

Translated English of Chinese Standard: FZ/T07007-2020

www.ChineseStandard.net → Buy True-PDF → Auto-delivery.

Sales@ChineseStandard.net

FZ

TEXTILE INDUSTRY STANDARD OF
THE PEOPLE'S REPUBLIC OF CHINA

ICS 13.020.10

W 04

FZ/T 07007-2020

**Minimum allowable values of water efficiency and
water efficiency grades for dyeing machine**

染色机水效限定值及水效等级

Issued on: April 16, 2020

Implemented on: October 01, 2020

Issued by: Ministry of Industry and Information Technology of the
People's Republic of China

Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions	4
4 Categories and technical requirements.....	5
4.1 Categories	5
4.2 Technical requirements	6
4.3 Test conditions.....	6
5 Minimum allowable values of water efficiency and water efficiency grades ..	8
6 Testing and measurement.....	8
6.1 Representation of water efficiency	8
6.2 Test equipment and installation	9
6.3 Test steps	9
6.4 Measurement	9
6.5 Quality verification	11
6.6 Data rounding-off.....	12
7 Test report	12
Annex A (informative) Requirements for water quality during dyeing	13
Annex B (informative) Density of water	14

Minimum allowable values of water efficiency and water efficiency grades for dyeing machine

1 Scope

This Standard specifies minimum allowable values of water efficiency, water efficiency grades and test methods for various dyeing machine (hereinafter referred to as dyeing machine).

This Standard is applicable to evaluation on water efficiency for dyeing machine.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 8170, *Rules of rounding off for numerical values & expression and judgement of limiting values*

GB/T 9995-1997, *Determination of moisture content and moisture regain of textile - Oven-drying method*

FZ/T 01024, *Instrumental assessment of change in colour for determination of grey scale rating*

FZ/T 90112-2018, *Testing method of dyeing ratio for dyeing machine*

3 Terms and definitions

3.1 dyeing machine

the equipment used for dyeing and producing small batches of textiles using the dip dyeing process according to the prescribed procedures

3.2 constant mass

weigh the textile materials at specified time intervals during the drying process; when the difference between the mass of two consecutive weighings is less than 0.1% of the mass of the last weighing, the mass of the latter weighing is

Q - Water efficiency for dyeing machine, in cubic meters per ton (m^3/t);

W - Total water consumption during dyeing, in cubic meters (m^3); see 6.4.2 for measurement method;

M - Total mass of fabric during dyeing, in kilograms (kg); see 6.4.1 for measurement method.

6.2 Test equipment and installation

In accordance with clause 5 in FZ/T 90112-2018.

6.3 Test steps

The test steps are as follows:

- a) Install and check related equipment;
- b) Select and weigh the fabric as the dyed product;
- c) Select and weigh dyes and related additives;
- d) Boil and bleach or pre-treat the fabric. Wash clean;
- e) Dye according to the prescribed process;
- f) Make records of water volume as required;
- g) Wash after dyeing (the amount of washing water does not need to be measured);
- h) Evaluate dyeing results after drying;
- i) Calculate total water inflow, total water consumption and water efficiency.

6.4 Measurement

6.4.1 Fabric mass measurement

Fabric mass measurement is carried out according to 6.1 in FZ/T 90112-2018.

6.4.2 Water consumption measurement

6.4.2.1 When the fabric does not need to be bleached, degreased or pre-treated before dying, use water intake test method to measure. The steps are as follows:

- a) Record the reading of the water meter before water inflow (P_1). After the fabric is dyed according to the process requirements (without washing), record the water meter reading (P_2). Use formula (2) to calculate the total water inflow P during the dyeing process.

When the dyed product is yarn, the quality of the yarn is evaluated as follows:

Use about 6% cheese. Take the inner, middle and outer layers of yarn. Weave into a small sample. Use standard color card for visual comparison. Or perform instrument evaluation according to FZ/T 01024. Color difference is not less than grade 4-5.

6.5.3 Equipment operation

During the dyeing process, the equipment runs smoothly, without clogging or leakage of dye liquor. The cloth runs evenly, without entanglement or knotting, or abnormal noise (obvious noise).

6.6 Data rounding-off

The calculation result of the water consumption of dyeing machine is rounded-off to two decimal places in accordance with the provisions of GB/T 8170.

7 Test report

The test report of water efficiency for dyeing machine includes the following:

- a) Basic information of the equipment to be tested: name, model specification, exit-factory number and production date;
- b) Test fabric varieties, fiber composition, specifications, color requirements;
- c) Equipment name and model;
- d) Test methods and measurement parameters used (liquid injection or drainage measurement method, fabric mass, dye liquor mass);
- e) Basic condition of test process;
- f) Measurement calculation table of water efficiency for dyeing machine;
- g) Determination report table of water efficiency for dyeing machine;
- h) Evaluation conclusion of water consumption of dyeing machine;
- i) Testers, reviewers, approvers, test dates.

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----