STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard Methods of Test for RUBBER

METHOD 19. RUBBER TEST MIXES—PREPARATION, MIXING AND VULCANIZATION—EQUIPMENT AND PROCEDURES*

1 SCOPE. This standard sets out the method for the preparation, mixing and vulcanization of rubber test mixes, and specifies the equipment.

2 MATERIALS. The standard materials required for the various standard test recipes shall be NBS† standard reference materials as indicated in the appropriate standard, or shall be in accordance with the relevant national standards.

3 COMPOUNDING PROCEDURE.

3.1 Batch Size. The standard laboratory mill batch mass, in grams, shall be as stated in the appropriate standard.

NOTE: The standard batch size, in grams, for internal mixers may be obtained from the following equation:

$$B = C \times \rho \times 10^6 \times f$$

where

B = the standard batch size, in grams

C = the normal mixer capacity, in cubic metres

ρ = the density of the compound at 23°C, in tonnes per cubic metre

f = the fill factor (normally the subject of agreement between purchaser and supplier)

3.2 Accuracy of Weighing. The rubber and carbon black shall be weighed to the nearest 1 g, the sulphur and accelerator to the nearest 0.02 g, and the zinc oxide and stearic acid to the nearest 0.1 g. All other ingredients shall be weighed with an accuracy of ± 1 percent.

3.3 Carbon Black. Unless otherwise specified, carbon black shall be conditioned before weighing, by heating in an oven at a temperature of 100 + 10, – 0°C for 2 h to 2.5 h. The black shall be placed in an open vessel of suitable dimensions, so that the depth of the black is no more than 10 mm during conditioning. The black, conditioned as above, shall be stored in a closed moisture-proof container until it is required for mixing.

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* Derived from and essentially the method described in ISO 2393—1973, Rubber Test Mixes—Preparation, Mixing and Vulcanization—Equipment and Procedures.

† National Bureau of Standards of the U.S.A.