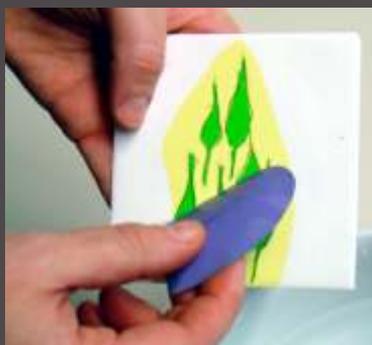




Keraflex[®] - Porcelain tape

Tips and Suggestions on Usage



Design possibility: Ceramic Decals



Design possibility: Painting

FLEXIBLE

TRANSPARENT

VERSATILE



designed by Andrea Nimtschke

Design possibility: transparent Cityscape



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For purchase enquiries, visit: www.kerafol.com

Examples for the products shown here are only suggestions.

Keraflex® - “White Gold” reinvented!

Mankind has been engaged in manufacturing ceramics and porcelain for a very long time. Its production, styling and design were changed time and time again to cater to the wishes and needs of the people.

Exhibitions, museums and historical records around the world all present examples of how and where ceramics were utilised and today we see ceramics in all aspects of daily life.

Which makes it all the more amazing, that so far no one has thought of industrially producing porcelain compounds in the form of very thin sheets. The worldwide patented "KERAFLEX" porcelain sheet from Kerafol, developed by Franz Koppe, offers almost endless usage and design possibilities. The high transparency level of the sheets after firing brings new life to the traditional usage of porcelain. The material thus obtains a new lightness and fineness that is fascinating.

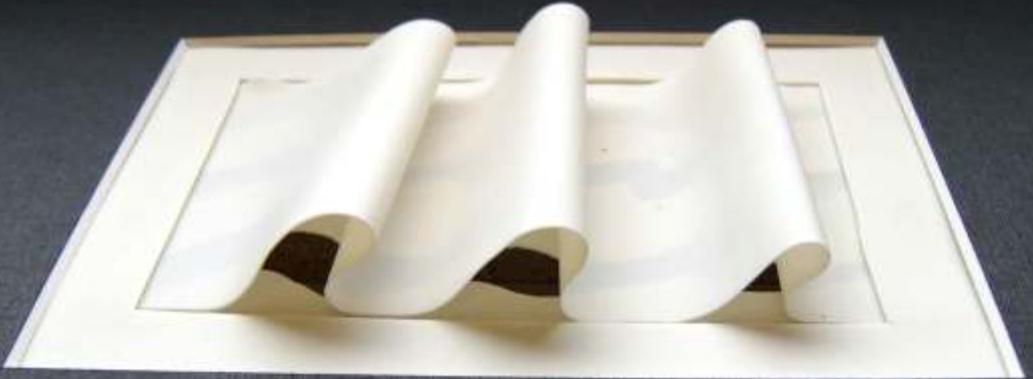
This brochure describes the various styling and design possibilities using KERAFLEX. With the aid of demonstrative pictures, the traditional processing possibilities, such as glazing and painting, are also explained, as well as completely new methods.

Let yourself be enchanted by the whole new world of porcelain design and give free rein to your creativity with "KERAFLEX"



Keraflex® - Usage possibilities: Design examples

Styling: Wave-design



design by G&S



design by G&S

Lamp-
design



design by G&S

Styling: Loop-design

Embossing - Creating fascinating textures

MATERIALS:

Keraflex green tape,
Separating agent e.g. Universal
Mold Release from Smooth-on

TOOLS:

mechanical embossing:
Plate or automatic press,
Stamping or embossing mould
made of hard plastic or metal

By embossing the Keraflex sheet, various shapes can be made visible as impressions on the sheet left by pressure per hand or machine.

The stamping or embossing mould should be made from a material as hard as possible (e.g. metal), to prevent wear on the original shape or motif. A pretreatment of the sheet affects the motif deepness; the thicker the sheet and the greater the pressure, the clearer the embossed motif.

Mechanical Embossing

The pictures show mechanical embossing per automatic press. Here the Keraflex sheet is pressed with a stamping die between two steel plates.

With the aid of automatic calibrated uniform pressure the Keraflex sheet is embossed. The protruding stamping mould is pressed into the Keraflex sheet, creating a recessed motif. The higher the pressure, the deeper the motif.

Pic. 2

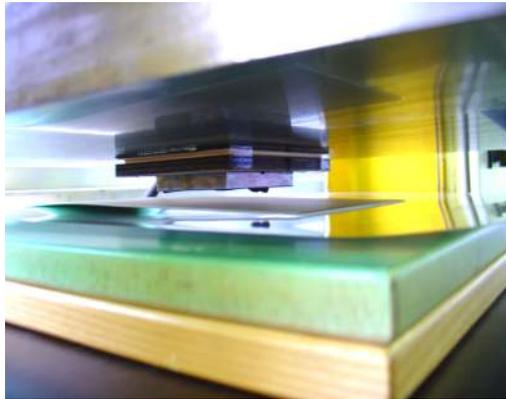


Pic. 1

The depth of the impression is determined by the pressure level and material thickness. A mechanical embossing makes it possible to attain uniform results. A pretreatment of the material is not necessary. It is simply recommended to spray the stamping die with a separating agent before pressing, so as to prevent the green sheet from sticking together.

Pic. 3 shows the green sheet before and after mechanical embossing.

Pic. 3



In general, no universal specification can be regarding pressure and hold time, as both the die condition and the size of the sheet that is to be embossed can affect the result. Generally, a sharp-edged embossing motif requires a lower pressure than a blunt one. For flat embossing motifs, a pressure of 90 N/mm² has proven sufficient. For embossing with sharper edges, the pressure must be reduced accordingly.



Embossing - Creating fascinating textures

MATERIALS:

Keraflex green tape

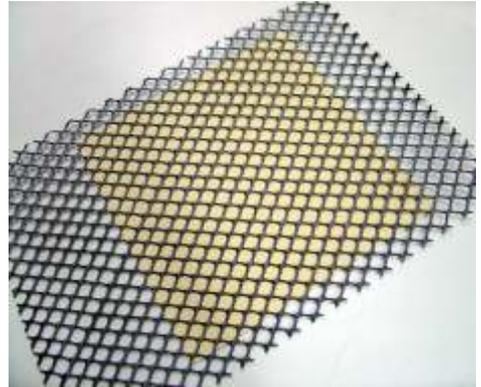
TOOLS:

manual embossing:
Roller and wire netting

The pictures show the process of manual embossing. Here the embossing mould is placed on the Keraflex sheet.

Manual Embossing

A wire netting can, for example, serve as a stamping die. Dipping the sheet in water for a few seconds before embossing (approx. 20-30 seconds) will make it easier to work with.



Pic. 1

Pic. 2



During manual embossing, uniform pressure is exerted with the aid of a roller.

The depth of the impression is determined by the pressure level applied.

The stamping die or pattern is produced on sheet in the negative form. The more uniform the pressure, the better the result.



Pic. 3

Punching - Fast and precise shaping

MATERIALS:

Keraflex green tape

WERKZEUG:

Punching tool (steel) consisting of punch, die and a manual punching apparatus

The punching process is the partial detachment of elements from a Keraflex sheet by means of a punching tool.

Here, material is sheared off by sharp tool edges that are brought towards each other. Keraflex sheets that are yet to be fired can be machined by punching; these should be removed from the carrier tape. The punching form must be individually manufactured for each motive.

Die The manual punching device

The outline of the punching form shows the motif to be punched and is the movable part during the punching process. A blank holder is needed to hold the sheet when it is punched onto the die. The punching die forms the motif negatively. It is the static part in the punching process; the sheet is positioned here for punching (Pic. 1,2).

Good results can also be attained by commercially available motif-punchers (Pic. 3).

Pic. 3



Pic. 1



Pic. 2

The quality of the punching, especially the contour quality, is determined by the sharpness of punch's edges and the punch/die shape tolerance. At tolerances > 0.1 mm, clean shearing is no longer possible; it results in undesired broken edges.

Important: all punched-out elements shrink on firing, as according to the corresponding firing shrinkages (See page 24).

Cutting - Endless variety of shapes

MATERIALS:

Keraflex green tape

TOOLS:

Scissors, guillotine paper cutter, carpet cutter, plotter (mechanical), stencil

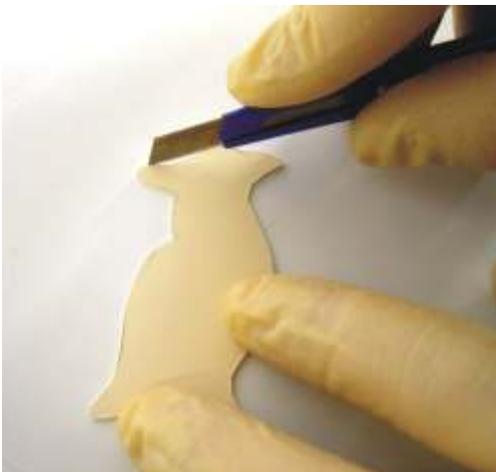
In order to obtain smaller pieces from a larger Keraflex sheet, the sheets can be processed by cutting.

It should generally be made sure that the cutting tools are well sharpened, otherwise fine cracks might occur at the cutting point.

Pic. 1



Pic. 2



Pic. 3

Besides manual cutting with scissors, (Pic.1) guillotine, (Pic.2) or carpet cutter, (Pic.3) special shapes can also be cut by a mechanical cutting plotter.

To obtain an exact cutting edge, the use of stencils is advisable.

The motives could also be drawn directly on the sheet with the use of a pencil. Any possible pencil marks will disappear after firing.

The carrier tape should be removed before cutting. The sheet does not need to be moistened before the cutting.

Garnishing - Interesting bonds

MATERIALS:

Keraflex green tape,
garnish slurry

TOOLS:

Brush, tool for radius formation,
moulding form,
towel

Garnishing is the process of merging the tape ends or the attachment of tape parts, by deforming and firmly connecting the tapes with garnish slurry.

A crack-free shaping is easily achieved by putting the sheet under running water (Pic. 1) before starting.

If the sheet is to be moistened by being placed in water, the maximum time for a 0.5 mm sheet is 5 minutes and for a 1.0 mm sheet max. 6 minutes. If the tape stays under water for too long bubbles may form in the tape. Generally a soaking time of 30-60 seconds is sufficient.

With this method, various radius (Pic. 2) can be shaped. In the extreme case, a radius of up to 2.5 mm can be formed.

For a lasting bond between sheets, garnish slurry from Kerafol is used.

The tape ends should overlap by about 2.0 mm. Garnish slurry is spread thinly and evenly on one end and finally pressed lightly onto the other end or onto the part to be garnished (Pic. 3). Excess slurry is removed with a brush or towel.

After shaping, adequate drying is to be ensured.

Excellent results can be obtained at a temperature of 50°C and a drying time of 10 hrs.



Bild 1



Pic. 2



Pic. 3



Pic. 4

Garnishing - Interesting bonds



Pic. 1



Pic. 2



Pic. 3

An example for the use of a mould, here a dough press from the company Tchibo:

The Keraflex-tape must be trimmed to fit the contour of the press. Afterwards moisten the sheet (see page 8). By using a brush garnish slurry is applied along the rim (Pic.1).

Then the press is closed and held in this position for a few seconds (Pic.2).

The moulded tape can now be removed for firing (Pic.3).

Important!: All shaped or formed pieces will shrink during the firing process (see page 24 for details).



Pic. 4

Further ideas may be taken from the traditional art of paper-folding (Origami). Here, just as with the dough press, the edges are fixed in place using garnish slurry. (Examples see pic. 4).

Defects after firing	Possible causes
Formation of bubbles	Insufficient drying after garnishing; Soaking in water too long
Cracks	Not enough moisture in the tape before garnishing
Garnishes open up	Too much or too little garnish slurry

Lamination - Interesting bonds

MATERIALS:

Keraflex green tape,
garnish slurry

TOOLS:

brush

Lamination is the coating of a sheet with another sheet with the help of garnish slurry. By using this layering method, lighting effects can be achieved

During lamination it is important that the sheet to be pasted has a smaller area than that of the base sheet, or else warping would result. Ideally, it should be 30 % of the base area.

Garnish slurry is spread thinly on the smaller sheet (Pic. 1 and 2) and placed on the bigger sheet (Pic. 3). Both sheets are pressed lightly together (Pic. 4).

Since both sheets are not being shaped, moisturisation and drying are not necessary.

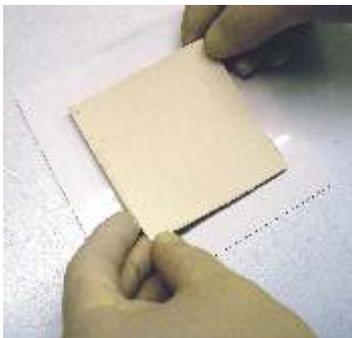
Please note: Make sure that the sheet is put exactly into the desired place, as due to the strong bond formed, it will be no longer possible to alter its position after lamination.



Pic. 1



Pic. 2



Pic. 3



Pic. 4

Defects after firing	Possible causes
Warping of the laminated sheets	Laminated area is in relation to the base area too large

Screen printing - Precise technique of shaping motives

Extensive knowledge of ceramic screen printing and appropriate technical equipment are necessary to carry out the following process.

The desired motive can be directly imprinted on the raw Keraflex sheet (flat) with the use of a coated stencil. A ceramic ink that can be fired at the recommended glaze firing temperature is chosen as the printing ink.

MATERIALS:

For printing:

Keraflex green tape

For screen coating:

Emulsions: here ASM RELFEX Photopolymer Image Transfer Film, UV-sensitive,
Screen frame set with screen mesh: e.g. SEFAR PET 1000 90-48 PW,
screen filler: e.g. KIWO KIWOFILL 201

For colouring:

High temperature ceramic ink e.g. Degussa 14850, Firing temp. up to 1280°C,
screen print oil e.g.. FERRO 80 10 15 ME, thixotrop,
mixing ratio: ink : oil = 10 : 7

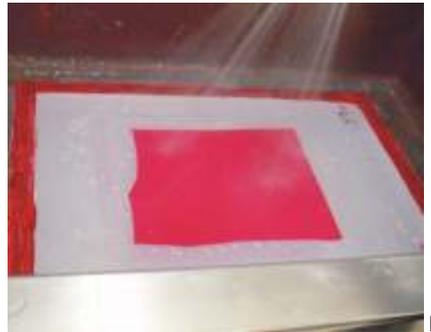
TOOLS:

Palette for mixing the colours,
palette-knife, rubber squeegee, screen printing equipment,
digital weighing machine



Pic. 1

The desired motive in film positive form is transferred onto the screen mesh by means of a coating.



Pic. 2

Washing out the exposed UV-sensitive coating.



Pic. 3

Closing the screen mesh with screen filler.



Pic. 4

Removing polyester carrier of coating (after drying).

Screen printing - Precise technique of shaping motives



Pic. 5

Retouching the UV-sensitive coating.



Pic. 6

Exact weighing of the ink amount with a digital weighing machine.



Pic. 7

Exact weighing of the oil amount with a digital weighing machine.



Pic. 8

Mixing of ink powder with oil.



Pic. 9

The prepared screen frame is fixed onto the printing table and the Keraflex sheet precisely mounted beneath the motive. The ceramic ink can then be directly printed on the Keraflex sheet by means of a squeegee.



Pic. 10

Fully printed sheet;
Now the tape is ready to be gloss fired.

Painting - Individual hand-made decorations

Painting of Keraflex tape is the most versatile way of decorating porcelain. Individual motives can be created by hand using appropriate porcelain or ceramic paints on raw, glazed and glaze fired or biscuit fired Keraflex tape.



Hand painting on raw Keraflex tape

MATERIALS:

Here ceramic clour powder from various manufactures are used (Heraeus, Degussa, Rüger&Günzel)

Colour preparation:

ceramic colour (firing range approx. 1200-1280 °C).
turpentine oil and copaiba balsam or water and powdered sugar

Hand painting on glazed, glaze fired Keraflex tape

MATERIALS:

Onglaze and inglaze colours from various manufacturers (z.B. Degussa, Heraeus) may be used.

Colour preparation:

Onglaze colours (firing range approx. 800-850 °C) or
inglaze colours (firing range approx. 1200-1280 °C),
turpentine and copaiba balsam

Hand painting on biscuit fired Keraflex tape

MATERIALS:

Onglaze colours from various manufacturers (z.B. Degussa, Heraeus) may be used.

Colour preparation:

Onglaze colours (firing range approx. 800-850 °C),
turpentine and copaiba balsam

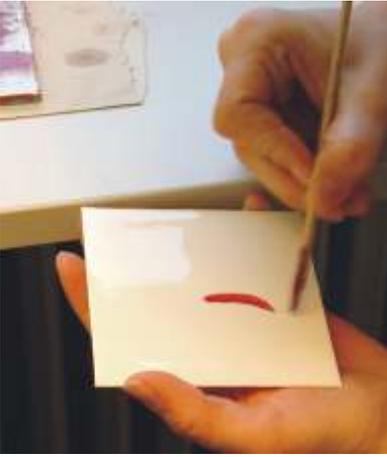
Tools to make the colour pastes and to paint:

TOOLS:

Metal palette knife and glass palette,
brush to apply the colours
(e.g. pocelain painting brush)

For the choice of colours it is important that they can be fired onto Keraflex sheet at the corresponding firing temperatures. At high temperature ranges, e.g. during glaze firing, the colour palette is restricted

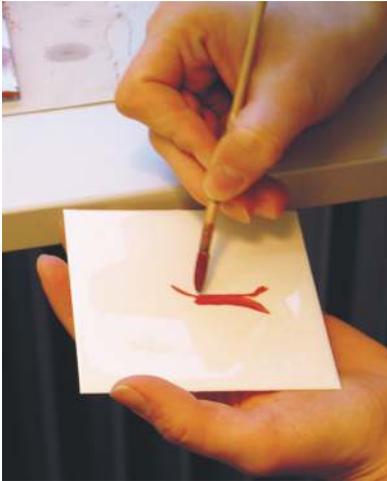
Painting - Individual hand-made decorations



Pic. 1



Pic. 3



Pic. 2



Pic. 4

First the ceramic colours are made into pastes using turpentine and copaiba balsam (for raw and fired sheets) or water and sugar (for use on raw sheets) with a scraper on a glass palette and subsequently these can be painted on the Keraflex tape.

Various techniques such as pen-and-ink drawing, area painting, brushing, lining, stippling, etc. may be applied

Painting - Individual hand-made decorations

The outcome of the hand painted decoration depends on whether raw (green) tape, glazed and glaze fired or biscuit fired tape is used. Depending upon the selected tape condition different points are to be considered.

Hand painting on raw Keraflex tape

If the colour paste is made with turpentine and oil, during the painting process the oily portions will stay for a short while on the surface of the Keraflex sheet before gradually drying away. After drying the colour adheres well.

Colours that are mixed with water and sugar slightly form beads on the surface, will however adhere well when dried.

Good results can be achieved with simple painting techniques. Nuanced colour application, controlled strokes, uniform areas and details are harder to execute here. The colours will turn out matt after firing.

Details and possible sources of defects:

- When applying several colours (with turpentine and balsam paste), it is recommended to wait for each colour to dry before applying another.
- If the colour penetrates to the reverse side after firing: The colour coating is too thick, apply thinner layers
- Keraflex tape warps after firing: the colour coating is too thick, apply thinner layers.
- When using a paste of water and sugar, the colour easily wipes off after painting: more sugar is needed while making the paste.

Hand painting on glazed, glaze fired Keraflex tape

The colour can be applied well on to glazed surfaces. Strokes, areas, lines and fine details are possible. The colour application can also be easily corrected.

Hand painting on biscuit fired Keraflex sheets

Due to the rough texture, the colours run a little during application. Thin contours, fine lines and details are thus harder to achieve. With simpler techniques however, good results can be achieved as well. The colours will turn out matt after firing.

Details and possible sources of defects:

- Colour penetrates through after firing: use less colour when painting
- Colour runs too much during painting: use less turpentine
- Colour dries too slowly: use less balsam
- Colour insufficiently adheres on the sheet after painting: use more balsam

Glazing - Glossy finish

To obtain a smooth and glossy surface, the top side of the sheet must be applied with a glaze coat of about 0.1 mm. In the following all individual steps from glazing to drying of a 10x10 cm² sheet are explained.

MATERIALS:

Keraflex green tape,
For application by spraying or immersion:

Colour pigments e.g. WEMA
 (temperature resistance >1250°C),
 soft paste porcelain W 452
 transparent glaze
 e.g. IMERYS Tableware
 (Massemühle Wagner)

For application with a brush:
 Stoneware glaze (brush-on glaze) e.g. Botz

TOOLS:

Measuring cup, scale
 (at least exact to 1/10 g),
 turbo mixer, Spray pistol with 1.5 mm nozzle
 (primary pressure 1.5 bar),
 brush if needed,
 drying cabinet or oven



Pic. 1

For a 10 x 10 cm² sheet you need to measure 100 ml glaze with a density of 1340 g/l (Pic.1). The glaze is made of 550 g/l solids constant and 790 g/l water. Depending on the colour the corresponding amount of colour pigment is added (Pic.2).

Colour	WEMA colour no.	Mass percentage	Applied quantity of glaze on g/100cm ² dry substance
Yellow	116100	24	2,19
Red	116420	24	1,98
Black	116810	24	1,35

Attention: The mass percentage of the colour pigments is in relation to the solids content.



Pic. 2



Pic. 3

Depending on the colour the corresponding colour quantity is measured and added (Pic. 2).

The glaze and colour are intensively mixed in a turbo mixer for at least 60 sec. (Pic. 3).

Glazing - Glossy finish



Pic. 4



Pic. 5



Pic. 6

The container of the spray pistol is filled with the colour glaze (Pic. 4). The glaze is applied in a cross manner, i.e. right - left - right, turn by 90°, left - right - left (Pic. 5). This procedure is to be repeated three times. Please wait 2 minutes between each procedure. When spraying please make sure the spraying pad being used consists of an absorbent material (e.g. plasterboard), in order to avoid the tape from buoying up. The underside and the outer edges of the sheet must then be freed from possible glaze residue with a moist sponge (Pic.6). A following drying process is very important.. Therefor the sheet is placed in a drying cabinet or oven at 100°C for 60 min.

Tips:

Even results can be obtained when spraying the carrier side!

If the glaze is applied with a brush an even layer of the glaze can´t be guaranteed!

(If the application with a brush is desired we recommend the brush-on glaze from the company Botz.)

Galze can also be applied by dipping!

Defects after firing	Possible causes
Formation of bubbles	Insufficient drying after glazing
Cracks	Too much glaze applied
Points in the colour glaze	Inadequate mixing of colour with glaze
Snakeskin during spraying	Spray nozzle too large, Mass flow rate of the spray pistol too high, Density of the glaze too low, Drying time between each spraying is too short
Sheet is burnt onto the firing pad	Glaze residue on the underside of the sheet not completely removed

Ceramic Decals - Simple motive transfer

MATERIALS:

Glazed & fired Keraflex- porcelain,
prepared ceramic ddecad

TOOLS:

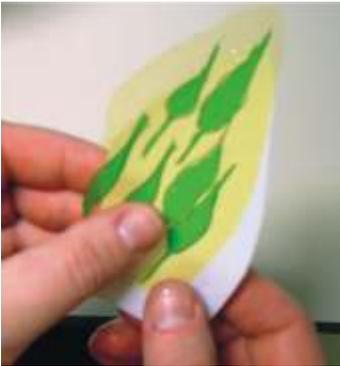
Squeegee, towel,
dish with water

A prepared ceramic decal is transferred onto a glazed, fired Keraflex porcelain.



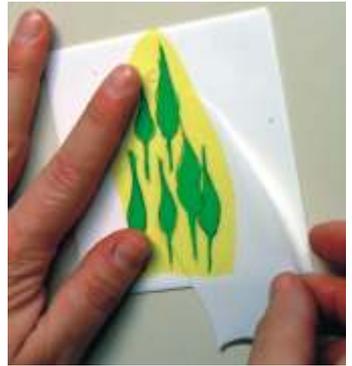
Pic. 1

The ceramic decal is first put in water until the lacquer layer, together with the motive, can be removed from the carrier paper (max. after 3 minutes; or latest when the decal floats up).

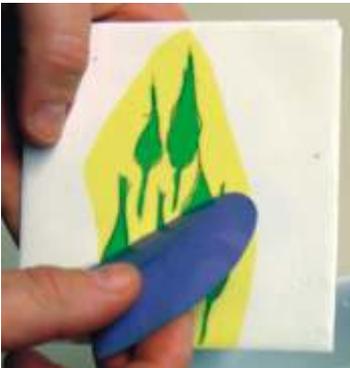


Pic. 2

The decal can now be pushed from the carrier paper onto the glazed side of the Keraflex porcelain.



Pic. 3



Pic. 4

During the transfer air bubbles may form which, together with the water between decal and sheet, must be carefully swept out with the squeegee.

Afterwards the surface is wiped with a towel

After a drying time of about 1 hr, (or better, overnight) the decorated Keraflex sheet can be fired (780 - 840°C).

Ceramic Decals - Simple motive transfer



Pic. 1

Pic. 1 shows the decal on the Keraflex porcelain before firing;



Pic 2

Pic. 2 the result after firing.

The transfer of decals on flat areas is easy to learn; the decoration of curved, uneven surfaces with decals is more difficult.

Possible defects

Colour burns out to bright or away

- Firing temperature is higher than the temperature allowed for the colour

Colour has boils or holes after firing

- Decal not sufficiently swept with squeegee
- Water or air was under decal before firing

Motive deforms when transferred onto the keraflex porcelain

- The decal was removed wrong from the carrier paper
- too much pressure used when sweeping the decal with squeegee
- Decal immersed in water that is too warm

Colour clings insufficiently onto the sheet after firing

- Firing temperature in oven lower as the permissible firing temperature of the ceramic colour

If the decal is left in the water for too long, the motive can float off, which makes it difficult to remove. The motive might then crinkle or fold and thus become unusable.

Imprinting - Patterns with rollers and stamps

Stamping

With the help of a stamp, ceramic colours are applied onto biscuit fired, glazed or raw Keraflex sheet and subsequently fired in. Various materials may be used as stamps. Here for example, stamps made from foam rubber and a potato are used.

MATERIALS:

- Fired or raw Keraflex sheet,
- foamed rubber or potato stamp,,
- ceramic colour powder (inglaze colours)
- for application on raw sheet (firing range 1200 - 1280 °C)
- for application on fired sheet (firing range 800 - 860 °C)
- from e.g. Heraeus, Degussa, Rüger&Günzel,
- turpentine and copaiba balsam

TOLLS:

Palette, palette knife
and brush if necessary

The ceramic powder is mixed with turpentine and balsam into a colour paste and spread with a palette knife or a brush on a palette.

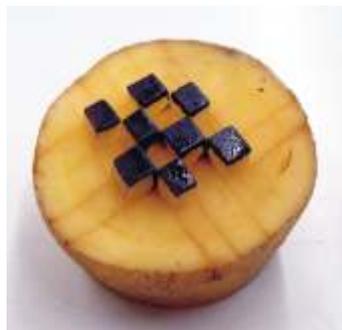
At the same time the colour tones can be controlled by the mixing ration of colour, balsam and turpentine: If a thick colour application is desired, then more colour powder and less balsam and turpentine should be used. If it is to be applied thinly, then the ration is reversed. In principle, more turpentine brings about a better flow, more balsam increases brightness.

Ceramic powder is thus mixed with turpentine and balsam on a paletter into a colour paste. Important: Thick colour applications may lead to warping of the material. Now the prepared stamp may be dipped into the colour. The motif is subsequently printed vertically from above with a light pressure.

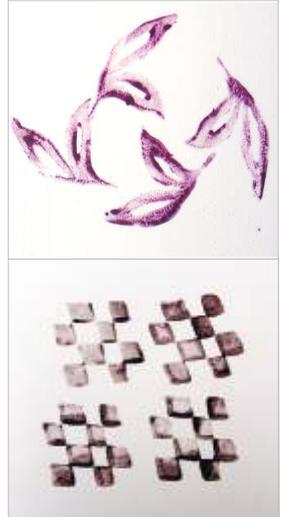
The stamp and stamp print as such are easily made.



Foam rubber stamp:
Motif cut out from foam rubber and attached to a round piece of wood.



Potato stamp:
Motif cut out from half atoffel potato.



Results of stamp prints
after firing.

Imprinting - Patterns with rollers and stamps

Roller printing

Roller printing offers the possibility of furnishing areas with patterns or decoration in one single step.

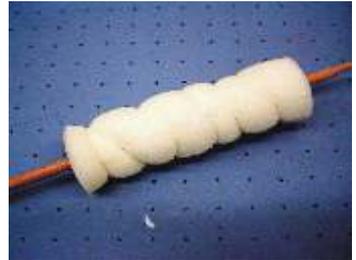
MATERIALS:

Fired or raw Keraflex sheet,
commercial inking roller,
ceramic colour (inglaze colour)

- for application on raw sheet (firing range 1200 - 1280 °C)
 - for application on fired sheet (firing range 800 - 860 °C)
- from e.g. Heraeus, Degussa, Ruger&Gunzel,
screen printing oil or turpentine & copaiba balsam

TOOLS:

Palette knife and
glass plate



Foam elastomer roller with which several decorative elements are combined.

To process the sheet, colour paste made with screen printing oil (ratio of colour to oil = 10:7) or turpentine and copaiba balsam is spread uniformly with a palette knife on a glass area, then applied onto the roller and finally rolled onto the Keraflex sheet. (See Pic. 1 and 2.)



pic 1



pic 2

The quality of the print depends a great deal on the style and quality of the roller. To get the right thickness of colour requires a certain amount of practice. After the colour is applied, the sheet is fired (See material list for temperatures).

Pic. 3: Keraflex after firing.



pic 3

Firing - Awakening the ceramic properties

Firing is done at the end of the ceramic production process and decides the success of all the preceding work. The ceramic obtains on firing its permanent material characteristics. Differentiation is made between biscuit firing (unglazed) and glaze firing (glazed). Fortunately, there are no differences in the execution of both firing types i. e. glazed and unglazed plates can be fired in the oven at the same time. An oven with temperature controls of up to 1300°C is required; clean, even firing plates for temperatures of up to 1300°C and supports to make shelves out of the plates in the oven.

MATERIALS:

Glazed or unglazed Keraflex sheet

TOOLS:

Oven with temp. controls of up to 1300°C

Firing plates:

- Keralpor plates from Kerafol or
 - Silicon carbide plates (engobed with Al₂O₃), 2 3
- if needed silicon carbide plates and supports to set up shelves in oven

Please note:

The sheet to be fired must be dry, the underlying surfaces must be clean and glaze-free, the firing plates must be clean and even.



pic 1



pic 2

Unglazed sheet can be fired in stacks of two or three (sheet dimensions not bigger than DIN A5) (see Pic. 1).

The surface of a glazed sheet must not be touched. It can only be fired single-layered, thus the sheets may not overlap (see Pic. 2).

Between the individual firing plate shelves there must be a distance of a few centimeters, so that the steam from the sheet additives can disperse.

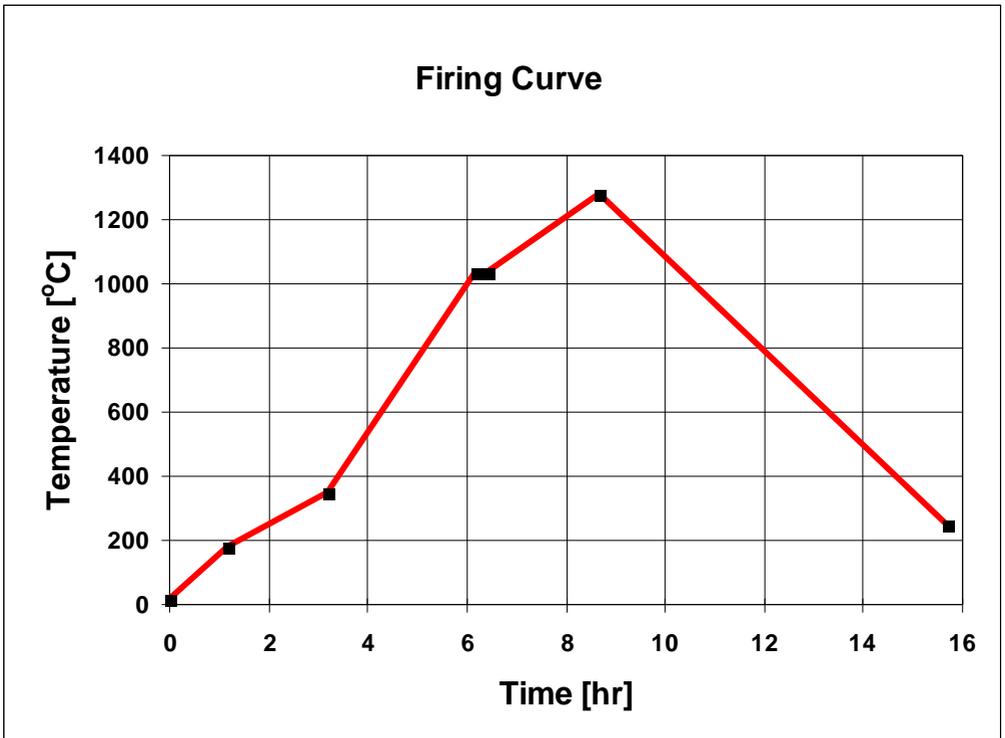
In the warm-up phase, a distinct smell caused by the decomposition reaction will result. During this time it must be vented well, or better, the steam removed by suction.

During the warm-up phase, avoid prolonged close proximity to the oven!

Firing - Awakening the ceramic properties

The firing curve shows the optimum course of firing. Using it, proper results can be achieved for both, glaze firing and biscuit firing (mono-firing).

Section	Temperature [°C]	t [hr]	t [hr]	T [K/hr]
Start	20	0	0	
1	180	1,17	1,17	137
2	350	2	3,17	85
3	1040	3	6,17	230
4	1040	0,25	6,42	0
5	1280	2,25	8,67	107
6	250	7	15,67	-147



Technical Characteristics

CHARACTERISTICS	Attributes	Unit	Keraflex® <small>Die Porzellanfolie</small> -substrate
	Colour	-	white-transparent
	Surface roughness R _a	µm	1.6
	Green density	kg/dm ³	2.42 ± 0.1
	Water absorption capacity	%	< 0.1
	Bending strength (unglazed)	MPa	23
	Thermal conductivity	W/mK	1.5
	Relative permittivity ϵ_r	-	6,0
	Dielectric strength	KV/mm	>20
	Thermal expansion coefficient	10 ⁻⁶ K ⁻¹	7
	Transparency	-	yes
	Bend radius	mm	> 4
	Firing shrinkage at 1200/1240/1280°C	%	approx.15/17/18

CHARACTERISTICS	Attributes	Unit	Keraflex® <small>Die Porzellanfolie</small> -green tape
	Colour	-	light-beige
	Tensile strength at 20°C	N/mm ²	1.35
	Solubility		soluble in water
	Dielectric strength	V/mm	approx. 12
	Density	g/cm ³	1.57
	Thickness	mm	0.5 or 1.0



Safety Instructions

Recommendation for safe handling of the porcelain sheet

Attention: Keraflex is not suitable for children!

Safety instructions:

Do not place Keraflex in or near ones mouth!

Processing temperatures > 120°C outside a closed furnace are to be avoided, as harmful gases may possibly be produced. Keraflex should be worked with at room temperature. Please make sure the workplace is well ventilated. Wash hands before taking a break and after working.

Do not drink, eat or smoke while working with the tape.

Please provide appropriate ventilation at all times, especially during the warm-up phase of the oven in the 150°C to 400°C range, as organic gases are discharged. If possible work with a gas extraction system. Avoid prolonged close proximity to the oven during this phase.

After firing in the oven, you'll have pure porcelain with the corresponding characteristics.

If the safety instructions are followed, no endangerment for humans or the environment are expected according to current knowledge.

First aid measures:

In the case of the inadvertent inhalation of furnace exhaust gases take the person outside to get fresh air. Seek medical treatment for any signs of discomfort.

Safety and technical data sheets can be obtained from the manufacturer or distributor on request.

Disposal:

Waste code number 101201: raw mixture before firing

For disposal consult municipal concerned.

Storage:

Always store product in its original packaging (hermetic packaged).

Keep product away from direct sunlight.

Do not exposed to temperatures >50°C for long periods

The information and application advice in speech, writing and by experiments are provided to the best of our knowledge. Nonetheless, no responsibility is taken for their correction, nor in relation to third party property rights. This advice neither relieves the user from personally checking our current information, nor from personally verifying the suitability of our products for the intended processes and purposes. The application, utilisation and processing of our products and the products produced using our application advice are beyond our control and thus lie exclusively in the user's own responsibility. The sale of our products is conducted under the applicable provisions of our current General Conditions for Sale and Delivery.

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Keraflex[®]

Purchase information at: www.kerafol.com



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