

## Fluke FoodPro Plus Thermometer: When food safety matters



### Food Safety Case Study

### Application Note

**Measuring tools:** Fluke FoodPro Plus Thermometer

**Operator:** Andrew Ng, Corporate Executive Chef for Hard Rock Cafe

**Inspections:** Critical Control Points from HACCP, Hard Rock Cafe, and international health standards



Chef Andrew Ng uses the Fluke FoodPro thermometer to check food temperatures at the Hard Rock Cafe.

**It's a world-renowned brand. And as a corporate executive chef in charge of not one, but ten Hard Rock Café restaurants in the Asia Pacific region, Chef Ng knows that monitoring the temperature of food is vital for both his patron's well-being and the restaurant's reputation.**

From the delivery of food items to storage, preparation, interim storage, baking or chilling, cooking, dressing and serving, temperature plays a crucial role throughout the food preparation process.

Accurately monitoring temperature is the first line of defense against spoiled food, reducing liability and wastage. Early detection of potential food problems ensures food quality and hygiene and prevents food-

borne bacteria from growing.

As such, a reliable food thermometer is an essential instrument for all scale food preparation. Andrew Ng, Corporate Executive Chef for Hard Rock Café is one such operator tasked with setting and maintaining food standards throughout HPC Holdings' ten Hard Rock Café outlets in the Asia Pacific region.

From Seoul, South Korea to Jakarta, Indonesia, he has been doing this job with great pride

since his company obtained the American rock-and-roll themed restaurant franchise some 17 years ago. "Monitoring temperatures is crucial to ensure food quality and safety at all our Hard Rock Café outlets. I have been using thermometers for food safety monitoring since I started its very first outlet in Singapore in 1989," said the 47-year-old chef.

With Hard Rock Café's international franchise director going around the region to

stays in tip-top shape puts extra pressure on management and staff. Add to that the differing hygiene and food handling standards in different SE Asia countries, where each health authority has its own set of rules and regulations.

### **Raising The Bar**

To meet the company's stringent food requirements, and those of the differing countries, Chef Ng relies on his Fluke FoodPro Plus thermometer throughout his operations. The chef is no stranger to the Fluke brand, having used older models over the last 15 years.

The chef has 12 FoodPro Plus thermometers: One for each outlet, a spare and another for his personal use. Carrying it with him on his frequent inspection checks, Chef Ng says the portable, pocket-sized FoodPro Plus thermometer has proved itself a ready and reliable asset in his kitchen operations. "Having the instrument easily accessible in the kitchens helps answer the queries and concerns raised by food safety inspectors conducting surprise checks, as well as those by the service quality auditor from Hard Rock Café's US head office."

### **Two-In-One Tool**

With the FoodPro Plus, Chef Ng and his kitchen staff are able to read both internal and external temperature quickly, accurately and with greater convenience. Chef Ng's present version offers both contact and infrared (IR) capabilities. The IR mode enables him to quickly scan and read surface temperatures without touching the food. This is especially convenient during kitchen inspections. The thermometer comes with an RTD (Resistant Thermal Device) platinum-tipped extendable probe that allows him to pierce food items and verify the core temperature where necessary.

He's impressed with the new FoodPro Plus thermometer. "The present one weighs only 180 grams. The old one was bulky by comparison, and it weighed some four to five times more," says Chef Ng. He also appreciates the fact that there are no connecting wires in the unit to impede movement, and its one-handed operation is convenient.

His kitchen staff members were using the older handheld digital thermometer with a wire connected contact probe. "It required the full use of two hands and had a much slower response time. The sensor needed some time to adjust to room temperatures once it took measurements of a hot or cold F&B item."

With the present model, a read-out is obtained by pointing at the target area within a 25 mm to 250 mm (1 in to 10 in) distance. The IR technology registers the temperature while a spot of illumination shows the operator the specific targeted area. The information is then fed to the backlit LCD screen in less than half a second.

Faster read-outs rank high in Chef Ng's book. His kitchens operate 365 days a year. The Singapore kitchen prepares an average of 600 meals per day. Its Beijing counterpart serves some 2,000 meals per day while its Taipei restaurant dishes out some 900 meals per day. On a daily average, the total combined outlets prepare 9,000 meals per day. Faster definitely translates into greater efficiency in his hectic kitchens.

### **Plan of Action**

Such thermometers have become an integral part of HACCP (Hazard Analysis and Critical Control Points) routines for institutional and large chain operators. This food safety procedure is now mandated for meat, poultry and seafood production plants, as well as fruit and egg process plants. The procedure covers the flow of food as it travels in and out of the temperature danger zones. The US Food and Drug Administration (FDA) recommends using both HACCP guidelines and infrared thermometers (1999 Federal Food Code, Annex 4, Section 8).

Infrared thermometers assure the greatest accuracy in the food critical Danger Zone (above 4 °C (40 °F) and below 60 °C (140 °F) where harmful bacteria grow most rapidly. If foods such as dairy products, shellfish, meats, etc, remain within this range for more than four hours, food-borne bacteria takes growth. Since it's the owners, operators and service personnel that bear every day responsibility for providing healthy quality food, they need both awareness and plan of action to ensure foods are out of the Danger Zone.



To follow the HACCP system, operators must monitor food safety and quality at each of the Critical Control Points (CCP). A CCP is any place along the food chain where time/temperature issues are critical to ensure food safety. For Chef Ng, these include the following areas:

**Receiving Bay:** Quality assurance starts when a delivery of fresh or frozen food arrives. The thermometer is used here to check eggs, dairy, frozen meat etc and where necessary, the internal temperature of the delivery truck. This ensures that the food is received within safe, permissible temperatures.

**Storage:** Once the food items are received, the staff has to verify that frozen and chilled foods are stored at or below 4 °C (40 °F). Chef Ng also uses the thermometer to conduct regular checks to find warm spots or uneven cooling areas in the storage units.

**Cooking:** Exact temperatures become vital in ensuring that all food items are properly cooked to specific temperatures. For example, in whole chickens or turkeys, a thermometer scan ensures that the surface temperatures are within safe parameters. To confirm that the fowl is well cooked inside, the internal probe is inserted for confirmation of temperature.

**Holding and Serving:** Ready food products that are waiting to be served, like salad items and dressings, are kept in holding or serving areas. A quick check can be made anytime with the thermometer to ensure that the items are out of the critical temperature Danger Zone.

**Cold Holding:** For walk-in chillers or cold-handling rooms, the thermometer is used to quickly verify that the temperature of products such as marinated meats or cold buffets do not exceed 4 °C (40 °F), as mandated by the FDA's 1997 Food Code.

**Hot Holding:** Some prepared foods like mashed potatoes are kept in steam tables or warming ovens. These have to be carefully monitored to ensure they remain at 60 °C (140 °F) or above. Here, food service handlers use the non-contact measurement mode to quickly scan hot or cold foods and view surface temperature readings.

To check on the internal temperatures of prepared soups, gravies and other liquid foods, Chef Ng recommends that the liquids be stirred thoroughly before a reading is taken.

With the HACCP check feature on the thermometer, inspections can be carried out 20 times faster. At one glance, the green light shows Chef Ng that the food is within the safe hot and cold holding temperatures. Conversely, a red light indicates potentially dangerous food temperatures.



## Hits The Right Spot

When he conducts food safety seminars or food preparation demonstrations for hotel executive chefs and the US Department of Agriculture, Chef Ng brings his FoodPro thermometer along. "I pack one whenever I travel – whether to check on our overseas outlets or to give a seminar. I find it is very convenient. I need only one small battery to operate the instrument. The infrared facility is very impressive and I would recommend it to the other chefs," says Chef Ng.

From the restaurant's delivery access to the kitchen's main line of operations, he uses the Fluke FoodPro Plus thermometer wherever there is a need. From temperature surveillance of food-service environments to the finished cooked product, "it's just perfect for the job – not too small, not too bulky," says Chef Ng.

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Printed in U.S.A. 2/2006 2584527 AW-EN-N Rev A