

Traditional Textile Printing Techniques of India: Block Printing, Bandhani, and Batik

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Introduction:

India's textile tradition is as much a story of colour and pattern as it is of weaving. Long before industrial printing machines existed, Indian artisans had already perfected an array of hand techniques for decorating cloth — carving intricate wooden blocks, tying thousands of tiny knots by hand, and coating fabric with wax to resist dye in precise patterns. These traditions, passed down through generations of craft communities, continue to define the visual identity of Indian textiles today. Among the most significant of these techniques are block printing, bandhani (tie-and-dye), and batik, each rooted in a distinct regional history, material process, and aesthetic philosophy, yet united by the shared principle of transforming plain cloth into a canvas of colour through entirely manual craftsmanship.

Block Printing

Block printing is one of the oldest and most widespread textile decoration techniques in India, particularly associated with the state of Rajasthan, though regional variants are found across the country. The process begins

with the carving of a wooden block, traditionally made from teak or sheesham wood, into which an artisan chisels intricate motifs inspired by nature — flowers, leaves, birds, and geometric patterns. Each block is dipped into dye or pigment and then stamped onto the fabric by hand, requiring considerable skill to maintain a uniform, precise repeat across the length of the cloth.

Several regional styles of block printing have earned distinct identities of their own. Bagru printing, practised in the village of Bagru near Jaipur, favours natural dyes and often uses mud-resist techniques to create earthy, muted tones. Sanganeri printing, from Sanganer in Rajasthan, is known for its fine, delicate floral motifs typically printed on a light or white background. Ajrakh printing, which originated in the Kutch region of Gujarat and Sindh nearly four centuries ago, is distinguished by its deep indigo and madder-red geometric and floral patterns, produced through a labour-intensive multi-stage resist-and-dye process. Kalamkari, practised in Andhra Pradesh, similarly combines hand-

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block printing with hand-painting using a bamboo or date-palm pen, and is produced in two well-known regional variants, the Srikalahasti and Machilipatnam styles.

Bandhani (Tie-and-Dye)

Bandhani, also known as bandhej, is among the oldest resist-dyeing traditions in India, with roots that are believed to stretch back thousands of years and early visual references found in the Ajanta cave paintings. The craft is traditionally associated with the Khatri community of Gujarat and reached particular refinement in Rajasthan, where it remains a flourishing craft today. The word itself derives from the Sanskrit root 'bandh', meaning 'to tie', which describes the technique at its core.

To create a bandhani pattern, small sections of fabric are pinched and tightly tied with thread, traditionally using the fingernails to pluck minute portions of cloth with remarkable precision. When the fabric is dyed, the tied portions resist the colour, leaving behind characteristic small dots once the threads are removed. By repeating this tying-and-dyeing process with different colours, artisans build up complex patterns of dots, waves, stripes, and squares across the cloth. The finished textiles are known for their vivid palette of yellows, reds, greens, and blues, and are widely used in sarees, dupattas, and turbans across Gujarat and Rajasthan. Related

resist-dyeing traditions include Leheriya, which produces diagonal wave-like stripes, and the double-ikat weaving traditions of Patola in Gujarat and Pochampally in Andhra Pradesh, which apply a similar resist logic to the yarn before weaving rather than to the finished cloth.

Batik

Unlike block printing and bandhani, batik is generally understood to have originated outside India, particularly in Java and Bali in present-day Indonesia, before spreading to and being adapted by textile artisans in India and other parts of Asia and Africa. Batik is a wax-resist dyeing technique in which hot wax is applied to selected areas of the fabric using a tool such as a canting (a wax pen) or, in the stamped variant, a copper block. Wherever the wax is applied, the fabric resists the dye, so that when the cloth is submerged in a dye bath, only the unwaxed areas absorb colour.

This process is typically repeated across multiple stages, with wax reapplied and the fabric redyed in different colours, allowing artisans to build up intricate, multi-layered patterns. Once the design is complete, the wax is removed by boiling or scraping the fabric, revealing the finished pattern beneath. Batik is traditionally classified into three main types: batik tulis, or hand-drawn batik, made using a canting to draw fine, detailed lines freehand;

batik cap, or stamped batik, made using pre-carved copper blocks to apply wax more quickly and uniformly; and batik lukis, or painted batik, in which dye is applied directly with a brush rather than through immersion. In India, batik has been particularly embraced in states such as Gujarat and West Bengal, where it has been blended with local motifs and colour sensibilities to create a distinctly Indian expression of the craft.

Shared Principles and Points of Difference

☞ Method of resist: Block printing applies colour directly to the fabric using carved blocks, whereas bandhani and batik are resist techniques — bandhani uses thread ties and batik uses wax to prevent dye from reaching certain areas of the cloth.

☞ Tools: Block printing depends on carved wooden or metal blocks; bandhani relies almost entirely on the human hand and thread; batik uses wax applied with a canting pen or a stamped block.

☞ Regional identity: Block printing is most strongly associated with Rajasthan and Gujarat (with variants such as Bagru, Sanganeri, and Ajrakh), bandhani with Gujarat and Rajasthan, and batik with an Indonesian origin later adapted across Indian states including Gujarat and West Bengal.

☞ Pattern character: Block printing typically produces repeat motifs of florals, paisleys, and geometric borders; bandhani is recognised by its dotted, wave-like, or striped patterns; batik is known for intricate, often free-flowing multicoloured designs with a distinctive crackled texture where dye has seeped through fine cracks in the wax.

☞ Labour intensity: All three techniques are highly labour-intensive and skill-dependent, but batik and Ajrakh-style block printing in particular can involve numerous sequential stages of resist application, dyeing, and washing before a single piece of cloth is finished.

Cultural and Economic Significance

These printing traditions are far more than decorative techniques; they represent living cultural heritage tied closely to the identity of the communities that practise them. Motifs used across these crafts are frequently drawn from religious and cultural symbolism, including forms inspired by the lotus, the swastika as a symbol of well-being, and other regional iconography, linking each textile to a broader cultural narrative. Economically, these crafts continue to sustain thousands of artisan families, particularly in Rajasthan, Gujarat, and Andhra Pradesh, and have found renewed

relevance in contemporary fashion, where designers increasingly draw upon block printing, bandhani, and batik to create garments that combine heritage craftsmanship with modern silhouettes.

Challenges Facing These Crafts

- 🔴 Competition from machine-printed imitations, which replicate traditional patterns at a fraction of the cost and time, undermining the market for genuinely handcrafted textiles.
- 🔴 A shrinking base of skilled artisans, as younger generations move toward more stable and better-paying occupations.
- 🔴 Rising costs of natural dyes and quality raw materials, which can make authentic handcrafted pieces less price-competitive.
- 🔴 Limited awareness among consumers about how to distinguish genuine hand-block printed or hand-tied textiles from mechanically produced imitations.

Conclusion

Block printing, bandhani, and batik together illustrate the extraordinary diversity of India's textile printing heritage — three distinct techniques, each shaped by its own regional history and material process, yet all sharing a common thread of painstaking handcraftsmanship. As these crafts face increasing pressure from mechanised imitation

and changing consumer habits, their survival will depend on continued patronage, fair compensation for artisans, and their thoughtful integration into contemporary fashion and design. Preserving these techniques is not simply a matter of protecting decorative art forms; it is a matter of safeguarding centuries of accumulated skill, cultural memory, and community identity woven into every piece of hand-printed or hand-dyed cloth.

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