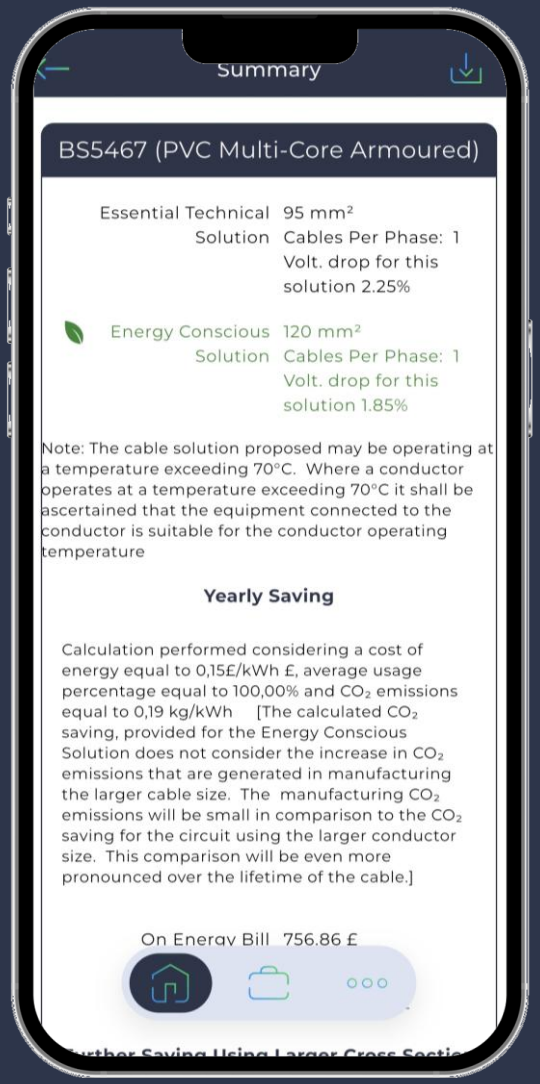


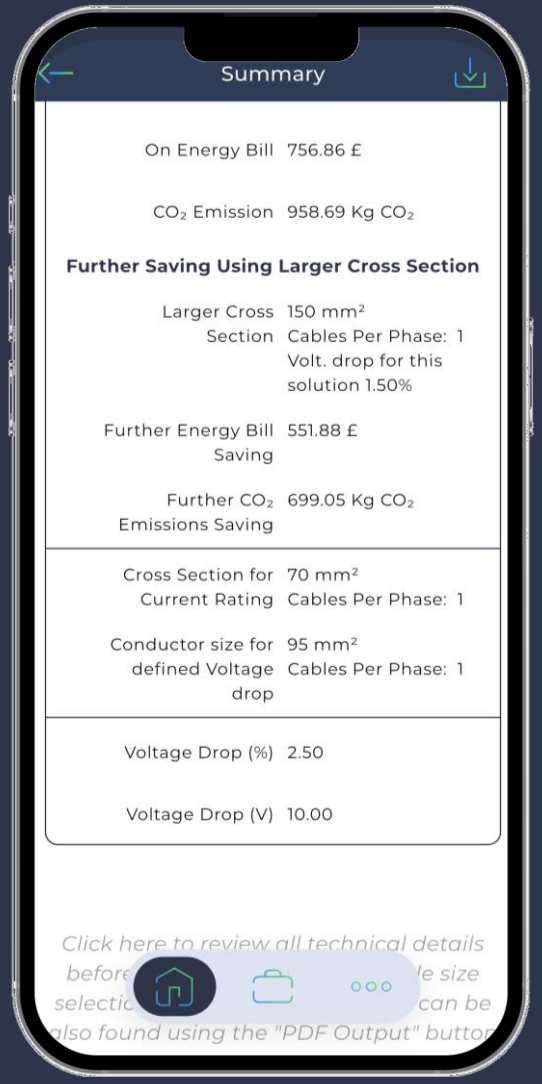


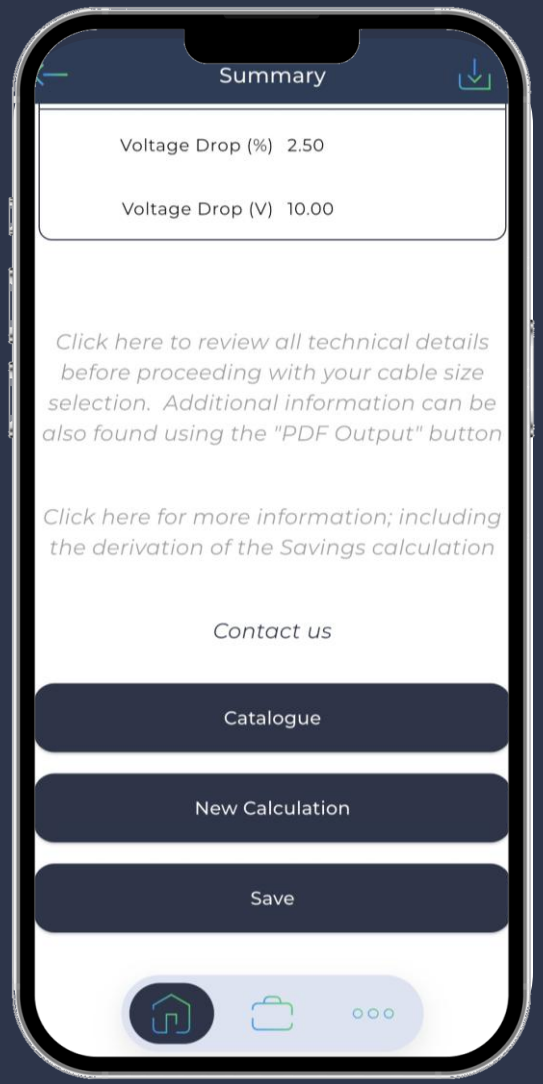
Information required:

1. Load (current)
2. Voltage
3. Cable length
4. Voltage drop requirement

Step 6: Review the results







CableApp calculates the best solution based on both current rating and voltage drop.

Real Installation Examples

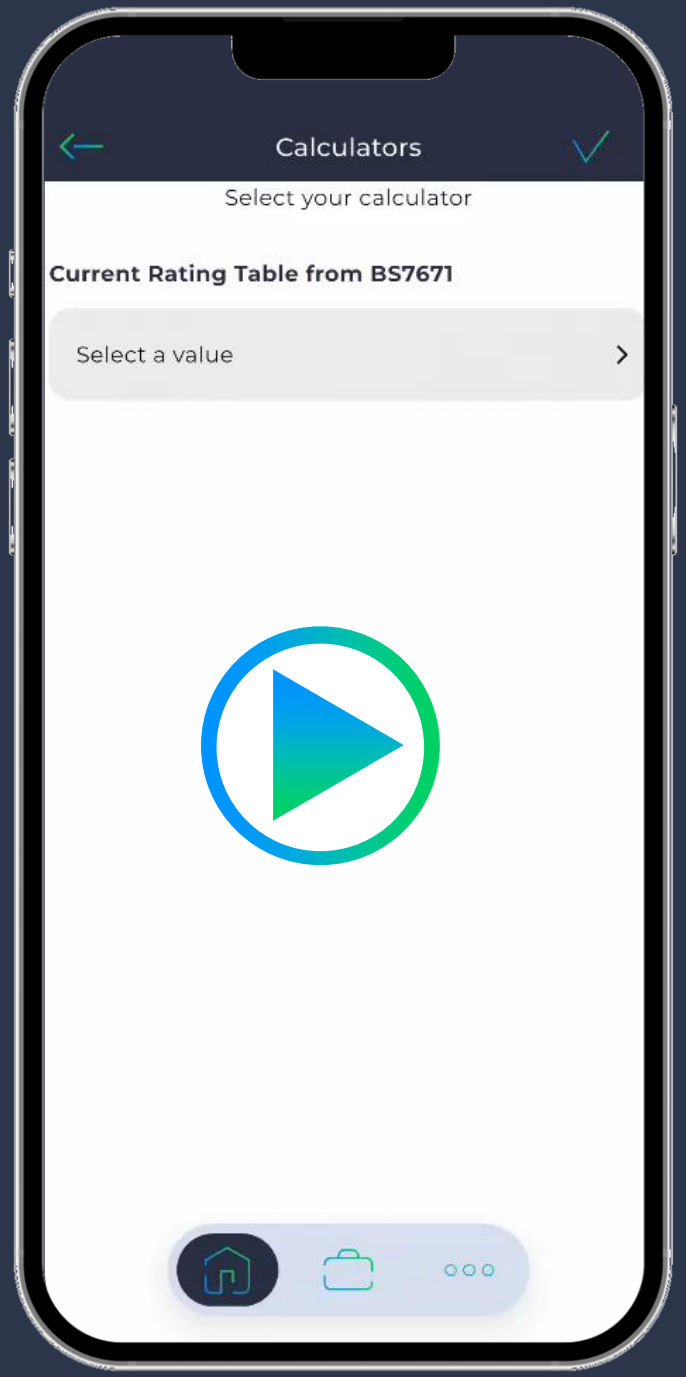
Armoured SWA (BS 5467)

Scenario: Outdoor or industrial installation (e.g. cable tray or buried)

CableApp helps you:

- Select appropriate cable sizes based on installation conditions
- Apply current rating and voltage drop calculations
- Reflect latest updates to BS 7671 (including Amendment 4)

Top Tip: Installation method (e.g. duct vs buried) can significantly affect cable selection.



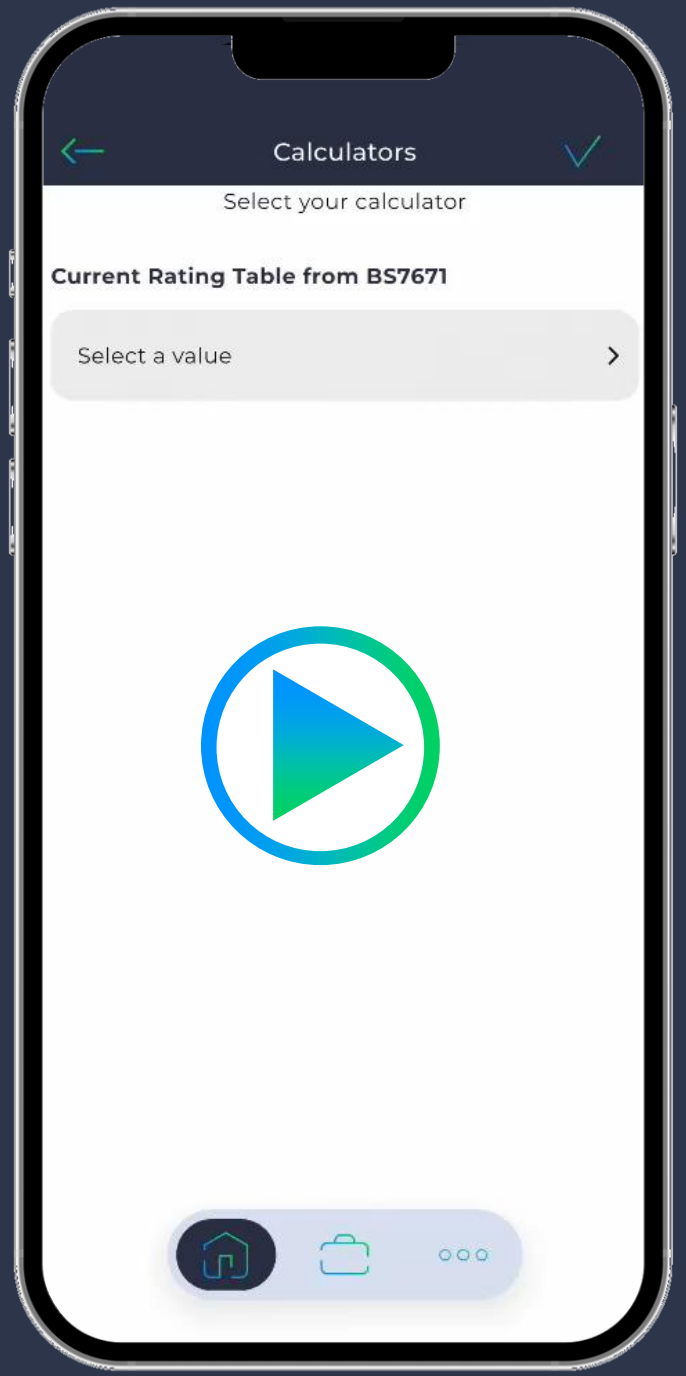
Building Wire (6242Y)

Scenario: Domestic circuits such as sockets, immersion heaters or electric showers

CableApp helps you:

- Select the correct cable size
- Account for installation types (e.g. insulated walls)
- Check voltage drop on longer runs

Top Tip: Longer cable runs may require a larger conductor size. CableApp will check this automatically



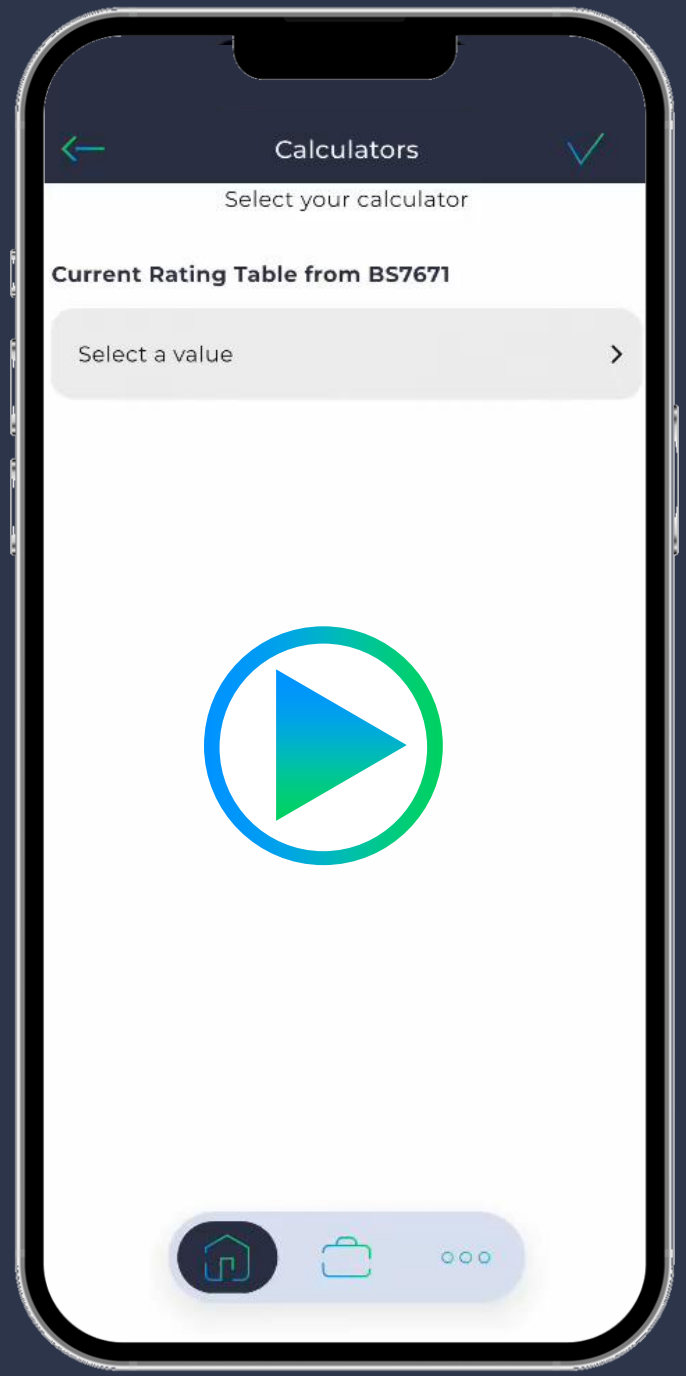
FP200 Gold

Scenario: Fire alarms and emergency lighting systems

CableApp helps you:

- Select suitable fire performance cables based on installation inputs
- Compare available cable options
- Support cable sizing for fire alarm and emergency lighting circuits
  - **Final cable selection should be verified against system design requirements and relevant standards**

Top Tip: Consider using the suggested alternative cables to compare solutions for your installations.



How CableApp calculates your installations needs

Basic calculation or Refinement of calculation

CableApp requires the following parameters as a minimum:

- Voltage (type) – d.c., single phase or three phase
- Refinement of the Voltage, if the default value is incorrect
- Current Rating – i.e. the load required
- Circuit length - in metres
- The voltage drop, either as a percentage or a value in volts

CableApp will use the conditions in this table for installation, unless the user alters these values using the drop-down menus. These default values are given in the table below (from BS7671)

Parameter	Condition
Ambient Air temperature	30°C
Ambient Ground temperature	20°C
Base installation depth (for cables installed in the ground)	0.7m
Base soil resistivity (for cables installed in the ground)	2.5 K.m/W

Table of Current Ratings Tables and Applicable Prysmian Products

Cable Type	Current Rating Table Reference (BS7671)	Volt Drop Table Reference (BS7671)	Cable Type
Single-core 70°C thermoplastic insulated cables, non-armoured, with or without sheath	4D1A	4D1B	6491X, 6181Y
Multicore 70°C thermoplastic insulated and thermoplastic sheathed cables, non-armoured	4D2A	4D2B	FP200 Gold; FP Plus, LSX
70°C thermoplastic insulated and sheath flat cable with protective conductor	4D5	4D5	6242Y
Single-core 90°C thermoplastic insulated cables, non-armoured, with or without sheath	4E1A	4E1B	6491B, BS7889; FP100
Single-core armoured 90°C thermosetting insulated cables (non-magnetic armour)	4E3A	4E4B	BS5467 (PVC); BS6724 (LSOH)
Multi-core armoured 90°C thermosetting insulated cables	4E4A	4E4B	BS5467 (PVC); BS6724 (LSOH); FP400 & FP600S (BS7846)

Correction Tables Used

Rating Factor Type	Correction Table Reference in BS7671	Applicable Reference Method & Ratings Table(s)
Rating factors (Ca) for ambient air temperatures other than 30°C Ambient	Table 4B1	Ref Method C, E & F Tables: All
Rating factors (Ca) for ambient ground temperatures other than 20°C Ambient	Table 4B2	Ref Method D1 & D2 Table 4E4A
Rating factors (Cs) for cable buried direct in the ground or in an underground conduit system for soil resistivity's (for Ref Method D)	Table 4B3	Ref Method D1 & D2, Table 4E4A
Rating Factors (Cd) for depths of laying other than 0.7m for direct buried cables and cables I buried ducts	Table 4B4	Ref Method D1 & D2 Table 4E4A
Rating factors for one circuit or one multicore cable or for a group of circuits of multicore cables, to be used with current-carrying capacities of Tables 4D1A to 4J4A	Table 4C1	Ref Method A, B, C, E or F (appropriately) Tables 4D1A, 4D2A, 4D5; 4E1A, 4E3A & 4E4A
Rating factors for more than one circuit, cables buried directly in the ground (for Ref Method D, Table 4E4A)	Table 4C2	Ref Method D2 Table 4E4A
Rating factors for more than one circuit, cables in ducts buried directly in the ground (for Ref Method D, Table 4E4A)	Table 4C3	Ref Method D1 Table 4E4A
Rating Factors for groups of more than one multicore cable, to be applied to reference current-carrying capacities for multicore cables in free air (Ref Method E, for Tables 4D2A, 4D5 & 4E4A)	Table 4C4	Ref Method E, Tables 4D2A, 4D5 & 4E4
Rating Factors for groups of more than one single-core cable, to be applied to reference current-carrying capacities of single-core cables in free air (Ref Method F, for Tables 4D1A, 4E1A & 4E3A)	Table 4C5	Ref Method F, Tables 4D1A, 4E1A & 4E3A

Calculation

CableApp carries out multiple calculations, to verify the cable size meets both current rating and voltage drop requirements.

For example:

- A small size cable may meet the current rating stipulated by the designer.
- However if it is a long circuit, a larger conductor size will be required to meet the specified the voltage drop.

Cable App will calculate the size required to meet both criteria and proposes the larger of the two calculations as the Technical Solution.

Energy Efficiency

Savings can be made by increasing the conductor size above that required to meet the design criteria.

Increasing the conductor size will reduce the energy losses in the circuit, which reduces running costs.

However, there is an offset against the increase in initial installation costs of using a larger cable size.

CableApp will calculate a proposed “Energy Conscious Solution”, advising the potential annual cost and CO2 emissions savings over the “Technical Solution”.

Further information regarding this calculation can be found on the results page and pressing “Click here for more information, including the derivation of the savings calculation”. Alternatively select the “Info” option from the “Settings” menu

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