



“Simitec - Revealing future of measuring”<sup>1</sup>

## KOONTI (Digital data compilation software) (Manual)

BA 1 3C X1 F1	BA 1 3C X1 F2	BA 1 3C X1 H1	BA 1 3C X1 HIU
BA 2 3C X1 F1_Dead	BA 2 3C X1 F2_Dead	BA 2 3C X1 H1_Dead	BA 2 3C X1 HIU_Dead
BA 3 3C X1 F1	BA 3 3C X1 F2	BA 3 3C X1 H1	BA 3 3C X1 HIU
BA 4 3C X1 F1	BA 4 3C X1 F2	BA 4 3C X1 H1	BA 4 3C X1 HIU
BA 5 3C X1 F1_Dead	BA 5 3C X1 F2_Dead	BA 5 3C X1 H1_Dead	BA 5 3C X1 HIU_Dead
BA 6 3C X1 F1	BA 6 3C X1 F2	BA 6 3C X1 H1	BA 6 3C X1 HIU
BA 7 3C X1 F1	BA 7 3C X1 F2	BA 7 3C X1 H1	BA 7 3C X1 HIU
BA 8 3C X1 F1	BA 8 3C X1 F2	BA 8 3C X1 H1	BA 8 3C X1 HIU
BA 9 3C X1 F1	BA 9 3C X1 F2	BA 9 3C X1 H1	BA 9 3C X1 HIU
BA 10 -3C X1 F1	BA 10 -3C X1 F2	BA 10 -3C X1 H1	BA 10 -3C X1 HIU
BA 11 -3C X1 F1	BA 11 -3C X1 F2	BA 11 -3C X1 H1	BA 11 -3C X1 HIU
BA 12 -3C X1 F1	BA 12 -3C X1 F2	BA 12 -3C X1 H1	BA 12 -3C X1 HIU
BA 13 -3C X1 F1	BA 13 -3C X1 F2	BA 13 -3C X1 H1	BA 13 -3C X1 HIU
BA 14 -3C X1 F1	BA 14 -3C X1 F2	BA 14 -3C X1 H1	BA 14 -3C X1 HIU
BA 15 -3C X1 F1	BA 15 -3C X1 F2	BA 15 -3C X1 H1	BA 15 -3C X1 HIU
BA 16 -3C X1 F1	BA 16 -3C X1 F2	BA 16 -3C X1 H1	BA 16 -3C X1 HIU
BA 17 -3C X1 F1	BA 17 -3C X1 F2	BA 17 -3C X1 H1	BA 17 -3C X1 HIU
BA 18 -3C X1 F1	BA 18 -3C X1 F2	BA 18 -3C X1 H1	BA 18 -3C X1 HIU
BA 19 -7C X1 F1	BA 19 -7C X1 F2	BA 19 -7C X1 H1	BA 20 -7C X1 F1
BA 20 -7C X1 F2	BA 20 -7C X1 H1	BA 21 -7C X1 F1	BA 21 -7C X1 F2
BA 21 -7C X1 H1	BA 22 -7C X1 F1	BA 22 -7C X1 F2	BA 22 -7C X1 H1
BA 23 -7C X1 F1	BA 23 -7C X1 F2	BA 23 -7C X1 H1	BA 23 -7C X1 HIU
BA 24 -7C X1 F1	BA 24 -7C X1 F2	BA 24 -7C X1 H1	BA 25 -7C X1 F1
BA 25 -7C X1 F2	BA 25 -7C X1 H1	BA 26 -7C X1 F1	BA 26 -7C X1 F2
BA 26 -7C X1 H1	BA 27 -7C X1 F1	BA 27 -7C X1 F2	BA 27 -7C X1 H1
BA 28 -10C X1 4 F1	BA 28 -10C X1 4 F2	BA 28 -10C X1 4 H1	BA 28 -10C X1 4 HIU
BA 29 -10C X1 4 F1	BA 29 -10C X1 4 F2	BA 29 -10C X1 4 H1	BA 29 -10C X1 4 HIU
BA 30 -10C X1 5 F1	BA 30 -10C X1 5 F2	BA 30 -10C X1 5 H1	BA 30 -10C X1 5 HIU
BA 31 -10C X1 5 F1	BA 31 -10C X1 5 F2	BA 31 -10C X1 5 H1	BA 31 -10C X1 5 HIU
BA 32 -10C X1 5 F1	BA 32 -10C X1 5 F2	BA 32 -10C X1 5 H1	BA 32 -10C X1 5 HIU
BA 33 -10C X1 6 F1	BA 33 -10C X1 6 F2	BA 33 -10C X1 6 H1	BA 34 -10C X1 6 F1
BA 34 -10C X1 6 F2	BA 34 -10C X1 6 H1	BA 34 -10C X1 6 HIU	BA 35 -10C X1 7 F1
BA 35 -10C X1 7 F2	BA 35 -10C X1 7 H1	BA 35 -10C X1 7 HIU	BA 36 -10C X1 7 F1
BA 36 -10C X1 7 F2	BA 36 -10C X1 7 H1	BA 36 -10C X1 7 HIU	

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# KOONTI -software

## General:

KOONTI compilation software compiles the spectral files in the different folders and their subfolders according to the subject to suit the data format of the LMSSC2 classification software, thus avoiding separate time-consuming operations related to data collection and processing. The software recognizes the most common data formats such as ascii, txt, csv.

As an example, the files related to the heat treatment of the roots of the cover image have been processed by Koonti in this example for LMSSC2 by heat treatment class (+ 3 °C, -3 °C, -7 °C and -10 °C) and are marked with the corresponding codes BE + 3C, BE-3C, BE-7C and BE -10C as shown in Figure 1. The additional notation \_F represents a variable (in this example, frequency, Hz), \_Col1 is the real part of the impedance (i.e., resistance,  $\Omega$ ), and \_Col2 is the imaginary part of the impedance (i.e., reactance,  $\Omega$ ).<sup>2</sup>

The matrix BE + 3C\_Col1 has 45 parallel resistance spectra and the matrix BE-3C\_Col2 the corresponding number of reactance spectra. Respectively, the following matrix pairs BE-3C\_Col1 & BE-3C\_Col2 have 38/38 spectra, BE-7C\_Col1 & BE-7C\_Col2 have 44/44 spectra and BE-10C\_Col1 & BE-10C\_Col2 have 48/48 spectra. Each spectrum must have a number of measurement points corresponding to the measurement frequencies.

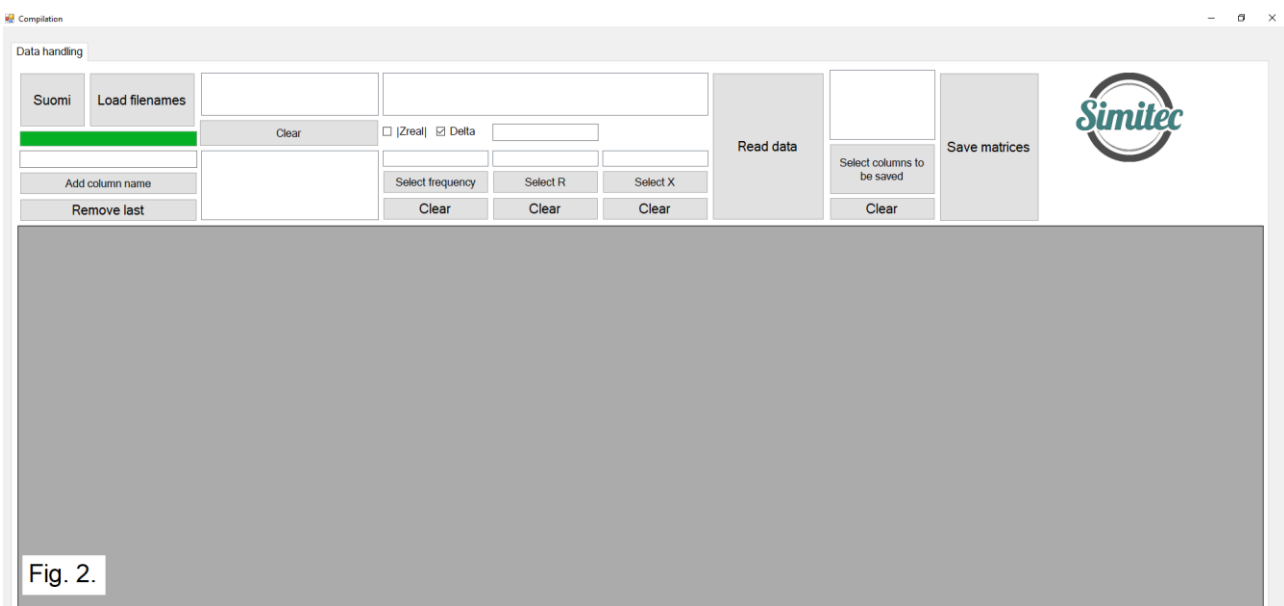
- BE+3C\_Col1
- BE+3C\_Col2
- BE+3C\_F
- BE-3C\_Col1
- BE-3C\_Col2
- BE-3C\_F
- BE-7C\_Col1
- BE-7C\_Col2
- BE-7C\_F
- BE-10C\_Col1
- BE-10C\_Col2
- BE-10C\_F

Fig. 1.

## Program settings:

### “Data handling”

Figure 2 shows the configuration software settings, which are divided into the following operating sections. The language selection (Suomi / English) is made by clicking on the relevant selection change button. The green (progress) bar in Figure 2 provides information on the progress of the download.



<sup>2</sup> For three-column data (frequency, resistance, reactance), the default entries are \_F, Col1, and Col2, unless the columns are named separately.

Clicking on the “Load filenames” button opens a selectable path from which to access the desired folder or the subfolder where the measurement data is stored. In the following example, that measurement data could be a spectral file according to the cover image. Use the cursor to select the desired file names (Figure 3) and after selection open the file management dialog by pressing the “Avaa/Open” button in the file manager, the path names of the selected files with their file names and the names of the briefly downloaded files will appear on the left side of the workspace (Figure 4). The magnification of this can be seen in Figure 6.

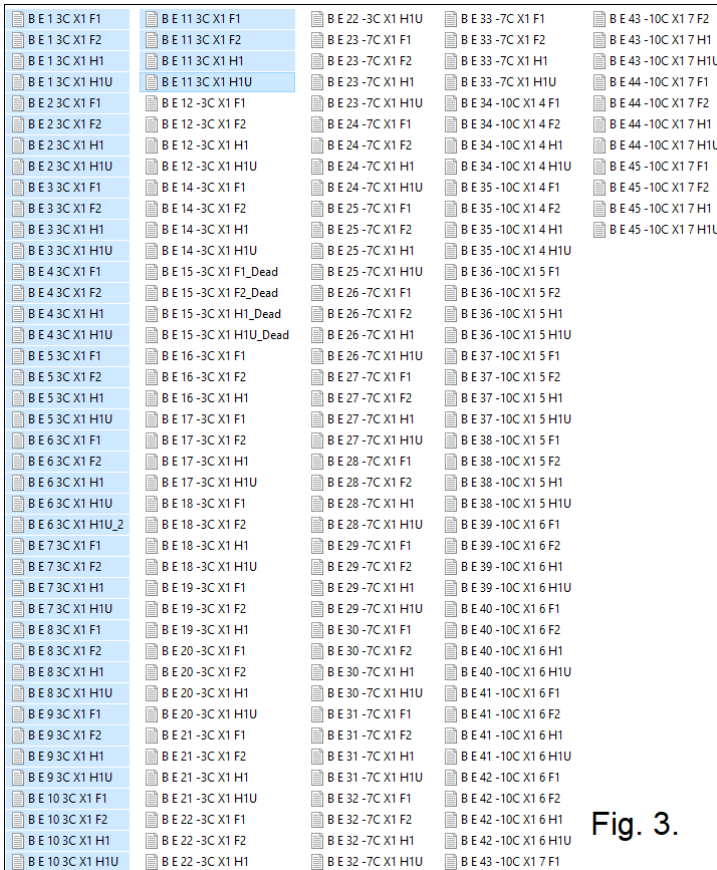


Fig. 3.

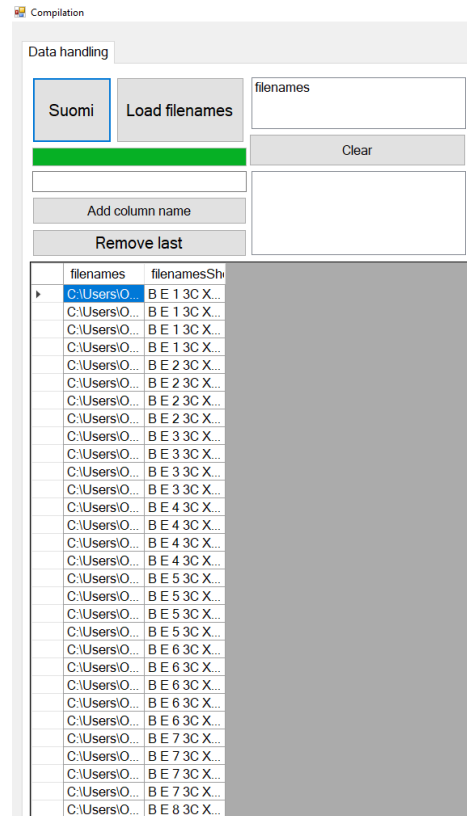


Fig. 4.

|Zreal| shown in Figures 2 and 5 can be used to remove the minus sign in the real part of the



Fig. 5.

impedance of three-column data in some special cases.<sup>3</sup>

<sup>3</sup> The minus sign of the real part of the impedance usually comes from the noise at the performance limits of the EIS device. The negative resistance region is known and is related to the tunneling phenomenon of charges through a very thin

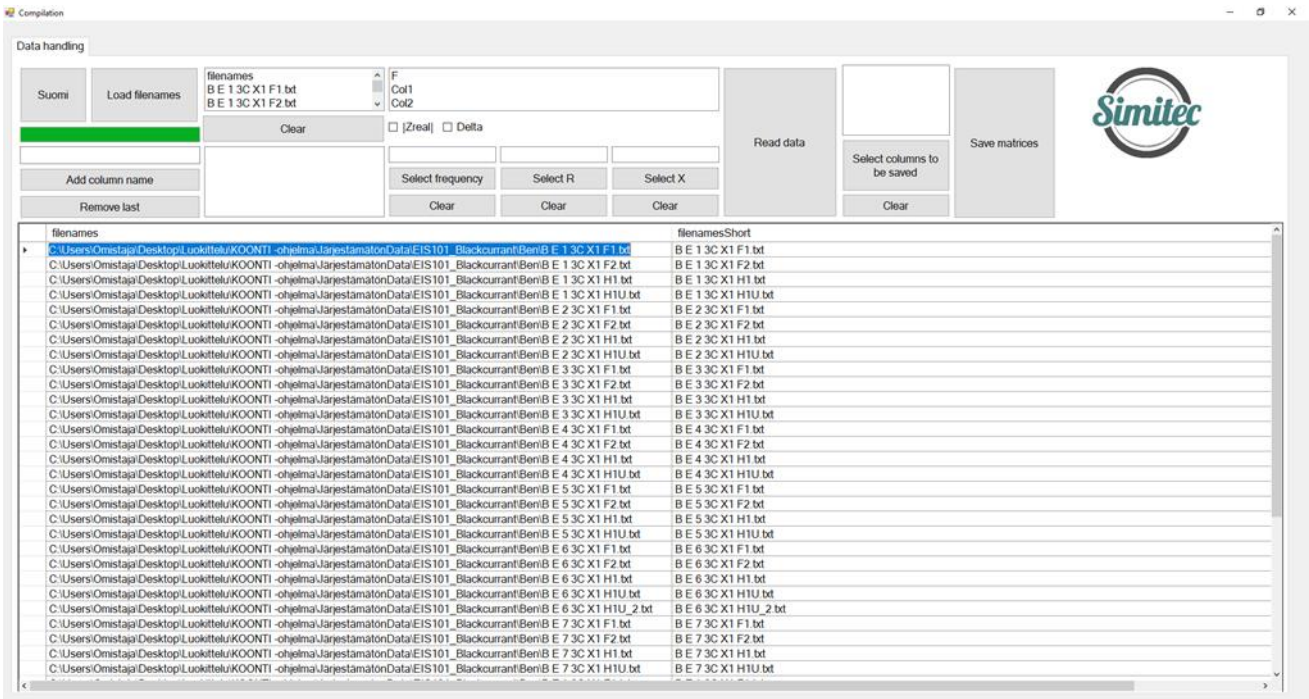


Fig. 6.

Next, the (column) packages of the downloaded files are compiled by clicking on the “Read data” button, whereby the names of the packages given to them in the storage situation in the measurement data folder (here: F, Col1 and Col2) are logged in the top left printable scroll bar (Figure 6). For classification, these can be named manually, if desired, by entering the column package name in the dialog box below the green bar, and the save acknowledgment is made with the “Add Column Name” button (Figure 7). In this example, the first packet has been f, the next R, and the next X (i.e., frequency, resistance, and reactance). Before moving these entries to the titles of the frequency

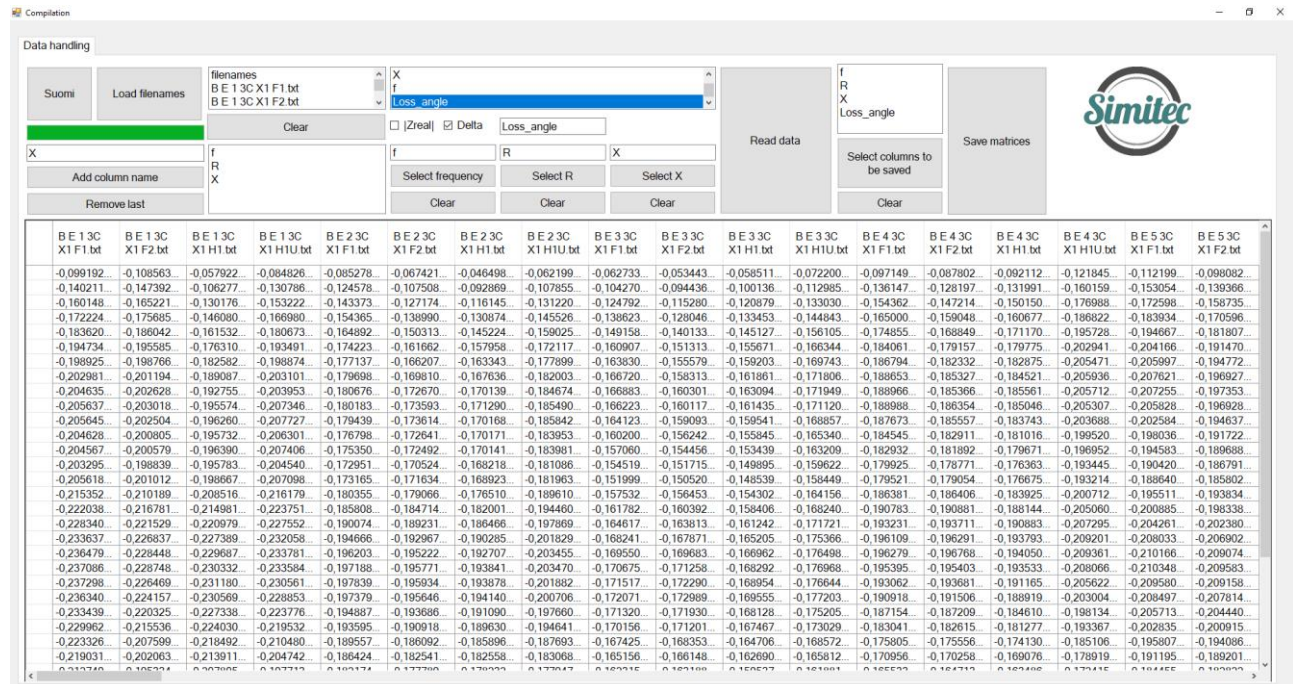


Fig. 7.

insulating layer. Leo Esaki, Ivar Giaever and Brian Josephson were awarded the Nobel Prize in 1973 for their explanation of this tunneling phenomenon.

vector (f), resistance matrix (R) and reactance matrix (X), they must be marked sequentially with the cursor and confirmed with the "Select frequency", "Select R" and "Select X" buttons. If you want to create your own spectrum packet for the loss factor called "Loss\_angle", you do so by activating the Delta function. In this case, the program calculates the loss angle spectrum from the formula  $\delta = \text{atan}(X/R)$  when the "Read data" function is repeated. In this case, in addition to R, X and f, Loss\_angle appears in the scroll window. Before saving to the file, select the desired f vector, R, X and Loss\_angle matrices from the "Select columns to be saved" button, as can be seen in the dialog box above it. Before the actual save, the file manager asks for the save folder and the main title of the file, for example "... \ Blackcurrant\_Ben\_ + 3C\_ ", which then logs the selected vectors and matrices as follows: "Blackcurrant\_Ben\_ + 3C\_f", "Blackcurrant\_Ben\_ + 3C\_R", "Blackcurrant\_Ben\_ + 3C\_X", "Blackcurrant\_Ben\_+3C\_Loss\_angle".

The files collected after recording can be loaded into the LMSSC2 classification program and then the desired LMC and / or SSC classification can be made, or the distributions of the spectra stored in the files can be viewed in the "Plot" section.

### RECOMMENDED CUSTOMER GROUP

- Industry and companies
- Universities and Research Institutes

### PRICE

- 1) "KOONTI" software compiles the spectral files in the different folders and their subfolders according to the subject to suit the data format of the LMSSC2 classification software, thus avoiding separate time-consuming operations related to data collection and processing. The software recognizes the most common data formats such as ascii, csv, txt. "Koonti" program work on laptop.
- 2) "KOONTI" installation media and operating license<sup>4</sup>. The "KOONTI" software is stored on a USB memory stick for delivery to the customer, and after installation on the computer, the stick acts as a license key. Therefore, it must be connected to the USB port while using the program.
- 3) Laptop (option)

Key features (minimum requirements)

- anti-glare 15.6 "HD Full HD or better
- 5th Generation Intel Core i7 processor or equivalent
- integrated Intel UHD Graphics or better
- 8GB DDR4 memory or more
- 256GB hard disk or larger
- WLAN and Bluetooth 4.0
- min. 2pcs USB 3.0 and 1pc USB 2.0 connectors
- Gigabit Ethernet (RJ-45) network interface
- operating system Windows 64bit (e.g. Win11)

**IN TOTAL: 1490 € (VAT 0%)<sup>5</sup>; EXW Joensuu**

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<sup>4</sup> For installation the software there exist several options: (i) The subscriber can do it first hand, (ii) The supplier can do it through a reliable internet connection, (iii) The subscriber purchases a laptop that meets the above minimum requirements and sends it to the vendor for software installation, or (iv) The supplier purchases the laptop, installs necessary software and invoices the subscriber separately for laptop price and installation work according to the Simitec Ltd service price list.

<sup>5</sup> Changes in prices are reserved.



## **Terms & Conditions**

Equipment FCA JOENSUU (Incoterms 2020). Other terms and conditions according to TK Services 2010. The ownership of the supplied equipment will be transferred to the subscriber when the entire trade amount has been paid to the supplier. Equipment and work not mentioned in this offer and its annexes and other components are treated as additional work.

Delivery terms in the following order: 1. KOONTI offer, 2. TK Services 2010.

## **Transfer of risk**

The risk is transferred to the Subscriber when the goods are handed over to the subscriber or transported by an independent carrier in accordance with the contract, subject to the delivery clause.

If the item is not handed over at the right time and this is due to the fact that the Subscriber or the Subscriber is involved, the Liability shall be transferred to the Subscriber when the Supplier has done what he or she is required by the contract to enable the transfer.

## **Delivery time**

Delivery time is agreed separately. The Agreement enters into force when the Subscriber's written order confirmation (including e-mail is accepted) has been received and confirmed from the Supplier's side to the Subscriber.

## **Payment terms**

The terms of the offer are as follows. Late interest rate 10.5%.

The total price of the product when ordering, 14 days net

Additional work and any other supplies and equipment not included in the delivery will be billed after delivery, 14 days net.

## **Warranty and maintenance**

The warranty for the devices to be delivered is 12 months from the time the equipment is ready for EXW. The warranty does not include travel and accommodation costs.

This offer includes KOONTI for email and phone support for the warranty period without any charge. If the Subscriber makes his own changes to the KOONTI system, the warranty will expire. The repair of the program is done by Simitec Ltd and the costs are invoiced according to the company's service price list and they are charged 100% afterwards, 14 days net.

After the warranty period, the training, support and installation services and repair work will be billed according to the current Simitec Ltd service price list and will be charged afterwards at 100%, 14 days net.

For example, the cost of repairing a bug or installing an update will be charged on the basis of work hours and parts used for repair after work.

## **Fee for additional work**

Additional and modifications must be agreed in advance and are based on a service price list. Other costs will be charged to actual amounts based on the Supplier's selling prices and terms and conditions set out in the Job Charging Pricing Schedule.