

PHILIPPINE NATIONAL STANDARD

**PNS/BAFS 180:2016
ICS**

Abaca fiber – Grading and Classification – Hand-stripped and Spindle/ Machine- stripped



BUREAU OF AGRICULTURE AND FISHERIES STANDARDS

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Foreword

This Philippine National Standard for Abaca Fiber- Grading and Classification - Hand stripped and Spindle / Machine stripped, PNS/BAFS 180:2016, intends to provide specification on the requirements and grading quality of hand stripped and spindle/machine stripped abaca fiber for local consumption and international trade.

A Technical Working Group (TWG) for the crafting of the said standard was created through Special Order No. 662 Series of 2015 spearheaded by the Department of Agriculture through the Philippine Fiber Industry Development Authority (PhilFida), Bureau of Agriculture and Fisheries Standards (BAFS) and representation from the private sectors.

The Bureau in collaboration with the members of the TWG conducted a series of technical reviews and public consultations in Region IV-A- Antipolo, Rizal, Region V – Naga, Camarines Sur and Region VII- Cebu for the crafting of the standard. Comments from the stakeholders on the draft were carefully assessed and deliberated prior to its finalization and approval.

1 Scope

This Standard specifies requirements and establishes a system of grading and classifying of commercial grades hand-stripped and spindle/machine -stripped abaca fiber.

2 References

The titles of the standards publications referred to in this standard are listed on the inside back cover.

3 Definitions

3.1

abaca

plant scientifically known as *Musa textilis nee*

3.2

abaca fiber

fiber extracted from the abaca plant scientifically known as *Musa textilis nee*

3.2.1

hand-stripped

fiber extracted through the use of manually operated stripping apparatus.

3.2.2

spindle / machine-stripped

fiber extracted through the use of semi-mechanized apparatus aided by an engine

3.3

color

influenced by the layer of leafsheaths or the variety from which the fiber is extracted, extent of stripping, oxidation, care taken in drying the fiber, and attack of micro-organisms on the fiber as a result of poor postharvest management.

3.4

grade

shall refer to the fiber quality as designated by an alphanumeric code generally described as normal, residual and wide strips fiber.

3.4.1

normal grade

fibers with tensile strength ranging from 35 to 55 kgf/gm, length not less than 60 cm, and not discolored, soiled or stained.

3.4.2

residual grade

fiber with < 35 kgf/gm tensile strength, less than 60 cm in length, soiled, stained, discolored, or excessively stripy.

3.4.3**wide strips**

abaca fiber of very irregular cleaning, too stripy and woody to fit in any of the normal and residual grades

3.5**Grading/Baling Establishments or GBE**

firm engaged in buying, grading/baling and selling commercial fibers for domestic and/or foreign consumption fully equipped with the required equipment, facilities, and manpower.

3.6**length**

attribute of abaca fiber that varies according to the growth and development of the plant.

3.7**stripping**

process of extracting fiber from the outer layer of the leafsheath that contains the primary fibers (aka tuxy) using a knife either in a hand stripping or spindle/machine stripping apparatus. Knives may or may not have serrations. Serrations shall be of uniform width and depth. The amount of tension applied by the knife on the block is also uniform.

3.7.1**excellent stripped fiber**

abaca fiber when very little or no pulp at all is attached to the stripped abaca. The texture of fiber is generally soft, and the size ranges from 0.2 mm to 0.5 mm.

3.7.2**fair stripped fiber**

stripped fibers with the diameter ranging from 1.00 to 1.50mm.

3.7.3**good stripped fiber**

abaca fiber when filaments are sticking together but the whole size should be in the range of 0.51 mm to 0.99 mm.

3.8**tensile strength**

basic quality for all the normal grades, the fiber which must possess the average strength considered normal for the grade in which it is included and measurable by a device called tensile strength tester

3.9**texture**

attribute of abaca fiber influenced by the size of the fiber strand and categorized as soft, medium soft, and medium.

3.10**tuxy**

process of separating the outer layer from the inner layer of the leafsheath. The outer layer contains the primary fibers while the inner layer contains the secondary fibers and pulpy material.

4 Minimum Requirements

In all normal grades subject to the special provisions for each grade and the tolerances allowed, hand-stripped and spindle/machine-stripped abaca fiber shall meet the following requirements:

- 4.1** The tensile strength of abaca fiber ranges from 35 to 55 kilogram force per gram meter (kgf/g.m).
- 4.2** The minimum length shall not be less than 60 centimeters
- 4.3** The abaca fiber must be of uniform color according to the grade.
- 4.4** The abaca fiber must be of the same kind of stripping.
- 4.5** The stripped abaca fiber must not be soiled, stained or discolored and must be free from foreign matters.

5 Grading

Hand-stripped and spindle/machine-stripped abaca fiber shall be classified into various grades according to where it is produced from, fiber strand size, color, stripping process and texture.

Table 1- Normal grades of hand and spindle/machine stripped abaca fiber

Grade		Description				
Name	Alpha-numeric code	Extracted from	Fiber strand size mm	Color	Stripping	Texture
Mid current	EF	Inner leafsheath	0.20 - 0.50	Light ivory to a hue of very light brown to very light ochre Frequently intermixed with ivory white	Excellent	Soft
	S-EF	Inner leafsheath	0.20 - 0.50	Light ivory or pale brown to a hue of ivory-white Frequently intermixed with ivory white	Excellent	Soft
Streaky Two	S2	Next to the outer leafsheath	0.20 - 0.50	Ivory white, slightly tinged with very light brown to red or purple streak	Excellent	Soft
	S-S2	Next to the outer leafsheath	0.20 - 0.50	Light ivory to very pale brown with very red or very light purple streaks	Excellent	Soft
Streaky Three	S3	Outer leafsheath exposed to the sun	0.20 - 0.50	Predominant color - light to dark red or purple or a shade of dull to dark brown	Excellent	Soft
	S-S3	Outer leafsheath exposed to the sun	0.20 - 0.50	Light brown to dark red or light purple with occasional streak of very light green	Excellent	Soft

Grade		Description				
Name	Alpha-numeric code	Extracted from	Fiber strand size mm	Color	Stripping	Texture
Current	I	Inner and middle leafsheath	0.51 to 0.99	Very light brown to light brown	Good	Medium soft
	S-I	Inner and middle leafsheath	0.51 to 0.99	Light to very light brown	Good	Medium soft
Soft seconds	G	Next to the outer leafsheath or similar leafsheath source where S2 is obtained	0.51 to 0.99	Dingy white, light green and dull brown	Good	Medium soft
	S-G	Same leafsheath that produces grade S-S2	0.51 to 0.99	Light brown with occasional streaks of very light green	Good	Medium soft
Soft Brown	H	Outer leafsheath	0.51 to 0.99	Dark brown	Good	
	S-H	Same leafsheath that produces S-S3	0.51 to 0.99	Brown to dark brown Intermixed with substantial portion of fiber with lighter colors In some, color approaches black	Good	
Seconds	JK	Inner, middle and next to outer leafsheath	1.00 - 1.50	Dull brown to dingy light brown or dingy light yellow, frequently streaked with light green	Fair	
	S-JK	Inner, middle and next to the outer leafsheath	1.00 - 1.50	Light dull brown to dingy light brown or dingy light yellow with occasional streaks light green	Fair	

Grade		Description				
Name	Alpha-numeric code	Extracted from	Fiber strand size mm	Color	Stripping	Texture
Medium brown	M1	Outer leafsheath	1.00 - 1.50	Dark brown to almost black	Fair	
	S-M1	Same leafsheath from which S-H is obtained	1.00 - 1.50	Brown or nearly black	Fair	

NOTE: For the spindle/machine stripped abaca fiber, it is designated with an 'S' separated by a dash before the alphanumeric code.

Table 2- Residual grades of hand and spindle/machine stripped abaca fiber

Grade		Description	
Name	Alphanumeric code	Consists of	Otherwise graded as
Residual fine	Y1	weak, stained, discolored, and/or soiled fiber	EF, S2, S3, I and G
	S-Y1	weak, stained, discolored, and/or soiled fiber	S-EF, S-S2, S-S3, S-I and S-G
Residual fair	Y2	weak, stained, discolored, and/or soiled fiber	H,, JK, M1
	S-Y2	weak, stained, discolored, and/or soiled fiber	S-H, S-JK and S-M1
String	O	Made up of strings and twisted or knotted strands of hand-stripped abaca fibers	Ordinary handmade cords used for tying hanks, bales and binding bundles of loose ungraded fibers
	S-O		
Tow	T	Less than 60cm in length	Consists of abaca tip cuttings, short, tangled and broken, resulting from sorting during the process of classification
	S-T		

Table 3 – Wide Strips Grades of hand and spindle/machine stripped abaca fiber

Grade		Description	
Name	Alphanumeric code	Consists of	Otherwise graded as
Wide strip	WS	All fibers that are excessively strippy and woody which does not fit in any of the normal and residual grades of hand stripped and spindle / machine stripped abaca fibers.	None
	S-WS		

6 Tolerances

In all normal grades, a 5% tolerance level would be provided as follows:

- 6.1 Negative (-) 5% of the 35 kgf/gm tensile strength
- 6.2 Negative (-) 5% of 60 cm length
- 6.3 Positive (+) 5% fiber strand size for excellent, good and fair stripping.

7 Sampling

Sampling method to be used for ascertaining conformance to the requirements of this specification shall be in accordance with the established procedures used by the competent authority.

8 Baling

Hand-stripped and spindle-stripped abaca fiber may be baled in this manner:

- 8.1 Every bale of fiber shall contain only dry fibers of the same kind of stripping, grade and province of origin. The fibers must, more or less, be of the prescribed length and free from plastic and other foreign matters.
- 8.2 Hand-stripped and spindle/machine-stripped abaca fiber shall be baled and bound securely by a suitable and strong material of the same kind of fiber.
- 8.3 In case of fibers tied into hanks, hanks shall be five (5) to ten (10) centimeters in diameter at the butt or head. The strand used in tying the hanks shall be of the same kind and grade as the fiber forming the hank and each strand shall not be knotted.
- 8.4 Hanks of abaca shall not be divided in two (2) or three (3) parts but shall be folded once or twice to keep the fibers together before they are laid straight in the press box the heads or butts of the hanks in one row alternating the tips of the hanks of

the next row until the bale is completed. The hanks shall be packed such that the tips of one layer doubles back over the butt of the layer of hanks beneath, and so on.

Grading/Baling Establishment (GBE) may also press bales in such a manner that three (3) or four (4) hanks of fibers are laid straight side-by-side in the press box at the middle of the lower press block 'cojin', the ends of which are laid apart from the inner end-side of the press box. The remaining portion of the hanks shall be coiled along the opposite end-side and along the sides of the press block encircling the butt ends until the entire length of the hanks is so coiled. The subsequent layer of hanks shall similarly be arranged with the butts or head on the opposite side of the layer of hanks below, until all the hanks composing the bale are so placed in the press box.

- 8.5** Unless otherwise provided, each bale shall have an approximate dimension of 100 centimeters by 55 centimeters by 60 centimeters (100cm x 55cm x 60cm) with a net weight of 125 kilograms after pressing.
- 8.6** Unless otherwise specified, each bale of fiber shall be securely bound by a material of the same kind as the baled fiber which shall not be less than seven (7) ties crosswise nor less than three (3) ties lengthwise. To hold the bales in their regular size, the 2nd, 4th and 6th crosswise ties may be doubled. The extreme ties shall not be closer than ten (10) centimeters from the edge of the bale. The fiber binding materials on each bale shall not weigh more than one (1) kilogram.

9 Labelling

The tagging and marking of bales shall be as follows:

- 9.1** Each bale shall bear a tag known as the long cloth tag for local and long cloth and square tag for export made of unstarved raw cotton of good quality material not less than 58 centimeters long and ten (10) centimeters wide, one end of which shall be securely tied to the fiber inside the bale and the other end shall project out from one end of the bale 15- 20 centimeters long.

In case of bales of short fibers where tying of the long cloth tag is not practical, one end of the long cloth tag shall, instead, be knotted and securely tied to the ties of either bundle composing the bale and must be placed between bundles.

- 9.2** The following data in their order shall be stamped, one below the other, on the long cloth tag placed inside the bale:
- 9.2.1** The full or abbreviated name of the GBE;
 - 9.2.2** The name of the municipality or city where the establishment is located;
 - 9.2.3** The establishment and lot number separated by a dash;
 - 9.2.4** The full or abbreviated name of the province of origin;
 - 9.2.5** The date of pressing; and

- 9.2.6** The initial of the station, the registered mark of the establishment, and the letter designation of the grade, the three (3) forming one line separated from one another by bars.
- 9.3** The classifier's license number shall be indicated on the upper portion of the long cloth tag tied inside the bale.
- 9.4** The other end of the long cloth tag projecting out of the bale shall be divided into two (2) sections. The one adjacent to the bale shall bear the same data stamped in the upper end of the tag in the same order, except the classifier's license number, and the rest of the long tag shall be reserved for the official stamps of the Authority.
- 9.5** All markings on the cloth tag, whether letters or numerals, shall be stamped with clear indelible stamping ink and shall not be less than one (1) centimeter in height except the name of the municipality / city where the establishment is located and the date of pressing which shall not be less than eight (8) millimeters.
- 9.6** For baling of abaca fiber intended for export, another cloth tag of the same or better material than the long cloth tag provided herein may be placed, on one side of the bale underneath the binding or ties. This tag should be in the form of a square tag measuring 35 by 35 centimeters. Upon it, the following data in their order shall be stamped or stenciled, one below the other, clearly in letters not less than five (5) centimeters high except the words 'PRODUCT OF THE PHILIPPINES' which shall have a measurement of not less than one-and-a-half (1 1/2) centimeters in height:
- 9.6.1** The words ' PRODUCT OF THE PHILIPPINES';
- 9.6.2** The initial of the station where the establishment is located;
- 9.6.3** The registered mark of the establishment;
- 9.6.4** The letter designation of the grade of fiber contained in the bale.

In the absence of the square cloth tag the data required to be placed thereon shall invariably appear clearly on the exposed surface of the wrapping materials on either side of the bale.

- 9.7** Additional marks required by the buyers may only appear on the square tag or long cloth tag, as the case maybe, after the bale has been inspected and approved.
- 9.8** Data/marks required herein to be placed upon the square and long cloth tags shall appear in black paint/ink or its equivalent.

Except those specified in this section unless requested and granted by the authority, no other data marks whatsoever shall appear on the tags of any bale of fiber before inspection.

References:

Fiber Industry Development Authority. FIDA Revised Administrative Order NO. 1 s.1999.Revised Rules and Regulations to Govern Licensing, Baling, Tagging, Marking, Inspection, Certification and Shipment of Philippine Commercial Fibers.

Fiber Industry Development Authority. FIDA Administrative Order No. 1 s. 2001. Official Standards for Hand-Stripped and Spindle Stripped Abaca Fiber (Revised).

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