

Trends to Follow

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Printing is the process of producing multiple copies from one original. Thus, printing is defined as follows :

Printing is the process of taking impression from any suitable surface, duly inked applying suitable pressure on suitable stock.

Printing and paper go together as both cannot survive without each other. The quality of both depends upon each other. For eg. A box (carton) of biscuits being printed in 6 colours making it very attractive and eye catching with details of price, quality, date of manufacture and contents. Now, compare this carton with the plain unprinted carton. The plain carton gives very dumb impression and confuses the consumer creating lot of doubts in their mind and not identified the quality of contents. The product inside may be of very good quality and price is very suitable but without branding. So, the printed carton which speaks everything about the product sells and the plain carton product fails / not as per printed carton.

Since the package is printed in 6 colours and over-print work is done. This is to protect the products inside. Now-a-days Drug & Health Organisation all over the world have laid down strict parameters to be followed. It is to be noted that over-print gloss varnish not only enhances the look of the carton but protects the product inside by reflecting upto 90% of the light incidented on the carton. Thus, UV protection is guaranteed.

The FDA organization in US, JVL (Japanese Voluntary Negative List) and BIS of India have very strictly specified that no food or edible products can be packed without total UV protection. In today's world almost everything comes in paper and paper board packaging, now paper manufacturers should ensure that all

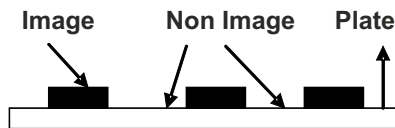
their products should sustain matalizing which is the shield for total UV protection. The world today has adopted multilayer packaging for food / lacto etc. as multilayer packaging consist of 3 / 5 / 7 layers of paper and plastic material laminated to each other giving tremendous strength to the package and ensuring total elimination of spurious products.

Paper and Paper Board consumption in Packaging Industry is almost five times the paper required for educational products as packaging cartons are not re-useable whereas educational products are re-useable.

There are 5 printing process :

1. Offset Lithography
2. Letterpress
3. Gravure
4. Silk-Screen
5. ColloTYPE

Among the 5 printing processes, the last one is the only process by which continuous tone reproduction is done and not even one percent of the world population knows about it. As this process is used to reproduce 4 to 6 copies only and is very expensive but very suitable for reproducing paintings and artworks of artist in original. Thus, 4 to 6 copies which are produced, are signed by the artist and are known as originals bearings Serial Nos.



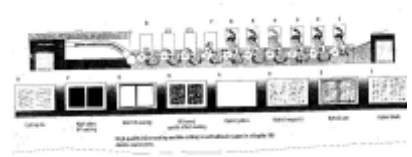
Offset Lithography is the most popular process of printing today as it reproduces very faithfully upto 95% of the originals at very high speed and very low cost. Offset Lithography is based on the following principals :

1. Image and non-image areas lie on the same plane.
2. Image and non-image areas are

chemically separated.

3. Ink repels water and water repels ink.

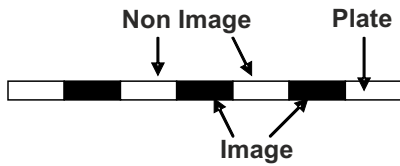
Today printing technology has made great leaps and has accommodated and adopted state of art electronic / mechanical technology.



Web Offset Printing machine today operate at the speed of 70,000 plus which is even faster than supersonic speed 60,000. Thus, testing the caliber of paper maker who produces the inputs for these fast machines.

These machines run 9 to 12 webs at a time producing varieties of product like daily newspapers, magazines, text books etc. etc. These machines are made to accommodate papers from 45 GSM to 400 GSM. Also, these machines have the provision of sheeting, cutting, creasing, punching and numbering. Thus, delivering finished product every time.

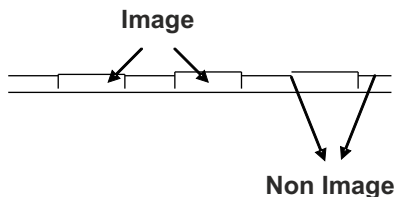
As Offset Printing is also known as Chemical process / Planographic process of printing involving verities of chemicals at every stage of reproduction as moisture / damping solution is used in every unit. Thus, increasing humidity (moisture contents in atmosphere) as humidity directly affects dimensional stability which in turn affects print quality and enhances drying time. As high humidity softens the coating and the surface of paper resulting in picking and loosening of fibres. Thus, creating lot of problems during printing. Even though Woodfree Paper and non- absorbent papers are available but they come with lots of strings. These strings are expensive and not economically viable but for certain special applications they are used.



Gravure is the process where the image is below the surface of plate or cylinder in the form of cavities. This process is used especially for printing of currency notes, postage stamp, negotiable documents and security works. As the process and the reproduction machinery is quite expensive so fake currency or forgery is eliminated to great extent alongwith the co-operation of paper makers who have to produce security paper as per the requirements. In order to ensure 100% security, the process of printing involves all the three processes of printing used together. Paper maker should ensure that the behaviour of paper and trapping of various inks is done in faithful manner.



Letter Press is the oldest process of printing in which the image areas are recessed and non-image areas are depressed.



Here, the paper is pressed for taking print, thus causing indentation. There is a very big drawback as the inks gets accumulated at the edges making it light in the centre and dark at the edges.

Now a days, this process is limited to Memography (Office Stationery) only.

As the technology has crossed all barriers enabling the printers to produce any type of job on any type of paper with full flexibility to attain our requirement. For example we have to produce the carton for packing juice equivalent to thickness of 450 GSM Board, this we have to attain by laminating various papers of different grammage with flexibility of UV protection. This laminated carton has more strength than metal can and over and above this laminated packaging is 100% bio-degradable and eco-friendly.

In the end, it is requested that paper makers should ensure the following features during manufacture of paper.

1. The thickness should be uniform throughout.
2. Surface finishing should be excellent and tensile strength should be good.
3. Ensure whiteness of paper should be of very high degree.
4. The paper / reams should be packed properly ensuring that the paper does not take or loose moisture.

Summary : As the trends have changed and will continue to change, the future will be of web (reels). The reason is simple that the machines manufactured today are custom built to the requirements of consumers. As already mentioned almost all large format multicolour printing machines have in-built facilities for sheeting, numbering and punching. So, the paper makers should gear themselves up to supply good quality paper in various widths.

These reels should be very well packed so that it does not get damaged in transit.

Conclusion :

The future is of reels, irrespective of size and grammage. It is very important to ensure that no foreign material lumps / dust is present in the reels. As these foreign materials have very damaging affect during printing because they damage the blankets and cause machine stoppages.

- i. Every stoppage is very expensive (Time factor and material factor).
- ii. Even in case of sheets, if a single torn sheet is fed into the machine, again causes machine stoppage and re-start brings down the profitability.
- iii. The dust present in the paper irrespective of variety causes multiple stage loss of production, printability and material like the dust goes into blanket and turn into ink thus causing stoppage to remove them which consumes large production time. Thus, affecting quality and profitability.

Large printing and publishing houses in India have switched over to almost 80% of their requirement to imported paper, reason being dust and foreign material.

Even most sophisticated paper mill in India which produces white back coated board often face this problem. In spite of stringent quality enforcement. One such sheet causes blanket loss of approx. Rs. 30,000/- plus stoppage time.