

PHILIPPINE NATIONAL STANDARD

PNS/BAFS 355: 2022
ICS 59.060.10

Salago Fiber — Product Standard — Grading and Classification



BUREAU OF AGRICULTURE AND FISHERIES STANDARDS

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Foreword

In 2018, the Philippine Fiber Industry Development Authority (PhilFIDA)- Department of Agriculture (DA) requested the development of the PNS on the grading and classification of salago fiber to promote the use of locally produced fibers. Salago fiber is used to manufacture high quality and high-grade Currency Banknote Paper (CBP).

The Technical Working Group (TWG), composed of representatives from the relevant government agencies and private sector organizations, was created through the following Special Orders (SO):

- a. SO No. 1092, series of 2018 (Creation of the Technical Committees [TC] and its TWG for the development of PNS for Agriculture and Fisheries Products, Machineries, Tools and Equipment);
- b. SO No. 442, series of 2020 (Creation of TC and its TWG for the Development of PNS for Agriculture and Fisheries Products, Machineries, and Structures);
- c. SO No. 81, series of 2021 (Creation of TWG for the Development of the PNS for Agriculture and Fisheries Products, Machinery, and Structures);
- d. SO No. 103, series of 2022 (Creation of TWG for the development of PNS for agriculture and fishery products, machineries, and infrastructures); and
- e. SO No. 617, series of 2022 (Addendum to SO No. 103 series of 2022).

A field data gathering was conducted in Dalaguete, Cebu to support the drafting of the standard. The draft PNS underwent a series of TWG meetings and stakeholder consultations from 2018 to 2022 conducted physically and via online platforms prior to its endorsement to the DA Secretary for approval.

This PNS is drafted in accordance with the BAFS-Standards Development Division (SDD) Standardization Guide No. 1: Writing the PNS.

1 Scope

This Standard specifies requirements and establishes a system of grading and classification of commercial grades of salago fiber extracted from the stalk of salago plant (*Wikstroemia spp.*).

The local names of salago plants in the Philippines are provided in Annex A (Local names of salago in the Philippines).

2 Normative References

The following documents are referred to in the text in such a way that some or all their contents constitute the requirement of this document. The latest edition of the referenced documents (including any amendments) applies.

Philippine Fiber Industry Development Authority (PhilFIDA)-Department of Agriculture (DA). (2020). Rules and regulations to govern licensing, baling, tagging, marking, inspection, certification, and shipment of Philippine commercial fibers (Administrative Circular [AC] No. 12, series of 2020). <http://www.philfida.da.gov.ph/images/Issuances/administrative-circular/ac-no-12-s-2020-rules-and-regulations.pdf>

3 Terms and Definitions

For the purpose of this Standard, the following terms and definitions shall apply:

3.1

bark

all tissues outside the wood (xylem) cylinder (Department of Environment and Natural Resources [DENR], 2004); outer covering of the salago plant composed of two layers namely, outer and inner barks.

3.2

elongation

elasticity or stretch of a fiber before it ruptures expressed in percentage (%) (FIDA, 2012)

3.3

fiber

any indigenous natural fiber derived from selected plants or animals, such as hairs, feathers, and silk. It shall be denominated and interpreted according to the common and commercial significance and not its scientific nomenclature (PhilFIDA, 2020, *modified*)

3.4**grade**

designation of fiber quality according to standard expressed in alpha-numeric codes (PhilFIDA, 2020)

3.5**Grading Baling Establishments (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 (PhilFIDA, 2020)

3.6**salago fiber**

fiber extracted from salago plant (PhilFIDA, 2020)

3.6.1**hand-cleaned salago fiber**

fiber that is directly extracted from the salago plant by hand-pulling and hand-cleaning. The resulting fiber is white in color (BFIS, 1981 *modified*)

3.6.2**steamed salago fiber**

fiber extracted from the salago plant, hand-pulled, boiled or steamed, scraped, and dried properly. The resulting fiber is green in color (BFIS, 1981, *modified*)

3.7**salago plant**

plant scientifically known as *Wikstroemia ovata* C.A. Mey. (PhilFIDA, 2020) and includes other species of *Wikstroemia* spp.

3.8**tensile strength**

maximum stress to which a material can be subjected before it breaks, expressed in kgf/g.m. (FIDA, 2012)

3.9**texture**

basic quality of fiber which refers to the level of softness and hardness (Bureau of Agriculture and Fisheries Standards-Department of Agriculture [BAFS-DA], 2021)

4 Minimum Requirements

In all grades, subject to the special provisions for each grade under Clause 7 and the tolerances allowed, salago fiber shall meet the following requirements:

- 4.1** The salago fiber of a certain grade shall not be mixed with other grades of salago fiber.
- 4.2** The salago fiber shall not be damp, soiled, stained, or discolored and shall be free from foreign matter.
- 4.3** The salago fiber shall have a moisture content (MC) of 10%-15%.

5 Additional Requirements

In all normal grades, subject to the special provisions for each grade under Clause 7 and the tolerances allowed, salago fiber should additionally meet the following requirements:

- 5.1** The color of salago fiber should be of uniform color that ranges from washout light brown to purplish, yellowish and greenish (steamed salago), depending upon the cleaning and the pigmentation of the bark.
- 5.2** The texture of the hand-cleaned fiber should be harsh before it can be graded in any of the principal standard grades. The texture of steamed salago fiber should be hard compared to hand-cleaned salago fiber.
- 5.3** The tensile strength of normal salago fiber should be 3.70 kgf/g.m – 11.39 kgf/g.m.

6 Cleaning Classification

6.1 Hand-cleaned salago fiber

6.1.1 Superior

Hand-cleaned salago fiber shall be of excellent cleaning when the fiber turns out in the form of fiber filaments stuck together, practically free from outer bark, skin, and foreign matters. The color should range from light straw to light greenish, light purplish, or light yellowish depending upon the pigmentation of the bark. The tensile strength is normal and the texture is harsh.

6.1.2 Good

Hand-cleaned salago fiber shall be of good cleaning when the fiber is partially free from outer bark, skin, and foreign matters. The color of the strip exhibits a two-toned shade, one is darker and more pronounced than the other. The color of the lighter side is usually light straw while the darker side may exhibit

brownish or greenish color depending upon the pigmentation of the bark. The texture is harsh and tensile strength is normal.

6.1.3 Fair

Hand-cleaned salago fiber shall be of fair cleaning when the fiber has some outer bark after being extracted from the stem of the plant and should be clean, free of molds, and foreign matters. The color depends on the pigmentation of the bark which may be dull green or dull brown. The texture is harsh and the tensile strength is normal.

6.2 Steamed salago fiber

6.2.1 Superior

Steamed salago fiber shall be of superior cleaning when the bark is practically free from scales, molds, and foreign matters. The bark shall be properly steamed and dried. The color shall be yellow-greenish, light yellowish, or very light purplish, depending on the pigmentation of the bark. The tensile strength shall be normal and the texture shall be hard.

6.2.2 Good

Steamed salago fiber shall be of good cleaning when the bark is properly steamed and when the fiber is partially cleaned, properly dried, and free from molds and foreign matters. The color shall be light green, light yellowish, or light purplish, depending on the pigmentation of the bark. The tensile strength shall be normal and hard in texture.

6.2.3 Fair

Steamed salago fiber shall be of fair cleaning when the bark is properly steamed and when the fiber is partially cleaned, properly dried, and free from molds and foreign matters. The color shall be greenish, purplish or yellowish, depending on the pigmentation of the bark. The tensile strength shall be normal and hard in texture.

7 Grading

Salago fiber may be graded mainly based on its cleaning, color, and texture. The following are the grades for salago fiber:

7.1 Normal grade

This grade consists of fibers with harsh to hard textures. Table 1 lists the characteristics of the normal grades of hand-cleaned salago fiber with harsh texture.

Table 1. Characteristics of hand-cleaned salago fiber (Fiber Utilization and Technology Division [FUTD]-PhilFIDA, 2022)

Grade		Characteristics					
Name	Alpha-numeric code	Texture	Tensile strength (kgf/g.m)		Elongation (%)	Color	Cleaning
			Range	Average			
Salago superior	SG-1	Harsh	5.14-8.16	6.66	2.05-2.92	light greenish, light purplish, yellowish	Superior
Salago good	SG -2	Harsh	4.21-8.68	6.27	1.57-2.56	brownish, greenish	Good
Salago fair	SG-3	Harsh	5.46-7.83	6.34	2.13-2.65	dull green, dull brown	Fair

Table 2 lists the characteristics of the normal grades of steamed salago fiber with hard texture.

Table 2. Characteristics of steamed salago fiber (FUTD-PhilFIDA, 2022)

Grade		Characteristics					
Name	Alpha-numeric code	Texture	Tensile strength (kgf/g.m)		Elongation (%)	Color	Cleaning
			Range	Average			
Steamed salago superior	S-SG-1	Hard	3.80-8.36	6.17	1.35-2.27	yellow-greenish, light purplish, light yellowish	Superior
Steamed salago good	S-SG-2	Hard	5.59-11.39	7.34	1.85-2.54	light green, light purplish, light yellowish	Good
Steamed salago fair	S-SG-3	Hard	3.70-6.82	5.88	1.67-2.11	greenish yellowish, purplish	Fair

7.2 Residual grade

This grade is designated by either SG-X (hand-cleaned) or S-SG-X (steamed) and consists of the following:

- the cleaning may either be superior, good or fair but the fiber is weak, moldy, partly soiled or stained fibers;
- too hard (brittle) fiber due to long storage; and
- tensile strength and elongation in accordance with Table 3 as shown below:

Table 3. List of tensile strength and elongation for residual salago fiber (FUTD-PhilFIDA, 2022).

Grade		Tensile strength (kgf/g.m)		Elongation (%)
Name	Alpha-numeric code	Range	Average	
Hand-cleaned salago	SG-X	3.40-5.23	4.58	1.78-2.11
Steamed salago	S-SG-X	3.34-6.27	5.16	1.27-2.27

8 Tolerances

In all grades, a five percent (5%) tolerance level for the cleaning process and moisture content shall be allowed wherever applicable.

9 Baling

Salago fiber shall be baled in accordance with the PhilFIDA AC No. 12, series of 2020 (Rules and regulations to govern licensing, baling, tagging, marking, inspection, certification, and shipment of Philippine commercial fibers).

10 Tagging and Marking

Salago fiber shall be tagged and marked in accordance with the PhilFIDA AC No. 12, series of 2020 (Rules and regulations to govern licensing, baling, tagging, marking, inspection, certification, and shipment of Philippine commercial fibers).

11 Methods of Analysis and Sampling

Methods of analysis and sampling to be used for ascertaining conformance to the requirements of this specification shall be in accordance with the standards and established procedures used by the competent authority.

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Annex A
(Informative)

Local names of salago in the Philippines

Local name	Philippine language/dialect
Salago	Tagalog
Siapo, Talo, Manal-os, Lumper, Salago	Bisaya
Talo, Salago	Bicol/Bikol
Palip, Tipolo	Ivatan
Arendaen, Baleo	Ilocano

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Bureau of Agriculture and Fisheries Standards (BAFS)**

**Technical Working Group (TWG) for the Philippine National Standard (PNS) on
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