HOME HEALTH SELF-ASSESSMENT KIT USER GUIDE

MASTERTON DISTRICT COUNCIL
TE KAUNIHERA Ā-ROHE O WHAKAORIORI

TE KAUNIHERA-Ā-ROHE O TARATAHI
CARTERTON DISTRICT COUNCIL

SOUTH WAIRARAPA DISTRICT COUNCIL
Kia Reretahi Tātau

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INTRODUCTION

A warm, dry home is not just more comfortable, it is also more energy efficient and much better for your health. Cold, damp and mouldy houses can lead to discomfort and more serious health problems, such as respiratory illness and cardiovascular disease. It is harder and more costly to heat damp and draughty houses.

The Building Research Association of New Zealand (BRANZ) undertakes house condition surveys every five years. The most recent survey, in 2015, showed:

- 53 per cent of houses could benefit from retrofit insulation in the ceiling and/or subfloor.
- 9 per cent of houses had a leaking tap or shower head.

For more information visit: www.branz.co.nz/healthy-homes-research

The 2018 census showed that:

- 21.8 per cent of the houses in the Wellington Region are sometimes or always damp.
- 16.7 per cent of the houses in the Wellington Region have sometimes or always a mould patch bigger than an A4 paper sheet.

This self-assessment toolkit will enable you to assess your home for warmth and damp, and understand how it is performing. You will find useful tips and advice to improve the comfort of your home, and the health of occupants.

The kit contains:

- an infrared thermometer
- a thermometer/hygrometer
- stopwatch
- power meter
- wood moisture level meter
- a user-guide with useful information to increase your house's health.

INFRARED THERMOMETER

DESCRIPTION

This measures the temperatures of different surfaces in your house. It will help you identify:

- cold spots in your house - areas of poor insulation or air leaks (floor, walls, ceilings, windows, doors, etc)
- cold/hot spots around fridge and freezer – air leaks, and whether there is sufficient ventilation at the back of your fridge and freezer
- any hot spots around your hot water cylinder and hot water temperature – that means whether your hot water cylinder is well insulated and whether your hot water is the ideal temperature.

HOW TO USE IT?

To measure surface temperature with the infrared thermometer provided follow these steps:

1. Press the trigger to turn on the thermometer.
2. Aim at the surface you want to check. You should not be more than 700 millimetres away from the surface. To measure water temperature, **do not place the thermometer in water**, point the thermometer where the water hits the sink the same way you would point at your walls.
3. Press and hold the trigger until temperature stabilises (this can take a few seconds).
4. Read the temperature (see right).
5. Record the reading in the record sheet.
6. The thermometer turns off by itself.

Note: Do not adjust the settings. To read temperature you only press the trigger.

Make sure to do the measurements when there is a big difference between the outside temperature and the temperature inside, i.e. on a cold day when your house seems warm and comfortable.

Warning:

- The thermometer cannot be used to measure a person's temperature.
- Do not point the thermometer at a person as serious eye damage may occur.

RECORD SHEET

Record the following temperatures:

- the ceiling, floors, and walls in different rooms of your house (living room, dining room, kitchen, bedrooms, and bathrooms)
- the seals of fridges and freezers, and the walls at the back of the appliances
- the hot water cylinder
- the hot water.

Identify cold and hot spot locations to help you identify heat losses or low-efficiency of your appliances.

To record your readings, you can either create your own table (see example below), or download and print the record sheet available by scanning the QR Code (see right).

ROOM	TEMPERATURE READINGS								
	Ceiling	Floors	Walls	Window seals 1	Window seals 2	Window seals 3	Outside door seals 1	Outside door seals 1	Other
Room 1									

SELF-ASSESS YOUR HOME

Cold spots – floors

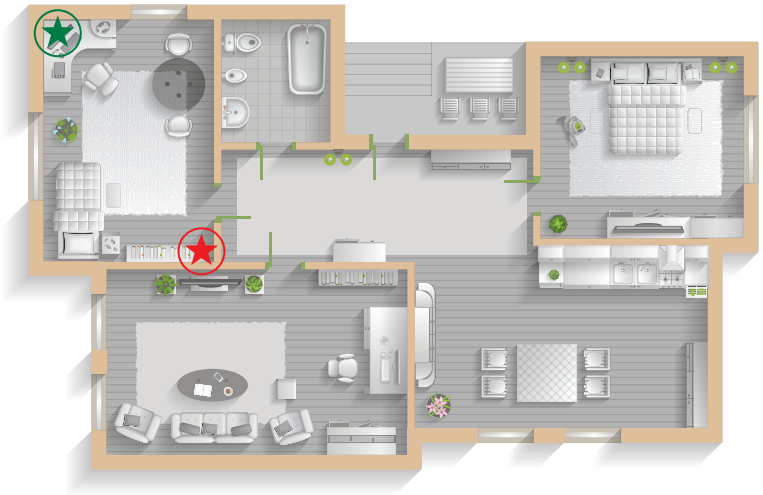
Take multiple measurements of your floor temperature. The results should be the same or within a couple of degrees. If a measurement is very different, it means that the insulation is not efficient (no insulation, damaged insulation, displaced insulation, etc).

To understand the passive heating power (when you use the sun to warm your house), take a measurement of the floor surface in the sunlight and one in the shade. The measurement in the sunlight will be higher than the one in the shade.

Cold spots – walls

Take multiple measurements of your internal wall temperature. The results should be about the same, or within a couple of degrees. If a measurement is very different, it means that the insulation is not efficient (no insulation, damaged insulation, displaced insulation, etc).

In the same room, take a measurement on the inside of an external wall (green star in the image below), and another measurement of an internal wall (red star). This will allow you to understand how well your walls are insulated (the closer the two measurements are, the better).



Cold spots – ceilings

Take multiple measurements of your ceiling temperature. The results should be about the same, or within a couple of degrees. If a measurement is very different, it means that the insulation is not efficient (no insulation, damaged insulation, displaced insulation, etc).

Be mindful that lights can warm the ceiling nearby. You should turn off the lights and let the ceiling cool down before taking measurements.

Cold spots – windows and doors

Take multiple measurements of the temperature around your window and door seals. For accurate results, make sure to take multiple measurements (see right). The results should be about the same, or within a couple of degrees. If a measurement is very different, it means that there is an air leak (for example a damaged seal).

Cold and hot spots – fridges and freezers

Take multiple measurements of your fridges and freezers as shown (see right). The results should be about the same, or within a couple of degrees. If a measurement is very different, it means that there is an air leak (due to a damaged seal for example).

Take a measurement behind your fridge/freezer, and another one on the same wall but away from your fridge/freezer. Ideally, the temperature should be the same. If the wall behind the fridge/freezer is warmer, it means that the ventilation is not good enough and you should leave more space between the wall and the fridge/freezer. Check the user guide for your appliances for required spacing.

Hot spots – hot water cylinder

Measure the temperature on the surface of your hot water cylinder. It should not be higher than 25°C. If it is, it means that your hot water cylinder is not well insulated.

To check the hot water temperature, run the hot water until the temperature stabilizes (at least 30 seconds). Point the thermometer where the water is hitting the sink. **Do not place the thermometer in water as it is not waterproof.** For health reasons, the temperature should be around 55-60°C:

- If the water is hotter, it can cause burn injuries (especially on children).
- If the water is colder, harmful bacteria can develop in the hot water cylinder.

THERMOMETER/HYGROMETER

DESCRIPTION

This measures the temperature and humidity inside your house. This tool helps you understand whether your house is:

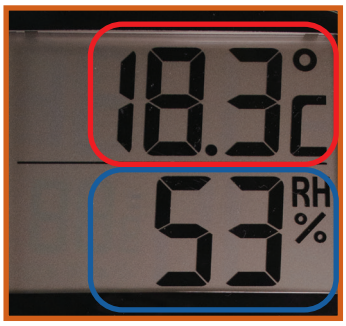
- a cold or warm house
- a damp or dry house.

HOW TO USE IT

All the measurements in the different rooms in your house should be made around the same time of the day.

1. Put the thermometer/hygrometer in the room you want to assess.
2. Make sure the temperature is being shown in degree Celsius (see right).
3. Wait around 10 minutes to allow the temperature (red square - see right) and humidity (blue square - see right) readings to stabilise.
4. Read the temperature and humidity of the room.
5. Record the reading on the record sheet.
6. Repeat in all the rooms you want to assess.

Switch to turn the hygrometer to degree Celsius



Temperature and humidity readings

RECORD SHEET

Record the temperatures and humidity in the different rooms of your house (living room, dining room, kitchen, bedrooms and bathrooms).

To record your readings, you can either create your own table (see example below) or download and print the record sheet available by scanning the QR Code.

ROOM	TEMPERATURE READING	HUMIDITY READING
Room 1		

SELF-ASSESS YOUR HOME

You can take several measurements in different locations in your house:

- the living room / dining room
- the kitchen
- the bedrooms
- the bathrooms
- the laundry.

Temperature

The World Health Organization (WHO) recommends a minimum indoor temperature of:

- 18°C in the living areas
- 16°C in the bedrooms
- 20-21°C for households with babies and seniors.

Respiratory problems are more likely to happen in low-temperature homes.

Humidity

A humidity of 40-60 per cent is recommended inside your house.

If humidity is too high your house will feel colder in winter and hotter in summer. It also increases condensation problems on windows, walls, ceilings, etc, which can be harmful but also damages your house. High levels of humidity provide conditions for mould and dust mites to grow. Both can increase respiratory problems and allergies (especially for asthma sufferers) Mould can also create unpleasant odours.

If your humidity level is too low, it may cause discomfort such as dryness in the nose and on the skin.

STOPWATCH

DESCRIPTION

This measures precise timing - to identify the flow rate of your shower head for example.

HOW TO USE IT?

1. The stopwatch will ordinarily display the time.
2. Press the middle button to go to the stopwatch function.
3. Press the button on the left to reset, if necessary.
4. Press the button on the right to start the stopwatch.
5. Press the button again to stop the stopwatch.
6. Press the button on the left to reset the stopwatch.
7. Press the middle button to go back to the time display.

RECORD SHEET

Record the time needed to fill your 10L bucket in your shower and identify the flow rate associated using the table provided.

To record your readings, you can either create your own table (see example below) or download and print the record sheet available by scanning the QR Code.

	TIME TO FILL A 10L BUCKET (SECONDS)	FLOW RATE ASSOCIATED IN LITRES PER MINUTE (SEE TABLE OVER PAGE)
SHOWER 1		
SHOWER 2		

SELF-ASSESS YOUR HOME

Measure your shower flow rate

You can use the stopwatch to measure how much water your shower uses (flow rate). To do this you will need:

- A 10 litre bucket.
- The stopwatch provided in the kit.

Measure how long it takes to fill the bucket in your shower:

1. Put a 10 litre bucket under your shower head.
2. Turn on your shower and start the stopwatch at the same time. Make sure all the water falls into the bucket for accurate measurement.
3. Turn off the stopwatch when the bucket is filled.
4. Read the stopwatch.
5. Record the reading in the record sheet.

TIME IT TAKES TO FILL A 10 LITRE BUCKET (SECONDS)	FLOW RATE (LITRES PER MINUTE)	
30	20.0	High flow rate
35	17.1	
40	15.0	
45	13.3	Average flow rate
50	12.0	
55	10.9	
60	10.0	
65	9.2	Low flow rate
70	8.6	
75	8.0	
80	7.5	

Having a high flow rate means that you are wasting a lot of water during your showers, and energy to heat the water.

Checking water leaks (households with water meter only)

If your house is fitted with a water meter (by the valve – toby - from the water main at the boundary of your property), you can check for water leaks by turning off all your taps and appliances that use water in your house. Check your water meter. If the counter is moving, you may have a leak.

Shut off the toby and check your meter again. If the counter is not moving, you may have a leak in your house or on the pipes feeding outside taps.

Water is a precious resource and should not be wasted through leaks.

POWER METER

DESCRIPTION

This measures the power usage, and the carbon dioxide emissions of your appliances, and helps you understand where you could save power.

HOW TO USE IT

How to set up the power meter:

Set up date and time:

1. Plug in the power meter into the wall socket then plug in your appliance.
2. Press SET – the **year** blinks.
3. Press the ▲ or ▼ to adjust the year.
4. Press SET – the **date** blinks.
5. Adjust Month(M)/Day(D) or Day(D/Month(M) display by pressingthe ▲ or ▼.
6. Press SET – The **month** blinks.
7. Press the ▲ or ▼ to adjust the **month**.
8. Press SET – The **day** blinks.
9. Press the ▲ or ▼ to adjust the **day.**
10. Press SET – the **hour** blinks.
11. Press the ▲ or ▼ to adjust the **hour**.
12. Press SET – the **minutes** blinks.
13. Press the ▲ or ▼ to adjust the **minutes**.

Set up the price of electricity ($0.34 per kWh in average in the Wairarapa – you can find your rates on your power bill if you would like a more precise measure):

1. Long press SET.
2. Press the ▲ or ▼ to adjust the **currency** to $.
3. Press SET – the 'PRICE 1' blinks.
4. Press SET – the bottom line blinks.
5. Press SET – the **hour** blinks.
6. Press SET – the **minutes** blinks.
7. Press SET – the **price** blinks.
8. Press the ▲ or ▼ to adjust the **price** to $0.34.
9. Repeat the previous step to set up the 'PRICE 2' to $0.34.

Set up the greenhouse gas emissions from electricity (0.11 kg of CO2e per kWh used):

1. Press SET – the KG/LB blinks.
2. Press the ▲ or ▼ to select KG.
3. Press SET – the KG blinks.
4. Press the ▲ or ▼ to adjust the **price** to 0.11 kg CO2e/kWh.
5. Press SET to go back to the main screen.

How to measure your instant (real time) power consumption :

1. Plug the power meter into the wall socket, then plug your appliance into the meter.
2. Press MODE to read the top line of the power meter:
   - $ indicates the instant cost.
   - W indicates the instant power consumption in Watts.
   - VOLT indicates the instant voltage in volts.
   - AMP indicates the instant current in amps.
   - KG indicates the instant greenhouse gas emissions in kilogrammes.
3. To go from one reading to the other, press MODE.
4. Record the reading in the record sheet.

How to measure your cumulative power consumption:

1. Press MODE to select the different data you would like to read (cost ($), power consumption (W) or greenhouse gas emissions (KG)).
2. Write the reading on the second line before plugging the appliance to the power meter.
3. Write the reading on the second line when you unplug your appliance. We recommend leaving the appliance connected to the power meter for at least 2 days (48 hours) to obtain an accurate reading.
4. Deduct the first reading from the second reading to have the cumulative consumption of your appliance.

RECORD SHEET

For the instant power consumption, record the consumption for the following appliances:

- Fridge, freezer, dishwasher, electric jug, microwave, oven, stove, washing machine, dryer, vacuum cleaner, heater, TV, computer, smartphone charger, spa pool, and other appliances.
- Record the readings when appliances are switched ON and on STANDBY.
- Record the readings for power consumption (W), cost ($) and carbon dioxide emissions (KG).

For the cumulative power consumption, record the consumption for the following appliances:

- Fridge, freezer, dishwasher, electric jug, microwave, oven, stove, washing machine, dryer, vacuum cleaner, heater, TV, computer, smartphone charger, spa pool and other appliances.
- Record the readings before you plug the appliances on the power meter (reading A).
- Record the readings 48 hours after you plugged the appliances into the meter (reading B).
- Calculate the cumulative power consumption, cost and emissions (Cumulative = B – A).

To record your readings, you can either create your own table (see examples on the following page) or download and print the record sheet available by scanning the QR Code.

Instant power consumption

APPLIANCE	POWER CONSUMPTION (W)		COST ($)		CARBON DIOXIDE EMISSIONS (KG)	
	On	Standby	On	Standby	On	Standby
Appliance 1						

Cumulative power consumption (over 48 hours)

APPLIANCE	POWER CONSUMPTION (W)			COST ($)			CARBON DIOXIDE EMISSIONS (KG)		
	Reading Before (A)	Reading After (B)	Cumulative = A - B	Reading Before (A)	Reading After (B)	Cumulative = A - B	Reading Before (A)	Reading After (B)	Cumulative = A - B
Appliance 1									

SELF-ASSESS YOUR HOME

You can use the power meter to measure how much power is consumed by the electric appliances you use. You could assess the following appliances:

- Fridge/freezer
- Dishwasher
- Electric jug
- Microwave
- Oven
- Stove
- Washing machine
- Dryer
- Vacuum cleaner
- Heaters
- TV
- Computer
- Smartphone chargers
- Spa pool

The tool will give you the power consumption of the appliance, as well as the cost, and the carbon dioxide emissions.

The following tables show the average consumption of different appliances.

NOTE: These tables were prepared in January 2021 with information available at that time. The running cost of appliances may vary depending on the electricity provider, location, intensity of use, and age of the appliance. The tables are based on normal use for a family of three people.

LARGE APPLIANCES

APPLIANCE	RATING	ENERGY USE (KWH)[1]				RUNNING COST (NZD) [2]	
		PER YEAR	PER MONTH	PER WEEK	PER USE OR DAY	PER YEAR	PER MONTH
FRIDGE/ FREEZER	0.5 Star	786	66	15.1	2.2	262.13	21.84
	3 Star	405	34	7.8	1.1	135.07	11.26
	6 Star	185	15	3.6	0.5	61.70	5.14
FRIDGE	0.5 Star	479	40	9.2	1.3	159.75	13.31
	3 Star	247	21	4.8	0.7	82.37	6.86
	6 Star	113	9	2.2	0.3	37.69	3.14
FREEZER	0.5 Star	701	58	13.5	1.9	233.78	19.48
	3 Star	362	30	7.0	1.0	120.73	10.06
	6 Star	165	14	3.2	0.5	55.03	4.59
DISH WASHER	0.5 Star	699	58	13.4	1.9	233.12	19.43
	3 Star	282	24	5.4	0.8	94.05	7.84
	6 Star	97	8	1.9	0.3	32.35	2.70
WASHING MACHINE	0.5 Star	694	58	13.3	3.3	231.45	19.29
	3 Star	259	22	5.0	1.2	86.38	7.20
	6 Star	37	3	0.7	0.2	12.34	1.03
CLOTHES DRYER	0.5 Star	1,846	154	35.5	8.9	615.64	51.30
	3 Star	1,225	102	23.6	5.9	408.54	34.04
	6 Star	753	63	14.5	3.6	251.13	20.93
HEAT PUMP	0.5 Star	2,281	190	43.9	6.2	760.71	63.39
	3 Star	1,521	127	29.3	4.2	507.25	42.27
	6 Star	1,086	91	20.9	3.0	362.18	30.18
TELEVISION	0.5 Star	476	40	9.2	1.3	158.75	13.23
	5 Star	177	15	3.4	0.5	59.03	4.92
	10 Star	61	5	1.2	0.2	20.34	1.70
MONITOR	0.5 Star	216	18	4.2	0.6	72.04	6.00
	5 Star	80	7	1.5	0.2	26.68	2.22
	10 Star	27	2	0.5	0.1	9.00	0.75

[1] Source: https://tools.genless.govt.nz/individuals/running-costs-calculator/#!/

[2] 33.35 c/kWh – Source: MBIE, Quarterly survey of domestic Electricity Price, August 2020

[3] Emission factors: 0.1101 kgCO2e / kWh – Source: MfE

		GREENHOUSE GAS EMISSIONS ($KgCO_2e$)[3]				ADDITIONAL INFORMATION
PER WEEK	PER USE OR DAY	PER YEAR	PER MONTH	PER WEEK	PER USE OR DAY	
5.04	0.72	87	7	1.7	0.24	280 Litres for fridge compartment + 120 Litres for freezer compartment
2.60	0.37	45	4	0.9	0.12	
1.19	0.17	20	2	0.4	0.06	
3.07	0.44	53	4	1.0	0.14	400 Litres
1.58	0.23	27	2	0.5	0.07	
0.72	0.10	12	1	0.2	0.03	
4.50	0.64	77	6	1.5	0.21	300 Litres
2.32	0.33	40	3	0.8	0.11	
1.06	0.15	18	2	0.3	0.05	
4.48	0.64	77	6	1.5	0.21	Capacity: 12 places – 7 uses per week
1.81	0.26	31	3	0.6	0.09	
0.62	0.09	11	1	0.2	0.03	
4.45	1.11	76	6	1.5	0.37	Capacity: 8kg – 4 uses per week – warm wash
1.66	0.42	29	2	0.5	0.14	
0.24	0.06	4	0	0.1	0.02	
11.84	2.96	203	17	3.9	0.98	Capacity 8kg – 4 uses per week, all year round
7.86	1.96	135	11	2.6	0.65	
4.83	1.21	83	7	1.6	0.40	
14.63	2.08	251	21	4.8	0.69	Used 6 month a year, 8 hours a day – Heat output 6 kWs
9.75	1.39	167	14	3.2	0.46	
6.97	0.99	120	10	2.3	0.33	
3.05	0.43	52	4	1.0	0.14	55 inch television – used 5 hours a day
1.14	0.16	19	2	0.4	0.05	
0.39	0.06	7	1	0.1	0.02	
1.39	0.20	24	2	0.5	0.07	24 inch monitor – used 9 hours a day
0.51	0.07	9	1	0.2	0.02	
0.17	0.02	3	0	0.1	0.01	

SMALL APPLIANCES

APPLIANCE	TYPICAL POWER USE (KW)	ENERGY USE (KWH)[1]				RUNNING COST (NZD)[2]	
		PER YEAR	PER MONTH	PER WEEK	PER USE OR DAY	PER YEAR	PER MONTH
MICROWAVE	1.2	58	5	1.1	0.08	19.48	1.62
OVEN	3.0	46	39	9.0	3.00	156.51	13.04
KETTLE	2.2	268	22	5.1	0.15	89.27	7.44
TOASTER	1.5	73	6	1.4	0.10	24.35	2.03
COOKTOP	2.0	1,460	122	28.0	4.00	486.91	40.58
HEATED TOWEL RAIL	0.1	15	3	0.7	0.10	5.07	1.01
ELECTRIC HEATER	2.0	2,920	487	112.0	16.00	973.82	162.30
VACUUM CLEANER	2.0	156	13	3.0	1.00	52.17	4.35
INCANDESCENT BULB	0.06	131	11	2.5	0.36	43.82	3.65
HALOGEN BULB	0.042	92	8	1.8	0.25	30.68	2.56
FLUORESCENT BULB	0.012	26	2	0.5	0.07	8.76	0.73
LED BULB	0.01	22	2	0.4	0.06	7.30	0.61

[1] Source: https://tools.genless.govt.nz/individuals/running-costs-calculator/#!/

[2] 33.35 c/kWh – Source: MBIE, Quarterly survey of domestic Electricity Price, August 2020

[3] Emission factors: 0.1101 kgCO2e / kWh – Source: MfE

		GREENHOUSE GAS EMISSIONS ($KgCO_2e$)[3]				ADDITIONAL INFORMATION
PER WEEK	PER USE OR DAY	PER YEAR	PER MONTH	PER WEEK	PER USE OR DAY	
0.37	0.03	6	0.5	0.12	0.01	4 minutes per use, 2 times a day
3.00	1.00	52	4.3	0.99	0.33	1 hour per use, 3 times a week
1.71	0.05	29	2.5	0.57	0.02	4 minutes per use, 5 times a day
0.47	0.03	8	0.7	0.15	0.01	4 minutes per use, twice a day
9.34	1.33	161	13.4	3.08	0.44	Used 2 hours per day
0.23	0.03	2	0.3	0.08	0.01	Used 1 hour per day, 5 months a year
37.35	5.34	321	53.6	12.33	1.76	Used 8 hours a day, 6 months a year
1.00	0.33	17	1.4	0.33	0.11	30 minutes per use, 3 times a week
0.84	0.12	14	1.2	0.28	0.04	Lights turned on 6 hours per day
0.59	0.08	10	0.8	0.19	0.03	Lights turned on 6 hours per day
0.17	0.02	3	0.2	0.06	0.01	Lights turned on 6 hours per day
0.14	0.02	2	0.2	0.05	0.01	Lights turned on 6 hours per day

WOOD MOISTURE LEVEL METER

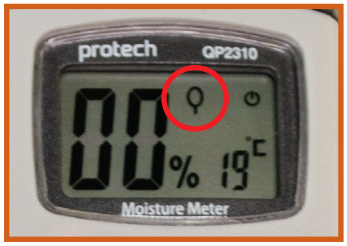
DESCRIPTION

Measures the moisture level in different materials such as wood and building materials. This tool helps you understand the moisture level of your firewood.

HOW TO USE IT?

These instructions explain how to measure the moisture content in the wood:

1. Open the top part of the wood moisture level meter so the measuring electrodes are visible.
2. Hold the red button down to turn the wood moisture level meter ON.
3. Hold the MODE button down to switch from degree Fahrenheit (°F) to degree Celsius (°C).
4. Press the MODE button to switch to firewood mode (**tree icon** - see right).
5. Press the measuring electrodes as far as possible into the firewood.
6. Read the moisture level.
7. Record the reading in the record sheet.
8. Hold the red button down to turn the wood moisture level meter OFF.



Warning: Be careful when using the tool as the electrodes are sharp and may cause injury.

RECORD SHEET

Record the moisture level in your firewood and/or building materials.

To record your readings, you can either create your own table or download and print the record sheet available by scanning the QR Code.

	READING 1	READING 2	READING 3	READING 4	READING 5	READING 6
MOISTURE CONTENT						

SELF-ASSESS YOUR HOME

Ideally, your firewood should be burnt when it has a moisture content of 15-20%. Here are a few reasons you should always burn dry wood:

- Burning wet firewood is not efficient as most of the energy is used to evaporate the moisture rather than warming your house.
- Wet wood burns less efficiently, and produces more smoke, tar and soot that damages your chimney and affects quality of air we breathe.

It is a good idea to always check the moisture content of the wood you buy, especially when it is being sold with a dry wood price.

HOW TO IMPROVE THE HEALTH OF YOUR HOUSE

KEEP IT WARM

Insulation

- Insulate your ceiling and underfloor to reduce heat loss by up to 50 per cent. This can be done at any time.
- Insulate your walls. This is harder and more expensive to do but can be done during renovations.
- Use an inexpensive kit (around $6 per standard size window) to stick insulation film to the frames of wooden windows. The transparent film creates a layer of still air in front of the glass that acts as insulation – just like double glazing.
- Upgrade your doors and windows (double-glazed windows with thermally broken aluminium joinery or uPVC joinery, wooden joinery, etc).

Tip: You may be eligible for a grant for a heater and/or home insulation. Visit these sites for more information:

www.tools.eeca.govt.nz

www.gw.govt.nz/home-heating-and-insulation-assistance

Reducing draughts

- Tighten loose hinges, catches and latches.
- Replace damaged rubber seals around your windows and doors.
- Seal gaps around door and window frames with a sealant to make them weather resistant.
- Fit draught excluders or door snakes along the bottom of your doors.
- Block an unused chimney or fireplace. Use a rubbish bag filled with shredded newspaper. Just make it obvious the chimney is blocked, so no-one tries to light a fire.

Curtains

- Open your curtains during the day to passively heat your house with the sun.
- Close your curtains just before the dark to retain the heat accumulated during the day.
- Use thermal curtains (double-layered with a thick lining) that:
    - touch the floor
    - are wider than the window frame
    - fit tightly against the wall and window frame
    - have a pelmet above curtains to add insulation.

Heating your home

- Choose a heater that uses renewable energies (wood, wood pellets, electricity).
- Choose a model that is efficient and meets your needs.
- Get professional advice when it comes to choosing a new heating system.
- Follow maintenance advice for your heaters.
- Burn dry wood (15-20 per cent moisture content) to increase efficiency and save money.

KEEP IT DRY

Reduce excess moisture:

- Don't dry your clothes inside.
- Put lids on pots and pans when cooking.
- Use extraction fans in the kitchen and bathroom and take short showers instead of a bath.

Open your windows

- Open some windows and doors on opposite sides of the house for 15-20 minutes each day, even in winter, to maintain a good air flow and reduce indoor moisture levels.
- Open your bathroom windows after a shower.
- Open your kitchen windows when cooking.
- Leave your bedroom window open at night if it is safe and suitable. (just a finger's width is enough in winter).
- Install windows with vents to allow ventilation even when the windows are closed.

Reduce humidity in your house

- Extract the moisture to the outside and not into the ceiling:
    - Use an extractor fan in the bathroom.
    - Use a rangehood in the kitchen.
    - Vent your dryer to the outside.
    - Use only externally-vented (flued) gas heaters.
- Use a shower cover to retain humidity in the shower cubicle.

Tip: An effective fan should be able to hold an A4 sheet of paper in place when it's operating and be extracted to the outside (not into the ceiling).

For more information visit: www.tenancy.govt.nz/healthy-homes/ventilation-standard

Raise indoor temperature

- Heat your house to at least 18˚C to experience fewer periods of high humidity.

Reduce moisture levels in your floors

- Install a groundsheet (polyethylene barrier or vapour barrier) under your house to effectively reduce indoor humidity. This is very cost effective and, most of the time, you can do it yourself.
- If your house is on piles, ensure good ventilation of the area under your floor.

Reduce condensation

- Reduce the likelihood of warm air coming into contact with cold surfaces with:
    - good insulation
    - double-glazed windows with thermally broken aluminium frame or uPVC frame or wooden frame
    - curtains.
- Wipe condensation off your windows every day.

Reduce and remove mould

- Reduce mould growth by following the advice in the previous section.
- Remove mould with methylated spirits in order to reduce the health problems associated with the presence of mould.

Firewood moisture content

For more information visit:

- www.mstn.govt.nz/mastertons-air-quality
- www.gw.govt.nz/how-to-keep-your-wood-dry
- www.warmercheaper.co.nz/good-wood/what-is-good-wood

KEEP IT CHEAP

Hot water – use less hot water to reduce your energy consumption

- Use less water and hot water:
    - shower instead of taking a bath
    - reduce your shower time
    - use cold water for your laundry
    - run the dishwasher and washing machine with full loads
    - fix your leaks.
- Install shower flow restrictor (these are inexpensive).
- Install an efficient shower head with a flow rate of 9 litres a minute or less.
- Set the thermostat of your hot water cylinder to 55-60°C (you may need a plumber to do that).
- Wrap your hot water cylinder with a cylinder wrap to reduce heat loss and insulate your hot water pipes (at least the first 1-1.5 m).
- Maintain your hot water system.

Tip: Take the opportunity when renovating to ensure you have an efficient hot water system. For more information visit: www.tools.genless.govt.nz/individuals/water-heating-systems-tool

Appliances

- Choose energy-efficient appliances. Use the Star rating system to help you choose models that best meet your needs.
- Turn off appliances when not in use – do not leave them on standby.
- Do not leave devices plugged in when they are fully charged.
- Use timers and thermostat to reduce your power consumption (e.g. heaters, freezers, lights, etc).
- Identify the appliances that are using a lot of power and replace them, if possible, with more efficient models, or minimise their use.
- Plug multiple appliances into one power board (e.g. all your appliances around the TV) allowing you to switch off the power board rather than appliances one by one.
- Use your smartphone to turn on/off smart WiFi power points.

Fridges and freezers

- Make sure that fridge and freezer doors are sealing properly.
- Leave 3-5cm between the back of your fridge or freezer and the wall, to enable good ventilation. Poor air circulation can double the electricity use of a fridge or freezer.
- Manage the temperatures of your refrigeration appliances (-18°C for your freezer and 2-4°C for your fridge).

Lighting

- Switch your lightbulbs to LEDs to reduce your power bill for lighting by up to 83 per cent.

Electricity plan

The website powerswitch.org.nz helps you find the best electricity and gas plan. Keeping track of your bills will help you understand where you can make savings.

MORE INFORMATION

Well Homes programme is a free service. To check eligibility visit: www.rph.org.nz/public-health-topics/housing-well-homes

Warmer Kiwi Homes programme provides grants to owner-occupiers to cover 67 per cent of the cost of installing insulation and/or heating. To check eligibility visit: www.energywise.govt.nz/tools/warmer-kiwi-homes-tool

Greater Wellington Regional Council offers financial assistance for ratepayers to upgrade their homes via a targeted rates scheme. Find out more here: www.gw.govt.nz/warm-greater-wellington-faqs

Eco-design information sheets on a range of topics helps you improve your home's performance: www.ecodesignadvisor.org.nz/resources

GenLess has more tips on keeping your home warm, dry and healthier: www.genless.govt.nz/living/lower-energy-homes

HomeFit Online Check www.homefit.org.nz

MASTERTON DISTRICT COUNCIL
TE KAUNIHERA Ā-ROHE O WHAKAORIORI

06 370 6300
161 Queen Street
Masterton
www.mstn.govt.nz

TE KAUNIHERA-Ā-ROHE O TARATAHI
CARTERTON DISTRICT COUNCIL

06 379 4030
28 Holloway Street
Carterton
www.cdc.govt.nz

SOUTH WAIRARAPA DISTRICT COUNCIL
Kia Reretahi Tātau

06 306 9611
19 Kitchener Street
Martinborough
www.swdc.govt.nz