

THE PAPERS USED FOR THE PRINTING OF NEW ZEALAND STAMPS 1855-1987

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PAPER When you look in the mirror you see what is reflected from the mirror and your mind concentrates its attention on that image.

To a stamp collector, the paper on which his stamps are printed can be something similar — we can look at the detail of the print, the colour, the design, the fineness of the engraving and the varieties which may be there — and we can do all this without thinking once about the paper which is so basic to the existence of the stamp.

There are three physical components of a stamp — paper, ink and gum and the paper is one aspect of your stamps which can give you endless pleasure once you start thinking about it.

The study of New Zealand stamp papers is a fascinating one — not least because many of our stamps were printed overseas and imported into New Zealand from Great Britain in the early years and then in modern times from a number of different countries.

There is a wide range of paper types which have been used. I think your hobby will be much more interesting once you have studied New Zealand stamp papers and learnt to recognise them.

WHAT IS PAPER? All paper is a dried, matted or felted sheet containing mostly vegetable fibres.

Papers are formed on a porous surface. This allows the water to drain out of a mixture of individual fibres of different sizes and lengths until they settle into position in a flat sheet.

The name "*paper*" comes from the word papyrus which the Egyptians made from the thin wafers of reeds pressed together to form a usable sheet. However, stamp papers are nothing like papyrus.

The Chinese first made paper by hand around about the time of the birth of Christ. They used the bark of the mulberry tree, but later used silk and hemp fibres to improve the product. Cellulose is the essential element of paper and it remains so today.

Around about 750 A.D. the Arabs captured some Chinese paper makers and established their own paper-making industry.

The Arabs used cotton instead of silk and slowly cotton paper came west into Egypt, across the Mediterranean and into Western Europe.

Over the centuries the methods and craft of paper-making spread through Europe with numerous improvements.

For instance, a “sizing” of gelatine helped to strengthen the paper and stop it from acting as blotting paper!

Paper-making machines were first built in the early nineteenth century and by 1812 commercial paper-making was well under way.

Despite all these changes, the basic method of producing postage stamp paper has remained unchanged over the nearly 150 years since stamps were first printed.

Nowadays, we produce wood pulp by various processes which is used for paper making. Before 1867 all papers were 100% pure rag content and this is a useful fact to keep in mind when identifying your New Zealand stamp papers.

HOW IS PAPER MADE? The early papers were made by hand and later by several other processes, the most famous of which is the John Dickinson method invented in 1809. Hand-made papers such as those used for the Full Face Queens are recognised by their “deckle edge”, where the clotted fibres show a rough and irregular edge. A “vat man” immerses a mould of closely spaced parallel wires in a tub containing a suspension of fibres and as the mould is withdrawn, the water drains out to the bottom, leaving a layer of wet clotted fibres on the wires. The vat man passes the mould to the “coucher” who tips the moist sheet of paper onto wet felt and removes the mould, covering the paper with another wet felt. Stacks of paper and wet felt, alternating, are pressed between two boards to remove any excess water. At this stage the pile of felt and paper is passed to the “layman” who hangs the paper in a humid loft to dry slowly and prevent wrinkles. The wire base of the mould produces “laid” paper with a pattern of lines on the underside. The 2/-Milford Sound stamp exists printed on “laid” paper. Hand-made paper looks mottled when you hold it up to the light and does not have a distinctive pattern of light and dark as machine-made papers do.

MACHINE-MADE PAPER After a violent pulping process, the fibres of cellulose material are prepared to absorb water and ultimately to knit together as they dry in the finished sheet of paper. The pulp is washed, beaten and mixed with sizing and loading agents such as clay or gypsum which fills the spaces between the fibres.

In the John Dickinson method the slurry of pulp and water is put into a vat and a hollow cylinder with a perforated surface is immersed in the vat. While the cylinder is rotated, water drains through into the cylinder leaving a layer of cellulose fibre on the rotating surface.

At this point, because of the revolving motion of the cylinder, the individual fibres arrange themselves in the direction of the revolutions and this makes the paper stronger in that direction.

An important term to remember here is “mesh”, which is present in all machine-made papers and which later on will help you to recognise individual papers used for New Zealand stamps.

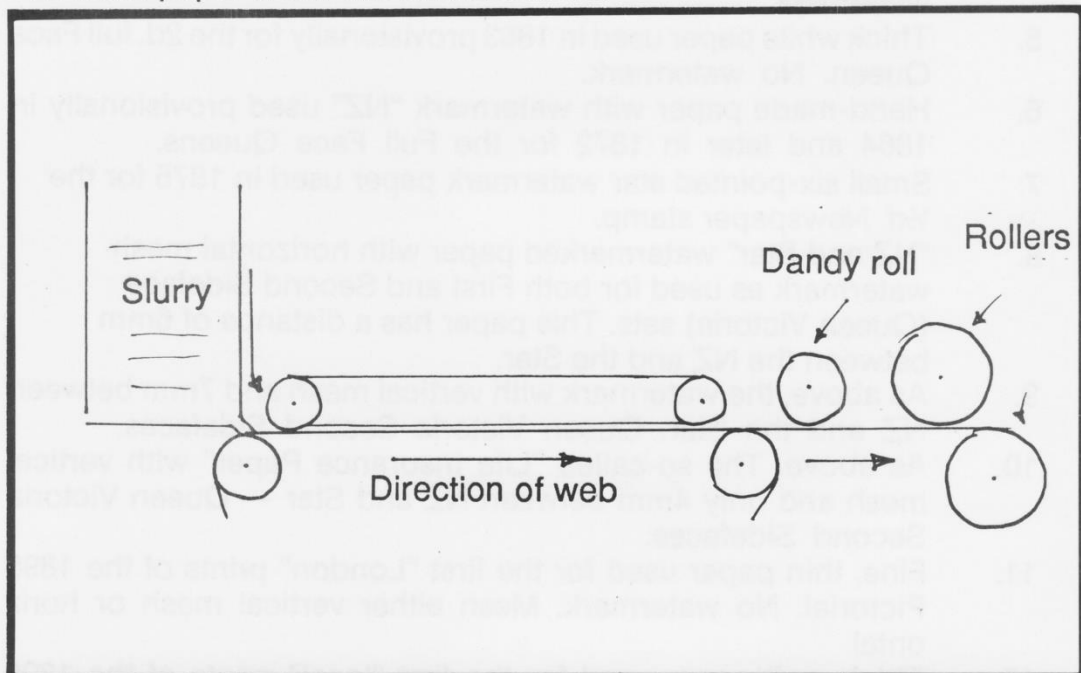
As the cylinder rotates, the web of paper is led off and pressed between an endless belt of felt. The paper is dried and smoothed and wound onto a reel.

Another method of making paper and the one which has most likely been used for New Zealand papers is the "Fourdrinier" method (1812).

In a Fourdrinier paper-making machine the "furnish" or the slurry of fibres is led into a reservoir and then moved through a narrow slot or opening onto a belt made up of wire mesh. Deckle straps move at the same speed on either side of the wire mesh and hold the furnish on the web.

With the movement of the wire mesh the fibres of paper arrange themselves parallel to the direction of the web and paper develops its "mesh". The wire mesh vibrates and this helps to separate water from the furnish and helps the fibres to become interwoven.

Woven mesh of the Fourdrinier machine produces paper which when held up to the light shows a regular pattern of pin-point thins. Many New Zealand paper show this characteristic.



Hand-made paper tends to shrink as it dries, but it tends to shrink both horizontally and vertically in the sheet.

Machine-made paper shrinks more across the "weft" (i.e. the direction of the fibres) than the direction of web. New Zealand rejected a lot of the Basted Mills papers used for the 1d. Universal because of excessive shrinkage after wetting (see list of papers below).

Paper expansion and contraction is a well known factor in postage stamps and it should always be kept in mind when trying to make exact measurements of perforations. In other words, the perforation measurements are not intended to be exact, but a close approximation.

Here, then, is a list of the major papers used to print New Zealand stamps since 1855 with a brief description and example(s) of each type. Check how many different types of paper you have in your New Zealand collection already. (This listing should be read in combination with the notes on New Zealand watermarks which follow).

1. Watermark large six-pointed star. Hand-made paper used for the London prints of the Full Face Queens (1885) and later (1882 to 1873 prints) in New Zealand.
2. Blue Paper commonly in use in 1855 for letter-sheets etc. Printings by Richardson of Full Face Queens. Various "letter" watermarks of paper manufacturers.
3. Thick white paper with vertical or horizontal mesh without watermark used by Richardson for second colonial prints of Full Face Queens. 1858-1861.
4. Thin, tough "Pelure" paper used in 1862 provisionally. No watermark
5. Thick white paper used in 1863 provisionally for the 2d. full Face Queen. No watermark.
6. Hand-made paper with watermark "NZ" used provisionally in 1864 and later in 1872 for the Full Face Queens.
7. Small six-pointed star watermark paper used in 1875 for the ½d. Newspaper stamp.
8. "NZ and Star" watermarked paper with horizontal mesh watermark as used for both First and Second Sideface (Queen Victoria) sets. This paper has a distance of 6mm between the NZ and the Star.
9. As above, the watermark with vertical mesh and 7mm between NZ and the Star. Queen Victoria Second Sidefaces.
10. As above. The so-called "Life Insurance Paper" with vertical mesh and only 4mm between NZ and Star — Queen Victoria Second Sidefaces.
11. Fine, thin paper used for the first "London" prints of the 1898 Pictorial. No watermark. Mesh either vertical mesh or horizontal.
12. Thick, soft paper used for the first "local" prints of the 1898 Pictorial set, mesh varies — no watermark.
13. Thick "Pirie" (Waterlow) vertical mesh paper with double line watermark NZ and Star. Very clear, vertical mesh — 1d. Universals.
14. Basted Mills paper — as 13 but a harder, thinner paper. 1d. Universals.
15. The Cowan horizontal mesh paper with no watermark — used for the ½d. Mt. Cook and 1d. Universal.

16. The close set "NZ and Star" paper. Horizontal mesh used for the later issues of the 1898 Pictorial set. Note: this Cowan paper had the watermark "bits" set in rows wide apart for use with large stamps.
17. The horizontal mesh Cowan paper with closer spaced watermarks as used for George V engraved stamps.
18. "De la Rue" horizontal mesh chalky paper used for the 1919-1925 1d. Dominion and other New Zealand surface printed stamps.
19. The scarce highly surfaced Cowan thick paper. Thick horizontal mesh used as an experiment in 1915. This paper has the same NZ and Star watermark as No. 18.
20. Jones paper used in 1925 with horizontal mesh, chalk-surfaced paper seen in the George V surface printed issues.
21. With a lithographed "watermark" used during a shortage of watermarked paper. Vertical mesh and more unusually horizontal mesh 1d. Dominion and surface printed George V stamps.
22. The Cowan thick, soft chalky paper (horizontal mesh) used for years for many surface printed New Zealand issues — George V surface printed original issue.
23. As 22 with surface on the wrong side in error and so with reversed watermark — various George V surface printed issues.
24. The fine vertical mesh paper with "single" watermark used for the 1935 Pictorial original issue.
25. The thicker paper with multiple watermark used from 1936 to 1940 always with horizontal mesh. Various 1935 Pictorial issues.
26. Coarse low-quality "Royal Cypher" paper used for later wartime/post-war printings.
27. Wiggins Teape single watermark mesh paper. This is the paper used for several George V stamps, for Arms Types and Insurance, Postage Due etc.
28. The later Wiggins Teape vertical mesh paper with multiple watermark. Mainly used for the Arms Type fiscal stamps.
29. The unsurfaced paper with multiple watermark and horizontal mesh, used only for the 1/3d., £1 and 5/- Official Arms Type fiscals.
30. George VI 1938 original vertical mesh paper.
31. George VI — the thinner "St Cuthbert's" vertical mesh paper used for the 4d. and 9d. values from 1947 on.
32. George VI. The fine horizontal mesh paper used for the ½d., 1½d., and 3d. only.
33. The coarse vertical paper used for the first issues of the 2d. Yellow.
34. The coarse horizontal mesh paper used for later 2d. issues.
35. Queen Elizabeth original thin coarse paper, vertical mesh. Used for all the original Queen Elizabeth set.

36. Queen Elizabeth white opaque paper. Actually an esparto paper. This was introduced in 1958 to replace the poorer quality Royal Cypher paper. Horizontal mesh.
37. 1960 ordinary paper. Watermark W8. Highly surfaced, but not coated paper used for all the original set of the 1960 Flowers. Vertical mesh.
38. 1966 chalky paper used for the 4d. value and others of the 1960 set. Vertical mesh, watermark W8.
39. From about 1968 on unwatermarked chalky surfaced papers were gradually introduced into use for New Zealand stamp issues and are now used for all issues, watermarks having been abolished. These papers vary in thickness and quality, depending on the manufacturer concerned. The paper with multiple watermark NZ and Star continued in use for the overprinted Arms Type fiscal stamps until 1986.
40. An unwatermarked chalky surface "security" paper has been used for various of the Scenic and commemorative issues — notably the Lakes issues of 1972. This paper (known as "granite" paper) has coloured fibres throughout the mesh.
41. In 1987 certain types of phosphorised paper came into use for New Zealand stamps (unwatermarked and chalk-surfaced). These papers were designed largely for the stamps of other countries to assist in the sorting of mail by rates, according to the phosphor content of the surfacing of the stamps, by electronic sorting machinery. Their use for New Zealand stamps appears to be incidental. The use of an ultra-violet lamp will help to identify these unusual modern papers.

NOTE: As in all branches of philately the study of papers is not an absolute science. Different grades of thicknesses occur in all the types above and in some cases an error by the paper manufacturer may result in a rare variety such as a paper which should be chalk-surfaced, but which is unsurfaced. These varieties add interest to the study of papers and can be very rare.