Cotton Ginning, Fibre Attributes and Their Impact on Spinning

EXPERT's Column

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COTTON GINNING

Cotton Ginning Importance of Cotton Ginning:

Cotton is one of the premier commercial crops of India, supporting livelihood of about 60 million people engaged in cotton cultivation, trade and processing. With the globalisation and opening of markets, major changes have taken place in the cotton processing industry. Cotton ginning plays a very important role of separating fibres from cottonseed and converting field crop into a saleable commodity i.e. lint. Ginning acts as a bridge between the cotton farmer and the textile industry. The major functions of a ginnery are to clean and gin the seed cotton, clean the lint and form a bale. The pre-cleaning, ginning, lint cleaning and baling are the important processes which cotton undergoes on its passage from the field to the industry and its ultimate conversion into yarn and fabric.

The quality of the cotton fibre is dependent on the pedigree or genetic composition of the variety as well as on the conditions under which the plant is grown. Although fibre quality per se cannot be improved during processing; improper handling or processing can adversely affect the quality. Defective ginning not only lowers the quality of the fibres, but also damages the seeds. Hence, considerable attention needs to be given to ensure proper ginning of cotton. When the seed cotton is received at the ginning factory, the ginner should take into account the inherent quality of the cotton and the conditions in which it has been received; so that he can adjust the machine suitably to maintain the quality of the lint. It is essential to note that any damage in quality caused during ginning cannot be rectified later in the spinning and weaving process. It is in this respect that cotton ginning plays a very crucial role in the preservation of cotton quality.

Types of Ginning Methods:

The four Ginning Technologies used in the world are 1) Saw Ginning (about 55%) 2) Double Roller Ginning (about 35%) 3) Rotobar or Rotary Knife Roller Gin (about 5%) and 4) Single Roller (about 5%). These technologies are having their own considerations and the competitiveness of the cotton processing, which in turn affects their adaptation. In India, about 98 % of the cotton produced is ginned on double roller gins manufactured domestically.

Indian cotton ginning industry is the second largest in the world. Ginning industry in India consist of about 4000 factories that includes both roller and saw gins. Out of these, about 1000 units are modernised with assistance from Technology Mission on Cotton (Mini Mission IV). Ginning industry in the country is slowly and steadily transforming itself into a world class enterprise. Modernisation of G&P succeeded in bringing out the trash level down upto 1% in the processed bale and has improved the quality status of Indian cotton.

A modern ginnery consists of different components such as machinery, various material handling systems and civil structures. The machinery and system selection depends on the plant size, desired quality of end product, availability of labourers, financial condition of the ginner, and ultimate use of the end product. The basic and essential machinery and material handling systems present in any Indian modernised ginnery include, seed cotton conveying system, pre-cleaner, seed cotton distribution system to individual DR gins, auto feeder, double roller gin/saw gin, lint handling systems, lint cleaner, seed handling systems, baling press, humidification systems, fire fighting systems, weigh bridge etc. By introduction of efficient ginning, pre and post cleaning and novel material handling machinery a l ong with implementation of skill development programmes, Indian ginning industry has been transformed into a remunerative business enterprise and has achieved global leadership in supply of quality cotton to domestic as well as international textile mills.

Fibre Attributes

The classification of cotton as well as its ranking for commercial use, is done mainly based on its four important fibre properties such as length, fineness, maturity and strength. The conventional methods to measure these parameters are very tedious and time-consuming, but give accurate results. In order to measure various fibre properties simultaneously and quickly, advanced instrument like High Volume Instrument (HVI) has been developed. This instrument is mainly used for testing large number of samples in a short span of time with

comparable results. Another instrument called Advanced Fibre Information System (AFIS) is also available for testing fibre properties, particularly for small size sample. All the three types of instruments have their own merit and use in the field of cotton evaluation.

An attempt is made in this article to describe in brief the various methods in vogue to evaluate the cotton quality and the impact of each fibre attributes on processing of cotton into yarn.

Conventional Instruments/Methods

a. **Length Measurement:** Length of the cotton fibre is generally expressed as 2.5% span length or mean length or staple length. The following instruments are used for measuring length parameters:-

    i. **Comb Sorter:** In this method, all the fibres of a given sample tuft are laid out side by side in the order of their length - beginning with the longest and finishing with the shortest. The diagram, so obtained, represents distribution of fibres in the order of length.

    ii. **Digital Fibrograph:** The Fibrograph1 is an optical instrument. A beard of cotton fibres is scanned through light, and the length frequency curve known as a Fibrogram is drawn.

b. **Fibre Fineness Measurement:** Fibre fineness is more commonly expressed as linear density or weight per unit length and popularly known as micronaire.

    i. **Gravimetric Method:** In this method, fibre weight is determined by weighing a known number of fibres either as a whole or as cut to 1 cm length. For this purpose, from a representative fibre tuft, 100 fibres are counted and made into 10 bundles totalling to 1000 fibres. Each bundle is weighed on a microbalance and then weight per unit length is determined.

    ii. **Indirect Methods:** Indirect methods are often used for quick measurement of fibre fineness. When the resistance to air flow is measured with a float in terms of

microgram per inch, the value obtained is called micronaire value.

    iii. **Caustic Soda Swelling Method:** Depending upon the relative dimensions of cell wall and lumen, the fibres are classified in maturity group viz. mature and immature. The percentage of mature and immature are calculated over the total number of fibres evaluated.

c. **Fibre Strength:** Fibre strength is a very important parameter and generally expressed as tenacity. Fibre strength denotes the maximum tension the fibre is able to sustain before breaking. Dividing the breaking load by the fibre weight per unit length is termed as tenacity. Fibre strength is determined for single fibre or bundle of fibres.

    i. **Single Fibre Strength:** Most commonly used equipment for this purpose is Instron Tensile Tester. The fibre is clamped between two jaws of the instrument. The moveable jaw then pulls the fibre and the breaking load is recorded.

    ii. **Bundle Strength:** For bundle strength determination, two instruments viz. Pressley Strength Tester and Stelometer are generally used. The force is exerted on one part of the clamp and when it reaches breaking strength, the pendulum stops and the force is recorded on the scale in kg. The fibres in the clamp are then weighed and tenacity is calculated. The tenacity is expressed in terms of gm/tex. Stelometer also gives elongation at break in terms of percentage.

(to be continued...)

Source : CAI Centenary Special 2022

(The views expressed in this column are of the authors and not that of Cotton Association of India)

Indian Cotton Value Differences

Value Differences of Indian cotton arrived at the meeting of Value Difference Committee of Cotton Association of India held on 21st July 2023

(Figures in Rs./ Candy)

Sr. No.	Parameters	Grade				Staple				Micronaire	
		Premium		Discounts		Premium		Discounts			
		Grade	Premium Amount	Grade	Discount Amount	Staple	Premium Amount	Staple	Discount Amount	Micronaire	Discount
1	P/H/R	Superfine	+4000	Fully Good	-1500						
	ICS-101										
	(Staple length: Below 22mm)		(6.22)		(2.33)						
	Micronaire : 5.0 – 7.0	Extra S. Fine	+6000	Good	-2000						
	(Grade : Fine) Trash – 4% Strength/GPT - 15		(9.33)		(3.11)						
2	P/H/R	Superfine	+4000	Fully Good	-1500						
	ICS-201 (SG)										
	(Staple length: Below 22mm)		(6.22)		(2.33)						
	Micronaire : 5.0 – 7.0	Extra S. Fine	+6000	Good	-2000						
	(Grade : Fine) Trash – 4.5% Strength/GPT 15		(9.33)		(3.11)						
3	GUJ	Superfine	+1000	Fully Good	-800	23	+800	21	-800		
	ICS-102										
	(Staple length: 22mm)		(1.56)		(1.24)		(1.24)		(1.24)		
	Micronaire 4.0 - 6.0	Extra S. Fine	N.A.	Good	-1000						
	(Grade : Fine)										
	Trash – 13% Strength/ GPT 20				(1.56)						
4	KAR	Superfine	+1500	Fully Good	-1000	23	+1000	21	-1000		
	ICS-103										
	(Staple length 23mm)		(2.33)		(1.56)		(1.56)		(1.56)		
	Micronaire 4.0 - 5.5	Extra S. Fine	N.A.	Good	-1200						
	(Grade : Fine)										
	Trash – 4.5% Strength/GPT 21				(1.87)						
5	M/M(P)	Superfine	+1000	Fully Good	-1000	24	+1000	22	-1000		
	ICS-104										
	(Staple length 23mm)		(1.56)		(1.56)		(1.56)		(1.56)		
	Micronaire 4.5 - 7.0	Extra S. Fine	N.A.	Good	-1200						
	(Grade : Fine)										
	Trash – 4% Strength/GPT 22				(1.87)						
6	P/H/R (U)	Superfine	+1000	Fully Good	-1000	28	+1800	26	-1800	3.0 - 3.2	-800
	ICS-202 (SG)										
	(Staple length 27mm)		(1.56)		(1.56)		(2.80)		(2.80)		(1.24)
	Micronaire 3.5 - 4.9	Extra S. Fine	N.A.	Good	-1300					3.3 -3.4	-400
	(Grade: Fine)										
	Trash – 4.5% Strength/GPT 26				(2.02)						(0.62)
7	M/M(P)/SA/TL	Superfine	N.A.	Fully Good	N.A.			25	N.A.	2.7 - 2.9	N.A.
	ICS-105										
	(Staple length 26mm)										
	Micronaire 3.0 - 3.4										
	(Grade: Fine)	Extra S. Fine	N.A.	Good	N.A.						
	Trash – 4% Strength/GPT 25										

Sr. No.	Parameters	Grade				Staple				Micronaire	
		Premium		Discounts		Premium		Discounts			
		Grade	Premium Amount	Grade	Discount Amount	Staple	Premium Amount	Staple	Discount Amount	Micronaire	Discount
8	P/H/R (U)	Superfine	+1200	Fully Good	-1000			26	-1800	3.0 - 3.2	-800
	ICS-105										
	(Staple length 27mm)		(1.87)		(1.56)				(2.80)		(1.24)
	Micronaire 3.5 - 4.9	Extra S. Fine	N.A.	Good	-1300					3.3 -3.4	-400
	(Grade : Fine) Trash – 4% Strength/GPT 26				(2.02)						(0.62)
9	M/M(P) /SA/TL/G ICS-105	Superfine	+500	Fully Good	-500	28	+1400			2.7 - 2.9	-500
	(Staple length 27mm)										
	Micronaire 3.0 - 3.4		(0.78)		(0.78)		(2.18)				(0.78)
	(Grade: Fine)	Extra S. Fine	N.A.	Good	-700						
	Trash – 4% Strength/GPT **25**				(1.09)						
10	M/M(P)/SA/TL	Superfine	+500	Fully Good	-600						
	ICS-105										
	(Staple length 27mm)		(0.78)		(0.93)						
	Micronaire 3.5 - 4.9	Extra S. Fine	N.A.	Good	-800						
	(Grade:Fine) Trash – 3.5%										
	Strength/GPT 26				(1.24)						
11	P/H/R (U)	Superfine	+1200	Fully Good	-1000	29	N.A.			3.0 - 3.2	-800
	ICS-105										
	(Staple length 28mm)		(1.87)		(1.56)						(1.24)
	Micronaire 3.5 - 4.9	Extra S. Fine	N.A.	Good	-1300					3.3 -3.4	-400
	(Grade:Fine)										
	Trash – 4%				(2.02)						(0.62)
	Strength/GPT 27										
12	M/M(P)	Superfine	+1000	Fully Good	-1000					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 28mm)		(1.56)		(1.56)						(1.87)
	Micronaire 3.7 – 4.5	Extra S. Fine	N.A.	Good	-1300 (2.02)					3.3 - 3.4	-800 (1.24)
	(Grade:Fine) Trash – 3.5% Strength/GPT 27									3.5 – 3.6	-400 (0.62)
13	SA/TL/K	Superfine	+1000	Fully Good	-1000					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 28mm)		(1.56)		(1.56)						(1.87)
	Micronaire 3.7 – 4.5	Extra S. Fine	N.A.	Good	-1300 (2.02)					3.3 - 3.4	-800 (1.24)
	(Grade:Fine) Trash – 3.5% Strength/GPT 27									3.5 – 3.6	-400 (0.62)
14	GUJ	Superfine	+1000	Fully Good	-1000			27	-1400	3.0 - 3.2	-1200
	ICS-105										
	(Staple length 28mm)		(1.56)		(1.56)				(2.18)		(1.87)
	Micronaire 3.7 – 4.5	Extra S. Fine	N.A.	Good	-1300 (2.02)					3.3 - 3.4	-800 (1.24)
	(Grade:Fine)										
	Trash – 3% Strength/GPT 27									3.5 – 3.6	-400 (0.62)
15	R (L)	Superfine	+1000	Fully Good	-1200			28	-1400	3.0 - 3.2	-1200
	ICS-105										
	(Staple length 29mm)		(1.56)		(1.87)				(2.18)		(1.87)
	Micronaire 3.7 – 4.5									3.3 - 3.4	-800 (1.24)
	(Grade:Fine)	Extra S. Fine	N.A.	Good	-1400						
	Trash – 3.5% Strength/ GPT 28				(2.18)					3.5 – 3.6	-400 (0.62)

Sr. No.	Parameters	Grade				Staple				Micronaire	
		Premium		Discounts		Premium		Discounts			
		Grade	Premium Amount	Grade	Discount Amount	Staple	Premium Amount	Staple	Discount Amount	Micronaire	Discount
16	M/M(P)	Superfine	+1000	Fully Good	-900					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 29mm)		(1.56)		(1.40)						(1.87)
	Micronaire 3.7 – 4.5										
	(Grade:Fine)	Extra S. Fine	N.A.	Good	-1200					3.3 - 3.4	-800 (1.24)
	Trash–3.5%Strength/GPT28				(1.87)					3.5 – 3.6	-400 (0.62)
17	SA/TL/K	Superfine	+1000	Fully Good	-900					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 29mm)		(1.56)		(1.40)						(1.87)
	Micronaire 3.7 – 4.5	Extra S. Fine	+1200 (1.87)	Good	-1200					3.3 - 3.4	-800 (1.24)
	(Grade:Fine)				(1.87)						
	Trash – 3% Strength/GPT 28									3.5 – 3.6	-400 (0.62)
18	GUJ	Superfine	+1000	Fully Good	-900	30	+700			3.0 - 3.2	-1200
	ICS-105										
	(Staple length 29mm)		(1.56)		(1.40)		(1.09)				(1.87)
	Micronaire 3.7 – 4.5										
	(Grade:Fine)	Extra S. Fine	+1200 (1.87)	Good	-1200 (1.87)					3.3 - 3.4	-800 (1.24)
	Trash – 3% Strength/GPT 28									3.5 – 3.6	-400 (0.62)
19	M/M(P)	Superfine	+1000	Fully Good	-900					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 30mm)		(1.56)		(1.40)						(1.87)
	Micronaire 3.7 – 4.5 (Grade:Fine)	Extra S. Fine	+1200	Good	-1200					3.3 - 3.4	-800 (1.24)
	Trash–3.5%Strength/GPT29		(1.87)		(1.87)					3.5 -.3.6	-400 (0.62)
20	SA/TL/K/O	Superfine	+1000	Fully Good	-900					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 30mm)		(1.56)		(1.40)						(1.87)
	Micronaire 3.7 – 4.5										
	(Grade:Fine)	Extra S. Fine	+1200	Good	-1200					3.3 - 3.4	-800 (1.24)
	Trash – 3% Strength/GPT 29		(1.87)		(1.87)					3.5 -.3.6	-400 (0.62)
21	M/M(P)	Superfine	+1000	Fully Good	-900					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 31mm)		(1.56)		(1.40)						(1.87)
	Micronaire 3.7 – 4.5	Extra S. Fine	+1200	Good	-1200					3.3 - 3.4	-800 (1.24)
	(Grade : Fine) Trash – 3% Strength/GPT 30		(1.87)		(1.87)					3.5 -.3.6	-400 (0.62)
22	SA/TL/K/TN/O	Superfine	+1000	Fully Good	-900					3.0 - 3.2	-1200
	ICS-105										
	(Staple length 31mm)		(1.56)		(1.40)						(1.87)
	Micronaire 3.7 – 4.5	Extra S. Fine	+1200	Good	-1200					3.3 - 3.4	-800 (1.24)
	(Grade : Fine) Trash – 3% Strength/GPT 30		(1.87)		(1.87)					3.5 -3.6	-400 (0.62)

Sr. No.	Parameters	Grade				Staple				Micronaire	
		Premium		Discounts		Premium		Discounts			
		Grade	Premium Amount	Grade	Discount Amount	Staple	Premium Amount	Staple	Discount Amount	Micronaire	Discount
23	SA/TL/K/TN/O	Superfine	N.A.	Fully Good	N.A.	31				3.0 - 3.2	N.A.
	ICS-106										
	(Staple length 32mm)										
	Micronaire 3.5 - 4.2	Extra S. Fine	N.A.	Good	N.A.					3.3 - 3.4	N.A.
	(Grade : Fine) Trash – 3% Strength/GPT 31										
24	M/M(P)	Superfine	+1200	Fully Good	-1500	35	+1500	33	-2000	2.5 - 2.7	-700
	ICS-107										
	(Staple length 34mm)		(1.87)		(2.33)		(2.33)		(3.11)		(1.09)
	Micronaire 2.8 - 3.7	Extra S. Fine	N.A.	Good	-2000	36	+2500				
	(Grade : Fine) Trash – 4% Strength/GPT 33				(3.11)		(3.89)				
25	K/TN	Superfine	+1200	Fully Good	-1500	35	+2000	33	-2000	2.5 - 2.7	-700
	ICS-107										
	(Staple length 34mm)		(1.87)		(2.33)		(3.11)		(3.11)		(1.09)
	Micronaire 2.8 - 3.7	Extra S. Fine	N.A.	Good	-2000	36	+3000				
	(Grade : Fine) Trash – 3.5% Strength/GPT 34				(3.11)		(4.67)				
26	M/M(P)	Superfine	+1200	Fully Good	-1500	36	+1000	34	-1500	2.5 - 2.7	-700
	ICS-107										
	(Staple length 35mm)		(1.87)		(2.33)		(1.56)		(2.33)		(1.09)
	Micronaire 2.8 - 3.7	Extra S. Fine	N.A.	Good	-2000						
	(Grade : Fine) Trash – 4% Strength/GPT 35				(3.11)						
27	K/TN	Superfine	+1200	Fully Good	-1500	36	+1000	34	-2000	2.5 - 2.7	-700
	ICS-107										
	(Staple length 35mm)		(1.87)		(2.33)		(1.56)		(3.11)		(1.09)
	Micronaire 2.8 - 3.7	Extra S. Fine	N.A.	Good	-2000						
	(Grade : Fine) Trash – 3.5% Strength/GPT 35				(3.11)						

Conversion factor – 643.04 based on the RBI closing exchange rate of 1 US $ = Rs.82.02 prevailing on 21st July 2023
Figures in bracket denotes value difference in Cents per Lb.

Note :

(1)   These Value Differences are applicable to domestic trade.

(2   The above differences are merely indicative in nature. Cotton Association of India gives no warranty as to the accuracy or completeness of information contained herein and accepts no legal responsibility howsoever arising in relation to such information.

(3)   Premium and Discount mentioned in Indian Rupees above will remain constant for one month whereas the same mentioned in Cents per Lb. will vary as per the exchange rate fixed by the Reserve Bank of India.

UPCOUNTRY SPOT RATES
(Rs./Qtl)

Sr. No.	Growth	Grade Standard	Grade	Staple	Micronaire	Gravimetric Trash	Strength /GPT	31st	1st	2nd	3rd	4th	5th
								Spot Rate (Upcountry) 2022-23 Crop July - August 2023					
1	P/H/R	ICS-101	Fine	Below 22mm	5.0 – 7.0	4%	15	16872 (60000)	16872 (60000)	16928 (60200)	16928 (60200)	17069 (60700)	17069 (60700)
2	P/H/R (SG)	ICS-201	Fine	Below 22mm	5.0 – 7.0	4.5%	15	17013 (60500)	17013 (60500)	17069 (60700)	17069 (60700)	17209 (61200)	17209 (61200)
3	GUJ	ICS-102	Fine	22mm	4.0 – 6.0	13%	20	13076 (46500)	13076 (46500)	13132 (46700)	13132 (46700)	13132 (46700)	13273 (47200)
4	KAR	ICS-103	Fine	22mm	4.5 – 6.0	6%	21	14060 (50000)	14201 (50500)	14341 (51000)	14201 (50500)	14060 (50000)	14060 (50000)
5	M/M (P)	ICS-104	Fine	23mm	4.5 – 7.0	4%	22	15185 (54000)	15325 (54500)	15325 (54500)	15325 (54500)	15325 (54500)	15325 (54500)
6	P/H/R (U) (SG)	ICS-202	Fine	27mm	3.5 – 4.9	4.5%	26	15438 (54900)	15578 (55400)	15663 (55700)	15578 (55400)	15578 (55400)	15578 (55400)
7	M/M(P)/ SA/TL	ICS-105	Fine	26mm	3.0 – 3.4	4%	25	- -	- -	- -	- -	- -	- -
8	P/H/R(U)	ICS-105	Fine	27mm	3.5 – 4.9	4%	26	15578 (55400)	15719 (55900)	15803 (56200)	15719 (55900)	15719 (55900)	15719 (55900)
9	M/M(P)/ SA/TL/G	ICS-105	Fine	27mm	3.0 – 3.4	4%	25	14763 (52500)	14904 (53000)	15044 (53500)	15044 (53500)	15044 (53500)	15185 (54000)
10	M/M(P)/ SA/TL	ICS-105	Fine	27mm	3.5 – 4.9	3.5%	26	15550 (55300)	15691 (55800)	15832 (56300)	15832 (56300)	15832 (56300)	15916 (56600)
11	P/H/R(U)	ICS-105	Fine	28mm	3.5 – 4.9	4%	27	16310 (58000)	16450 (58500)	16535 (58800)	16450 (58500)	16450 (58500)	16450 (58500)
12	M/M(P)	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	15860 (56400)	16000 (56900)	16141 (57400)	16141 (57400)	16169 (57500)	16310 (58000)
13	SA/TL/K	ICS-105	Fine	28mm	3.7 – 4.5	3.5%	27	15916 (56600)	16056 (57100)	16197 (57600)	16197 (57600)	16225 (57700)	16366 (58200)
14	GUJ	ICS-105	Fine	28mm	3.7 – 4.5	3%	27	16113 (57300)	16113 (57300)	16169 (57500)	16169 (57500)	16281 (57900)	16422 (58400)
15	R(L)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	16225 (57700)	16310 (58000)	16366 (58200)	16366 (58200)	16450 (58500)	16535 (58800)
16	M/M(P)	ICS-105	Fine	29mm	3.7 – 4.5	3.5%	28	16394 (58300)	16394 (58300)	16450 (58500)	16450 (58500)	16506 (58700)	16647 (59200)
17	SA/TL/K	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	16422 (58400)	16422 (58400)	16478 (58600)	16478 (58600)	16535 (58800)	16675 (59300)
18	GUJ	ICS-105	Fine	29mm	3.7 – 4.5	3%	28	16450 (58500)	16450 (58500)	16506 (58700)	16506 (58700)	16591 (59000)	16731 (59500)
19	M/M(P)	ICS-105	Fine	30mm	3.7 – 4.5	3.5%	29	16675 (59300)	16675 (59300)	16731 (59500)	16731 (59500)	16788 (59700)	16928 (60200)
20	SA/TL/K/O	ICS-105	Fine	30mm	3.7 – 4.5	3%	29	16703 (59400)	16703 (59400)	16759 (59600)	16759 (59600)	16816 (59800)	16956 (60300)
21	M/M(P)	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	16816 (59800)	16816 (59800)	16872 (60000)	16872 (60000)	16928 (60200)	17069 (60700)
22	SA/TL/ K / TN/O	ICS-105	Fine	31mm	3.7 – 4.5	3%	30	16872 (60000)	16872 (60000)	16928 (60200)	16928 (60200)	16984 (60400)	17125 (60900)
23	SA/TL/K/ TN/O	ICS-106	Fine	32mm	3.5 – 4.2	3%	31	N.A. (N.A.)	N.A. (N.A.)	N.A. (N.A.)	N.A. (N.A.)	N.A. (N.A.)	N.A. (N.A.)
24	M/M(P)	ICS-107	Fine	34mm	2.8 - 3.7	4%	33	20246 (72000)	20246 (72000)	20246 (72000)	20246 (72000)	20246 (72000)	20246 (72000)
25	K/TN	ICS-107	Fine	34mm	2.8 - 3.7	3.5%	34	20387 (72500)	20528 (73000)	20528 (73000)	20528 (73000)	20528 (73000)	20528 (73000)
26	M/M(P)	ICS-107	Fine	35mm	2.8 - 3.7	4%	35	20809 (74000)	20949 (74500)	20949 (74500)	20949 (74500)	20949 (74500)	20949 (74500)
27	K/TN	ICS-107	Fine	35mm	2.8 - 3.7	3.5%	35	21090 (75000)	21231 (75500)	21231 (75500)	21231 (75500)	21231 (75500)	21231 (75500)

Standard Descriptions with Basic Grade & Staple in Millimetres based on Upper Half Mean Length [By law 66 (A) (a) (4)]

(Note: Figures in bracket indicate prices in Rs./Candy)