HERITAGE CRAFTS

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Ceramic Painting: tools, materials and techniques

A companion guide to the film with master craftsperson Lee Price

This guide goes with our film on ceramic painting, made with Lee Price and Laura Taylor at Duchess China 1888 in Stoke-on-Trent. It lists the tools and materials you see in the film, summarises Lee's key tips, and points you to the film's main moments, courses, bursaries and the Red List. It is a starting point, not a substitute for in-person training: as Lee says, this is a skill best learned by doing it with someone.

Before you start

Ceramic painting uses oils, solvents, metal-oxide powders, gold and a kiln. Always read the supplier's safety data sheet for each product, work in a well-ventilated space, and only use a kiln with proper training or supervision. See the safety notes at the end of this guide.

About the craft

Ceramic painting is the art and craft of on-glaze decoration, using traditional methods and materials such as metallic oxide paints, oil-based mediums, lithography, raised paste and gold gilding. In the film, Lee decorates a bone china plate through several stages: transferring a design, painting in colour, building raised paste and enamel relief, adding gold, and burnishing the gold to a shine.

Ceramic painting is classified under Industrial Pottery on the Red List as one of the skilled hand processes required at various stages of the pottery industry.

Red List status: Critically Endangered

Tools and materials

Everything below is taken from the film. Brand names and suppliers are not given in the film; see "Where to buy" at the end of this section.

1. Design and transfer

Item	What it is for	Notes from the film
A design or pattern	The image you will paint	Lee works from patterns in the Duchess China archive. A design can be scaled up or down for a plate, cup or egg cup.
Tracing paper and a very fine black pen	Tracing the design in fine detail	Lee uses a very fine Rotring pen. In production, the traced design is scanned and made into a screen-printed transfer, which is applied to the plate and fired on.
Carbon paper and a very sharp 4H pencil	Transferring the outline by hand	Press lightly but firmly enough to transfer the line, without breaking the fine lead. The pencil line burns away in the kiln.

2. Mixing colours and first-fire painting

Item	What it is for	Notes from the film
Metallic oxide on-glaze ceramic colours (powder)	The paint	Powdered colours made for ceramic painting and screen printing.
Palette knife	Mixing and grinding the colour	Lee compares the mixing to mixing cement. Turn the mixture over slowly until it reaches a smooth, workable consistency.
A tile or palette	Mixing the paint and working the brush	Keep it clean.
Aniseed oil	Wets the powder to start the mix	Also used to dampen a clean-off brush for lifting colour.
Fat oil	Gives the paint flow and consistency	Dip the brush, then work it out on the tile before loading colour. Too much oil makes the paint run and can cause problems in the kiln.
Linseed oil	Cleaning brushes between colours	Used as shown in the film.
Kitchen towel	Taking off excess oil or paint	Wipe the brush if the paint feels too wet.
Brushes: squirrel-hair ceramic brushes	Painting fine, flowing lines	Lee prefers brushes with spring and good flow, and uses very fine ones for detail. Twist the bristles to a point.
A clean-off brush	Lifting off unwanted colour	Almost dry, dipped in aniseed. Works even when the paint has dried.

3. Raised paste and enamel

Item	What it is for	Notes from the film
Raised paste powder (here, yellow)	Building a slightly raised surface	An enamel-based oxide colour made for ceramics.
MX54 medium	Mixing with the raised paste powder	An open, oil-based medium. Add a few drops at a time.
Palette knife	Grinding the paste	Grind the powder right down until smooth. Lee aims for a toothpaste consistency.
Brushes, including a longer-bristle brush	Dropping and dragging the paste; "cutting" for longer, higher strokes	Longer bristles let you draw out a longer tail of paste.
White enamel	Higher relief, including dots ("jeweling")	Similar to raised paste but gives more depth. Takes several days to dry because it is built up higher.
Turpentine	Cleaning the brush and tidying edges	Wipe and tidy stray paste before it dries.
A raking light	Checking how high the paste is	Hold the work to the light and look for the small shadow.

4. Gold

Item	What it is for	Notes from the film
Gold (a traditional "gold shell")	Gilding edges, borders and raised work	Nothing is added to it; load the brush straight from the shell. Trace the outline first, then fill.
Clean turpentine	Correcting mistakes	Let the gold set for about half an hour, then wipe away very carefully under a good light.
Artificial light	Seeing the gold against the surface	Gold is hard to see against blue lines and dark areas.

5. Burnishing

Item	What it is for	Notes from the film
Cotton ball and cold water	Applying the sand	Dip in water and squeeze out.
Fine burnishing sand	Polishing the fired gold to a shine	Rub in a circular motion. The gold comes out of the kiln looking brown.
Something clean to wipe off the sand	Revealing the finished gold	Not specified in the film.

6. Firing and workspace

- A kiln. Each stage is fired separately, in layers: base colours first, then shading, depth and detail, then raised paste and enamel, then gold.
- Firing ranges Lee gives: about 760–800°C for painting, 760–780°C for raised paste and 760–775°C for gold.

- Position in the kiln matters. Too much oil can make the paint blister or burn off, and the bottom of the kiln is cooler.
- A clean, dust-free workspace with good light. Hold the plate with your thumbs around the edge and tilt it as you paint.

Where to buy

- Mediums like the Aniseed Oil and Fat Oil - Hygan Products
- Brushes - Hygan Products
- Raised paste brushes - Rosemary and Co
- Burnishing Sand - Hygan Products
- Colours - Duchess China down Trentham

Lee's key tips

- Work from light colours to dark. Put down base colours first, then shading and detail.
- Build up in layers and fire between them. Painting over a layer that is still too wet can drag the colour underneath.
- If the paint drags, take excess colour off the brush. Lee was taught that if you cannot see brush marks, you are doing a good job.
- Control the oil. The paint works better slightly drier, and too much oil can cause blistering in the kiln. Lee compares it to tempera: stroke the paint on gently.
- Keep your tile, brushes and workspace clean, and take care not to touch wet paint.
- For raised paste, aim for a toothpaste consistency. A good mix leaves small mounds that hold their shape. Wash on a thin layer first, then build it up slowly by dropping the paste on and dragging it.
- Keep your hand very steady and inside the line. Lee says it took him six or seven years to perfect this, so be patient and practise.
- For gold, trace the outline first, then fill in, working from the inside out. Keep checking against a good light.
- Burnishing is a simple technique with a dramatic result: small circular rubs with fine sand bring out the shine.

Key moments in the film

Timestamps are minutes and seconds. [Check against the final edited film before publishing.]

Time	What happens
00:37	Meet Lee Price and Laura Taylor
01:45	The Duchess China archive pattern book
03:14	Tracing a design, and how it becomes a screen-printed transfer
04:31	Transferring the outline by hand with carbon paper and a 4H pencil

Time	What happens
06:52	Introduction to first-fire painting
07:14	Mixing the colours with aniseed and fat oil
08:47	Painting the base colours, light to dark
12:31	Lee's seven-year apprenticeship and why he keeps the skill alive
18:45	Lifting off colour with a clean-off brush
28:07	How the paint behaves, and why too much oil is a problem
29:28	Raised paste, white enamel and jeweling: examples of finished work
30:36	Mixing the raised paste with MX54
36:44	Dropping on and dragging raised paste
41:11	Cutting with a longer brush
44:43	Checking raised paste with raking light, and making raised dots
48:58	The gold process, and firing ranges
51:37	Gold covering, and how to correct a mistake
54:03	Working a production piece in gold
58:19	Burnishing the gold
60:53	Reflections on learning by doing and keeping the craft alive

Safety and good practice

Please read

Oils, turpentine and other solvents, metal-oxide powders and gold products can be hazardous. Check the safety data sheet for every product you use.

Work with good ventilation, keep food and drink away from your workspace, and wash your hands after handling materials.

Kilns are dangerous. Only fire work with proper training or supervision, or ask a studio or factory that offers firing services.

This guide summarises the film and does not replace professional advice or training. [Heritage Crafts to confirm this wording with Lee Price.]

Take the next step

Watch and learn

- Watch the film: heritagecrafts.org.uk/our-stories/skills-transmission-films/ceramic-painting-with-lee-price/

Bursaries and funding

- Heritage Crafts training bursaries: heritagecrafts.org.uk/opportunities/training-bursaries
- Free bursary places on the masterclass for people from under-represented communities or facing financial barriers: see the booking page above.

- Endangered Crafts Fund: heritagecrafts.org.uk/ecf
- matchMAKER jobs and training: heritagecrafts.org.uk/matchmaker

The Red List

- Ceramic Painting on the Red List: https://heritagecrafts.org.uk/craft/industrial-pottery/
- The Red List of Endangered Crafts: heritagecrafts.org.uk/skills/redlist
- Browse all crafts: heritagecrafts.org.uk/skills/crafts

Credits

Filmed at Duchess China 1888, Stoke-on-Trent.

Featuring Lee Price and Laura Taylor

Directed, produced and edited: Dylan Howitt

Production Coordinator: Finn Arschavir

Camera Operators: Dylan Howitt and Finn Arschavir

Original Music Composed by: Alex Munslow

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