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### Historical recipes for preparatory layers for oil paintings in manuals, manuscripts and handbooks in North West Europe, 1550-1900: analysis and reconstructions

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## Appendix 6 Ground layers for canvas preparation 1550-1900, including South European recipes

### 6a Single-layer oil-bound grounds 1550-1900

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
Vasari 1550 (1568): 52 (translation Maclehorse and Brown 1960: 230)	IT			softest glue (x 4-5, with sponge)		nut oil, white, lead tin yellow, earth that is used for bells (x 1, plastered over the canvas and beaten with the palm of the hand)		
'Regl�as para pintar' c. 1575-1600 (Bruquetas-Gal�n 1998: 37)	SP			glue water	pumice stone	some oil colour (common lead white, minium or black, oil)	pumice stone	
BnF Ms. Fr 640 c. 1580-1600: 57 perso 115	FR					common ashes, oil, chalk or colours gathered from the vessel [=pencil jar]		
Borghini 1584 (1730): 136	IT			glue (x 1-2)		colours		
Armenini 1587: 124-5	IT	Flour, oil lead white (applied with knife or piece of bone)		soft glue (x 2-3)		varnish, white, red	a knife to shave [=scrape] gently	
Armenini 1587: 124-5	IT	Flour, oil lead white (applied with knife or piece of bone)		soft glue (x 2-3)		lead white, lead tin yellow, earth that is used for bells	a knife to shave [=scrape] gently	
Armenini 1587: 124-5	IT	Flour, oil lead white (applied with knife or piece of bone)		soft glue (x 2-3)		verdigris, lead white, umber	a knife to shave [=scrape] gently	
De Mayerne 1620-44: 11	UK			calf skin glue, or 'cheurotin'	while size is wet, flatten with muller on marble, with a muller	lead white, umber (x 1-2)		

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
De Mayerne 1620-44: 98v	UK		bathe in liquid glue, size with liquid glue or apply gelled glue from glove leather clippings (with bone or spatula)	cut the knots in the canvas with a well cutting iron, pumice stone		lead white, little ochre, minium or other competent colour (with spatula)	
De Mayerne 1620-44: 98v	UK		bathe in liquid glue, size with liquid glue or apply gelled glue from glove leather clippings (with bone or spatula)	cut the knots in the canvas with a well cutting iron, pumice stone		lead white, carbon black (with spatula)	
Lebrun 1635 (Merrifield 1849(1999): 772)	FR		parchment or flour glue (with knife or spatula)			potters earth, yellow earth or ochre ground with nut or linseed oil (with knife or spatula)	
Pacheco 1649: 383-4 (translation Véliz 1986: 68)	SP		flour or mill dust, oil, little honey	pumice stone		oil priming (x 1-2)	
Symonds 1650-2 : 10	IT		layer of glue			nut oil, lead white, lead tin yellow, earth that is used for bells	
Symonds 1650-2 : 10	IT		glue of glove cuttings or of glew	scrape with an iron		good quantity of oyle (red earth, a little white, chalk, very little carbon black)	
King 1653-57: [48]	UK	take off knots with pumice stone	thin starch (with knife)	pumice again		primer (with wooden vording knife)	let dry hour or two to the end that oyle may sink into cloth, with knife stuke away all the primer you can
'Tractato' 1656 (translation Véliz 1986: 111)	SP		flour gacheta [=flour paste], little common oil (with knife)	loose threads and knots are cut and canvas smoothed with pumice stone		powdered shells from lakes, linseed oil (as many layers as needed to cover well, with large knife)	sanded with pumice stone and smoothed and scraped with a sharpened knife
'Art of painting in oyle' 1664: 95-6	UK		thin size, honey (x 2, first layer warm with brush, second cold with a knife)			lead white, little red lead Spanish browne, umber, oyle (x 2, with a knife)	

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
Volpato c. 1670 (Merrifield 1849 (1999): 731)	IT		glue		linseed oil, terra da bocali, red earth, little umber (x 2, second coat more finely ground, applied with knife)	pumiced	
Félibien 1676: 407-8	FR		Glue water	Pumice stone to remove the knots	Brown red, little lead white to make it dry sooner, nut or linseed oil (with large knife)	Pass a pumice stone	
Eikelenberg 1679-1704: 385	NL		Porridge of wheat flour (with knife)		[lead white], umber, brown red, little from the penciltray or rinsing jar	Knife, remove knots and 'verselletjes', ba..steen [some kind of stone] or pumice stone	
Eikelenberg 1679-1704: 404-5	NL		Porridge of wheat flour (applied with brush, smoothed with palette knife)	Knots and dirt removed with a 'lacquer stone' [meaning not entirely clear, but probably a pumice stone]	Potters earth, linseed oil		
Beurs 1692: 20	NL		Water and pulp ('brij') [probably refers to paste such as prepared from flour]	Rub on a grinding stone or board	Umber, lead white, oil (x 3-4)		
Hidalgo 1693 (translation Véliz 1986: 137)	SP		gacha, size, honey		almagra and umber or Fuller's earth, cooked linseed oil, drier (x 2-3)		
Hidalgo 1693 (translation Véliz 1986: 137)	SP		glove clippings (x 2)	0	almagra and umber or Fuller's earth, cooked linseed oil, drier (x 2-3)		
Dupuy du Grez 1699: 243-4	FR		Glue water	Pumice stone to remove the knots	Brown red, lead white, Spanish white, linseed or nut oil (with large knife)	One may pass a pumice stone	

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
Palomino 1715, SP 1724, vol. 2: 32-33			glove clippings glue				clay that is left by the rivers, or 'tierra de Esquivias', red earth, linseed oil, old colours or dark brown earth <sup>753</sup> ('sombra de el Viejo')
Palomino 1715, SP 1724, vol. 2: 32-33			paste, honey, linseed oil				Clay that is left by the rivers, or 'tierra de Esquivias', red earth, linseed oil, old colours or dark brown earth <sup>754</sup> ('sombra de el Viejo')
Chambers 1728, GE vol 2: 735			glued	pumice stone	ochre, drying oil, often some lead white	pumice stone	
Cröker 1729: 74-77	GE		rock- or dust-flour, water (x 2, with a small plank, with a thin underside and somewhat thicker upper side)	dsmooth between layers while still wet, with glass grinding stone. When dry: pumice stone, or sand leather [=early type of 'schuurpapier']	red bole, varnish (x 1, with brush)		
de la Hire 1730: 710	FR		gelled leather glue (with large knife)	dcrape with the same knife	brown red, oil, some siccativ (normally red minium) (x 1, with the same knife)	pumice	
Barrow 1735: n.p.	UK		layer of glue	pumice stone	oker, sometimes little lead white (x 1)	pumice stone	
Chomel 1743: 948	NL		a glue	grinding stone	brown-red, lead white, linseed and nut oil (x 1, with large knife)	polish with grinding stone to make it smoother	
Pictorius 1747: 355	NL		glue water, wheat flour (rubbed in with moist cloth)	even on a flat surface when somewhat dry, then dry completely	paint	pumice stone	

<sup>753</sup> Véliz 1986 in her edition of Palomino identifies 'sombra de el Viejo', which literaterally translates as 'dark of the old one' as 'dark brown earth'. Véliz 1986: 150

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<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
Mss.Hist.Helv.XV SUI II.233B 1750- 1800 (transcribed in Stettler 1987: 48-9)					brown red, Kassels brown/English red/rust, <sup>755</sup> a little lead white or chalk (x 1)		
Orellana 1755: SP 107			glove leather (x 1-2)		almagra		
Dossie 1758: vii- UK viii, 204, 205			hot drying oil (soaked in)		flake white, fat oil, colour (dried horizontally so the paint evens out)		
École 1759: 173- FR 5			glue water (x 1)	pumice stone	brown red, lead white, nutoil or linseed oil (x 1, with large knife)	pumice stone	
Hallen 1761: 322 GE					oil ground with red bole or other 'bad' [=common, simple] paint		greasy waxy oils from the rinsing jar to keep moisture from the wall away from the paintings (applied by some, to front and back)
Hallen 1761: 322 GE			gelled parchment glue (x 1, with a knife)		oil ground with red bole or other 'bad' [=common, simple] paint		
Chomel 1767: FR 869			glove glue water (x 1)	pumice stone	brown red, lead white, linseed or nut oil (x 1, large knife)	pumice stone	
Griselini and IT Fassadoni 1772: 269-70			layer of glue (x 1)	pumice stone	ochre, little lead white (x 1)	pumice	
Nieuwen NL verlichter 1777: 166-7			glue from cuttings of leather gloves, gelled and cold (x 1, with large thin knife)	well flattened pumice stone	brown red in oil, siccative (red minium or lead white) (x 1, with knife)	pumice stone	
Le Pileur 1779: FR 70		pumice stone	glue, little honey		lead white, little honey, binder not specified		

<sup>755</sup> The recipe describes 'Keßels Braun'. The meaning of this term is not entirely clear. See Stettler 1987: 48.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
Dutens 1779: 62	FR		blove glue				black, ochre, white, little red brown
Pernety 1781: 8	FR		blue water (x 1)	pumice stone			brown red, lead white, nut oil or linseed oil (x 1, with large knife)
Artist assistant 1785?: 93	UK		size, or paste water (x 1)	pumice stone			oker, little lead white [oil] (x 1)
Golden cabinet 1793: 112	USA		size or paste-water (x 1)	pumice stone			okre in oil, lead white (x 1)
Secrets 1801: 151-2	FR		eau de colle de gants (x 1)	pumice stone			brown red, little lead white, nut oil or linseed (x 1, with large knife)
Ibbetson 1803: 11,1	UK		strong glue (brush)				stiff paint, greatest part whiting (x 2-3, plastered [=with knife])
Ibbetson 1803: 11	UK		very thin starch (x 1)	while wet rubbed with a rubber stone			proper thin colour (x 1)
Peale in Sully: 1809-1873: 020	UK	pumiced and wet	isinglass (x 1, with large spatula)				colour (x 1, with spatula)
Sully 1809-71: 036-7	US/ UK		paste, Venice turpentine, little vermilion (x 1, applied with a brush, flattened with palette knife)	pumice			flatten with spatula when coat is nearly dry
Sully 1809-71 (recipe date 1856): 156	US/ UK	wet surface with pumice stone	paste, little Venice turpentine, pinch of vermilion (x 1, palette knife)	pumice stone			paint (x 1-2)
Montabert 1829: 163	FR						lead white, [oil] (x 1-2, palette knife)
Mérimée 1830: 242	FR		gGelled glove glue (x 1, with large knife with bent handle)	pumice stone			copal, elemi resin, spike oil, one third of this varnish, two thirds poppy oil, white or ochre (x 1, with palette knife)
Arsenne and Denis 1833: 335-7	FR		tepid glove glue (x 1, with large knife with bent handle)	pumice			lead white (x 2-3, with a knife)
							lead white, little black or red ochre (x 2-3, with the same knife)

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
Arsenne and Denis 1833: 335-7	FR				lead white, one part oil, one part turpentine essence, applied to a wet canvas (x 1, with large knife with bent handle)		
Fernbach 1834: 4-5	GE				linseed oil, lead white, 'Thonerde' (Mannheimer chalk) (x a couple of times, with a spatula, palette knife. First layer applied thinly)		
Field 1835: 213	UK		size		earths and metallic oxides, drying oils		
<i>Nyt magazin</i> 1838: 261-2	DK				linseed oil varnish (litharge, linseed oil), slaked chalk or slaked pipe clay, ochre, umber, cologne earth, carbon black (x 2, with a spatula with bent handle)	polished with pumice powder, sand or felt, or instead with a piece of cork. Then washed.	copal-oil varnish/ amber varnish
<i>Nyt magazin</i> 1838: 261-2	DK				linseed oil varnish (litharge, linseed oil), slaked chalk or slaked pipe clay, ochre, umber, cologne earth (x 2, with large spatula with bent handle)	polished with pumice powder, sand or felt, or instead with a piece of cork. Then washed.	copal-oil varnish/ amber varnish
<i>Nyt magazin</i> 1838: 261-2	DK				linseed oil varnish, slaked chalk, lead white (x 2-3, with large spatula with bent handle)	pumice stone and water	
Sarsfield Taylor/Merimee 1839: 218-9 <sup>756</sup>	UK		size of glove parings (x 1, large palette knife or trowel with blunt edge and as straight as a rule)	rubbed with pumice stone	lead white (x 2-3, with a knife)	pumiced (after first layer)	
Fielding 1839: 80-1 <sup>757</sup>	UK		very thin starch (x 1)	rubbed while wet with rubber stone	thin colour (x several times)		
Cawse 1840: 21	UK				tobacco-pipe clay, spanish white (first mixed with water and 'sand and other impurities' removed), drying oil, colour		

<sup>756</sup> English translation of Mérimée 1830 by Sarsfield Taylor, but with some differences.

<sup>757</sup> Fielding quotes Ibbetson 1803.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>
					(trowel or palette knife)		
Susse 1845: 22	NL		leather glue	rumice stone	oil, lead white, ochre (x 3-4)	pumice stone	
'P.07': 1847: 7PP239L01	UK	pumiced as usual	very weak size	rubbed down	whiting, lead white, umber, glue size, treacle, linseed oil (x 4, with trowel)		
'P.09': 1854: 9PP015	UK		sized		Ox Zinc, Meguilp (9PP014L16?: bees- wax, turps, dble mastic vsh) (x 1, with trowel)		
'P.09': 1854: 9PP017L01	UK				Ox Zinc, Meguilp [=9PP014L16: bees- wax, turps, dble mastic vsh] (x 1, with trowel)		
C.W. Peale's ground in Sully 1873: 035-6	US/ UK	wet, pumiced	isinglass, water (x 1, with large (wooden) spatula)		required colour (x 1, with spatula)	flatten with spatula when the coat is nearly dry	
Raycroft 1888: 25	UK		thin liquid glue (x 1)		silver white, little ivory black, [oil], turpentine (x 1-2, second without turpentine)		

## 6b two-layer oil-bound grounds for canvas 1550-1900

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
De Mayerne 1620-44: 5	UK		glue of clippings of leather or glue that is not too thick (x 1)		brown red or brown red from England (x 1)	Flatten with a pumice stone	lead white, carbon black, small [or smalt] coals, little umber (x 1 or 2)			

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
De Mayerne 1620-44: 5	UK			glue of clippings of leather or glue that is not too thick (x 1)		ochre burnt that reddens in the fire (x 1)	flatten with a pumice stone	lead white, carbon black, small [or smalt] coals, little umber (x 1-2)			
De Mayerne 1620-44: 5	UK	wetten the canvas				brown red or brown red from England (x 1)	polish	lead white, carbon black, small [or smalt] coals, little umber (x 1-2)			
De Mayerne 1620-44: 87	UK			strong glue or leather clippings glue, not too strong (x 1, with knife)		bole, umber, oil (x 1, with 'brossette' or knife)	remove all knots by scraping with a knife and flatten with a pumice stone	lead white, umber			
De Mayerne 1620-44: 90	UK			strong glue (x 1, with brush, then knife) (cracks)		bole, umber (x 1)		lead white, umber (x 1)			
De Mayerne 1620-44: 95	UK					bole, umber (x 2-3)		smalt, lead white, little lake			
De Mayerne 1620-44: 96	UK			strong glue		bole, umber		lead white, little umber	rub with the pumice stone and remove all knots	lead white, little umber, smalt	polish with a brush or pencil
De Mayerne 1620-44: 98v	UK			bathe in liquid glove clippings glue, cover large canvas with gelled glove clippings glue (with spatula) or with warm glue	cut the knots of the canvas with a sharp knife, pumice stone	yellow ochre (x 1, with spatula)		lead white, little ochre, minium or other competent colour; or lead white, carbon black (x 1)			
Pacheco 1649: 384-5 (translation Véliz 1986: 68)	SP		pumice stone	weak size, cold (x 1, with knife)	pumice stone	linseed oil, Sevilla clay (x 2, with a knife)	pumice stone after both coats	oil, Sevilla clay, little lead white if you wish (x 1, with a knife)			

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
Félibien 1676: 407-8	FR			glue water (x 1)	pumice stone to remove knots	brown red, little lead white to speed up the drying, nut or linseed oil 9x 1, with large knife)	pass the pumice stone	lead white, little carbon black (x 1, with large knife)			
De la Fontaine 1679: 43-4	FR		rub with pumice stone	glue		umber, brown red (x 1, with iron knife)	rub with pumice stone	lead white, umber, little carbon black			
Dupuy du Grez 1699: 243-4	FR			glue water (x 1)	pumice stone to remove knots	brown red, Spanish white, linseed or nut oil (x 1, with trowel or knife)	one may again pass over the pumice stone	lead white, carbon black (x 1)			
Anonymous [in Wiltshut manuscript]: 1726-39: n.p. [78 in pdf]	GE			flour, linseed oil (x 1)		lead white, linseed oil, painters varnish (x 2)	rub with pumice stone (after each application)	lead white, Berlin blue, nut oil (x 1)			
Chambers 1728, vol. 2: 735	GE			sized	pumice stone	ochre, drying oil, often some lead white (x 1)	pumice stone	lead white, charcoal black (x 1)	pumice stone		
De la Hire 1730: 710	FR			gelled leather glue (with large knife)	scrape with the same knife	brown red, some siccative (normally red minium) (x 1, with the same knife)	pumice	lead white, little brown red, little carbon black (x 2)			
Barrow 1735: n.p.	UK			layer of glue	pumice stone	oker, sometimes little lead white (x 1)	pumice-stone	lead white, little charcoal black (x 1)			
Chomel 1743: 948	NL			a glue	pumice stone	brown red, lead white, linseed oil and nut oil (x 1, with large knife)	rubbed with pumice stone to make it more even	lead white, charcoal black (x 1)			
Dossie 1758: 203	UK			hot drying oil		drying oil, red oker (x 2-3, applied when layer of hot drying oil is nearly dry)	hot drying oil (brushed over as long as it will sink in)	lead white, oil, pigments (x 1)	pumice stone, glass called 'callender stone'		

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
École 1759: 173-5	FR			glue water (x 1)	pumice stone	brown red, lead white, nut oil or linseed oil (x 1, with large knife)	pumice stone	lead white, little carbon black (x 1)			
Jombert/De Piles 1766: 126-131	FR			glove clippings glue, gelled and cold (x 1, with large knife)		brown red, nut or linseed oil, siccative (ordinarily red minium or lead white) (x 1, with large knife)		lead white, brown red, little carbon black (x 2, with large knife)			
Chomel 1767: 869	FR			glove glue water	pumice stone	brown red, lead white, linseed or nut oil (x 1, with large knife)	pumice stone	lead white, carbon black (x 1)			
Griselini and Fassadoni 1772: 269-70	IT			layer of glue (x 1)	pumice stone	ochre, little lead white (x 1)	pumicee	lead white, little carbon black (x 1)			
Watin 1772: 190-1	FR			glove leather glue, that is beaten to a paste-like ('bouillie') consistency (x 1, with large wooden knife)	pumice stone	brown red, nut oil, litharge (x 1, with knife)	you may pass the pumice stone	lead white, carbon black, nut oil and linseed oil 1:1 (x 1, thin layer with brush)			
Valuable secrets 1775: 133-5	UK			size (x 1)	rub with ponce stone	brown-red, little lead white, nut, or linseed oil (x 1, with large knife)	rub with ponce stone	lead white, charcoal black (x 1)			
Nieuwen verlichter 1777: 166-7	NL			glove or leather cuttings glue, gelled and cold (x 1, with large thin knife)	well flattened pumice stone	brown red in oil, siccative (red minium or lead white) (x 1, with the same knife)	remove surplus from the back with knife. Pumice stone.	lead white, brown red, little charcoal black (x 2, as little as possible )		pumice stone	
Le Pileur 1779: 69-70	FR			layer of glue (x 1)	pumice stone	ochre, oil, little lead white (x 1)	pumice stone	lead white and charcoal (x 1)			

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
Pernety 1781: 08	FR			glue water (x 1)		brown red, lead white, nut oil or linseed oil (x 1, with large knife)		lead white, little carbon black (x 1)			
<i>Artist assistant</i> 1785?: 93	UK			size, or paste water (x 1)	pumice stone	ochre, little lead white (x 1)	pumice stone	lead white, little charcoal black (x 1)			
<i>Encyclopedie methodique</i> 1789: 145	FR			glove glue, consistency like paste ('bouillie') (x 1, with large wooden knife)	pumice stone	brown red, nut oil, litharge (x 1, with knife)	you may pass the pumice stone	lead white, carbon black, nut oil and linseed oil 1:1 (x 1, light layer with brush)			
<i>Golden cabinet</i> 1793: 112	USA			size or paste-water (x 1)	pumice-stone	ochre in oil, white-lead (x 1)	pumice stone	lead white, charcoal-black (x 1)			
<i>Maler- og forgylder handbok</i> , no date [after 1794]: 70-1	DK			middle strong glove glue, beaten to froth (x 1, with wooden spatula)	scrape while wet, pumice when dry	brown-red, litharge, linseed oil (x 1, with wooden knife)	pumice stone	pale white, coal black, linseed oil (x 1, light layer)			
Krünitz 1799, volume 76: 623-5	GE			glove glue, beaten to a paste ('Brey') (x 1, with large wooden spatula)	pumice in all directions	brown red, nut oil, litharge (x 1, with large wooden spatula)	pumice stone	lead white, charcoal black, half nut oil, half linseed oil (x 1, light layer)			
<i>Secrets</i> 1801: 151-2	FR			glove glue water (x 1)	pumice stone	brown red, little lead white, nut oil or linseed oil (x 1, with large knife)	pumice stone	lead white, little carbon black (x 1)			
Simis 1801: 158	NL					drying oil, chalk (x 2)	smooth with pumice stone and water	light colour (x 1)			

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
Stöckel 1825: 181-3	GE			averagely strong glove glue, beaten thick or into a 'Brei' (x 1, with large wooden spatula)	pumice stone	brown red, litharge, some oil varnish (x 1, with large wooden spatula)	can be rubbed with pumice stone	lead white, charcoal black, oil varnish (x 1, light layer)			
Riffault 1826: 183-4	FR			glove leather glue, beaten into a paste ('bouillie') (x until canvas saturated, with large wooden knife)	pumice lightly	brown red, nut oil, litharge (x 1, with large wooden knife)	can be rubbed again with pumice stone	lead white, carbon black, nut and linseed oil 1:1 (x 1, brushed on)			
<i>Artist &amp; tradesman's guide</i> 1827: 38-9	UK			size (x 1)	rub with pounce stone	brown red, little lead white, nut or linseed oil (x 1, as thin as possible)	rub again with pounce stone	lead white, charcoal black (x 1, as little as possible)			
Montabert 1829: 159-60	FR			skin or parchment glue, gelled (x 1, with spatula or palette knife)	pumice	lead white, oil (linseed, nut or other) (x 1)	pumice with water	oil, lead white, other colour (x 1-2)	pumice		
Montabert 1829: 159-60	FR			skin or parchment glue, gelled (x 1, with spatula or palette knife)	pumice	yellow or red ochre, oil (linseed, nut or other) (x 1)	pumice with water	oil, lead white, other colour (x 1-2)	pumice		
Vergnaud 1831: 137-8	FR			glove leather glue, beaten into a paste ('bouillie') (x until canvas saturated, with large wooden knife)	pumice lightly in all directions	brown red, nut oil, litharge (x 1, light layer with knife)	can be rubbed again with pumice stone	lead white, carbon black, nut and linseed oil 1:1 (x 1, light layer with brush)			

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
<i>Complete guide</i> 1841: 41	UK			thin glue (x 1)		lead white, red lead, linseed oil, turpentine (x 1)		lead white, linseed oil, turpentine, sugar of lead (x 1)			
Hampel 1846: 22-5 <sup>758</sup>	GE	wash with sponge with potash and rinse with tepid water		rye flour, water (x 1, with wooden spatula, which has first been soaked in linseed oil for 24 hours to become slippery/smooth ('Geschmeidig')		red bole, or light English red, Inseed oil varnish (x 1 or 2 if not smooth)		lead white, little ochre and black or lead white and dark ochre (x 2)	wash with sponge with potash, rinse with tepid water	finely ground pumice stone, linseed oil varnish, lead white (x 1)	
Francis 1854: 70	UK			thin glue (x 1)		lead white, red lead, linseed oil, turpentine (x 1)		lead white, linseed oil, turpentine, sugar of lead, colouring matter (x 1)			
Hopman 1856: 135-6	NL					boiled oil, lead white, washed chalk, yellow wax, turpentine (x 2)	rub smooth with pumice stone	yellow ochre, white, black (x 2, spreading first layer with badger brush, applying second layer with dabbing movement)			
Hopman 1856: 135-6	NL					boiled oil, lead white, washed chalk, yellow wax, turpentine, finely pounded and soaked pipe clay (x 2)	rub smooth with pumice stone	yellow ochre, white, black (x 2, spreading first layer with badger brush, applying second layer with dabbing movement)			
'P.04': 1871:P4P140L01, (P4P141L13, P4P142L01)	UK					1st color oil, raw linseed oil, whiting, patent dryers, keep 6-12 months before applying		putty, lead white, patent dryers		lead white, putty	

<sup>758</sup> This recipe is for 'alla prima' painting. If this technique is not employed, the final pumice powder containing layer is omitted.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>	<i>smoothing</i>
Spon 1879: 113	UK				lead white, whiting, raw oil, boiled oil (x 2, with brush, palette knife or trowel)	scrape excess from the back. Rub after second coat is dry with light piece of pumice-stone and water	white-lead, whiting, burnt ochre, small quantity of pumice stone, gold size, raw oil, turpentine (x 1-3)		repeat rubbing with pumice-stone and water	

### 6c Aqueous binding media (animal glue, flour paste, casin) or emulsion grounds that are not covered by a second oil-bound ground layer

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>isolation layer</i>
Borghini 1584 (1730): 138	IT		glue (x 1)		mestica (x 2)				
Borghini 1584 (1730): 138	IT				Volterra gesso, fine flour ('fiore di farina'), glue and oil (x 1, with iron blade)				
Bate 1633 (1654 <sup>759</sup> ): 167	UK	smooth with sleekstone	size, little honey (x 1)		whiting, size, little honey (x 1)				
Lebrun 1635 (Merrifield 1849): 820 <sup>760</sup>	FR				parchment glue and oil priming (x 1)				
'Recipe book', Ms. Frans Hals Museum 1650-1700: 5	NL				glue, red bole (x 1)				

<sup>759</sup> Talley 1981 transcribed the recipe from the first 1633 edition. The recipe text was checked against the 1654 edition.

<sup>760</sup> The first line of this recipe designates special purpose: 'to prime a canvas quickly in a manner that one may paint the same day that it is primed'.

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>isolation layer</i>
Palomino 1715, 1724, vol. 2: 34-35 (translation Véliz 1986: 152)	SP			glue		cernada: sifted ashes and sizing from clippings (x 1)		oil (x 1, with brush)		
Müller 1750-1800: 65 (transcribed in Lehmann 2002: 50) <sup>761</sup>	GE			wheat flour, water, linseed cakes (x 1)						
Le Pileur d'Apligny 1779: 70	FR		pumice stone	glue, little honey (x 1)		lead white, little honey (x 1)				
Golden cabinet 1793: 112	USA		pumice stone	good size, a little honey (x 1)		whiting, size, little honey (x 1)				
Transactions 1806: 85-9	UK					calcined and crushed bones of sheep's trotters, wheaten flour, (x 2)	first coat pumiced		calcined and crushed bones of sheep's trotters, wheaten flour, pigment (x 1)	raw linseed or poppy oil before painting
Sully: 1809-1871: 019	US/ UK					glue, water, whiting, oil (x 1 on damp canvas, applied while warm with a brush)	pumice stone may be used			
Delonprey in Sully 1809-71 (recipe date 1826): 036	US/ UK					paste, lead white, oil, litharge (x 1, with palette knife)				
Sully 1809-71 (recipe date 1840): 106-7	US/ UK			size (x 1)		whiting such as used by gilders (x 1, cracked)				

<sup>761</sup> The title of this recipe is 'Wenn man Leinen anstreigen wil', which probably translates as 'if you want to paint on linen'. The very short recipe does not make clear whether the paint to be applied is oil paint. The context of the book, a workshop book with a wide variety of recipes, does allow for the possibility, but not the certainty, that the recipe was part of instructions for oil painting.

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>isolation layer</i>
Sully: 1809-1871 (recipe date 1849): 134-5	US/ UK					lead white, linseed oil, starch, water (x 2, second coat with a small proportion of starch, with spatula)	pumice stone (between coats)			
Sully 1809-71 (recipe date 1855): 156	US/ UK					lead white, skimmed milk				
Cawse 1822: 9-11 <sup>762</sup>	UK				pumiced	calcined ground sheep's trotters, wheat flour (x 2, first layer rubbed in with pumice stone, second applied with brush)	sandpaper		calcined ground sheep's trotters, wheat flour, colour (x 1-2)	raw linseed oil or poppy oil
Smith 1825: 357-8 <sup>763</sup>	FR					calcined ground sheep's trotters, wheat flour (x 1, thin layer)	pumice		calcined ground sheep's trotters, wheat flour, base colour (x 1-2)	
Bouvier 1827: 577-80	FR			glued	pumiced	pipe clay, yellow bright ochre, red bright ochre, glue [starch or flour] (x 4, with large varnish brush)	pumice lightly			
Montabert 1829: 158	FR					soft glue, white (x 1)			oil rubbed in (x 1)	
Montabert 1829: 167-168	FR	absinth, garlic or sliced onion				parchment glue, chalk, little honey (x 1-2, applied thinly with a spatula or a brush)			decoction of black liquorice sugar	
Montabert 1829: 167-168	FR	absinth, garlic or sliced onion				parchment glue, lead white, little honey (x 1-2, applied thinly with a spatula or a brush)			decoction of black liquorice sugar	

<sup>762</sup> Cawse quotes Grandi 1806

<sup>763</sup> Smith repeats Grandi 1806

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>isolation layer</i>
Montabert 1829: 167-168	FR	absinth, garlic or sliced onion				parchment glue, pipe clay, little honey (x 1-2, applied thinly with a spatula or a brush)		decoction of black liquorice sugar		
Montabert 1829: 167-168	FR	absinth, garlic or sliced onion				parchment glue, chalk, lead white, pipe clay, little honey (x 1-2, applied thinly with a spatula or a brush)		decoction of black liquorice sugar		
Montabert 1829: 167-168	FR	absinth, garlic or sliced onion				wheat flour, powder of calcined bones, pumice powder (x 1)		decoction of black liquorice sugar		
Roberson 1831: last page	UK					linseed oil, India rubber [caoutchouc], white rosin, litharge, copperas				
Arsenne and Denis 1833: 335-7	FR					starch or beautiful flour, pipe clay, yellow-orange tone (x 3-4, large brush like a varnish brush)				
Bickes 1834: 133-4	GE				glue water, cooled to a gel (x 1, with spatula)	pumice stone	white chalk, glue water (x 8-10)	horsetail or pumice stone		
Sarsfield Taylor/ Merimee 1839: 220-221	UK					Ddstemper (best use weak size, oil, mucilage of linseed meal) (x 2)	pumiced	merely oil, become viscous by exposure to the air		
'P.07': 1842-8 (recipe date 1847): 7PP239L01	UK		pumiced as usual	very weak size	pumiced	whiting, lead white, umber, glue size, treacle, linseed oil (x 4, with a trowel)				
Dietrich 1871: 21-2	GE			rye flour (x 1-2)	pumice stone	slaked chalk, glue water, some honey (x until not a single hole can be seen)	sanded			

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>isolation layer</i>
Sully 1873: 024	US/ UK					lead white, skimmed milk (x 1)	pumice stone		lead white, skimmed milk, little vermilion (x 1)	
Sully 1873: 34-5	US/ UK					lead white, skimmed milk (x 3)	pumice stone		lead white, skimmed milk, little vermilion (x 1)	linseed oil <sup>764</sup>
Sully 1873: 34-5	US/ UK					lead white, skimmed milk (x 1)	pumice stone		lead white, skimmed milk, little vermilion (x 1)	
Grace 1881: 87-8 <sup>765</sup>	UK					flake white, well-beaten egg (stale is best), thin if needed with French white vinegar and water (x 1-2 approximately)				
<i>Technische Mitteilungen</i> nr. 25 (1886): 39	GE			Cologne glue or hareskin glue (x 1, canvas soaked in the warm glue)		Cologne glue or hare skin glue, slaked chalk, or equal parts of chalk and China clay, or just China clay (x 3-4, 1st layer with very little chalk, last layer with more glue added to smooth it. All layers applied with a brush, first layers dabbed on, last brushed on)	pumice stone, water	shellac or thin oil paint applied before painting on the ground		
<i>Technische Mitteilungen</i> nr. 25 (1886): 39	GE					thick leadwhite in oil, chalk, glue, clay, caoutchouc in benzine				
Vibert 1892: 186-8	UK	washed with benzine				zinc white, casein paste [made with casein or cheese, water, ammonia, glycerin] (x 1, with swallow-tail brush)	rubbed with glass paper	retouching varnish	zinc white, casein paste [made with casein or cheese, water, ammonia, glycerin] (x 2-3, with brush)	

<sup>764</sup> Only if a 'resisting ground' [as opposed to an absorbent ground] is wanted.

<sup>765</sup> Before painting, the whiteness of the ground is reduced with a thin wash of colour (yellow ochre and ivory black). Grace advises to change the tone of this wash according to the area of the painting. Because of the fact that this layer follows the design of the painting, it is considered to be part of the painting stage and not in the ground layer build-up. In the case of an oil-bound ground, this wash consists of oil paint thinned with 'benzoline' or turpentine. In the case of a distemper ground, it consists of tube oil colours thinned with benzoline, or a thin wash of watercolour paint. Grace 1881: 88.

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>isolation layer</i>
<i>Technische Mitteilungen</i> nr. 20 (1895): 1-2	GE					chalk ground		boiled linseed oil		
<i>Technische Mitteilungen</i> nr. 9 (1897): 2	GE			milk (canvas soaked in milk)		burnt chalk, water, beeswax, linseed oil, white cheese				

### 6d Aqueous or emulsion-bound first ground layers with an oil-bound ground layer on top

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>
Vasari 1550 (1568): 53	IT			soft glue (x 3-4)		flour paste with nut oil, lead white (x 1, with knife)		soft size (x 1-2)	'the priming'		
'Ms. Sloane 1990' 1623-44: 78/79	UK			size		white chalk, glue, honey (x 1)			ochre, oil, little minium to speed up drying (x 1)		burnt sheep's bones, little lead white to give body, massicot to speed up drying (x 2)
'Ms. Sloane 1990' 1623-44: 78/79	UK			size		white ground with glue, little honey (x 1-2, with brush)			[lead] white, little minium		
Pacheco 1649: 383-4 (translation Véliz 1986: 68)	SP			size from glover's scraps (brush)		same size, sifted gesso (x 2, with a knife)	pumice stone		primed (with a brush)		
Pacheco 1649: 383-4 (translation Véliz 1986: 68)	SP					glue size, siftes ashes (with brush and knife)	pumice stone		red earth, linseed oil		
Pacheco 1649: 383-4	SP			size from glover's scraps		same size, sifted gesso (x 2, with a knife)			lead white, red lead, charcoal black, linseed		

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>
(translation Véliz 1986: 68)			(with brush)					oil (with a brush)		
Salmon 1672: 141	UK	being made smooth			size, whiting ground (x 2-3)	scrape smooth		lead white, oyl (x 1)		
Orlandi 1719: 480	IT				soft glue from glove clippings, gesso (x 1, with spoon <sup>766</sup> )		polished with pumice stone, bathed in the aforementioned glue.	colour with a little earth, raw nut oil (x 1, with spoon or with brush)		
Smith 1756: 58	UK	rub smooth with sleekstone	glew, honey (x 1)		whiting, size (x 1)			white-lead, little black, linseed-oil (x 1)		
Sully 1809-71 (recipe date 1828): 046	US/ UK				hard yellow soap, water, lamp black, yellow ochre or whiting, strong drying oil (x 1)			coat of paint without the soap (x 1)		
Mérimée 1830: 244-245	FR			pumice stone	distemper (with very weak glue, little oil, much mucilage of linseed meal) (x 1-2)	pumice stone		very liquid layer in oil (x 1)		
Cawse 1840: 20-1; 26	UK				parchment clippings size, whitening, (tint) (x 2, spread with large palette knife when nearly cool) Plaster of Paris may be added	1st coat: well-surfaced pumice-stone, 2nd coat: hand, dipped in water		coloured drying oil (x 1)		
Hundertpfund 1847: 125-7	GE				flour, pipe clay <sup>767</sup> ('Haugenerde), water (x until no more holes are visible)			oil paint, lead white, turpentine oil (x 2, second layer without turpentine and applied thinly with badger	pumice stone (after first coat)	flour (sieve on top and beat off the superfluous flour) (applied while former layer is wet)

<sup>766</sup> The mention of a 'spoon' for ground application is puzzling. The Italian word employed in the original text is 'cucciara'.

<sup>767</sup> In the English 1849 translation Haugerde is translated as pipe clay. Hundertpfund 1849: 105-9

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>
								brush)		
Hundertpfund 1847: 127-30	GE				flour, pipe clay <sup>768</sup> (‘Haugerde’), water (x 3-4)			oil paint (x 1)		
Hundertpfund 1849: 105-9 <sup>769</sup>	UK				boiled flour, pipeclay, cold water, (x 3-4, until no more pores are visible)			oil colour of lead white and oil of turpentine (x 2, second without turpentine and applied with a badger brush)	pumice-stone (after first coat)	flour sifted over and superfluous dusted off (straight after application of leadwhite paint)
Knowlton 1879: 29-30	UK				glue, water, whiting, soap			lead white, spirits of turpentine (oil)		
Knowlton 1879: 30-1 <sup>770</sup>	UK				water, flour, pipe-clay (x 1)			lead white, oil of turpentine [oil] (x 2, second without turpentine and applied with badger brush)	scrape	flour, sifted over and dusted off (while former layer still wet)
Grace 1881: 87-8 <sup>771</sup>	UK				size, whiting			flake white, whiting/finely ground chalk, linseed-oil (diluted with spirits of turpentine if becomes thick by evaporation) (x 1-2, with large brush)		

<sup>768</sup> In the English 1849 translation ‘Haugerde’ is translated with pipe clay. Hundertpfund 1849: 105-9

<sup>769</sup> Translation of Hundertpfund 1847.

<sup>770</sup> Summary of Hundertpfund 1847 or 1849.

<sup>771</sup> Before painting, the whiteness of the ground is reduced with a thin wash of colour (yellow ochre and ivory black). Grace advises to change the tone of this wash according to the area of the painting. Because of the fact that this layer follows the design of the painting, it is considered to be part of the painting stage and not in the ground layer build-up. In the case of an oil-bound ground, this wash consists of oil paint thinned with ‘benzoline’ or turpentine. In the case of a distemper ground, it consists of tube oil colours thinned with benzoline, or a thin wash of watercolour paint. Grace 1881: 88.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>smoothing</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>third ground layer</i>
Church 1890: 26	UK		glue (x 1)		whitening, size (x 1)			lead white, linseed oil (x 1)		
Church 1890: 26	UK		glue (x 1)		whitening, size (x 1)			lead white, linseed oil (x 1)		zinc white, drying oil (x 1, thin)
Church 1890: 26	UK		glue (x 1)		whitening, size (x 1)			lead white, linseed oil (x 1)		zinc white, dusted on
Vibert 1892: 186-8	UK	washed with benzine			zinc white, casein paste [made with casein or cheese, water, ammonia, glycerin] (x 1)	rubbed with glass paper	retouching varnish	zinc white, casein paste [made with casein or cheese, water, ammonia, glycerin] (x 2-3)		

#### 6e Nineteenth century innovations regarding binding media for grounds for canvas preparation (selected from table 6a to 6d)

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
Transactions 1806: 85-9	UK			calcined and crushed bones of sheep's trotters, wheaten flour (x 2)	first coat pumiced		calcined and crushed bones of sheep's trotters, wheaten flour, pigment (x 1)			raw linseed or poppy oil before painting
Sully: 1809-1871: 019	US/ UK			glue, water, whiting, oil (x 1 on damp canvas, applied while warm with a brush)	pumice stone may be used					
Delonprey in Sully 1809-71 (recipe date 1826): 036	US/ UK			paste, lead white, oil, litharge (x 1, with palette knife)						
Sully 1809-71 (recipe date 1828): 046	US/ UK			hard yellow soap, water, lamp black, yellow ochre or whiting, drying oil (x 1)			coat of paint without the soap (x 1)			

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
Sully 1809-71: 156	US/ UK			lead white, skimmed milk						
Cawse 1822: 9-11 <sup>772</sup>	UK			calcined ground sheep's trotters, wheat flour (x 2, first layer rubbed in with pumice stone, second applied with brush)	sandpaper		calcined ground sheep's trotters, wheat flour, colour (x 1-2)		raw linseed oil or poppy oil	
Smith 1825: 357-8 <sup>773</sup>	FR			calcined bones of sheep's trotters, wheat flour (x 1, thin layer)	pumice		calcined bones of sheep's trotters, wheat flour, base colour (x 1-2)			
Montabert 1829: 163	FR			copal, elemi resin, spike oil, caoutchouc, copaiva balsam, white or ochre (x 1, with palette knife)						
Montabert 1829: 167-168	FR	absinth, garlic or slice of onion		parchment glue, chalk, little honey			decoction of black licquorice sugar			
Montabert 1829: 167-168	FR	absinth, garlic or slice of onion		parchment glue, lead white, little honey			decoction of black licquorice sugar			
Montabert 1829: 167-168	FR	absinth, garlic or slice of onion		parchment glue, pipe clay, little honey			decoction of black licquorice sugar			
Montabert 1829: 167-168	FR	absinth, garlic or slice of onion		parchment glue, chalk, lead white, pipe clay, little honey			decoction of black licquorice sugar			

<sup>772</sup> Cawse quotes Grandi 1806

<sup>773</sup> Smith repeats Grandi 1806

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
Montabert 1829: 167-168	FR	absinth, garlic or slice of onion			wheat flour, powder of burnt bones, pumice powder		decoction of black licquorice sugar				
Mérimée 1830: 244-245	FR		pumice stone		distemper (with very weak glue, little oil, much mucilage of linseed meal) (x 1-2)	pumice stone		very liquid layer in oil (x 1)			
Roberson 1831: last page	UK				linseed oil, india rubber [caoutchouc], white rosin, litharge, copperas						
Sarsfield Taylor/ Merimee 1839: 220-221	UK				distemper (best use weak size, oil, mucilage of linseed meal) (x 2)	pumiced	merely oil, become viscous by exposure to the air				
Hampel 1846: 22-5 <sup>774</sup>	GE	wash with sponge with potash and rinse with tepid water		rye flour, water (x 1, with wooden spatula, which has first been soaked in linseed oil for 24 hours to become slippery/smooth ('Geschmeidig'))	red bole, or light English red, Inseed oil varnish (x 1 or 2 if not smooth)			lead white, little ochre and black or lead white and dark ochre (x 2)	wash with sponge with potash, rinse with tepid water		finely ground pumice stone, linseed oil varnish, lead white (x 1)

<sup>774</sup> This recipe is for 'alla prima' painting. If this technique is not employed, the final pumice powder containing layer is omitted.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
Hundertpfund 1847: 125-7	GE			flour, pipe clay <sup>775</sup> ('Haugerde'), water (x until no more pores are visible)			oil paint, lead white, a little turpentine oil (x 2. second layer without turpentine and applied thinly with badger brush)	pumice stone (after first application)		flour (sieved over and superfluous flour beaten off) (applied while former layer is wet)
'P.07': 1847: 7PP239L01	UK	pumiced as usual	very weak size	whiting, lead white, umber, glue size, treacle, linseed oil (x 4, with trowel)						
Hundertpfund 1849: 105-9 <sup>776</sup>	UK			flour, cold water, pipeclay (x 3-4, until no more pores are visible)			oil colour of lead white and oil of turpentine (x 2, second without turpentine and applied with a badger brush)	pumice-stone (after first layer)		flour sifted over and superfluous dusted off (straight after application of leadwhite paint)
'P.09': 1854: 9PP015	UK		sized	Ox Zinc, Meguilp (9PP014L16?: bees-wax, turps, dble mastic vsh) (x 1, with trowel)						
'P.09': 1854: 9PP017L01	UK			Ox Zinc, Meguilp (9PP014L16?: bees-wax, turps, dble mastic vsh) (x 1, with trowel)						

<sup>775</sup> In the English 1849 translation Haugerde is translated as pipeclay. Hundertpfund 1849: 105-9

<sup>776</sup> Translation of Hundertpfund 1847.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
Hopman 1856: 135-6	NL			boiled oil, lead white, washed chalk, yellow wax, turpentine (x 2)	rubbed smooth with pumice stone		yellow ochre, white, black (x 2, spreading first layer with badger brush, applying second layer with dabbing movement)			
Hopman 1856: 135-6	NL			boiled oil, lead white, washed chalk, yellow wax, turpentine, crushed fine and soaked pipe clay (x 2)	rubbed smooth with pumice stone		yellow ochre, white, black (x 2, spreading first layer with badger brush, applying second layer with dabbing movement)			
'P.04': 1871:P4P140L0 1, (P4P141L13, P4P142L01)	UK			1st color oil, raw linseed oil, whiting, patent dryers, keep 6-12 months before applying			putty, lead white, patent dryers			lead white, putty
Sully 1873: 024	US/ UK			lead white, skimmed milk (x 1)	pumice stone		lead white, skimmed milk, little vermilion (x 1)			
Sully 1873: 034-5	US/ UK			lead white, skimmed milk (x 3)	pumice stone		lead white, skimmed milk, little vermilion (x 1)		linseed oil <sup>777</sup>	

<sup>777</sup> Only if a 'resisting ground' [as opposed to an absorbent ground] is wanted.

<i>source</i>	<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
Sully 1873: 034-5	US/UK			lead white, skimmed milk (x 1)	pumice stone		lead white, skimmed milk, little vermilion (x 1)			
Knowlton 1879: 29-30	UK			glue, water, whiting, soap			lead white, spirits of turpentine (oil)			
Knowlton 1879: 30-1 <sup>778</sup>	UK			water, flour, pipe-clay (x 1)			lead white, oil of turpentine [oil] (x 2, second without turpentine and applied with badger brush)	scrape		flour, sifted over and dusted off (while former layer still wet)
Spon 1879: 113	UK		0	lead white, whiting, raw oil, boiled oil (x 2, with brush, palette knife or trowel)	rub with light piece of pumice-stone and water		white-lead, whiting, burnt ochre, small quantity of pumice stone, gold size, raw oil, turpentine (x 1-3)	repeat rubbing with pumice-stone and water		
Grace 1881: 87-8 <sup>779</sup>	UK			flake white, well-beaten egg (stale is best), thin if needed with French white vinegar and water (x 1-2 approx.)						

<sup>778</sup> Summary of Hundertpfund 1847 or 1849.

<sup>779</sup> Before painting, the whiteness of the ground is reduced with a thin wash of colour (yellow ochre and ivory black). Grace advises to change the tone of this wash according to the area of the painting. Because of the fact that this layer follows the design of the painting, it is considered to be part of the painting stage and not in the ground layer build-up. In the case of an oil-bound ground, this wash consists of oil paint thinned with 'benzoline' or turpentine. In the case of a distemper ground, it consists of tube oil colours thinned with benzoline, or a thin wash of watercolour paint. Grace 1881: 88.

<i>source</i>		<i>support repair</i>	<i>smoothing</i>	<i>sizing layer</i>	<i>first ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>second ground layer</i>	<i>smoothing</i>	<i>isolation layer</i>	<i>third ground layer</i>
<i>Technische Mitteilungen</i> nr. 25 (1886): 39	GE				Thick leadwhite in oil, chalk, glue, clay, caoutchouc in benzine						
Church 1890: 26	UK			glue (x 1)	whitening, size (x 1)			lead white, linseed oil (x 1)			zinc white, drying oil (x 1, thin)
Church 1890: 26	UK			glue (x 1)	whitening, size (x 1)			lead white, linseed oil (x 1)			zinc white, dusted on
Vibert 1892: 186-8	UK	washed with benzine			zinc white, casein paste [made with casein or cheese, water, ammonia, glycerin] (x 1, with swallow-tail brush)	rubbed with glass paper	retouching varnish	zinc white, casein paste [made with casein or cheese, water, ammonia, glycerin] (x 2-3, with brush)			
<i>Technische Mitteilungen</i> nr. 9 (1897): 2	GE			milk (canvas soaked in milk)	burned chalk, beeswax, linseed oil, white cheese						