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Raw Hemp

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Raw Hemp

1 Scope

This Standard specifies the technical requirements, test methods, inspection rules, packaging, marking, transportation and storage of raw hemp.

This Standard is applicable to hemp bast that has received the processing of peeling, including water retted hemp, sunned hemp and peeling hemp from green straw, etc.

2 Normative References

Through the reference in this Standard, the clauses of the following documents become clauses of this Standard. In terms of references with a specified date, all the subsequent modification sheets (excluding the corrected content) or revised versions are not applicable to this Standard. However, the various parties that reach an agreement in accordance with this Standard are encouraged to explore the possibility of adopting the latest version of these documents. In terms of references without a specified date, the latest version is applicable to this Standard.

GB 6529 *Textiles - Standard Atmospheres for Conditioning and Testing*

GB/T 8170 *Rules of Rounding off for Numerical Values & Expression and Judgement of Limiting Values*

GB/T 12411 *Test Methods for Jute and Kenaf Fibers*

GB/T 12945 *Jute Fiber*

3 Terms and Definitions

The following terms and definitions are applicable to this Standard.

3.1 Hemp

Hemp belongs to the Cannabaceae and Cannabis. It is a collective term for industrial hemp¹ plant, hemp bast and hemp fiber.

3.2 Raw Hemp

Raw hemp refers to industrial hemp bast used as the raw material of textiles, including water retted hemp, sunned hemp and peeling hemp from green straw, etc.

¹ Industrial hemp refers to low-toxic (the content of THC is below 0.3%) and non-toxic (the content of THC is below 0.1%) hemp.

3.3 Water Retted Hemp

Water retted hemp refers to hemp bast obtained from industrial hemp stems through retting, washing, peeling and drying.

3.4 Sunned Hemp

Sunned hemp refers to hemp bast obtained from industrial hemp stems through drying in the air, stacking and exposure to the sun before peeling.

3.5 Peeling Hemp from Green Straw

Peeling hemp from green straw refers to hemp bast obtained from industrial hemp directly peeled after harvesting.

3.6 Speck

Speck refers to a defect of raw hemp of industrial hemp as a result of pests, wind damage and mildew that would affect the use of textiles.

3.7 Trash

Trash refers to hemp leaves, hemp chips, hemp roots and bast with no processing value, and other mixed substances in raw hemp of industrial hemp.

4 Technical Requirements

4.1 Rules of Grading

4.1.1 Raw hemp is classified into Grade-1, Grade-2 and Grade-3, and those that fail to reach Grade-3 are considered to be inferior to grading.

4.1.2 Raw hemp takes sensory characteristics, bundle fiber specific breaking tenacity and effective length as the grading conditions, and the lowest one among them shall be used to determine the grade. The rules of grading of raw hemp are: see Table 1 for water retted hemp; see Table 2 for sunned hemp; see Table 3 for peeling hemp from green straw.

4.2 Moisture Regain Rate

The conventional moisture regain rate of raw hemp is 12%; the actual moisture regain rate shall be not greater than 15%. When the actually measured moisture regain rate of a batch of hemp exceeds 15%, it shall be dried before being delivered for sales.

4.3 Impurity Rate

4.3.1 The conventional impurity rate of raw hemp is 3%.

4.3.2 In terms of water retted hemp, the impurity rate shall be not greater than 3% for Grade-1, not greater than 4% for Grade-2 and not greater than 5% for Grade-3.

4.3.3 In terms of sunned hemp, the impurity rate shall be not greater than 3% for all grades.

4.3.4 In terms of peeling hemp from green straw, the impurity rate shall be not greater than 3% for Grade-1, not greater than 4% for Grade-2 and not greater than 5% for Grade-3.

4.3.5 When the impurity rate of raw hemp is excessively high, impurities shall be removed first, and delivered for sales after satisfying the requirements.

5 Instruments and Tools

5.1 Balance: measuring range of 100 g, division value of 1 mg; platform balance: measuring range of 5 kg, division value of 0.1 g; weighing scale: measuring range of 100 kg, division value of 0.1 kg.

5.2 Oven: temperature control range of 50 °C ~ 150 °C, temperature control accuracy of 1 °C; attached balance: measuring range of 100 g, division value of 10 mg.

5.3 Bundle fiber strength tester: effective distance of sample-clamping is 200 mm; tensile speed is 200 mm/min; measuring range is not less than 900 N; division value is not greater than 1 N.

5.4 Steel tape: measuring range of 3 m, division value of 1 mm.

5.5 Steel ruler: measuring range of 300 mm, division value of 0.5 mm.

6 Sampling

6.1 The inspection and sampling of raw hemp shall be conducted in accordance with the methods specified in GB/T 12411. From each batch of raw hemp, randomly select 6 samples; each sample shall be not less than 3 kg. Three of them shall be used for the inspection of sensory characteristics, and the remaining three of them shall be used

P_i ---average tensile breaking strength of the test specimen, expressed in (N);

P_t ---average bundle fiber specific breaking tenacity, expressed in (cN/dtex);

k ---unit conversion factor; the value is 0.003.

The calculation result shall be rounded off to two decimal places in accordance with the stipulations of GB/T 8170.

8.4 Inspection of Hemp Bundle Effective Length

Measure from the base to the tip of the hemp bundle. Take the length of 80% of the total number of hems as the effective length of hemp bundle.

8.5 Inspection of Impurity Rate

Conduct the inspection in accordance with the methods specified in GB/T 12411.

9 Grading

In accordance with the inspection results of sensory characteristics, hemp bundle specific breaking tenacity and hemp bundle effective length, and the stipulations of 4.1, determine the grading.

10 Calculation of Conditioned Weight

Conditioned weight shall be calculated in accordance with Formula (2):

$$G = G_0 \times \frac{100 + W_k}{100 + W} \times \frac{100 - F}{100 - F_k} \dots\dots\dots (2)$$

Where,

G ---conditioned weight, expressed in (kg);

G_0 ---actually measured weight, expressed in (kg);

W_k ---conventional moisture regain rate, 12%;

W ---actually measured moisture regain rate, expressed in (%);

F_k ---conventional impurity rate, 3%;

F ---actually measured impurity rate, expressed in (%).

The calculation result shall be rounded off to one decimal place in accordance with the stipulations of GB/T 8170.

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