

Painting Supports: Significance, Historical Review, Types and Appropriate Preparations for Effective Painting

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Abstract

Paintings tend to appeal to many art lovers due to their colourful schemes, emotional expressiveness, and aesthetic attractions, among others. Additionally, they are comparatively less cumbersome to produce with easy-to-obtain tools and materials; and also, have expansive possibilities for diverse styles and techniques pliable on almost any available surface. However, one important factor that gives them solid foundations for durability and longer lifespan, and to which many painters fail to attach much attention, is the surfaces on which paintings are executed. Through observation, it is established that most painting supports in Ghana are restricted to canvas making them monotonous, less exploratory and markedly limited in pursuit of individual artistic talents. Interviews conducted with some selected painters in Ghana suggest insufficient knowledge about diversified painting surfaces and their appropriate paint systems. This paper explores into the importance of painting supports, their historical antecedents, types, surface treatments, and relative paint mediums. It explains the advantages of various painting supports and their techniques to facilitate the acquisition of knowledge and skills needed to diversify their usage in Ghana.

Keywords: Painting Support, Paint system, Grounding, Paint Medium, Key

Introduction: Significance of painting supports

Painting, as a medium of expression, has undergone many changes and influences from time immemorial due to the ever-changing needs and aspirations of human life. Thus, from the prehistoric era, through the ancient to modern times, the issues of human needs – philosophical, social, psychological, therapeutic, religious, aesthetic, metaphysical, biological, magical and cultural – have given cause for artists, and for that matter painters, to play vital roles in sustaining life by means of creating various functional and aesthetic items relative to the various civilizations at different times, space and consciousness.

However, the aspirations of society today are completely overwhelmed by more contemporary human difficulties as terrorism, hunger, gangsterism, epidemic, political wrangling, religious extremism, global warming, environmental degradation, and others, making the role of the artist even more crucial in formulating contents not only to abate these problems, but also shield the next generation from inheriting them.

Yet, for a painter to be “successful” in this light, his paintings should live and survive him akin to Michelangelo’s consideration of his works as his children who were to outlive him to bear testimony that he once passed through the world. (Adams: 1994). Many artists have lived, struggled and practiced their trade in oblivion; others have died as paupers and been classified as nonentities in the eyes of the public. However, their works have been intact and lived on long after their deaths, highly valued, and their mission of life eventually proven right by posterity.

Similar to this assertion is found in Vincent Van Gogh of the Expressionism fame. Like the biblical Job, Van Gogh’s whole life could concisely be described as a train of misfortunes, a manifold of physical pain and emotional atrocities. But he did not live long to realize the gains of his arduous journey of life which appeared fated as a sacrificial lamb for succeeding generations to take a cue from. Even though all the odds were against him – lack of sales, societal rejection, ridicule, unrequited love, hunger, ill health – it beats one’s imagination how such an agonizing character was able to garner the motivation to churn out such volumes of work in his short working span without his creative flow being affected.

He had the strong conviction of leaving an art legacy behind him as he hinted in one of his numerous letters to Theo, his beloved brother and benefactor, that: - “I have walked this earth for thirty years, and, out of gratitude, want to leave some souvenir in the shape of drawing or pictures” (Keyes, et. al. 2000). This he succeeded not only through unique techniques of thick brush strokes, brilliant colours and jagged lines underscoring his powerful landscapes and portraitures, but also his wise choice of materials and paint support systems that have made his works intact for the benefit of posterity. He stands today a tall yardstick for any emotionally shattered artist to measure up to, as “he is now, without question, the most famous painter in the history of Western art ...” (ibid, p. 17)

It should however be clear that the correlation between ‘success’ and ‘time’ here mentioned, is relative and precludes such paradigms as ritualistic body paintings practiced by many traditional societies in Africa, Asia and a host of others including the Navajo sand paintings of native American Indians; as well as contemporary body paintings by sports fans and others whose success is only limited to the extent to which such rituals or festivities become accomplished.

Nonetheless, several paintings of no mean value have, over the years, not only failed to survive time, but also completely died out and been buried with the names of the artists denying posterity the benefit of their ingeniousness. To a large measure, many are due to ill-prepared painting supports, inferior materials and misapplication of paint mediums.

Alternatively, many durable paintings that have served generations till recent times, like that of Michelangelo, Monet, Picasso, Van Gogh, few to mention, are by far due to their lengthening paint systems including appropriate choice of painting support, requisite surface treatment and solid grounding processes relative to the paint mediums used. Thus, all painters and decorators looking for longer term durability should seek for solid support preparations reminiscent of a solid foundation for a mighty edifice slated to stand the test of time.

Methodology:

Through personal observation, it was established that many Ghanaian painters limit painting supports usage mostly to canvas. Some selected emerging professional painters in Ghana were interviewed to determine their knowledge about different painting supports, and their appropriate paint systems. The paper also traced the history of painting supports, their suitable surface preparations and paint mediums dwelling on descriptive method. Again, based on pieces of information obtained from both primary and secondary sources, analyses of selected common supports were made explaining their characteristics and advantages.

250 paintings were observed through regular visits to major art galleries and shops in Ghana, studios of selected painters, collections from private homes, features in painting catalogues, exhibition brochures and postings on social media on which further confirmations were sought from their respective painters. Out of these, 220, making 88%, were made of canvas supports; 20 (8%) of paper (mostly strawboard); and others, mostly of plywood, making up of 10 (4%). The sampling did not include watercolour paintings for their obvious supports.

Fig (1): shows table of supports preferences observed from most Ghanaian painters:

	Painting support	Usage	%
1	Canvas	220	88%
2	Paper (strawboard)	20	8%
3	Others	10	4%
	Total	250	100%

Fig (1): *painting supports preferences mostly used by Ghanaian artists*

In addition, 50 emerging professional painters were contacted to solicit for information: - 13 of them were interviewed face-to-face in their studios, and the rest through their personal contacts, emails and the social media. Selection of the artists were based on two premises – 22 had their works included in the paintings observed above whilst the rest were randomly selected in three towns in Ghana based on their artist population. Thus, 15 were selected from Accra, 8 from Kumasi, and 5 from Takoradi respectively. Again, sampling was targeted at emerging painters because the possibility of them exploring into diversified areas to fully establish themselves was higher than professionals who had already made their mark with little motivation to diversify.

The following formed the salient questions and analyses of the interview:

- i. How many years have you practiced as a painter?
 - ii. How important are painting supports and their paint systems to you?
 - iii. Why are paintings in Ghana mostly done on canvas supports?
 - iv. Why are supports, other than canvas, not explored into?
 - v. What do you think about the usefulness of supports as metals, wood panels, plastics and cement renderings, and others?
- On years of practice, 28 of them (56%) have practiced from 5 – 10 years; 15 (30%) from 11 – 18 years; and 7 (14%) practicing for 19 years and above.
 - Even though most of the painters were aware of the importance of painting support, they did not attach special attention to their treatments and other paint systems. Their knowledge about them was just below average.
 - Generally, the following reasons were assigned to their preferences for canvas supports:
 - i. Easy transportation
 - ii. Easy preservation
 - iii. Easier and less cumbersome to work with
 - iv. Easily available tools and materials
 - v. Less expensive materials.
 - vi. Most patrons prefer canvas.
 - One main reason for not plying into other supports as cement rendering, plastics, metals and others,

stems from very little knowledge about their paint systems. Hence, many who get commissions for murals even prefer painting on large canvasses and hanging them to painting directly on concrete walls.

Historical review

History is replete with many painting supports employed by differing civilizations to push through various philosophies and standards of living pertaining to their survival. During the pre-historic times for example, cave walls, animal skins (leather), bones, rocks and horns of animals were mostly used as painting supports to attain basic needs of life through the proffering of ritualistic and magical customs vital to their living.

The ancient periods of Egypt, Persia, Greco-Romans civilization, the medieval ages, and many others, whose artistic cultures have been all-time sources of inspiration to modern times, saw some of the most penetrating and influential traditions in the annals of art practice. Generally, some of the major painting supports used include Papyrus (for hieroglyphic texts meant for guiding the dead in their transition into the afterlife), tomb walls, parchment, wine and oil vase (terracotta), metals and other non-permanent materials painted on human skins, the earth (ground), tree trunks, stones, wooden stubs etc, many of which were destroyed or discarded after serving their purposes.

Later in the same periods appeared techniques of frescoes, mosaic, wood panel with encaustic and tempera as mediums, illuminated manuscript and stained glass paintings. Relating mostly to the Gothic civilization, stained glass paintings were generally conceptual, and in Christian iconographic imagery usually used to enhance biblical understanding, propagate the virtues of Jesus Christ and also brighten interior deco of churches with rich colours (Matthews et.al 2001, p. 235). Other forms of painting supports were particularly associated with architecture including calligraphic designs on Mosques, columns and walls of churches which, by their constructions especially during the Romanesque period, made large spatial openings available for painting, among others.

As years rolled by, artistic expression and general living standards of the West gradually drifted into a new paradigm based on the revival of classical learning which had been overly restrained by the exigencies of the long medieval periods. Referred to as the “Renaissance”, meaning “rebirth” in French, this new horizon generally sought inspiration from the humanistic secular standards of the Greco-Roman civilization providing tremendous room for individuals to exploit their potentials and excel in diverse fields within secular life. Again, the period invented the printing press that sought to promote mass education and the enlightenment of human minds; and particularly encouraged exploration into nature as basis for scientific, artistic and philosophical advancement in human development.

The effects of this new life on arts were very remarkable. Artists did not only take keen interest in observing and imitating nature, they were able to capture its true character guided by the techniques of perspective, anatomical proportion and foreshortening. They created illusion of three-dimensionality on flat picture plain by skilful manipulation of light and shade, movement, balance and space achieving a very high degree of naturalism thereof. Understandably, these technicalities were largely lacking during the preceding long medieval periods because they were not their primary focus other than mostly concentrating their art as aides for biblical understanding.

Accordingly, fresco continued to be much popular among painters. However, for their cumbersome nature, they gradually gave way to wood panel supports, and later, to a much more user friendly canvas by the end of the 15th century (Wadum 1994). Linen and cotton canvases subsequently remained more preferred supports and used extensively throughout the Baroque and Rococo periods till the Modern Art era of the 20th century when new unconventional materials and techniques were explored. Achievements of the Renaissance civilization were very great; it brought about massive advancement in all facets of life becoming the major developmental foundation for the West and the world at large.

The Modern era uplifted art onto a completely new prospects and expanded its scope more than ever before. Its antecedent is traceable to the politico-religious conflicts and social difficulties of the Renaissance civilization, especially during the Baroque and the Rococo periods, which culminated in making the 20th century an amalgam of individual thoughts and freedom of artistic expression. Referred to as epoch of avant-gardism, the craze for people to bask in this newfound freedom often congregated like-minded cliques into different art styles and movements as Impressionism, Cubism, Fauvism, Expressionism and many others, purposely to liberate human minds from the shackles of age old traditions, explore into wider areas of artistic expression and be unique in those areas.

Consequently, this brought about additional painting supports in the form of acid-free papers, plywood, chipboard, masonite, illustration boards, aluminium, and polyester canvas fabric, few to mention. Another significant invention that brought major innovation to painting methods and materials till recent times is synthetic paint mediums and their associated canvas supports such as acryla weave, syntra and others which Faulkner and Ziegfeld (1963 p. 415) attribute to technological advances in the production of synthetic compounds rivalling the traditional mediums for painting.

Certainly, as history compiled the above artistic achievements largely associated with Western culture, the exploits of other peoples of the world were also running, sustaining their subjective lives and adding to the scope of art. Research shows that since the ancient era to date, the peoples of the orient, particularly China, Japan and Korea have exploited the use of various painting methods and materials including cave wall paintings, frescos, lacquer painting, waterproof ink and brush works employing various supports as wood, leather, paper and silk. However, recent history shows an extensive usage of brush and ink on paper and silk for portraying calligraphic images, figurative and landscape paintings of mountains and rivers among others.

As regards Africa, history proves that easel painting had not been a tradition. However, house wall painting (mural), the preserve of women, had been the most serious form of painting alongside body paintings and, sometimes, in association with other forms of art as wooden masks and other sculptural items. The Sirigu ethnic group of Ghana, and the Ndebele, Basotho and Mbari communities of South Africa, have all been noted for house wall painting in Africa for several years generally portraying symbolic, abstract, geometrical and stylised compositions used mainly to educate members of the community, push through pertinent philosophical ideas, and also for decoration.

The main support, mud plastered house wall, did not need any grounding since the mud paint medium was very much compatible with it. Colours ranged from black, red and yellow ochre to white (kaolin). The technique relates, in some ways, to that of fresco. However, while fresco uses plaster (stucco) as the main medium, this uses mud and water solution (slurry). Again, fresco incorporates the painting into the wet plaster before drying, whilst geometric line drawings of mud house painting are etched out when mud plaster is leather-hard and then painted out when dried. Another technique is to allow the mud plastering to dry out before charcoal or a sharp edge is used to draw out the geometric designs and then painted. However, mud house painting has to be retouched occasionally to retain its brilliance, while fresco is very permanent as long as the plaster remains intact.

The history of ancient aborigines of Australia also presents a significant area of rock, tree bark and x-ray painting techniques ever witnessed in the world. Leading a simple nomadic food gathering and hunting life, they did not have permanent homes. Their existence depended largely on the availability of rock shelters for protection against the weather. Where there were no rock shelters, they built temporary shelters from grass and tree barks in anticipation of the rainy season, and then discarded them after the rains when they had to move to other hunting grounds.

Thus, rocks and tree barks, mainly obtained from eucalyptus tree species, became their vital supports for painting, engraving (petroglyphs), series of drawings, symbolic patterns and designs in pursuance of mythological and ceremonial significance. Subject matter depicted varied images of animals as kangaroos and camels with humans chasing or shooting at them. Others generally covered concepts of day-to-day rituals; social customs reflecting totemic and ancestral veneration; as well as portrayal of lesser spirits and other deities for guidance and protection.

Seeking a different artistic technique, even though of similar ceremonial and mythological concerns, the X-ray painting style, which was mostly associated with the Arnhem region of northern Australia, sought to depict internal structures of painted images such as fishes and animals exposing their skeletons, hearts, lungs and other inner organs. Till recent times, this painting technique has been in practice. However, the rock and tree bark supports usage has since given way to canvas exploitations by contemporary artists.

Undoubtedly, the above historical review is but only a fraction of how painting support usage has relatively served different generations from time immemorial till today. This clearly explains that every culture has in its wake an artistic regime synonymous to its day-to-day activities of life. Through the marvel of the internet system, today's world is however couched in the contingencies of globalization breaking barriers and bringing countries and cultures closer for a common good. Thus, art, and for that matter knowledge on painting supports and their appropriate systems, are not only nearer to the door steps of artists, it also makes styles, techniques and materials internationally assessable and easier to transfer across the world as aptly explained by Canaday (1995) that: "boundaries of traditions in art today are vague; horizons infinite; and artists tempted to explore in a hundred directions at once".

Supports and their Paint systems

Generally, paintings undergo gradual physical and chemical changes immediately the painter finishes painting. No matter where a painting is kept – a gallery, store room, a hall of an apartment or the open air – these changes happen as a result of different factors as shrinkage of drying materials laden with moisture, drying oils of the paint, and discolouration of the paint pigment. Others include warping, shrinkage, cracking, brittleness, rusting, porousness or corrosion of support surfaces. Furthermore, deterioration of paintings becomes relatively rapid due to exposure to intense humidity, heat, fungal attack, weevils, incompatibility of surface to the paint medium, and above all, ill-prepared surfaces.

Through art discourses, critiques and appreciation, it becomes clear that many artists and connoisseurs

of the arts are easily won over by a painter's styles and techniques, medium, subject matter and contents, among others. They tend to ignore or overlook the importance of painting surfaces and their effective foundations which, in the words of Smith (1993 p.26), rather help in no small measure to accept a paint system and ensure long-term durability.

Lots of painters are rather complacent with already prepared canvasses from suppliers and unaware that several of such surfaces may not have been prepared to meet their individual techniques and other particularities. Ostensibly, they fail to realize that without an appropriate and effective grounding compatible to both the support and the overlaid paint medium, paintings are rendered frail and vulnerable leading to a short life span.

To a large extent, factors that normally influence painters' choice of painting supports include size and weight of painting, easy transport to a distant destination, exposure to weather conditions, purpose of the painting, kinds of paint mediums to be used, technique, style, and others. It is therefore incumbent on all painters not only to learn about varieties of supports, but also try them out to see the experiences they could throw up. **Fig. (2)** enumerates some common supports and their categorization.

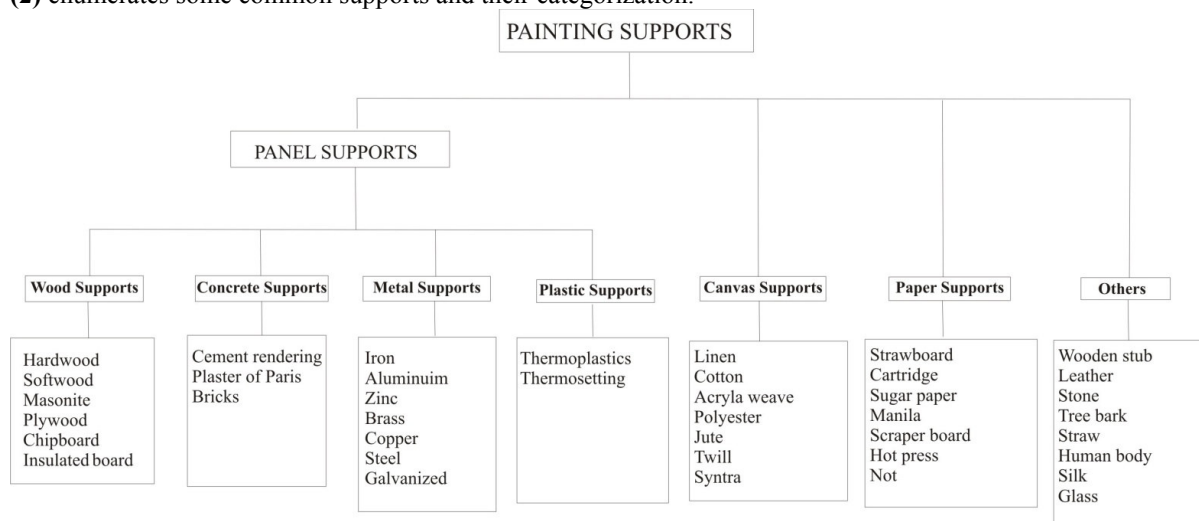


Fig.2 Categorization of common supports

Nonetheless, knowing the various kinds of supports is one thing different from preparing them appropriately to receive paint. As shown in **fig. (3)**, some of the support surfaces need to be abraded; others need scuffing; pressure washing; scrubbing; degreasing; sand-blasting and others in the process of building appropriate grounding for the respective paint mediums.

Irrespective of a paint quality, it is largely believed among paint manufacturers that any effective painting venture slated to chalk a longer lifespan should be made up of 80% surface preparation and 20% paint application. Accordingly, a paint system is all the appropriate preparations including surface treatments and grounding (priming) processes given to a support to make it solid enough to receive a relative paint medium and its applications, and also ensure durability of paintings. The following reasons are therefore important for achieving a good paint system:

- i. To ensure that a surface has the appropriate key to its corresponding paint medium.
- ii. To determine a good and satisfying finish.
- iii. To ensure a longer lifespan for a painting or decoration

Support	Types	Abrading	Degreasing	Washing	Scuffing	Pressure Washing	Vacuuming	Dusting
Canvas	Linen			*				*
	Polyester			*				
	Cotton			*				
	Acryla weave			*				
	Syntra			*				
	Jute			*			*	*
Concrete Wall	Cement rendering	*				*	*	*
	Plaster of Paris	*						*
	Bricks	*				*	*	*
Metal Panel	Aluminium	*	*		*			*
	Zinc	*	*		*			*
	Copper	*	*		*			*
	Bronze	*	*		*			*
	Brass	*	*		*			*
	Galvanized	*	*		*			*
	Steel	*	*		*			*
	Iron	*	*		*			*
Cast Iron	*	*		*			*	
Paper Board	Strawboard							*
	Cartridge							*
	Hot press							*
	Not							*
	Scraper board							*
	Manila							*
Wood Panel	Masonite	*					*	*
	Softwood	*					*	*
	Hardwood	*					*	*
	Plywood	*					*	*
	Chipboard						*	*
Plastic Panels	Thermosetting		*	*				*
	Thermoplastics		*	*				*

Fig. 3: Surface treatments of supports before grounding

- iv. To limit cost
- v. To shield or protect the surface against the effect of weather conditions
- vi. To ensure that the surface is free of defects as dents, nail stumps, rust and others which may undergo chemical changes and eventually damage the painting, or show through the coated surface.
- vii. To ensure that no unwanted materials as grease, dirt, fungi, old flaking paint or wall papers, and others are trapped between the surface and the coating to prevent proper adhesion.
- viii. Making sure the surface is not damp or laden with moisture from the atmosphere or from a leakage within the painting surface.

There are several types of supports with varying surface characteristics that require appropriate paint systems to ensure the above qualities. There is therefore the needful for painters and decorators to “understand” the surfaces they work with. That is, they should have adequate knowledge and skills about their treatments; the requisite tools and materials and their relative procedures; damages likely to affect surfaces under different atmospheric and other foreseeable conditions and how to rectify them; and in particular, be able to effectively utilize a prepared surface with painting techniques that will not break down the grounding and expose the bare surface to a direct contact with the overlaid paint.

Additionally, it should be clear that painting surfaces are broadly classified into two types, namely porous and non-porous surfaces. Porous surfaces have air voids, pores or passages along which liquids are absorbed. On the other hand, non-Porous surfaces have no air voids or pores and therefore do not allow liquids passing through them. According to Goodier (1987), these surface characteristics have great bearing on the

quality of the painter's work, and therefore, require different treatments to attain appropriate keys for paint adhesion.

Porous and non-Porous surfaces are further classified into five characteristics: (i) **Absorbent surfaces** (porous): - they have air voids partially separated by impervious materials and therefore do not allow liquids freely passing through them; (ii) **Very absorbent surfaces** (porous): - they have air voids that freely allow the passage of liquids through them; (iii) **Non-absorbent surfaces** (non-porous): - these are non-porous surfaces, often dense, smooth and shiny and have very low key for paint adhesion; (iv) **Chemically active surfaces** (porous): - these materials are laden with alkali, especially lime, and promote a chemical reaction with some drying oils in paints; (v) **Corrodible surfaces** (non-porous): - these materials are often ferrous metals which are very prone to rust especially when exposed to the weather conditions. **Fig (4)** shows categorization of characteristics.

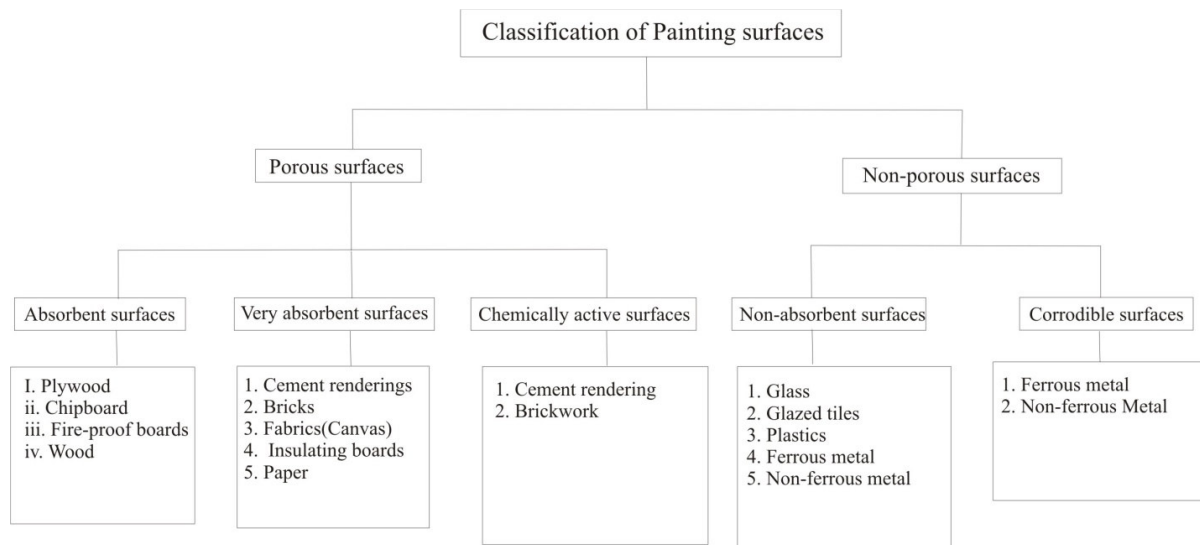


Fig.4 Categorization of surface characteristics

Selected Common supports and their treatments:

The following common supports are identified with their appropriate descriptions and treatments:

1. Wood

Wood comes in two classifications namely hardwood and softwood depending on the tree from which they are obtained. Hardwoods come from broad-leaved dicotyledonous trees generally used for furniture, while softwoods are of the coniferous tree species. Being fairly absorbent and providing appropriate key for varieties of paint mediums, almost all woods in good condition could make good painting supports. Thus, wood panel support had been in vogue for several years before canvas gained popularity among painters. Variety of woods as cedar, chestnut, larch, mahogany, olive, dark walnut and teak among others have often been sawn into planks, seasoned and converted into panels for painting.

However, one particular problem that causes wood panel defects is moisture which is held in the ducts within the wood. This requires seasoning to dry it out in order to retain its actual size. Thus, if wood is painted prior to seasoning it will undergo shrinkage as it dries and distort its shape damaging the painting. Equally, if seasoned painted wood is exposed to a prolonged atmospheric conditions especially where its joints, back or end grains are bare, it will attract moisture and gradually weaken the bonding nature of the paint binder (film former) causing peeling or blistering. Another defect emanates from resinous matter oozing from woods especially from knots which appear at sections where branches were cut off the main trunk. These require special treatment to prevent them from staining painted areas.

The following may be followed when preparing wood surface for painting:

- i. Dust off unwanted dirt on wood.
- ii. If there are nail stumps, push them deeper into the surface and fill created holes with putty
- iii. Abrade lightly to provide key. This should be along the grain else will lead to scratches of the surface.
- iv. Fill all cracks or gaps, if there any, with filler and then sand down when dry
- v. If wood has knots, apply knotting solution on them. If this is not done, resins which normally leak from such knots which stain the surface.
- vi. If wood is already stained with resin, wipe down with white spirit to remove excess resin.

- vii. Prime with requisite wood primer
- viii. Dust off with a dust brush and clean finally with a rag to remove fine surface dust.

2. Cement rendering surface

Portland cement surfaces have certain natural characteristics which need to be understood before using as painting support:

- They are alkali in nature which easily become activated and resist paint primers upon slightest attack from moisture. Any effective paint medium on them will generally depend on the chemical agreement between them and the bonding nature of that paint medium in relation to the atmospheric conditions.
- Alkali resisting primers are therefore more appropriate for cement renderings.

The following should be taken into consideration in preparing cement rendering surfaces:

- i. Newly cement renderings are laden with moisture requiring at least 12 months drying period before painting. This helps to avoid efflorescence.
- ii. If dampness of the surface is caused by leakages from pipes, gutters, or a structural defects in the concrete it is essential that such defects are first repaired or stopped and allowed to dry out before painting. If this is ignored, dampness will persist to destroy the coated surface no matter the number of times painted. Again, applying a damp-proof solution or fixing the leakage with a lead foil will only be a stopgap solution as dampness gradually eats into the bonding nature of those repairs and also spread to other areas to make the problem perennial.
- iii. Splashes of mortar and efflorescence prevent proper adhesion of paint and good finish. These must be scrapped or brushed off before painting
- iv. All surface defects as cracks, dents, holes etc must be treated and sanded down before painting. It should be understood that paint film microns are not thick enough to fill and obliterate such defects. They either show through painting to give poor finish or become deeper as surface is subjected to expansion and contraction of weather conditions.
- v. For old plaster surface:
 - Apply fungicidal wash to get rid of any mould or algae.
 - Remove all death growths by thoroughly washing down surface with clean water and stiff brush to prevent regeneration.
 - Brush to remove any flaking paint, loose mortar and dust
 - If there are any holes, cracks or dents fill or stop them.
 - Lightly abrade filled cracks, dents or holes before applying a stabilizing masonry primer to the whole surface.

3. Metals

Metals are broadly classified into two types as ferrous and non ferrous metals. Ferrous metals have high iron content in their composition which is prone to rust due to their exposure to oxygen and water usually in the atmosphere. Thus, ferrous metals as cast iron, mild steel, high tensile steel, wrought iron which are highly corrosive in nature and need to go through abrasive or blast clearing. Immediately after this, they should be primed with specially prepared primers based in rust inhibitive formulas to prevent rusting. These primers include red lead, metallic lead, or zinc chromate. On the other hand, non-ferrous metals as zinc, aluminium, copper, brass, bronze, lead and tin which are less corrosive.

Metal treatments and their grounding preparations are mostly done at the factory level as part of the manufacturing processes; because, they contain chemical treatments and processes too technical and elaborate to be left in the hands of painters and decorators who may lack such knowhow and resources. However, painters should have simple knowledge and skills about minor treatments as abrading, degreasing, and dusting etc, especially when metals develop scratches or corrosion, which may subsequently affect paints applied on them if left untreated. Such treatments may include:

- i. Wire-brushing or scraping with files to remove all rust and dirt;
- ii. Priming with red lead paint;
- iii. Metals should be bone-dry before painting
- iv. Painting should not be carried out during humid atmospheric conditions.

4. Canvas

Canvas as painting support has had a long history. Mostly stretched on chassis (stretcher bars) before painting, they have the advantage of providing larger surface areas for painting compared to the other supports. They come in different types of fabrics with different qualities generally identified by their made and weave. These include closely woven fabrics as cotton, polyester etc., and then others with coarse fibres as linen, jute and twill few to mention. Not all fabrics qualify to be used effectively for canvas painting especially if they cannot easily lend themselves to requisite treatment to receive paint.

Even though cotton fabrics came long after linen, both have been in use for centuries with linen being

the most preferred due its extreme durability. It is also less hygroscopic (not retaining moisture drawn from the atmosphere), and its coarse fibres produce tooth surface that make it easy to apply with paint. Its weight, toughness and texture also make it appropriate to hold and contain diversified techniques. On the other hand, cotton fabrics which are produced from seed hair of the cotton plant, have more uniform texture than linen and therefore produces smoother surface for painting. It is less expensive but more prone to cracking than linen because it is more hygroscopic and more venerable to continual expansion and contraction.

Other forms of canvas fabrics have also had considerable usage due to their varying preferences and advantages with slightly different forms of treatments. However, recent developments in the manufacture of synthetic paint has generated additional sets of fabrics as acryla weave, syntra and others that are very appropriate for synthetic paint mediums.

The following could be taken into consideration when dealing with canvas support:

- i. Canvas must be carefully stretches to prevent tearing of the fabric.
- ii. For their highly absorbent nature canvas fabrics require appropriate treatment before use.
- iii. More loosely woven fabrics with coarse fibers need considerable sizing before priming. This helps to lessen their rate of absorbency.
- iv. Canvas sometimes becomes difficult to stretch properly if basic tools as canvas pliers are not used.
- v. They require strong stretcher bars not prone to weevil attacks.
- vi. Extra protection for a canvas painting is provided by framing.
- vii. For transporting larger paintings not possible to be on a vehicle, it is advisable to remove painting from its stretchers and roll on a pipe other than folding. This will prevent damage of the paintings.
- viii. Canvas supports differ in quality and preferences from rigid panel supports such as wood, metals and others because of their flexibility, weight and transportability among others. **Figs (5) and (6)** elaborate on the advantages of Canvas (flexible supports) over Panel (rigid supports) and vice versa respectively.

	Canvas	Panel support
(i)	Easily transportable	Not easy to transport due to its rigidity.
(ii)	Less laborious to prepare	More laborious to prepare. Too cumbersome.
(iii)	The tooth and spring of the prepared canvas facilitate a more rapid and expressive execution.	(iii) Too rigid to attract more and diversified techniques.
(iv)	Various degrees of roughness and absorption can be achieved by altering the materials and preparation methods.	Not easy to control the roughness or absorption of the surface.
(v)	More flexible	Mishandling of wood panel such as plywood, masonite, chipboard etc can easily lead to breaking.
(vi)	Canvas is resilient and less prone to weather conditions than panels.	Weather conditions on panel supports as warping, rusting etc are more rapid than canvas.
(vii)	Can be used to execute paintings with greater dimensions.	Dimensions are more limited due to its nature.

Fig (5) Advantages of Canvas (flexible supports) over Penal (rigid supports)

	Panel support	Canvas
(i)	Most panel supports have less absorbent rate.	Unless properly treated, canvas is very absorbent and quickly swallows up oil content of paint.
(ii)	Compared to canvas, many panels are less prone to mold.	Owing to its absorbent nature, canvas is more prone to mold.
(iii)	Unless under harsh pressure panel supports do not sag easily.	Canvas sags easily and distorts composition.
(iv)	Due to their nature, the tendency to get panel supports intact after work is higher than canvas.	The slightest mishandling of fabrics tears easily.
(v)	Weather changes on many panel supports have less effect on painting than canvas.	Expansion and contraction of canvas due to weather changes leads to cracking of painting especially when using uneven woven fabrics as twill.
(vi)	Owing to its rigidity, many panel supports are more appropriate for palette knife painting.	The flexibility of the canvas surface requires extra skills to handle with palette knife.
(vii)	Due to their studier nature, some rigid supports as wood panels can take other unconventional materials as stone, sticks etc	Due to their lighter weight and flexibility, it is more difficult to combine with other heavy unconventional materials.

Fig (6) Advantages of Panels (rigid support) over Canvas (flexible support)

Grounding the surface (Priming)

Before a treated surface is used for painting or decoration, it should be given a specially prepared coating as a foundation on which the overlaid finishing paint is built. This is referred to as priming or grounding forming the last stage of surface preparation. It is meant to prevent the surface from having a direct contact with the finishing paint in order to avoid or drastically reduce chemical reaction between them. It is also meant to reduce absorption of drying oils or mediums into the support; and in the case of metals, prevent corrosion by moisture laden paint.

Before priming the painter should be sure that the support surface is not damp; the surface provides key to the primer; and that, the primer is receptive to the finishing paint medium. In most cases, priming becomes more appropriate if initial (first) coating is thinned into lighter consistency with sufficient concentration of binder. This helps primers sip more freely into the grains of the surface to seal them, and also blend well with subsequent coating for adequate bonding between the layers. A thick consistency for initial coating will only form a skin lying on the surface which could easily peel off. Thus, a firm priming grip on the surface, which is also compatible with the overlaid finishing paint, ensures durability and longer life span for paintings.

Artists are therefore advised that, before undertaking any painting venture, they should conduct full analyses of the support and its appropriate paint system as surface treatment; materials for grounding; and the finishing paint medium. Consideration should also be given to other foreseeable eventualities as weather conditions, transportation to another location, painting techniques, and other unconventional applications in relation to weight, size and sturdiness etc. It is again advised that, after priming of all surfaces, application of top finishing paint should not take too long to begin. For metal supports specifically, priming should be done immediately after surface treatment because the slightest trap of moisture between the bare surface and the primer will corrode it eventually.

Nonetheless, it may be needless to recommend primers to painters as gamut of them are flooding the markets from many experienced and credible manufacturers. Also, all paint products are packaged with easy-to-follow labels and manuals that painters can read to be sure of all available brands and their specifications. Thus, Goodier (1987 p.278) prompts painters looking for a 'good' paint to check the qualities of the following paint properties: - viscosity, opacity, colour, drying time, adhesion and elasticity, water resistance, wet-edge time and flow qualities.

Additionally, one cannot talk comprehensively about surfaces and their grounding systems without dealing with paint components and their effects on the surface. Paint is basically composed of pigment, binder, thinner and other additives. Among other functions, the pigment identifies the colour of the paint; the thinner makes the paint easily pliable; whiles, the binder, also referred to as a film former, bonds the pigment onto the surface in the form of a film after the thinner has evaporated or oxidized. However, additives are other important substances added to the mixture to assume special characteristics depending on the quality a manufacturer seeks to attain or towards satisfying particular end usage. Thus, an additive as driers or hardeners is added to the mixture to increase the drying process; plasticizers to prevent brittleness which leads to easy cracking; stabilizers to boost its binding nature; fungicides to prevent microorganisms, anti skinning agents to prevent paints from skinning in containers, and many others.

Painters naturally become apprehensive in choosing a paint system especially if uncertain about how a surface will react to it. In the past, there was little or no mechanism by which the durability or efficacy of paint could be ascertained before use. The most effective clue had been to compare the years of a painting to the freshness or brilliance of its paint medium at a particular period. Thus, painters carried the task of formulating and manufacturing their own paint by manually crushing and grinding pigments into fine particles before mixing them into a paste with strong smelling turpentine or seed oil, and thinning them into a suitable consistency before use. (Katz et al 1995 p.13)

This was energy sapping, time wasting, and sometimes resulted in less durable paint if a formula was not rigidly followed. It also became a hindrance in the creative process as shortage of paint meant truncating a highly charged working inspiration to prepare paint especially if the artist did not have workshop assistants or apprentices to take care of that.

Today, hosts of paint manufacturers, through highly scientific and technological processes, produce variety of professional and non professional materials to meet the myriad styles and techniques of painters. They have powerful laboratories and Quality Assurance Departments that subject all paints and their associated mediums to rigorous testing to ensure quality relative to their corresponding surfaces. Through a very reliable distribution lines they are able to get supplies to artists the world over. This has tremendously relieved painters of the arduous task of formulating their own paints, and limited them only to their ability to purchase supplies for use.

Paint manufacturing has played very significant roles in life so far as decoration, protection of surfaces, sanitation, religious rituals and festivals, teaching aides, identification of business enterprises, portraits and many others are concerned. Nonetheless, recent trends in art development and practice go beyond conventional paint usage. Comparing modern art to that of the past, Jackson Pollock, of the Abstract Expressionism fame, says that: “new needs need new techniques; and that, as modern artists have found new means of making their statements, they express their feeling other than illustrating” (Shapiro and Shapiro, 1990 p. 358). Analysing this statement, it is clear that illustration which is relatively objective, seeks to enhance the understanding of ideas or contents of compositions. On the other hand, expression of feeling is more subjective and does not limit the artist who paints at will and explores into unconventional areas to differ in style, idealistic expression and recognition.

Indeed, many painters of today have become more resourceful and innovative than ever before with their interests going beyond ‘colours’ of paints to prospecting for ‘colours’ of tangible natural objects as stones, tree barks, papers, ropes, sand, broken glass, straw, and other man-made odds and ends reminiscent of the artist El Anatsui and his recent adventure with liquor bottle tops. Referred to as tesserae, such materials are either used solely or in combination with manufactured paint, and come along with their own unconventional techniques and processes as gluing, nailing, tying, sewing, weaving, assembling, etc, and with tools as sticks, hammer, needles and others.

Accordingly, Pollock, in explaining his work procedure, again says that: “... I continue to get further away from the usual painter’s tools such as easel, palette, brushes etc. I prefer sticks, trowels, knives and dripping fluid paint or a heavy impasto with sand, broken glass and other foreign matter added” (ibid p. 356). To sum it all up, Faulkner and Ziegfeld (1963 p.404) assert that: “What the painter wishes to say in his work determines not only his choice of subject, but also his choice of medium and the way he uses it”. No matter the medium – manufactured paint, natural or artificial objects – artists should not be found wanting in cognisance of appropriate painting support, its paint system and long term durability.

Conclusion

There is nothing more satisfying than for an artist to work with materials that best suit his techniques and interest. However one cannot conveniently claim that particular materials are his favourite especially when he has not worked on other materials. It is very clear that Ghanaian painters generally limit their painting supports to canvas due to their low knowledge about other surfaces and their paint systems. Thus, their skills have, for a long time, been limited making painting practice monotonous, unadventurous, and less lucrative. This essay has not only delved into the knowledge and specifications about different painting supports and their paint systems, it has also touched on paint properties and their characteristics in relation to various supports for the benefit of artists. Ghanaian painters must avail themselves of this knowledge and exploit different painting supports in order to bring diversification and innovation into their works.

Recommendations

- i. Curricula of Art Training Institutions should include diversified painting supports.
- ii. Museums, galleries, art connoisseurs and writers should encourage painters to use varieties of painting supports.
- iii. Artists should be resourceful, adventurous and innovative.
- iv. Business outlets that deal in paint products and associated accessories should venture into tools and

materials that relate to diversified supports and their paint systems to motivate painters.

- v. Painters must rigidly follow labels and manuals of manufactured paints and their associated materials and methods in order not to misapply them either exclusively or in combination with other unconventional technique.

References

1. Adams, Laurie Schneider, (1994), *A History of Western Art*, Brown and Benchmark Publishers New York.
2. Canaday, John, (1959), *Mainstreams of Modern Art*, Simon and Schuster, New York.
3. Faulkner, Ray, Ziegfeld, Edwin, (1963), *Art Today*, Holt Rinehart and Winston, Inc., New York.
4. Fulcher, A., Rhodes, B., Stewart, W., Tickle, D., Windso, J., (1998), *Painting and Decorating: an Information Manual*, Blackwell Publishing Company, Oxford.
5. Goodier, J.H., (1987), *Dictionary of Painting and Decorating*, Published by Goodier, J.H., London.
6. Katz, Elizabeth L., Lankford, Louis E., Plank, Janice D., (1995), *Themes and Foundations of Art*, NTC/Contemporary Publishing Group, Inc., Chicago.
7. Kay, Reed, (1983), *The Painter's Guide to Studio Methods and Materials*, Prentice-Hall, Inc., London.
8. Matthews, Roy T. and Platt, F. DeWitt, (2001), *The Western Humanities*, Mayfield Publishing Company, London.
9. Keyes George S. & Roland Dorn, (2000), *Van Gogh Face to Face – The Portraits*, Thames & Hudson, New York.
10. Shapiro, David, Shapiro, Cecile, (1990), *Abstract Expressionism: A Critical Record*, Cambridge University Press New York.
11. Smith, Ray, (1993), *An Introduction to Acrylics*, Darling Kindersley, London.
12. Wadum, Jorgen, (1994), *Vermeer Illuminated, Conservation, Restoration and Research*, The Hague.