Ice Bomb 1000828

Instruction Sheet

09/15 ALF

1 Cap
2 Ice bomb
3 Spacer rings
4 Cast-iron bolts

1. Description

The ice bomb is used to demonstrate the expansion in the volume of water when it freezes and the enormous forces that can be generated.

The ice bomb consists of a steel cylinder with a plastic cap. Attached to the cylinder there is a shackle with a pair of holes through which a cast-iron bolt can be passed.

2. Equipment supplied

1 Basic unit
1 Plastic cap
3 Spacer rings
10 Cast-iron bolts

3. Accessories

Set of 10 cast-iron bolts	1000827

4. Technical data

Dimensions: approx.	40×30×75 mm³
Max. bolt diameter:	10 mm
Weight:	620 g approx.

5. Operation

5.1 Preparation for the experiment

- Cool some distilled water down to about 4°C.
- First check the fitting of the bolt in the ice bomb, by closing the cylinder with the plastic cap and inserting a bolt through the shackle.

The bolt should fit tightly. If necessary reduce the distance between the cap and the bolt by using spacer rings.

5.2 Experiment procedure

- Fill the cylinder with the cooled water and close it with the plastic cap.
- Fit the bolt into the holes so that it projects no more than 1 cm on one side of the shackle. If not too much is broken off, the bolt can be used again another time.
- Put the entire assembly in a small plastic bag and place it in the freezer compartment of a refrigerator.

After about 15 minutes the bolt will be found to have snapped.