e:nergycarbon
Efficient low carbon heating systems

Welcome to your new infrared heating system

Electricians resistance test pack

(For completion before final connection/commission)



YOUR 10 YEAR WARRANTY

Carrying out resistance tests

Your electrician will need to carry out a series of resistance tests to confirm that your system is operating correctly. The results of these readings should be entered into the sheets on the following pages in accordance with the resistance values shown on the guide.

'Resistance before mounting' should be taken out of the box before installation and should match the values shown on the outside of the box.

'Resistance after mounting' should be carried out at the distal cable end before connecting to the transformer. For ease your electrician should take care to label each cable in accordance with the layout plans for identification at a later date.

Applying for your warranty

Once complete each sheet should be signed by the electrician and a copy of each page emailed to warranty@energycarbon.co.uk for checking and registration. When this is received your sign off and warranty will be returned within 7 days.

PRÜFPROTOKOLL

TEST REPORT

Kunde

Customer

Name
Name _____

Straße
Address _____

PLZ/Ort
Postcode/town/city _____

Telefon
Telephone no. _____

Auftragsgeber
Contact name _____

Elektroinstallateur
Electrician _____

Verlegedatum
Fitting date _____

Installationsdatum
Installation date _____

Einbauort (Raum)
Fitting (Room) _____

☐ Decke / Ceiling ☐ Wand / Wall ☐ Boden / Floor

Firmenstempel + Unterschrift des Elektroinstallateur
Company stamp + electrician's signature

e:nergycarbon
energy efficient ceiling heating

An den einzelnen Lastausgängen der Netzteile dürfen jeweils nur maximal 400 W angeschlossen werden. Die Maximallängen der einzelnen Heizbahnen sind:

E-NERGY CARBON FLEECE – 36 W/lfm (60 W/m²)	max. 11 m
E-NERGY CARBON FLEECE – 66 W/lfm (110 W/m²)	max. 6 m
E-NERGY CARBON FLEECE – 132 W/lfm (220 W/m²)	max. 3 m
E-NERGY CARBON FLEECE S – 25 W/lfm (145 W/m²)	max. 16 m
E-NERGY CARBON PET – 69 W/lfm (115 W/m²)	max. 5,8 m

Die Netzteile können je nach Ausführung Auf- oder Unterputz verbaut werden. Dazu ist ein Mindestabstand von 50 mm zur Folie einzuhalten. Die Leitungslänge auf der Sekundärseite des Netzteils darf maximal betragen:

10 m bei 2,5 mm² Kabel
25 m bei 6 mm² Kabel

Only a maximum of 400 W may be connected to the individual load outputs of the power supplies. The maximum lengths of the individual heating tracks are:

E-NERGY CARBON FLEECE – 36 W/lfm (60 W/m²)	max. 11 m
E-NERGY CARBON FLEECE – 66 W/lfm (110 W/m²)	max. 6 m
E-NERGY CARBON FLEECE – 132 W/lfm (220 W/m²)	max. 3 m
E-NERGY CARBON FLEECE S – 25 W/lfm (145 W/m²)	max. 16 m
E-NERGY CARBON PET – 69 W/lfm (115 W/m²)	max. 5.8 m

Depending on the version, the power supply units can be installed on-wall or flush-mounted. A minimum distance of 50 mm to the foil must be maintained. The maximum cable length on the secondary side of the power supply unit is allowed:

10 m with 2.5 mm² cable
25 m with 6 mm² cable

5 WIDERSTANDSWERTE IN ABHÄNGIGKEIT DER LÄNGE*

Länge Length	FLEECE 36 W/lfm (60 W/m²)	FLEECE 66 W/lfm (110 W/m²)	FLEECE 132 W/lfm (220 W/m²)	FLEECE S 25 W/lfm (145 W/m²)	PET 69 W/lfm (115 W/m²)
0,1 m	365,84 Ω	199,06 Ω	99,53 Ω	516,00 Ω	188,30 Ω
0,2 m	182,92 Ω	99,53 Ω	49,77 Ω	258,00 Ω	94,15 Ω
0,3 m	121,95 Ω	66,35 Ω	33,18 Ω	172,00 Ω	62,77 Ω
0,4 m	91,46 Ω	49,77 Ω	24,88 Ω	129,00 Ω	47,08 Ω
0,5 m	73,17 Ω	39,81 Ω	19,91 Ω	103,20 Ω	37,66 Ω
0,6 m	60,97 Ω	33,18 Ω	16,59 Ω	86,00 Ω	31,38 Ω
0,7 m	52,26 Ω	28,44 Ω	14,22 Ω	73,71 Ω	26,90 Ω
0,8 m	45,73 Ω	24,88 Ω	12,44 Ω	64,50 Ω	23,54 Ω
0,9 m	40,65 Ω	22,12 Ω	11,06 Ω	57,33 Ω	20,92 Ω
1,0 m	36,58 Ω	19,91 Ω	9,95 Ω	51,60 Ω	18,83 Ω
1,1 m	33,26 Ω	18,10 Ω	9,05 Ω	46,91 Ω	17,12 Ω
1,2 m	30,49 Ω	16,59 Ω	8,29 Ω	43,00 Ω	15,69 Ω
1,3 m	28,14 Ω	15,31 Ω	7,66 Ω	39,69 Ω	14,48 Ω
1,4 m	26,13 Ω	14,22 Ω	7,11 Ω	36,86 Ω	13,45 Ω
1,5 m	24,39 Ω	13,27 Ω	6,64 Ω	34,40 Ω	12,55 Ω
1,6 m	22,87 Ω	12,44 Ω	6,22 Ω	32,25 Ω	11,77 Ω
1,7 m	21,52 Ω	11,71 Ω	5,85 Ω	30,35 Ω	11,08 Ω
1,8 m	20,32 Ω	11,06 Ω	5,53 Ω	28,67 Ω	10,46 Ω
1,9 m	19,25 Ω	10,48 Ω	5,24 Ω	27,16 Ω	9,91 Ω
2,0 m	18,29 Ω	9,95 Ω	4,98 Ω	25,80 Ω	9,42 Ω
2,1 m	17,42 Ω	9,48 Ω	4,74 Ω	24,57 Ω	8,97 Ω
2,2 m	16,63 Ω	9,05 Ω	4,52 Ω	23,45 Ω	8,56 Ω
2,3 m	15,91 Ω	8,65 Ω	4,33 Ω	22,43 Ω	8,19 Ω
2,4 m	15,24 Ω	8,29 Ω	4,15 Ω	21,50 Ω	7,85 Ω
2,5 m	14,63 Ω	7,96 Ω	3,98 Ω	20,64 Ω	7,53 Ω
2,6 m	14,07 Ω	7,66 Ω	3,83 Ω	19,85 Ω	7,24 Ω
2,7 m	13,55 Ω	7,37 Ω	3,69 Ω	19,11 Ω	6,97 Ω
2,8 m	13,07 Ω	7,11 Ω	3,55 Ω	18,43 Ω	6,73 Ω
2,9 m	12,62 Ω	6,86 Ω	3,43 Ω	17,79 Ω	6,49 Ω
3,0 m	12,19 Ω	6,64 Ω	3,32 Ω	17,20 Ω	6,28 Ω

*Weichen die Widerstandsmesswerte mehr als 15 % vom Ausgangswert ab, so ist mit einer Beschädigung der Kontakte oder der Heizfolie zu rechnen. In diesem Fall dürfen Sie das Heizsystem nicht in Betrieb nehmen.

5 RESISTANCE VALUES AS A FUNCTION OF LENGTH*

Länge Length	FLEECE 36 W/lfm (60 W/m²)	FLEECE 66 W/lfm (110 W/m²)	FLEECE 132 W/lfm (220 W/m²)	FLEECE S 25 W/lfm (145 W/m²)	PET 69 W/lfm (115 W/m²)
3,1 m	11,80 Ω	6,42 Ω		16,65 Ω	6,07 Ω
3,2 m	11,43 Ω	6,22 Ω		16,13 Ω	5,88 Ω
3,3 m	11,09 Ω	6,03 Ω		15,64 Ω	5,71 Ω
3,4 m	10,76 Ω	5,85 Ω		15,18 Ω	5,54 Ω
3,5 m	10,45 Ω	5,69 Ω		14,74 Ω	5,38 Ω
3,6 m	10,16 Ω	5,53 Ω		14,33 Ω	5,23 Ω
3,7 m	9,89 Ω	5,38 Ω		13,95 Ω	5,09 Ω
3,8 m	9,63 Ω	5,24 Ω		13,58 Ω	4,96 Ω
3,9 m	9,38 Ω	5,10 Ω		13,23 Ω	4,83 Ω
4,0 m	9,15 Ω	4,98 Ω		12,90 Ω	4,71 Ω
4,1 m	8,92 Ω	4,86 Ω		12,59 Ω	4,59 Ω
4,2 m	8,71 Ω	4,74 Ω		12,29 Ω	4,48 Ω
4,3 m	8,51 Ω	4,63 Ω		12,00 Ω	4,38 Ω
4,4 m	8,31 Ω	4,52 Ω		11,73 Ω	4,28 Ω
4,5 m	8,13 Ω	4,42 Ω		11,47 Ω	4,18 Ω
4,6 m	7,95 Ω	4,33 Ω		11,22 Ω	4,09 Ω
4,7 m	7,78 Ω	4,24 Ω		10,98 Ω	4,01 Ω
4,8 m	7,62 Ω	4,15 Ω		10,75 Ω	3,92 Ω
4,9 m	7,47 Ω	4,06 Ω		10,53 Ω	3,84 Ω
5,0 m	7,32 Ω	3,98 Ω		10,32 Ω	3,77 Ω
5,1 m	7,17 Ω	3,90 Ω		10,12 Ω	3,69 Ω
5,2 m	7,04 Ω	3,83 Ω		9,92 Ω	3,62 Ω
5,3 m	6,90 Ω	3,76 Ω		9,74 Ω	3,55 Ω
5,4 m	6,77 Ω	3,69 Ω		9,56 Ω	3,49 Ω
5,5 m	6,65 Ω	3,62 Ω		9,38 Ω	3,42 Ω
5,6 m	6,53 Ω	3,55 Ω		9,21 Ω	3,36 Ω
5,7 m	6,42 Ω	3,49 Ω		9,05 Ω	3,30 Ω
5,8 m	6,31 Ω	3,43 Ω		8,90 Ω	3,25 Ω
5,9 m	6,20 Ω	3,37 Ω		8,75 Ω	
6,0 m	6,10 Ω	3,32 Ω		8,60 Ω	

*If the resistance readings differ more than 15% from the original level, damage to the contacts or the heating foil must be expected. You must not put the heating system into operation in this case.

3. Resistance values E-NERGY CARBON DRYTEC 36 V

3.1 E-NERGY CARBON DRYTEC 36 V – 45 W/lfm (112 W/m²)

Length	Resistance	Power
0,1 m	288,80 Ω	4 W
0,2 m	144,40 Ω	9 W
0,3 m	96,27 Ω	13 W
0,4 m	72,20 Ω	18 W
0,5 m	57,76 Ω	22 W
0,6 m	48,13 Ω	27 W
0,7 m	41,26 Ω	31 W
0,8 m	36,10 Ω	36 W
0,9 m	32,09 Ω	40 W
1,0 m	28,88 Ω	45 W
1,1 m	26,25 Ω	49 W
1,2 m	24,07 Ω	54 W
1,3 m	22,22 Ω	58 W
1,4 m	20,63 Ω	63 W
1,5 m	19,25 Ω	67 W
1,6 m	18,05 Ω	72 W
1,7 m	16,99 Ω	76 W
1,8 m	16,04 Ω	81 W
1,9 m	15,20 Ω	85 W
2,0 m	14,44 Ω	90 W
2,1 m	13,75 Ω	94 W
2,2 m	13,13 Ω	99 W
2,3 m	12,56 Ω	103 W
2,4 m	12,03 Ω	108 W
2,5 m	11,55 Ω	112 W
2,6 m	11,11 Ω	117 W
2,7 m	10,70 Ω	121 W
2,8 m	10,31 Ω	126 W
2,9 m	9,96 Ω	130 W
3,0 m	9,63 Ω	135 W
3,1 m	9,32 Ω	139 W
3,2 m	9,03 Ω	144 W
3,3 m	8,75 Ω	148 W
3,4 m	8,49 Ω	153 W
3,5 m	8,25 Ω	157 W
3,6 m	8,02 Ω	162 W
3,7 m	7,81 Ω	166 W

Length	Resistance	Power
3,8 m	7,60 Ω	171 W
3,9 m	7,41 Ω	175 W
4,0 m	7,22 Ω	180 W
4,1 m	7,04 Ω	184 W
4,2 m	6,88 Ω	188 W
4,3 m	6,72 Ω	193 W
4,4 m	6,56 Ω	197 W
4,5 m	6,42 Ω	202 W
4,6 m	6,28 Ω	206 W
4,7 m	6,14 Ω	211 W
4,8 m	6,02 Ω	215 W
4,9 m	5,89 Ω	220 W
5,0 m	5,78 Ω	224 W
5,1 m	5,66 Ω	229 W
5,2 m	5,55 Ω	233 W
5,3 m	5,45 Ω	238 W
5,4 m	5,35 Ω	242 W
5,5 m	5,25 Ω	247 W
5,6 m	5,16 Ω	251 W
5,7 m	5,07 Ω	256 W
5,8 m	4,98 Ω	260 W
5,9 m	4,89 Ω	265 W
6,0 m	4,81 Ω	269 W
6,1 m	4,73 Ω	274 W
6,2 m	4,66 Ω	278 W
6,3 m	4,58 Ω	283 W
6,4 m	4,51 Ω	287 W
6,5 m	4,44 Ω	292 W
6,6 m	4,38 Ω	296 W
6,7 m	4,31 Ω	301 W
6,8 m	4,25 Ω	305 W
6,9 m	4,19 Ω	310 W
7,0 m	4,13 Ω	314 W
7,1 m	4,07 Ω	319 W
7,2 m	4,01 Ω	323 W
7,3 m	3,96 Ω	328 W
7,4 m	3,90 Ω	332 W

Length	Resistance	Power
7,5 m	3,85 Ω	337 W
7,6 m	3,80 Ω	341 W
7,7 m	3,75 Ω	346 W
7,8 m	3,70 Ω	350 W
7,9 m	3,66 Ω	355 W
8,0 m	3,61 Ω	359 W
8,1 m	3,57 Ω	363 W
8,2 m	3,52 Ω	368 W
8,3 m	3,48 Ω	372 W
8,4 m	3,44 Ω	377 W
8,5 m	3,40 Ω	381 W
8,6 m	3,36 Ω	386 W
8,7 m	3,32 Ω	390 W
8,8 m	3,28 Ω	395 W

Attention! General information on resistance readings Attention!

If the measured resistance values deviate more than 15 % from the initial value, dama-ge to the contacts or the heating foil must be expected. In this case, you must not put the heating system into operation.

Detailed information for parallel connection of several heating foils (universal connector)

If several heating foils of one foil variant are connected together to one supply line, the sum of the individual lengths must be used as the resistance value. For example, if a 1.20 m long heating foil is connected in parallel with a 1.50 m long heating foil, the total resistance must correspond to the resistance measured value of 2.70 m. When connecting several heating foils in parallel, the permissible maximum power of the load outputs of the power supply units must not be exceeded. Connection of the heating foils in series is not permitted.

Test report resistance values

Room	Lane no.	Length	Performance	Resistance before mounting	Resistance after mounting
	1	cm	W/m²	Ω	Ω
	2	cm	W/m²	Ω	Ω
	3	cm	W/m²	Ω	Ω
	4	cm	W/m²	Ω	Ω
	5	cm	W/m²	Ω	Ω
	6	cm	W/m²	Ω	Ω
	7	cm	W/m²	Ω	Ω
	8	cm	W/m²	Ω	Ω
	9	cm	W/m²	Ω	Ω
	10	cm	W/m²	Ω	Ω
	11	cm	W/m²	Ω	Ω
	12	cm	W/m²	Ω	Ω
	13	cm	W/m²	Ω	Ω
	14	cm	W/m²	Ω	Ω
	15	cm	W/m²	Ω	Ω
	16	cm	W/m²	Ω	Ω

Date _____ Signature _____

Test report resistance values

Room	Lane no.	Length	Performance	Resistance before mounting	Resistance after mounting
	1	cm	W/m²	Ω	Ω
	2	cm	W/m²	Ω	Ω
	3	cm	W/m²	Ω	Ω
	4	cm	W/m²	Ω	Ω
	5	cm	W/m²	Ω	Ω
	6	cm	W/m²	Ω	Ω
	7	cm	W/m²	Ω	Ω
	8	cm	W/m²	Ω	Ω
	9	cm	W/m²	Ω	Ω
	10	cm	W/m²	Ω	Ω
	11	cm	W/m²	Ω	Ω
	12	cm	W/m²	Ω	Ω
	13	cm	W/m²	Ω	Ω
	14	cm	W/m²	Ω	Ω
	15	cm	W/m²	Ω	Ω
	16	cm	W/m²	Ω	Ω

Date _____ Signature _____

Test report resistance values

Room	Lane no.	Length	Performance	Resistance before mounting	Resistance after mounting
	1	cm	W/m²	Ω	Ω
	2	cm	W/m²	Ω	Ω
	3	cm	W/m²	Ω	Ω
	4	cm	W/m²	Ω	Ω
	5	cm	W/m²	Ω	Ω
	6	cm	W/m²	Ω	Ω
	7	cm	W/m²	Ω	Ω
	8	cm	W/m²	Ω	Ω
	9	cm	W/m²	Ω	Ω
	10	cm	W/m²	Ω	Ω
	11	cm	W/m²	Ω	Ω
	12	cm	W/m²	Ω	Ω
	13	cm	W/m²	Ω	Ω
	14	cm	W/m²	Ω	Ω
	15	cm	W/m²	Ω	Ω
	16	cm	W/m²	Ω	Ω

Date _____ Signature _____

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