



**CALCULATION OF THE FLAKE ICE
MACHINES NEED ON THE FISH COUNTER
OF SUPERMARKETS**



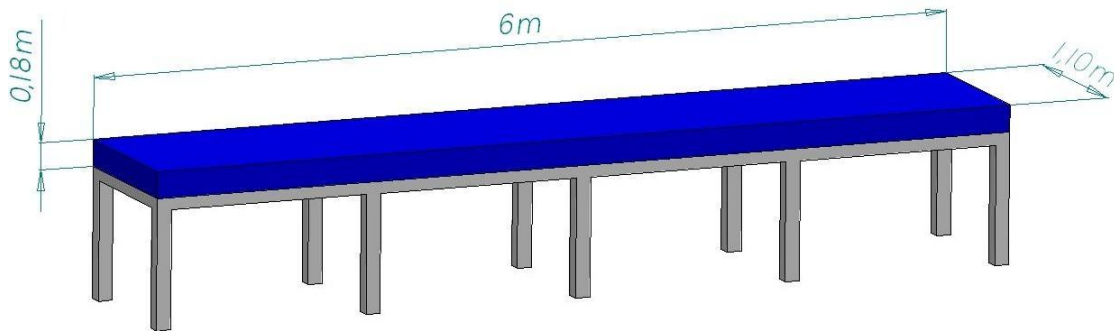
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1. PURPOSE

Establish the calculation method to apply to determine the necessary combination of ice makers, according to the volumetric requirement of the ice bed on the fish counter display of supermarkets.

2. CALCULATION METHOD

For a counter which is 6 m long x 1.10 m wide and with an estimated ice height of 18 cm:



The volume of ice required is $6 \text{ m} \times 1.1 \text{ m} \times 0.18 \text{ m} = 1.19 \text{ m}^3$ of ice

Data to be considered:

- Ice density, scale ice:
917 Kg/m³
- Air holes in scale ice mass:
50% (coefficient 0.5)
- Estimated % of ice lost during handling:
10% (coefficient 0.9)

For a single preparation per day of the display counter the necessary kilos of ice to fill this volume are calculated according to the following formula:

$$\text{Ice Kg need} = (\text{Vol m}^3 \times \text{Ice density Kg/m}^3 \times \text{our Air holes coefficient}) / \text{Lost ice coefficient during handling}$$

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AN EXAMPLE OF A SUPERMARKET WITH A DISPLAY COUNTER MEASURING 6 x 1,1 x 0,18m

Ice needs = $(1,30\text{m}^3 \text{ ice} \times 917\text{Kg} / \text{m}^3 \times 0,50) / 0.9 = 605 \text{ Kg}$ of ice needed to fill this volume.

Additionally, include the Kg of ice renewal that is added to the counter during the rest of the day and that is supplementary to what is necessary to fill this volume on Monday's morning. As an example, we assume 350Kg therefore, $605 \text{ Kg} + 350 \text{ Kg} = 955 \text{ Kg}$.

With the total Kg that is needed daily, the production tables are used according to the ambient temperature of the premises and the temperature at which the water enters the machine.

The machine or machines necessary to satisfy this production is then obtained.

It is recommended to size them for the most unfavorable case: summer and the warmest region of the country. Room temperature in the premises: 25°C (air-conditioned) and water temperature 20°C . In this situation and to cover the ice needs, it will be appropriate the installation of a duplex system with two units IQ550 with an SCD 600 or a SCALA 1000 with an SCD600 system.

3. CONCLUSION

Since each ice maker manufacturer publishes nominal productions in their catalogue measured in different conditions, to make a correct comparison and sizing of the equipment necessary it is vital to check their data sheets with the productions at the usual ambient temperature and water input temperature in premises where the ice maker is to be installed.

ITV Ice Makers' policy defends transparent communication to the market of real productions of machines in each ambient and water temperature condition, advising its customers on the correct sizing of their installation and the necessary ice makers to meet the amount of ice required.