Handling and Application Instructions for Real Chocolate

Molding

Tempered chocolate is pumped into a hopper. It is necessary to control and maintain temperature as well as balance the level of usage and replenishment. Molds must be clean and dry, and free of residue, water spots, oils, old chocolate, and foreign material. It is recommended that molds be periodically cleaned to ensure the best appearance of the molded product.

Cooling

Proper cooling is as important as the tempering process itself. Proper cooling ensures the chocolate does not lose temper and results in a final product that is free of fat bloom, has good gloss and snap, and has the correct crystal size and type. When properly cooled, chocolate will release easily from a mold or surface. Ideally, the cooling tunnel will have good air flow and circulation, with individual zone control. Cooling tunnels typically have at least 3 cooling zones and use air that has a low relative humidity. Recommended zone temperatures are as follows:

Zone 1: 60 – 65°F
Zone 2: 45 – 50°F
Zone 3: 60 – 65°F

The increase in temperature at the exit zone prevents condensation from forming on the chocolate, which will lead to sugar bloom. Residence time in the tunnel must be adequate for proper cooling. This is achieved by having the appropriate tunnel length and belt speed.

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Storage & Handling

All chocolate should be handled and applied with great care in order to achieve a desirable appearance. Chocolate should be stored in a cool, dry environment that is free from odors. It is recommended that all customers use a storage facility with a temperature of 55-65F and less that 50% humidity for both ingredients and finished products. Any moisture, including free or atmospheric, will have a significant impact on the flow property of the chocolate and must be avoided. Transportation should also be controlled to not exceed 60 – 70°F and 60% humidity. Chocolate should not be frozen, as the product has a high likelihood of exhibiting bloom after returning to room temperature.

Melting

Chocolate should be warmed to 115 – 120° F with indirect heat, continuous agitation, and under controlled conditions. This is necessary to ensure all fat crystals are completely melted. Not completely melting the chocolate can result in tempering issues. It is critical not to overheat chocolate. Burning of the sugar may occur, creating off flavors and thickening of the product.

Chocolate Tempering

After complete melting, the chocolate must be cooled to the proper seeding temperature. The seeding temperature is 84-86F for dark chocolate and 82-84F for milk chocolate. To complete tempering, dark chocolate must be warmed to 88 – 90° F, milk chocolate warmed to 86 – 88° F. Temperatures are approximate and can vary based on formulation. Exact tempering parameters will depend on the type of tempering equipment used.

Enrobing

Tempered chocolate is pumped into the enrober hopper. It is necessary to control and maintain temperature as well as balance the level of usage and replenishment. Product to be enrobed should be approximately 70° F at the time of enrobing. If too hot or too cold, it will de-temper the chocolate resulting in fat bloom or a dull appearance, respectively. Adjustment of blowers is recommended to increase or decrease chocolate pickup, rather than adjustment of temperature, which can de-temper the chocolate. The temperature of the blower air should closely match that of the tempered chocolate.