
INTERNATIONAL STANDARD



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Equipment for vine cultivation and wine making — Grape presses — Methods of test

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FOREWORD

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5703 was developed by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, and was circulated to the member bodies in March 1977.

It has been approved by the member bodies of the following countries :

Australia	India	Romania
Austria	Iran	South Africa, Rep. of
Chile	Italy	Switzerland
Czechoslovakia	Korea, Rep. of	Turkey
France	New Zealand	United Kingdom
Germany, F.R.	Portugal	U.S.S.R.

The member body of the following country expressed disapproval of the document on technical grounds :

Spain

Equipment for vine cultivation and wine making — Grape presses — Methods of test

0 INTRODUCTION

The main operations characterizing a press are :

- feeding-in the grapes;
- compression of the grapes;
- extraction of the must or the wine;
- removal of the pomace.

These operations may be continuous or discontinuous, depending on the type of press.

These main operations may be accompanied by an auxiliary operation such as the disintegration of the grapes, which are compressed during the pressing operation.

The presses may be fed with grapes having the following characteristics :

a) *physical*

- whole, pumped or not
- crushed
- destalked
- destalked and crushed before or after destalking
- drained or not
- etc.

b) *technological*

- fermented
- heated
- submitted to carbonic maceration
- enzyme-treated
- etc.

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies technical test methods for grape presses.

It applies to continuous and discontinuous presses.

2 REFERENCES

ISO 3835/II, *Equipment for vine cultivation and wine making — Vocabulary — Part II*.

ISO 3835/III, *Equipment for vine cultivation and wine making — Vocabulary — Part III*.¹⁾

3 DEFINITIONS

In addition to the definitions given in ISO 3835/II and ISO 3835/III and, in particular,

“load : The mass of fresh or fermented grapes supplied to the press”,

the following definitions apply :

3.1 yield :

- For discontinuous press : The ratio of the load to the pressing time between the commencement of loading and the end of unloading.
- For continuous press : The ratio of the load supplied to the time of continuous operation.

3.2 overall yield (for discontinuous acting press) : The ratio between the load and the time of pressing from the commencement of loading to the end of evacuation of marc.

3.3 gross output : Relationship between the total mass of crude liquid extracted and the load applied.

3.4 net output : Relationship between the total mass of the clear must or clear wine extracted and the load applied.

3.5 overall evaluation : Percentage assessment, from the load supplied, of the clear must or the clear wine, the insoluble particles and dried pomace.

3.6 specific energy consumption : Quantity of energy absorbed (work) per unit of mass of the load applied during the time used for calculation of yield.

1) At present at the stage of draft.

4 PRINCIPLE

Determination of technological characteristics for the press to be tested and comparison of the quality of must or wine obtained (both for its analytical properties and its sensory properties) with that of the must or wine from a reference press.

5 EQUIPMENT

5.1 Oenological equipment

In the test station it is mandatory to have :

- a mechanized emptying tank, as shown in the diagram given in annex D, for preparing the grapes, having a capacity sufficient to fill the reference press and the press to be tested (for example, having a capacity of approximately 250 hl) fitted with a drainage chimney;
- calibrated vats;
- plastic bags (having a capacity of 3 to 5 l);
- one-litre glass jars, sealable;
- products for inhibiting fermentation : sodium fluoride, essence of mustard, magnesium salicylate, ethyl monobromacetate;
- refractometer;
- densimeters;
- a mustmeter;
- thermometers;
- graduated cylinders;
- stirring rods;
- detachable labels;
- desiccation oven;
- apparatus for measuring the turbidity (nephelometer, differential absorption meter, colorimeter, etc.).

5.2 Mechanical and electrical equipment

In particular, the station shall have the following equipment :

- a reference press which is mandatorily a vertical hydraulic press, having the technological characteristics given in annex E. It shall be fitted with a control, recording and regulation device for the pressure;
- an open trough for distributing the grapes to be pressed;
- two weighing hoppers;
- electric meters;
- voltmeters;
- ammeters;

- chronometers;
- a 20 000 g centrifuge;

and all equipment necessary for measuring the consumption of energy.

6 PROCEDURE

6.1 Pressing

6.1.1 General specifications

The pressing of the press during tests shall be compared with that of the reference press.

By means of a distribution duct, pass the grapes to be pressed simultaneously into two weighing hoppers situated above the entrance to the reference press and press undergoing tests.

The pressing programme of the press undergoing tests shall be the programme recommended by the constructor.

An operating sheet (or check list) for the press (see annexes B and C) shall be completed for each test. On this sheet shall be entered the properties of the grapes used : variety of vine, degree of cleanliness, maturity, duration of draining, duration of fermenting, temperature of the grapes, etc.

The minimum test sample of sound, whole grapes, stored or processed in the mechanized emptying tank (to be divided between the press to be tested and the standard press) should be sufficient to fill two presses homogeneously.

Before pressing, subject the sample to static draining in this vat for a maximum period of 30 min; do not begin draining until the vat has been completely filled. For the continuous acting press, draining of grapes should be sufficient to ensure a normal working.

The pressing programme for the standard press shall comprise sufficient screwing operations maintained by an automatic regulating device, to obtain a gross output approximately equal to that of the reference press.

6.1.2 Various types of grape to be pressed

The effective dimensions of the cage of the standard press represent an effective volume of approximately 1 000 l.

6.1.2.1 PRESSING WHOLE GRAPES (CHAMPANIZATION METHOD)

This is when the grapes are pressed and have not previously undergone any mechanical action before arriving at the press.

The minimum test sample of sound grapes (to be divided between the press to be tested and the standard press) should be sufficient to fill the two presses homogeneously.