

 West Lothian Council	Environmental Health		SUBJECT: TEMPERATURE CONTROL
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Information Sheet FH21

Temperature Control and Monitoring

Introduction

In this guide, all temperatures are given in degrees Centigrade – shown like this :- °C.

Why is it necessary

The main kinds of bacteria that cause most food poisoning become inactive in the cold, and most are killed by heat. Controlling the temperature of food is a very effective way of controlling bacterial growth, and so reducing the risk of food poisoning. There are some bacteria however that will grow at refrigeration temperatures; some cause food poisoning others spoil foods.

How cold is cold?

Bacterial growth slows down when the temperature falls below +5°C. So refrigerators should operate at between +1 to +5 °C, but definitely at no more than +8 °C. You should check your refrigerators at least once every day to make sure that they are operating in this range. If you keep high-risk foods then you should check twice a day. We recommend that you keep a written record of the temperature checks, so that you can prove that you have carried out these checks. If food temperatures exceed the safe limit we would recommend disposing of the food **and** finding out the reason why it happened **and** putting into place a means of stopping this happening again.

Freezers keep food safe for much longer periods, so they operate at much lower temperatures. They should operate at (minus) -18°C or colder (this means at least -18 degrees below freezing), and these should also be checked daily and the reading recorded as above. As before, if food temperatures fall out of the desired temperature range you must decide what to do with it.

How hot is hot?

Bacteria can survive quite a lot of heat and we find that some food is not hot enough to be safe. Most bacteria will die at above +63°C. If you are keeping hot food ready for service then it must not fall below this temperature.

To cook fresh food, it must reach at least +75°C all the way through to make sure all the bacteria are dead. This reading should be held for at least 30 seconds. If not hot enough then continue cooking.

To reheat food that has already been cooked before, it has to reach at least +82°C. If not hot enough then continue reheating until it reaches above +82°C.

What do these rules mean in practice?

Let's look at some of the practical things food businesses should be doing to make sure that they control the temperature of foods properly.

Checking Temperatures

It is very important to check temperatures at key stages of food preparation, such as cooking, reheating, and refrigeration temperatures. To do this properly you will need an accurate and reliable thermometer, which is suitable for use with food.

We recommend that the best type to use is an electronic probe thermometer. These are battery powered, and have a metal probe to stick into food. They show the temperature as numbers in a digital display. There are many types available at different prices. Your food safety officer can help you choose a suitable type and find a supplier.

To use a probe thermometer properly, you must make sure that the probe is germ free before using it. The usual way to do this is to use 'Probe Wipes'. These are special alcohol soaked wipes, which are safe to use with food. Although other types of wipes look similar they do not work. Just rinsing the probe in water, or wiping it on a kitchen tissue will **NOT** work and can be dangerous.

Regular checks on calibration demonstrate the probe works properly. With a mix of ice and water the probe should read 0°C (-1 °C to +1°C is acceptable). With the probe needle partly immersed in boiling water it should read 100°C (+99 °C to +101°C is acceptable). If the test readings fall out with these ranges then change the battery and repeat the procedure. If it is still out of the desired range, replace the probe thermometer.

Keeping Written Temperature Records

As Food Business Operator you should be able to demonstrate foods are being held at, or processed at safe temperatures. Regular recording of monitoring temperatures will allow you to show this. This can be very useful to you if we have to investigate complaints about your business, or if you are ever involved in a food poisoning outbreak, because you will be able to prove that you have been complying with the law.

The records you keep do not have to be complicated, and you do not need special forms. You can record them each day in a diary or small notebook. If you do want to use special recording forms, then we can help you with this.

Delivery

Your suppliers must deliver all perishable food to you at the right temperature, which means that the delivery should come in a refrigerated van. Make sure the food is at the correct temperature, i.e. +8°C or colder for chilled food (best at +2°C to +5°C) and no warmer than (minus) -12°C (preferably -18°C) for frozen food. It is good practice to write down the delivery temperatures so that you can show that the food was delivered at the correct temperatures. You can ask the driver to record the temperature on your delivery note.

Collecting your own chilled food

You must buy food from reputable suppliers. If you purchase chilled or frozen food from the cash and carry or supermarket you need to make sure that it is being kept at the correct temperature. If you do not have your own refrigerated or freezer compartment van you might need to use cool boxes or cool bags. You must ensure that you take the food as quickly as possible back to your premises, with a check being carried out on temperatures upon arrival. A simple fridge thermometer will give the air temperature. Periodically record this to show foods arrived at a safe temperature. The safe temperature range for chilled foods is between +1°C and +5°C, with frozen foods no warmer than -12°C .

Storage (Chilled and Frozen)

Your refrigerator should be able to keep the food at a temperature of between +1°C to +5 °C, maximum +8°C, and frozen food should be stored at -18°C or colder. You should check these daily and keep a written record.

Defrosting

Frozen food should always be defrosted in a cool place, and the best place for this is in the refrigerator. This means that while the food is defrosting it will still always be at a safe temperature. This can take some time, so you will have to plan ahead. Defrost raw food at the bottom of the refrigerator to avoid defrosting juices dripping onto other food.

Microwave ovens can be useful for defrosting quickly, but follow the manufacturers' instructions. Defrosting raw meat in the sink, or under running water, can be dangerous as the splashing water can spread bacteria over a large area, and we do not recommend this method. It is important to make sure that all food is thoroughly defrosted before use, and that defrosting cooked food must always be separate from raw foods.

Preparation

Food kept at room temperatures for longer than is necessary may allow any bacteria in the food to grow. So, any food for preparation (especially high risk foods) should be brought out of the fridge in small batches that can be used quickly and then chilled again until needed. This limits the length of time that bacteria have a chance to grow, keeping the food safe. Remember to keep raw and ready to eat foods separate from each other.

Cooking

Almost all food should be cooked thoroughly to a temperature above +75 °C for at least 30 seconds. There are only a very few exceptions to this, such as rare steaks and some types of fish. Chipsteaks, burgers, and any food made from minced meats must always be thoroughly cooked all the way through.

Cooling

Food which has been cooked, and is to be stored in the refrigerator or freezer for use later, must be cooled down as quickly as possible so that germs do not have a chance to grow. This means that, no matter how much food you have cooked, it must be ready to go into the refrigerator or freezer in about one and a half hours (1 ½ hours).

We know cooling food quickly can be difficult, especially in large quantities, and we will want to know that you have thought about this carefully. Although you must not put hot food into a cold store, the food does not have to be completely cooled before you do so. Once food has cooled to about +35 °C, then it is quite safe to put it into either a large refrigerator or freezer.

Putting hot food into a domestic type fridge or freezer is not recommended. It is possible to cool food to 35 °C in 1½ hours if you use the right method.

We suggest that you pour hot food into large shallow containers to cool. Thin layers let the heat escape quickly. Electric fans can be used to blow air over food to cool it even quicker. Keep checking the temperature so you know when it has reached +35 °C.

You must have a method for doing this that you can prove will work. If you need help in working this out then please ask.

Re-heating

When re-heating food which you have previously cooked, a temperature of at least +82°C must be reached.

Hot Holding/Display

Food should only be held hot for limited periods and should be kept above +63°C. **Do not reheat food in a bain marie or hot holding cabinet, these are for hot holding only.**

Cold Display

Perishable food should be displayed at +1°C to 5°C, maximum +8°C. Perishable foods which are not refrigerated during display can only be kept for a maximum time of 4 hours, including the time taken to prepare them, after which time they must be thrown away.

Transport

If you deliver chilled or frozen food to your customers, ideally you should have a refrigerated or freezer compartment van. If not, you might need to use cool boxes or cool bags. You must ensure that you take the food as quickly as possible to your customer, and that it is still at a safe temperature when it is delivered.

Thermally insulated delivery bags are available for hot food delivery.

Further help

Remember it is your responsibility to ensure that the food served to your customers is safe. If you would like help, or need any further advice, then please contact us on 01506 280000 or environmentalhealth@westlothian.gov.uk