

ALL YOU NEED TO KNOW ABOUT **HANDLES FOR COOKWARE** CERTIFICATIONS



LA TERMOPLASTIC - F.B.M.

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Most countries today, whether large or small, have a manufacturing structure of industrial companies operating in the cookware sector to produce pots and pans.

In some cases, this is limited to manufacturing for the domestic market, but nowadays, every country is interested in expanding its exports and this is obviously also true in the cookware industry, and not just for manufacturers located in Asian countries. This is an important factor if we consider that safety measures vary depending on the final market and that therefore, standardization and certification tests for distribution must be performed according to the specifications of the country where the product will be marketed.

Specifically, we can say that the main international frame of references for cookware certifications are the European standards (EN) and those of the United States (CMA).

When dealing with manufacturers operating outside of the target markets for the commercialization of the finished product, it is therefore even more important to ensure that the cookware purchased for domestic use conforms to the standards.

It is also important that it can properly pass the required tests before being placed on the market. Unfortunately, this is not always the case and some producers tend to lower their quality standards to save money, resulting in limitations which become evident when the finished product is subjected to cookware certification tests.

It is essential for buyers and retailers purchasing abroad to know and understand the industry regulations to avoid making mistakes. This is true when purchasing both preassembled cookware items for domestic use, as well as cookware accessories, particularly handles and knobs. In every one of its plants, F.B.M. is committed to subjecting its products to the tests required by the international cookware certifications, also based on their targeted destination.

1. EUROPEAN REGULATIONS

EN 12983 - 1

EN 12983 - 2

The EN 12983-1 standard specifies the safety and performance requirements for cookware items intended for domestic use, on top of a stove, cooker or hob. Several articles in this standard refer to cookware certifications, universally applicable to all cookware regardless of material or method of manufacture, except for glass, ceramic and glass-ceramic.

Taken in its entirety, the standard is very comprehensive, offering a complete overview of the subject area and providing all the necessary information on compliance tests to those operating the sector.

According to the European Regulations, to be considered valid and capable of validation, the tests must be performed in laboratories under very specific conditions with respect to the environment (for example the standard specifies the ambient temperature at which the tests should be conducted to obtain optimal results) as well as the equipment to be used to test the products.

Although F.B.M is not technically responsible for certifications, since these are required for the finished product only and not for the individual accessories, we still test all our own products in accordance with the EN 12983-1 standard, (as described in paragraph 7), which lists the specific instructions for properly performing all the compliance tests on accessories.



1.1 EUROPEAN TEST

The tests specified in the EN 12983-1 standard which concerns accessories for cookware are as follows: resistance to burning, heat resistance, torque resistance, bending strength, fatigue resistance and thermal hazards. The purpose of these tests is to subject the product to excessive stress to ensure the mechanical resistance of the items and, consequently, the safety of the product for the end user.

Let's examine these tests and their purpose in detail:

- 1. RESISTANCE TO BURNING:** it ensures that the handles will not melt, become deformed, or show signs of melting, when exposed to a direct flame.
- 2. HEAT RESISTANCE:** establishes the standard temperature of heat resistance of items which must be free from cracks, splits and blisters which, in the case of handles, is set at 150° C.
- 3. TORQUE RESISTANCE:** specifies the resistance that the handle must have to torsion, determined by applying a torsional stress on the screw axis, and stipulates that the movement of the handle shall not be any more than 10° in any direction.
- 4. BENDING STRENGTH:** tests the fixing system of the handle to the pan that must withstand a bending force of 100 N without resulting in structural failure which would render the product unusable.

5. FATIGUE RESISTANCE: is performed with a special apparatus that stresses the cookware, subjecting it to a load 1.5 times greater than the volume of its capacity by raising and lowering the item 15,000 times.

6. RESISTANCE TO THERMAL HAZARDS: this test indicates the suggested temperature limits for handles. Based on the type of material examined, the temperature reached after a determined period of cooking time must not exceed a certain heat threshold limit (for example, 55°C for metal and 70°C for plastic). However, this test stipulates that if the temperature of the handle exceeds these limits, the manufacturer is obligated to indicate that the use of adequate protection is required to ensure safe handling of the cookware.

1.2 EN 12983 - 2

Along with the above mentioned tests, the EN 12983-2 European standard is particularly important in this sector as it explicitly outlines additional requirements for glass, ceramic and glass-ceramic cookware.

This section presents, among other things, the resistance to pull of assembled handles, which are pulled using a weight of 10 kg and, under these conditions, must withstand a further dynamic impact corresponding to the force of a hammer blow, without any damage to the anchoring system and a resulting reduction in the performance of the cookware itself.

The above mentioned information describes a part of the guidelines followed by F.B.M. for its production but, above all, lays out the basic requirements for obtaining cookware certifications in Europe for the commercialization of household cookware accessories. If products do not pass these tests, they should not be placed on the market, as they are potentially harmful to the end user.

2. THE U.S.A REGULATION

AND HOW IT DIFFERS FROM THE EUROPEAN REGULATIONS

In addition to these standard tests, over the years, F.B.M. has developed further tests on the product based on its experience operating in various markets and the requirements of its different customers. These tests are part of what the company calls F.B.M. Quality Management System and are performed ad hoc for special products that could require specific tests in addition to the standard ones. The United States applies a different and specific standard concerning quality and safety in the cookware sector. The CMA, an acronym for the Cookware Manufacturers Association, which since 1922 has promoted excellence in the cookware sector, has been entrusted with drafting a standard and overseeing production. Manufacturers who are association members are formally committed to work to guarantee the utmost safety to consumers, focusing on manufacturing excellence and ethical management. The CMA document is very comprehensive in its entirety. It begins with a complete overview, which starts by defining top-of-range cookware as those products used for foods which cook by direct contact with the heat source. It also specifies the standard sizes and capacities for cookware instruments designed for the American market, to help consumers purchase these products.

Also included in this regulation is a section dedicated to tests and procedures to determine the reliability and safety of cookware products based on the association's standards.

Generally speaking, we can confirm that the principles of the American and European standards are very similar, even though the CMA includes different tests not found in the European standards and excludes others.

One of the most challenging tests required by the CMA is surely the assembly strength test which states that the handle must support a minimum 4 kg weight placed in the center of the pan without causing a deformation of the handle.

The test proves to be quite challenging because it must be performed in a heated environment (oven at 350°F), which can pose a great risk to the products since the handle, which is already under strain, is subjected to considerable stress.

Other tests however, are more in line with the European version, for example, the torque resistance test which requires a different load to be applied on the central axis of the handle, but however stipulates that this should not cause a deflection greater than 10° on the fixing system.

In the same way, the fatigue resistance test is standardized at 15,000 cycles of raising the product loaded with a weight.

The flame/softness test is even more challenging as it requires two periods of exposure to direct flame, without the accessory completely losing its solid state, or softening to the point of losing functional and structural strength.

Considering all this, and after comparing the two international regulations for cookware certification, the differences in the procedures become quite clear.

The CMA regulations contain no heat resistance, bending strength and thermal hazards tests, as well as no method to test resistance to pull of handle assembly, in dynamic conditions.

Conversely, in the EN regulations there are no assembly strength tests with load, both in a hot and cold environment.

However, the US and European standards, are conducted basically in the same way, with small differences in times and tolerance weights, but the results to be achieved are similar.

A comparison between EN 12983 regulation and CMA regulation.

EN 12983	CMA
7.2 Resistance to Burning	4.4 Flame Softeness Testing
7.3 Heat Resistance	-
7.4 Torque Resistance	3.3.3 Torque Resistance for Stick Handle Pans
7.5 Bending Strength	-
7.6 Fatigue Tests	3.3.5 Fatigue test
7.7 Thermal Hazard	-
4. Resistance to pull of handle assembly	-
-	3.3.1.1 Assembly Strength
-	3.1.3.2 Test Procedure for COLD (room temperature) assembly strength
-	3.3.1.3 Test Procedure for HOT assembly strength

3. TESTS CONDUCTED IN F.B.M. LABORATORIES

As mentioned previously, although F.B.M. is not responsible for certification as the obligation lies with the manufacturer of the finished product or the retailer that sells it, our company is committed to perform the tests prescribed by international regulations.

Furthermore, F.B.M. also subjects the accessories it produces to nonconventional and non-standardized tests to guarantee a higher level of safety and reliability for end users.

In addition to the tests mentioned in the previous paragraph, F.B.M. also conducts special tests that it has developed over the years, like aging and shock tests.

The aging tests are performed by subjecting the products to a continuous cycle of dishwashing and oven for an accelerated simulation of normal conditions of use to determine the degree and speed of aging, and therefore any possible changes in the the product.

The work performed in F.B.M. laboratories is very important and enhances the value of its products because of our rigorous standards for internal certifications.

However, we remind that F.B.M. produces only cookware accessories and consequently, the tests only apply to these products.

Therefore, the responsibility for official certification of the finished product lies with the client companies.

These companies can obtain final complete certifications from internationally recognized test Laboratories.



Upon request, F.B.M. can provide the results of tests conducted in its laboratories for its products. Since F.B.M. caters to a global market, to facilitate administrative and logistical issues, the company has four branches on different continents (Europe, Asia, Latin and South America), each equipped with state-of-the-art installations and sophisticated digitalization processes which guarantee the quality of our products. As we have seen, cookware regulations are not the same all over the world and F.B.M. respects the specific standards of different countries. For example, Brazil has recently officialized the new INMETRO No. 398/2012 standard for the cookware sector, which came into effect April 2018. Therefore, the work conducted by F.B.M. in each of its plants is directed towards the manufacture of products that respect both national and international standards.

To provide further guarantees the quality of the products, F.B.M. has also developed safety tests that assess aspects of the accessories that are not included in the international standards.

In conclusion, F.B.M. has established itself as a leading global presence with a strong commitment to developing cutting-edge cookware accessories.

All tests are conducted in the prototype phase before our products are placed on the market. Afterwards, tests are performed on sample products from each plant, with the utmost attention to the results from every test session.

As a result, companies only receive accessories that are ready to assemble, that have already been tested, and will therefore be reliable and comply with subsequent official tests for cookware certifications.

Thanks to our commitment and dedication, along with our careful attention to the specific standards of each target market, every F.B.M. plant in the world has continued to gain recognition as being one of the most important operators in the cookware accessories industry and your reference for quality topics of cookware accessories.



Thank
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