



U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Rohit Khanna
Fire Protection Engineer
Combustion and Fire Sciences
Directorate for Engineering Sciences

Tel: (301) 504-7546
Fax: (301) 504-0533
Email: rkhanna@cpsc.gov

September 7, 2003

Senka Kriskapa
Project Manager
Canadian Standards Association
5060 Spectrum Way
Mississauga, Ontario
L4W 5N6
CANADA

Subject: PROPOSED REVISIONS TO THE HARMONIZED STANDARD ON SPECIALTY COOKING APPLIANCES, ANSI Z21.89/CSA 1.18

Dear Ms. Kriskapa:

The U.S. Consumer Product Safety Commission (CPSC) staff has recently completed testing several models of turkey fryers. The staff believes that revisions to the Standard on Outdoor Cooking Specialty Gas Appliances, ANSI Z21.89/CSA 1.18, are needed to reduce the risk of fire associated with turkey fryers. This letter contains general proposals that we believe can be adopted to effectively address the fire scenarios. In addition, the staff will provide specific proposals when we comment on the report of the April 8-9 Technical Advisory Group (TAG) meeting.

The major hazard pattern associated with turkey fryers is ignition of cooking oil. Due to the high heat output of the fryer burners, the potential exists for cooking oil to reach auto-ignition temperatures. The staff believes that these fires can be avoided through the incorporation of an oil overheating performance test in Part II of the standard. The test should consist of filling the fryer's cooking vessel to the maximum directed volume and operating the burner at maximum flow for a specified period of time. Acceptable performance for this test should be that ignition of oil shall not occur. At this time, we believe that a reasonable duration for this test would be two (2) hours. CPSC staff proposes that discussion of this test be included on the TAG's agenda at the next committee meeting.

One method for complying with this performance test is to reduce the fryer burner heat output. CPSC staff testing of currently available fryers shows that they can heat oil to the recommended cooking temperature of 350° F in a relatively short period of time. Reducing the burner output should not adversely impact the fryer's ability to heat oil in a reasonable amount of time. An alternate approach to meeting an overheating oil performance test could be the use of safety controls. During the April TAG meeting, one attendee presented information on two types of safety controls that could prevent overheating oil fires. The thermostatic and shut-off controls are promising options that we believe can be incorporated into fryer designs. Either of these

Ms. Kriskapa

Page 2

approaches, once perfected, could be used to meet the requirements of an oil overheating performance test in the ANSI/CSA standard.

Another area of concern is the performance of thermometers. Thermometers used in turkey fryers should be accurate and durable. They are important components that warn consumers when oil heats to unsafe levels. In addition, since turkey fryers are for outdoor use and sometimes used in extreme weather conditions, the thermometers should be durable in these environments. Some of the thermometers provided with the fryers tested by CPSC staff were of such poor quality that tapping on the face of the device would cause the needle to rotate. CPSC staff recommends requirements to ensure accurate and reliable thermometers are supplied with turkey fryers. We understand that the TAG has raised the issue of thermometer performance. We will provide specific comments on this issue when we respond to the report of the April TAG meeting.

During testing of turkey fryers, staff noticed that decorative paint used on some fryer stands ignited and produced large flames during initial use. Although some instructions warn consumers to light the burner prior to cooking to remove this paint, this is not a safe procedure and if the consumer fails to do so, a severe explosion could occur if the hose ignites. Even though the standard requires a Type I or Type II connection between the regulator and propane tank, reliance on this safety device alone is not sufficient to allow the use of flammable paint. The use of flammable decorative paint should be prohibited by the standard.

During the April TAG meeting, there was much discussion on the content of warning labels. It is important that warning labels are clear and concise so consumers are made aware the potential dangers associated with turkey fryers. The staff will provide detailed comments on warning labels when comments are provided on the TAG report.

Finally, the CPSC staff recommends that the standard require fryers to come equipped with maximum fill lines. The fill lines should be obvious and permanently marked for consumers. It is important that fill lines account for expansion of oil during heating. If a consumer errs in adding too much oil, a boil-over event can occur and result in a severe fire hazard.

The preceding comments are those of the CPSC staff and have not been reviewed or approved by the Commission. For further information or clarification on these issues, please call me at (301) 504-7546.

Sincerely,

Rohit Khanna