



Sanitary Napkins Creature Comforts and Something More

From scraps of rags to natural materials such as sea sponges, women have devised any number of ways to cope with menstruation. Currently there are a variety of products to choose from: sanitary napkins, liners, tampons and menstrual cups. The true significance of such choice and access can be understood when one realizes that there are still places where young girls and women must isolate themselves during menstruation due to religious impositions or cultural norms, or even because they cannot afford the modern contraptions. For its comparative testing, *Consumer Voice* has zeroed in on sanitary napkins and nine eight popular brands are in the fray, being tested for parameters ranging from absorbency and disposability to pad length and width.

Late nineteenth-century research into disposable sanitary napkins marked a breakthrough in the field of gynaecological hygiene. Today, some one-and-a-quarter-century later, sanitary napkins are available in a wide variety of designs that take into account not just comfort but also style and fashion sensibilities. Some major innovations include quilting of the lining, wings and panty liners, fragrant pads and reduction of pad thickness.

Clearly, with a multi-billion-dollar feminine hygiene industry at their beck and call, so to speak, the women of today are quite fortunate. Life without their winged sanitary pads is not to be imagined at all. These and a variety of other pads are marketed by several multinational companies in various categories and sizes based on requirements and absorption capacity. *Consumer Voice's* comparative testing has been done on the regular selling sizes and types/categories sold across India.

A sanitary napkin or a sanitary towel is an absorbent item used by a woman while she is menstruating or in any other situation where it is necessary to absorb a flow of blood. It also serves to protect clothing and furnishings.

In India, the biggest barrier to using a sanitary napkin is affordability. Around 70 per cent of women in India cannot afford to buy them and consequently resort to soaking alternatives like unsanitized cloth, even reusing these. Incidents of reproductive tract infection are more common among these women.

BRANDS TESTED

A market survey in five metro cities was carried out to assess the availability and popularity of the brands of sanitary napkin available in retail markets. All the tested brands have been evaluated and graded as per their overall performance based on comprehensive lab-test reports.

Rank	Brand	Variant	Regular/Large/ Extra Large	Pad Size (mm)	MRP (Rs)	Pack Size	Manufacturer
REGULAR							
1.	Caremate	Active choice medium flow	N/M*	240	45	20	Shree Radhe Hygiene
2.	Kotex	Soft & smooth	Regular	230	50	20	KA Enterprise Gurgaon
3.	Carefree	N/M*	Regular	465	105	20	Johnson & Johnson
4.	She	Select comfort	N/M	230	20	8	Royal Hygiene Care
4.	Stayfree	Secure cottony soft	Regular	230	52	20	Johnson & Johnson
4.	Whisper Choice	Choice wings	N/M*		26	8	P&G
LARGE							
1.	Don't Worry	N/M*	Ultra thin regular	240	32	6	Mankind Pharma Limited, Delhi
2.	Sofy	Side wall Dry slim	Large	260	99	15	Unicharm
EXTRA LARGE							
1.	She	Ultra comfort	Extra large	284	199	30	Royal Hygiene Care

N/M* (not marked)

COMPARATIVE TEST

BEST BUY

Caremate

VALUE FOR MONEY

Caremate

KEY FINDINGS

- In overall test performance, Caremate is on top (90) followed by Kotex (86) and Carefree (85).
- All brands clear the absorbency test, being able to absorb the liquid flow.
- In the disposability test of absorbent materials, brands Don't Worry, Sofy, She (extra large)

and Whisper do not disperse in water within five minutes, as required by Indian Standards. Lumps are formed in the stirred water.

- Carefree is found to have the thickest pad (102.88mm) and Don't Worry the thinnest (26.2mm).
- In the sensory tests, Whisper is rated on top followed by Caremate and She (extra large).

Size	Pad Length (mm)	Width (mm)	Thickness (mm)
Regular	200 ± 20	60 to 75	15 ± 2
Large	240 ± 20		
Extra large	280 ± 20		

Design and Construction

Sanitary napkins are designed to absorb and retain menstrual fluid discharges. When used, they are applied inside an undergarment with a press-on adhesive fixing strip. Main functions/key elements of sanitary napkins are to absorb and retain menstrual fluid, isolate fluids from the body, ensure no leakage and no odour. Of course, it is necessary that the napkin stays in place and is comfortable to wear.

Standard Design

1. Top sheet – nonwoven or apertured film
2. Transfer layer
3. Absorbent layer
4. Absorbent core
5. Back sheet film

Product shape can be either flat or curved, with/without wings to secure the pad in place and add additional leak protection.



THE PARAMETERS EXPLAINED

1. Pad Size (Length x Width x Thickness):

Sanitary napkins come with or without wings and are curved or contoured to prevent leakage on the sides.

- Length: As per IS, the requirement for regular, large and extra large sizes is 180mm to 220mm, 220mm to 260mm, and 260mm to 300mm, respectively, to be able to provide adequate coverage.
- Width: As per IS, the width of the napkins has to be in the range of 60mm–75mm depending upon the size as declared.
- Thickness: The pad thickness has been printed by the manufacturer depending upon the size/area of the pad and the category (from regular to extra large) under which it falls. The suitability and comfort of the user are to be considered. Some prefer thick protection while others use thin pads to serve their needs/ convenience.

2. **Absorbent filler:** The filler material – such as cellulose pulp, cellulose wadding, tissue, cotton – shall be free from lumps, oil spots, dirt, or foreign material.

3. **Absorbency and absorbability to withstand pressure after absorption:** The sanitary napkin shall be able to absorb 30ml of coloured water or oxalated sheep or goat blood or test fluid when flowed on the centre of the napkin (at the rate of 15ml per minute). No stain or leakage shall show up at the bottom or sides of the sanitary napkin.

4. **Covering:** As per Indian Standard, the covering of the absorbent filler shall be of good quality cotton or rayon knitted sleeving, gauze or non-woven fabric with sufficient porosity to permit the assembled pad to meet the absorbency requirements. If cotton gauze is used, it shall conform to IS.

5. **Disposability:** All the filler material or absorbing material packed in the sanitary

napkin with the covering is to be removed, immersed in 15 litres of water and stirred. This immersed material of the pad shall disintegrate in the water in not more than five minutes.

6. **pH:** The sanitary napkin shall be free from acidic and alkali material and the pH of the absorbent material shall be 6 to 8.5 when tested by the method given in IS.

7. **Workmanship and finish:** The absorbent filler material shall be arranged and neatly cut in the required size of the pad and form a uniform thickness throughout, without any wrinkle or distortion. It shall be placed in the covering in such a way that it does not cause lump formation as a result of sudden pressure. The covering fabric shall cover the filler completely. The sanitary napkin shall have a non-absorbent barrier on one side which shall have an identifying thread or marking clearly indicating the side of the barrier as well as the effective area of absorbing.

8. **Packaging:** Sanitary napkins shall be packed in a polyethylene-lined carton or a polyethylene bag. Ratings are given based on these criteria: quality of packaging material; environmental concerns like biodegradability and recyclability/reusability; and depth of printing on the packaging.

9. **Marking:** Each carton shall be marked with: 1) manufacturer's name or trademark; 2) number of sanitary napkins contained in it; 3) size; 4) MRP; and 5) instruction for use and disposal.



COMPARATIVE TEST

Caremate

Regular

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 240; result: 210
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 54.98

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability: Pass test

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out of 4: 2; non-biodegradable

Marking: All required information provided



Kotex

Regular

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 230; result: 200
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 61.52

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability: Pass test

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out of 4: 2; non-biodegradable

Marking: All required information provided



Carefree

Regular

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 465 (full length of belted-shape pad); result: 185
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 102.88; thickest among the tested brands

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability: Pass test

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out of 4: 2.5; non-biodegradable

Marking: All required information provided



She

Regular

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 230; result: 197
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 52.21

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability: Pass test

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out of 4: 2; non-biodegradable

Marking: All required information provided



Stayfree

Regular

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 230; result: 208
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 69.28

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption:

Pass test

Covering: Pass test

Disposability: Pass test

pH: Within the specified range

Workmanship and finish:

Excellent

Packaging: Score out of 4: 2;

non-biodegradable

Marking: All required information provided



Whisper Choice

Regular

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 240; result: 201
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 59.97

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability:

Absorbent core does not disintegrate at all

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out of 4: 2; non-

biodegradable

Marking: Pad size not given



Don't Worry

Large

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 240; result: 239
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 26.2

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability:

Absorbent core does not disintegrate at all

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out

of 4: 2; non-biodegradable

Marking: All required information provided



Sofy

Large

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 260; result: 225
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 43.01

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after

absorption: Pass test

Covering: Pass test

Disposability:

Absorbent core does not disintegrate at all

pH: Within the specified range

Workmanship and finish: Excellent

Packaging: Score out of 4: 2; non-

biodegradable

Marking: All required information provided



COMPARATIVE TEST

She

Extra Large

Pad Size (Length x Width x Thickness)

- **Length (mm):** Declared: 284; result: 257
- **Width:** Within specified size as declared on packaging
- **Thickness (mm):** 21.73

Absorbent filler: Pass test

Absorbency and absorbability to withstand pressure after absorption: Pass test

Covering: Pass test

Disposability: Absorbent core does not disintegrate at all

pH: Within the specified range

Workmanship and finish:

Excellent

Packaging: Score out of 4: 2; non-biodegradable

Marking: All required information provided



Every packet of sanitary napkins must carry the following instructions:

- Method of use
- Indication as to which side is absorbent
- Disposal instructions (for example, napkins without covering can be disposed of in water closets)
- Frequency of recommended change
- Environmental concerns (post-disposal and during manufacturing)
- Date of manufacture and expiry date

SENSORY TESTS

Female volunteers used the samples as per the guidelines given in the questionnaire and subsequently provided their opinions. The ratings given by them are summarized in the table here.

	Brand	Score out of 25
REGULAR	Caremate	19.39
	Kotex	14.66
	Carefree	12.99
	She	15.85
	Stayfree	13.88
	Whisper Choice	20.88
LARGE	Don't Worry	17.15
	Sofy	15.85
EXTRA LARGE	She (Extra large)	17.7

Avoid These Common Mistakes in Using Your Sanitary Napkin

- a) **Not washing your hands clean before handling a new sanitary napkin:** In the process of opening, flattening and putting on a sanitary napkin, the hands may bring many bacteria onto the sanitary napkin.
- b) **Not paying attention to the expiry date:** In fact, the requirements for hygienic standard of sanitary napkin are very strict and the sanitary napkin is of poorer quality if it is closer to the expiry date.
- c) **Buying sanitary napkins on promotion:** Generally, promotional or gift items are mostly slow moving goods that may have involved raw materials of poorer quality, less stringent test requirements, longer storage periods, etc., and thus their quality cannot be assured.
- d) **Using products on trial:** There are always new brands, new products, new materials and new concepts of sanitary napkins in the market and with aggressive promotion, consumers may be lured into using these. For example, there is the popular sanitary napkin with dry net surface but many women with sensitive skin have complained of rashes and itchiness after use. Relying on a known manufacturer, a known shop, good reputation and one's own experience are still the most basic principles of common sense in choosing appropriate sanitary napkins.
- e) **Using sanitary napkins with medication or fragrance:** Most doctors would not recommend such products because the medication and fragrance may have undesirable effects on the body.

Nothing Ragged about It

Before disposable sanitary pads were created, reusable pads or cloths were widely used to collect menstrual blood. Women often used a variety of devices that they crafted from materials from rags to sheep's wool. Subsequently, even as disposable pads became popular and affordable, cloth menstrual pads made a comeback around the 1970s.

Women choose to switch to cloth menstrual pads mainly because of comfort, savings over time, environmental concerns and personal health reasons. There are many different styles of cloth menstrual pads available today. Popular styles of cloth menstrual pads include all-in-one, or AIO pads, in which the absorbent layer is sewn inside the pad; 'inserts on top' style pads, which have absorbent layers that can be secured on top of the pad as needed; envelope- or pocket-style pads, which have absorbent layers that can be inserted inside the pad as needed; and a

foldable style, in which the pad folds around the absorbent layers. Cloth menstrual pads can have waterproof lining, which provides more leak protection but may also be less breathable. In underdeveloped countries, reusable or makeshift pads are still used to collect menstrual blood. Rags, soil, and mud are also reportedly used for collecting menstrual flow.

Also called 'mama cloth', reusable menstrual pads can be found on a number of websites, or can be easily made at home. They have become a popular alternative among some groups of women, especially environmentalists and mothers who use cloth nappies/diapers, because they are more environmentally friendly, but they are also gaining in popularity among more mainstream women, because they are allergen-, chemical- and perfume-free, and can be more comfortable for women who suffer from irritations from using disposable pads.

A Timeline of the Milestones and Other Interesting Ones

A number of developments and changes in attitude about menstruation and related products have occurred through history, some quite creative and even effective. It is fascinating to see how women's options have evolved.

- **Ancient world:** Egyptian women use softened papyrus for tampons. In Greece, tampons are rigged out of lint wrapped around small pieces of wood. And in Rome, pads and tampons are made of soft wool. In other parts of the world, paper, moss, wool, animal skins and grass are used to fashion ways to absorb menstrual flow.
- **1839:** Charles Goodyear invents the technology to vulcanize rubber, used in manufacturing condoms, intrauterine devices, douching syringes and the 'womb veil', also known as the diaphragm.
- **1850s and on:** Inventors patent a wide variety of products: catamenial sacks and bandages, as well as receptacles made out of springs, wire, buttons, flaps, elastic straps, valves and girdles. Not many make it to market.
- **1873:** The Comstock Act is passed, making it a federal crime to distribute or sell pornography or conception-related materials or text in the United States. In response, the birth control industry coins the term 'feminine hygiene' to advertise their repackaged, OTC products.
- **1896:** Lister's Towels, the first commercial sanitary pads, go on sale. Produced by Johnson & Johnson (and named for Joseph Lister, a pioneer in sterile surgery) and arguably too avant-garde for the prudish times, they sink like the proverbial rock.
- **Early 20th century:** Many American women use homemade pads, often rigged out of 'bird's eye', the same absorbent cotton material used for baby diapers. They pin these cloths, or rags, to their underwear or to homemade muslin belts. Sanitary aprons and bloomers are available by mail and are designed to protect clothing from staining, not to absorb blood flow.
- **World War I:** When nurses in France realize that the cellulose bandages they are using on



wounded soldiers absorb blood much better than plain old cotton, they start using them for their own flow.

- **1920s:** Kotex (a combination of 'cotton' and 'texture') lands in stores. Disposable pads, while a big step forward, cannot be worn without reusable sanitary belts. Up until 1970, when Stayfree and New Freedom pads are put on the market, all sanitary napkins will require the use of a belt to keep them in place.
- **1927:** Johnson & Johnson introduces Modess, Kotex's major competitor, in a field of literally hundreds of sanitary pad manufacturers.
- **1940s:** The 'Modess...because' print campaign is launched, turning menstrual advertising into a showcase for high-end couture and fashion photography. [photo: Modess because]
- **1969:** Stayfree minipads, the first sanitary pads with adhesive strips, go on sale, signalling the end of belts, clips, and safety pins for millions of women.
- **1985:** Courteney Cox Arquette uses the word 'period' for the first time in a TV commercial.
- **2003:** The FDA approves the first continuous birth control pill, which both suppresses periods and provides birth control.
- **2007:** Lybrel is approved by the FDA—the first birth control pill to eliminate periods altogether. That being said, the website freely admits that women may experience 'menstrual cramps and vaginal bleeding'.

Source: <http://www.lunette.com>

COMPARATIVE PERFORMANCE SCORES OF SANITARY NAPKINS

Test Parameters↓ Brands→	% Weightage	Regular				Large		Extra Large		
		Caremate	Kotex	Carefree	She	Stayfree	Whisper	Don't Worry	Sofy	She
No. of Pads per Pack		20	20	20	8	20	8	6	15	30
MRP (Rs)		45	50	105	20	52	26	32	99	199
Cost per Pad (Rs)		2.25	2.5	5.25	2.5	2.6	3.25	5.33	6.6	6.63
Absorbent Filler	4	4	4	4	4	4	4	4	4	4
Covering	4	4	4	4	4	4	4	4	4	4
Pad Size	9	6.85	7.33	7.78	5.65	7.33	7.42	5.51	4.81	4.28
pH	8	7.66	7.84	7.94	6.94	6.67	6.59	7.14	7.51	7.21
Disposability	10	10	10	10	10	10	4.0	4.0	4.0	4.0
Absorbency and Absorbability	25	25	25	25	25	25	25	25	25	25
Sensory Tests*	25	19.39	14.66	12.99	15.85	13.88	20.88	17.15	15.85	17.7
Packaging	4	2	2	2.5	2	2	2	2	2	2
Marking	5	5	5	5	5	5	4	5	5	5
Workmanship and Finish	6	6	6	6	6	6	6	6	6	6
Overall Score (Rounded off)	100	90	86	85	84	84	84	80	78	79

Rating: >90: very good****, 71-90: good****, 51-70: fair****, 31-50: poor**, <30: very poor*

*Sensory tests include scores for these parameters: comfort in fitting; convenience in use and fitting; disposability; soaking ability; and overall acceptability