**Green Building Encyclopaedia • Green Building Specification**

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W21 PROJECTION

To be read with Preliminaries/General Conditions A10-A55, A90 and Appendix W21

**GENERAL**

11 RELATED WORK SECTIONS Refer to the following sections for additional requirements relating to work section W21:

A90 PERFORMANCE SPECIFICATION

M60 PAINTING/CLEAR FINISHING

P20 UNFRAMED ISOLATED TRIMS/SKIRTINGS/SUNDRY ITEMS

W12 PUBLIC ADDRESS/CONFERENCE AUDIO FACILITIES

W20 RADIO/TV/CCTV

Z20 FIXINGS/ADHESIVES

11A RELATED APPENDIX Refer to the following sections for additional requirements relating to work section W21:

W21 SWA A+I APPLICATORS AND INSTALLERS & EQUIPMENTS

W21 SWA M+S MANUFACTURER & SUPPLIERS

W21 SWA CON CONSULTANTS

SPA DofC DECLARATION OF CONFORMITY

SPA SoMR STATEMENT OF MANUFACTURER’S REVIEW

12A SCOPE OF WORK The Works consists of:

Completing the design, manufacture, delivery and application/installation of Projection equipment, and projection screens, together with all ancillary equipment, materials and components necessary to achieve the required appearance and performance and provide an installation fit for its intended purpose, all in accordance with the design-intent Drawings and this Specification.

13 SITE SURVEY Visit the site and carry out a survey of all relevant construction and conditions to enable commencement of the Works to meet the Programme.

**DESIGN AND PERFORMANCE REQUIREMENTS**

20 DESIGN REQUIREMENTS

Co-ordinate the design with the Works of other trades and actual site environmental conditions, the surrounding building fabric, to ensure the correct selection of equipment, panels, priming and coatings.

Carry out appropriate design and calculations, See W21/95.

21 PERFORMANCE

Ensure the Works and adjacent materials with routine maintenance, can retain their appearance and performance throughout the design life without failure resulting from defects in design, specification, materials or workmanship.

Failure is defined as:

Imperfections in the coated surfaces through the boards, sheets, fabrics or coatings

Vibrations in the projector or screen supports resulting in shaking image on screen

Inadequate projected light level in all natural day lighting levels, sunlight and night time artificial lighting

Inadequate projected image quality and contrast in all lighting levels and conditions, day and night

Excessive noise or heat generated by projector.

23 COMPATIBILITY Evaluate coating compatibility with substrates, backing materials and adjacent surfaces and coatings, advise the CA if materials are incompatible and seek further instruction to meet the programme.

**MECHANICAL RESISTANCE AND STABILITY**

30 INTEGRITY

Ensure fixings and fastenings resist all dead and live loads.

Ensure fixings and fastening and their adjustability can accommodate without failure or damage all drying shrinkage, creep, deflections, thermal and moisture movements.

**SAFETY IN CASE OF FIRE**

46 TOXICITY Ensure the coatings cannot give off toxic fumes in the event of fire.

**HYGIENE, HEALTH AND THE ENVIRONMENT**

50 CDM REGULATIONS refer to PRELIMINARIES A34/150 and PERFORMANCE SPECIFICATION A90/145A.

51 METHOD STATEMENTS CDM:

Attention is drawn to the potential risks of danger to site operatives, other visitors and to the building.

The list included is not exhaustive and shall be added to by the Contractor with their specialist knowledge brought to bear on them.

Provide a method statement showing how each issue will be addressed and resolved:

Poor posture: excessive stress and strain causing injury to muscles and tendons, particularly where coating occurs insitu and application involves bending, twisting or other difficult postures.

Sharp edges: cuts and abrasions to the skin.

Skin Hazards: dermatitis, burns and similar conditions caused by contact with coatings, priming and cleaning materials.

Inhalation or ingestion of fumes or materials, due to eating, drinking, or smoking, splashes in the location of coating activities.

Risk of ingestion of coatings ingredients due to the unsafe practise.

54 COSHH DATA SHEETS:

Provide a copy of the manufacturer’s COSHH data sheet for all materials in cleaning, preparation, priming and coating application to the CA for review.

Take appropriate precautions to avoid hazards to health.

56 COSHH DATA SHEET AND CDM RISK ASSESSMENT

Carryout a risk assessment of the use of the specified sealants in the Works based on the task involved and the COSHH datasheets,

Include comment on the long term maintenance associated with an occupied building.

Report to the CA on the findings and if necessary propose alternative coatings, primers and tool cleaners.

58 ENVIRONMENTAL IMPACT METHOD STATEMENT

Provide a Method Statement addressing CDM, Risk Assessments, Hazardous Waste and Waste disposal.

**PROTECTION AGAINST NOISE**

78 ACOUSTIC PERFORMANCE: PROJECTORS: Provide evidence of performance by test certificate or assessment based on tests by an approved testing authority.

**ENERGY, ECONOMY & HEAT RETENTION**

80 AIR-TIGHTNESS

Ensure the building envelope vapour barriers and airtightness layers are not punctured by fasteners, affecting airtightness to minimise air and heat energy losses.

Ensure leaks detected in air tightness testing that are not fixed by correcting construction details, are completed with sealant.

Ensure the sealing occurs at building fabric and not at linings and finishes.

85 MOISTURE RESISTANCE

Ensure the Works will withstand, during construction and in the finished building, without loss of appearance and performance, due to conditions expected from:

Levels of relative humidity,

Surface or interstitial condensation on or within any of its components or assemblies,

**OTHER REQUIREMENTS**

**SUBMITTALS**

91 DRAWINGS

Submit drawings of the installations within the Works.

Fully dimension and annotate the drawings,

Show at a suitable scale the Works where applicable, in plan, section and elevation, include full size details noting all maximum and minimum, dimensions,

Show: boards, sheets, fabrics and coatings, fixings and fasteners.

94 STATEMENT OF MANUFACTURER’S REVIEW

Submit a signed Statement of Manufacturer’s Review (See Appendix APP SoMR):

Verifying that the manufacturer’s Technical Services Department of all materials or products proposed has reviewed and approved the proposal as being suitable for the requirements of this project.

Confirming satisfactory laboratory testing of background materials, primers and coatings for compatibility, and project review by the Company’s Technical Services Department,

95 TECHNICAL CALCULATIONS

Submit calculations verifying conformance of the projection and screen coating systems with the performance specified:

Advise the CA immediately if the spaces shown on Drawings are of inadequate size or spacing to meet the requirements of projection.

96 DECLARATION OF CONFORMITY

Ensure that all relevant Specifications are submitted to specialist sub-contractors, manufacturers and suppliers and/or standards to be achieved are stated in purchase orders.

Indicate that a declaration of conformity to BS EN ISO/IEC 17050 will be required with the deliveries, see Appendix APP DofC.

Obtain evidence of currency of licensee status from the issuing agency, for commodities carrying product quality marks. E.g. BSI Kitemark or SGS Yarsley Testguard,

Collect together (and/or obtain) and provide all declaration of conformity or other evidence, to the CA for review.

97 INSTALLATION AND APPLICATION REPLACEMENT/MAINTENANCE METHOD STATEMENT

Provide a method statement on the process of projector and screen and coating maintenance at the end of the useful life of the installations.

Hazardous waste removal procedures and locations: removed materials, and new materials and packaging Submit for review by the CA before commencement.

Include in the Operation and Maintenance Manuals.

98 OPERATION & MAINTENANCE MANUAL Provide guidance on effective maintenance programme for the installations and applications to minimise the effect on appearance and performance.

**TYPES OF PROJECTION INSTALLATIONS**

100 FRONT PROJECTION BOARD INSTALLATION:

Location: [\_\_\_\_\_\_\_\_],

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Projector: to W21/110

Background: [\_\_\_\_\_\_\_\_],

Fixings and Fastenings: [\_\_\_\_\_\_\_\_], See W21/115

Anti-vibration mounting: to W21/111

Power supply: \_\_\_\_\_\_,

Ambient natural Light: [Bright/Medium/Subdued/Dark]

Blackout capability: [\_\_\_\_\_\_\_\_],

Background wall colour: (at design stage): [\_\_\_\_\_\_\_\_],

UV filtration: [in glazing]

Background Ambient artificial lighting conditions: \_\_\_\_\_\_

Screen:

Projection distance: \_\_\_\_\_\_\_\_ mm.

Screen aspect ratio: [4:3, 16:9],

Projection Area: \_\_\_ width x \_\_\_\_\_height mm.

Diagonal: \_\_\_\_\_\_ m.

Background: shallow curved wall, drylining, plaster skim

Front projection surface: [

Drylining system forming flat surface over area of screen See W21/130

Front projection board: See W21/131/132/133].

Preparation: Priming to [W21/210/410],

Front projection Screen:

High contrast coating to W21/160.

Edge strip:

 Surface:

 Tape: to W21/170

 Painted to W21/175,

 Projecting frame: to W21/171.

 Painted to W21/175,

101 FRONT PROJECTION FABRIC INSTALLATION:

Location: Education Room,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Projector: to W21/110

Background: Pitched roof soffit rafters

Fixings and Fastenings: to accommodate pitched roof and horizontal projector See W21/115

Anti-vibration mounting: to W21/111

Power supply: \_\_\_\_\_\_,

Ambient natural Light: Bright/Medium/Subdued/Dark

No blackout capability,

North-west: glass façade with large overhang

South-east: high level glazed clerestory windows

Background wall colour: (at design stage): I

UV filtration: in glazing

Background Ambient artificial lighting conditions: \_\_\_\_\_\_

Screen:

Projection distance: \_\_\_\_\_\_\_\_ mm.

Screen aspect ratio: 4:3, 16:9,

Projection Area: \_\_\_ width x \_\_\_\_\_height mm.,

Diagonal: \_\_\_\_\_\_ m.

Background: shallow curved wall, drylining, plaster skim

Front projection surface: Front projection fabric: See W21/150,

Preparation: Priming not required,

Front projection Screen: High contrast coating to W21/160.

Edge strip:

 Surface:

 Tape: to W21/170

 Painted to W21/175,

 Projecting frame: to W21/171.

 Painted to W21/175,

105 BACK PROJECTION CLEAR SHEET INSTALLATION:

Location: \_\_\_\_\_,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Background: \_\_\_\_\_\_

Projector: to W21/110

Fixings and Fastenings: to accommodate pitched roof and horizontal projector See W21/115.

Anti-vibration mounting: to W21/111.

Power supply: \_\_\_\_\_\_,

Ambient natural Light: Bright/Medium/Subdued/Dark

No blackout capability,

North-west: glass façade with large overhang

South-east: high level glazed clerestory windows

Background wall colour: (at design stage): I

UV filtration: in glazing

Background Ambient artificial lighting conditions: \_\_\_\_\_\_

Screen:

Back projection surface: Back projection Sheet: See W21/140.

Preparation: Priming to W21/310,

Back projection Coating:

High contrast coating to W21/161.

Application: See W21/310 – 365.

Glazing frame: [\_\_\_\_\_\_\_\_],

Edge strip:

 None,

 Surface:

 Tape: to W21/170

 Painted to W21/175,

 Projecting frame: to W21/171.

 Painted to W21/175,

Projection distance: \_\_\_\_\_\_\_\_ mm.

Screen aspect ratio: 4:3/16:9,

Projection Area: \_\_\_ width x \_\_\_\_\_height mm.

Diagonal: \_\_\_\_\_\_ m.

Supports, fixings and fastenings:

Floor support system: See W21/127,

Ceiling Suspension system: See W21/128,

Weighted hanging kit: See W21/129.

**EQUIPMENT**

110 DATA PROJECTOR:

Brightness: [<2000 (Business), 6,000 (Public display)] lumens

Image resolution: [HD/\_\_\_]

Type: [LCD/DLP/LcoS]

Contrast ratio: 1:\_\_\_\_\_\_

Processing: single-chip, 3-chip (important if choosing DLP).

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Make: \_\_\_\_

Model: \_\_\_\_\_

Mounting: [table top/ceiling]

Application: [Home viewing/public presentation]
Preferences: [Film like/TV like]
Projection distance: \_\_\_\_\_\_\_\_ mm.

Screen aspect ratio: [4:3, 16:9],

Projection Area: \_\_\_ width x \_\_\_\_\_height mm.

Diagonal: \_\_\_\_\_\_ m.

111 ANTI VIBRATION MOUNTINGS:

Function: rapidly convert all mechanical, audible and electronic vibration frequencies to heat

Set of 5 No.: 4 No. Pink, 1 No. Blue,

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052 Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Gooeys

Application:

Pink: at extreme corners between flat base of equipment and supporting platform, if shape permits not below legs

Blue: Below motors or transformers

115 PROJECTOR SUSPENSION:

Fixings and Fastenings: to accommodate [pitched roof rafter] and horizontal projector, and hide anti-vibration mounting

Materials: mild steel for rigidity

Finish: [\_\_\_\_\_\_\_\_],

Colour: [Black-out, mimic or contrast with background],

Gloss level: Matt

Anti-vibration mounting: to W21/111

116 PROJECTOR TRESTLE:

Materials: mild steel for rigidity

Finish: [\_\_\_\_\_\_\_\_],

Colour: [\_\_\_\_\_\_\_\_],

Gloss level: [\_\_\_\_\_\_\_\_],

Feet/Castors: [\_\_\_\_\_\_\_\_],

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Anti-vibration mounting: to W21/111

120 MOBILE SCREEN:

Location: \_\_\_\_\_\_,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Base: [\_\_\_\_\_\_\_\_],

Type: [\_\_\_\_\_\_\_\_],

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Suppliers: See W21/209D

121 WALL TRACK MOUNTED SCREEN:

Location: \_\_\_\_\_\_,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Background: [\_\_\_\_\_\_\_\_],

Preparation: [\_\_\_\_\_\_\_\_],

Type: [\_\_\_\_\_\_\_\_],

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Suppliers: See W21/209D

122 LOOSE FLOOR MOUNTED SCREEN:

Location: \_\_\_\_\_\_,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Base: [\_\_\_\_\_\_\_\_],

Type: [\_\_\_\_\_\_\_\_],

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Suppliers: See W21/209D

127 FLOOR TO CEILING SUSPENSION SYSTEM FOR BACK PROJECTION TRANSPARENT SCREEN:

Location: \_\_\_\_\_\_,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Base: [\_\_\_\_\_\_\_\_],

Soffit: [\_\_\_\_\_\_\_\_],

Preparation: [\_\_\_\_\_\_\_\_],

Anti-vibration mounting: to W21/111

Transparent screen: See W21/140

Back projection coating: See W21/161,

Application: See W21/310-370,

Fixings and Fastenings: [\_\_\_\_\_\_\_\_],

Suspension system: \_\_\_\_\_\_

Materials: [\_\_\_\_\_\_\_\_],

Finish: [\_\_\_\_\_\_\_\_],

Colour: [\_\_\_\_\_\_\_\_],

Gloss level: [\_\_\_\_\_\_\_\_],

Manufacturer: \_\_\_\_\_\_\_

Product Reference: [\_\_\_\_\_\_\_\_],

128 WEIGHTED HANGING KIT FOR BACK PROJECTION TRANSPARENT SCREEN

Location: \_\_\_\_\_\_,

Reference Drawing(s): [\_\_\_\_\_\_\_\_],

Background: [\_\_\_\_\_\_\_\_],

Preparation: [\_\_\_\_\_\_\_\_],

Anti-vibration mounting: to W21/111

Transparent screen: See W21/140

Back projection coating: See W21/161,

Application: See W21/310-370,

Fixings and Fastenings: [\_\_\_\_\_\_\_\_],

Hanging kit: \_\_\_\_\_\_

Materials: [\_\_\_\_\_\_\_\_],

Finish: [\_\_\_\_\_\_\_\_],

Colour: [\_\_\_\_\_\_\_\_],

Gloss level: [\_\_\_\_\_\_\_\_],

Manufacturer: \_\_\_\_\_\_\_

Product Reference: [\_\_\_\_\_\_\_\_],

**MATERIALS**

130 FRONT PROJECTION BOARD FOR PAINT SYSTEM:

Type: flat smooth paintable surface

[Porous surfaces

Papered Gypsum Plasterboard

Fibre reinforced Gypsum board

Others subject to Goo Systems approval

Wood based:

MDF

Particleboard

Plywood

Others subject to Goo Systems approval]

Manufacturer and Product Reference: Contractor to propose for CA’s review.

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Supports: to ensure a flat, firm surface.

Fixings and fastenings: \_\_\_\_\_\_

Preparation:

HPLV Sprayed: See W21/210 – 270

Rolled: See W21/410 – 480.

131 FRONT PROJECTION BOARD:

Materials: slightly expanded, closed-cell rigid plastic sheet with particularly fine and homogeneous cell structure

Surface: silky matt,

Properties: lightest sheet material of its kind, high inherent rigidity and remains stable after intensive processing.

Properties and Characteristics:

Thickness and colours: 1-4 mm. 5-19 mm.

Apparent density DIN 53479 700 kg/m³ 500 kg/m³

Tensile strength DIN 53455 16 Mpa 10 Mpa

Elongation at break DIN 53455 34 % 30 %

E-modulus

in tension DIN 53457 860 Mpa 500 Mpa

in flexure DIN 53457 1300 Mpa 750 Mpa

Flexural strength DIN 53452 28 Mpa 20 Mpa

Impact strength DIN 53453 15 kJ/m² 15 kJ/m²

Surface hardness DIN 53505 >50 Shore-D >50 Shore-D

Vicat softening temperature DIN 53460 Method A 80 °C 78 °C

Coefficient of linear expansion DIN 53461 0.056 mm/(mK) 0.066 mm/(mK)

Thermal conductivity DIN 52612 0.081 W/mK 0.059 W/mK

Water absorption DIN 53495 23°C – 24h below 1% below 1%

Flammability Switzerland VKF V.3 V.3

 Germany DIN 4102 B1 B1

 France NFP 92-501 M1 M1

Surface Spread of flame UK BS 476 Part 7 Class 1 Class 1

 International UL 94 V-0 / 5V V-0 / 5V

Weight 500 kg/m3 500 kg/m3

Manufacturer: 3A Composites GmbH, Alusingenplatz 1, 78224 Singen, Germany.

T 0049 7731 941 29 89 F 0049 7731 941 21 05

E display.eu@3AComposites.com W [www.forex.eu](http://www.forex.eu)

Product Reference: FOREX®-CLASSIC

W <http://www.display.3acomposites.com/en/products/forex/forexreg-classic.html>

Literature:

W <http://www.display.3acomposites.com/en/downloads/forex.html>

UK Agent: NexNix Ltd. Middle Barn, Whitestone Farm, Main Road, Birdham, Nr. Chichester, West Sussex, PO20 7HU

T 08452 60 30 90 Intl: 0044 1243 512634

**E** sales@nexnix.co.uk **W** [www.nexnix.co.uk](http://www.nexnix.co.uk)

NexNix Ltd. Seaglass, 15 Coney Six, East Wittering, West Sussex, PO20 8DL

T 08452 60 30 90 Intl: 0044 1243 512634

**E** sales@nexnix.co.uk **W** [www.nexnix.co.uk](http://www.nexnix.co.uk)

UK On line shop:

W [www.goosystems.co.uk](http://www.goosystems.co.uk)

Thickness: 5 mm.

Colour: White,

Format: 16x9, 4x3

Diagonal: 55”, 69”, 83” 90”

W x H: 48 x 27”, 60 x 34”, 72 x 41” 72 x 54”

Preparation: none required,

Ready to be with Screen Goo & Painted, framed or Flok’d edges.

HPLV Sprayed: See W21/210 – 270

Rolled: See W21/410 – 480.

132 FRONT PROJECTION BOARD FOR PAINT SYSTEM:

Manufacturer: 3A Composites GmbH, Alusingenplatz 1, 78224 Singen, Germany.

T 0049 7731 941 29 89 F 0049 7731 941 21 05

E display.eu@3AComposites.com W [www.3AComposites.com](http://www.3AComposites.com)

Product Reference: Sintra Bright White graphic display board

Materials: Durable, lightweight, hard and rigid expanded PVC,

Characteristics: floppy (needs support to ensure flat viewing surface),

Surface: For truer colour reproduction.

Colour: Bright White

Thickness: 6 mm.

Sheet size: 4 x 8 feet to 2000 mm. x 10 feet.

Fabrication:

easy to fabricate with wood or foam board techniques without special tools;

heat formed and laminated

Cuts cleanly, creating smooth edges;

Framing: [\_\_\_\_\_\_\_\_],

Fixing and fastenings: [\_\_\_\_\_\_\_\_],

Preparation: requires no priming prior to being “Goo’ed”.

Ready to be coated with Screen Goo & Painted, framed or Flok’d edges.

HPLV Sprayed: See W21/210 – 270

Rolled: See W21/410 – 480.

133 FRONT PROJECTION BOARD FOR PAINT SYSTEM:

Manufacturer: 3A Composites GmbH, Alusingenplatz 1, 78224 Singen, Germany.

T 0049 7731 941 29 89 F 0049 7731 941 21 05

E display.eu@3AComposites.com W [www.3AComposites.com](http://www.3AComposites.com)

Product Reference: Gatorfoam

W <http://www.display.3acomposites.com/en/products/gatorfoam/characteristics.html>

Materials: extruded polystyrene foam board bonded between two layers of wood-fiber veneer.

Wood fibre veneer:

Manufacturer: 3A Composites GmbH, Alusingenplatz 1, 78224 Singen, Germany.

T 0049 7731 941 29 89 F 0049 7731 941 21 05

E display.eu@3AComposites.com W [www.3AComposites.com](http://www.3AComposites.com)

Product Reference: Luxcell® 112-02

W <http://www.display.3acomposites.com/en/products/gatorfoam/characteristics.html>

W <http://www.luxcell.com/product_selector.html>

Properties

Colour: White

For use with 0.030 0.050 HPL

Thickness: 0.26” (+/- 002”)

Tensile: 132 MD / 77 CD (+/- 10% lbs/linear inch)

Density: 40 +/- 10 % (lbs/ft2)

Dimensional Change: 1% MD/CD

Internal Bond: 90 lbs/in2 (+/- 10%)

Weight per MSF 97.0 +/- 8.0 (in lbs):

Applications: Hot and Cold

Recommended: in 3-ply construction hot/cold press

Stock Sheet sizes: 4’ or 5’ x 8’, 10 or 12’

Type: heavy-duty graphic arts board.

Required Colour: Bright white face and white foam core

Thickness: 12.7 mm. (1/2”)

Characteristics: lightweight, rigid (self supporting) prone to denting in high traffic areas

Preparation: requires no priming prior to being “Goo’ed”.

Ready to be with Screen Goo & Painted, framed or Flocked edges.

HPLV Sprayed: See W21/210 – 270

Rolled: See W21/410 – 480.

140 BACK PROJECTION TRANSPARENT SCREEN FOR PAINT SYSTEM:

Materials:

Glass

Acrylic plastic,

BS 6206 Class A Impact performance,

Thickness: \_ mm.

Colour: Clear, transparent,

Surface Texture: float glass no patterns,

Glass Edge Treatment: Cut square, arrised and polished,

Optical Properties: \_\_\_\_\_\_\_.

Manufacturer:

Product Reference: \_\_\_\_\_\_\_

Format: 16x9, 4x3

Diagonal: 55”, 69”, 83” 90”

W x H: 48 x 27”, 60 x 34”, 72 x 41” 72 x 54”

Preparation: \_\_\_\_\_\_\_,

Ready to be coated with Screen Goo: HPLV Sprayed to W21/310 – 370.

Frame: \_\_\_\_\_\_

Supports, fixings and fastenings:

Floor to Ceiling Suspension system: See W21/127

Weighted hanging kit: See W21/128

145 STRETCHER FRAMING TO FABRIC FRONT PROJECTION SCREEN:

Wood based:

Softwood

MDF

Particleboard

Plywood

FSC Certified timber with FSC Chain of Custody See Work section Z10 and Appendix APP FSC

Sections: sufficient to resist, distortion and deflection forces when stretching fabric taut over frame.

Manufacturer and Product Reference: Contractor to propose for CA’s review.

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Framing and Supports: to ensure a flat, firm surface.

Fixings and fastenings: \_\_\_\_\_\_

Fabric: See W21/150,

Coating: See W21/510 – 540,

Non-reflective Frame: See W21/\_\_\_\_\_

150 FRONT PROJECTION FABRIC FOR PAINT SYSTEM:

Manufacturer and Product Reference: Contractor to propose for CA’s review.

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Manufacturer: Dazian, East Coast, 18 Central Boulevard, South Hackensack, New Jersey 07606 USA

T 00 877-232-9426 (9:00 am-5:00 pm EST) F 00 201-641-2728 or 00 201-549-1055

W <http://www.dazian.com>

Contact: <http://www.dazian.com/contact-us.aspx>

Product Reference: **3 Pass Blackout Foam Lining 54”**

Blackout fabric comprised of 2 fabric layers with a heavy foam sandwich, and a soft suede finish.

Used as lining or shade to protect from sunlight and moisture, or to block out light.

Width: 54 Inches

Fabric Content 70% Polyester / 30% Cotton

Weight (Lin) \_\_ Ounces

Weight (Sq) \_\_ Ounces

Fire Spec. **FR –** Flame Resistant, Meets NFPA 701 Small Scale

Fire Rating NFPA 701 Small Scale

Care Instructions Wipe clean with commercial cleansers or soap and water. Test spot first.

Piece Size 60.00 Yards Approx.

**Available Colours:** Ivory/Beige/White

Roll size: It is sold to length

Stretcher Framing: use with a stretcher frame to make a lightweight, portable screen.

Preparation: No priming or special preparation is required.

Application:

Rolled applications are not recommended for blackout cloth.

Spraying will give optimal results with this substrate.

Spraying: See W21/510-550,

Framing: to W21/560/565/570.

160 FRONT PROJECTION SCREEN HIGH CONTRAST COATINGS:

Screen Paint: water-based, acrylic-emulsion,

Viscosity (poise) range: 200 -675

Function: to accurately reflect and disperse the complex coloured light patterns produced by video projectors.

Dispersion: proprietary durable premium acrylic dispersion,

Pigments:

pigments accurately reflect the full spectrum of colour produced by video projectors,

pigment treatment techniques maximize the reflective properties of the pigments.

Performance characteristics:

very low light absorption,

high reflectivity

Minimum light loss to ensure colour fidelity,

high concentrations of pigment.

Colour accuracy

Wide viewing angles

High colour contrast

A sense of image depth, or feeling of looking into the picture

Application consists of two different products/stages.

Base coats: reflective,

Top coats: diffusive, colour correct topcoat

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Screen Goo

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (USA) disclosure list ingredients: Propylene Glycol, Texanol

UK Agent: NexNix Ltd. Middle Barn, Whitestone Farm, Main Road, Birdham, Nr. Chichester, West Sussex, PO20 7HU

T 08452 60 30 90 Intl: 0044 1243 512634

**E** sales@nexnix.co.uk **W** [www.nexnix.co.uk](http://www.nexnix.co.uk)

NexNix Ltd. Seaglass, 15 Coney Six, East Wittering, West Sussex, PO20 8DL

T 08452 60 30 90 Intl: 0044 1243 512634

**E** sales@nexnix.co.uk **W** [www.nexnix.co.uk](http://www.nexnix.co.uk)

UK On line shop:

W [www.goosystems.co.uk](http://www.goosystems.co.uk)

Coverage rates: (per 2 thin coats)

Rolled: 4.65 m2/litre

HPLV Sprayed 3.72 m2/litre

Fire Performance:

Test Report FH-1661 NGC Testing Services Buffalo New York USA.

Test Method: ASTM D-84

Products tested:

Screen Goo Basecoat, Colour: Digital Grey lite

Screen Goo Topcoat, Colour: Digital Grey lite

Test Result: Materials Class: A

Flame Spread Index (FSI): <25

Smoke Development Index: 0 (no smoke developed).

Base coat: See W21/160A

Top Coat: See W21/160B

160A BASE COAT OF FRONT PROJECTION SCREEN HIGH CONTRAST COATING:

All as W21/160 and:

Undercoat: 2 base coats,

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Screen Goo Basecoat,

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (USA) disclosure list ingredients: Propylene Glycol, Texanol

VOC levels: Basecoat: 57 gm/litre

Size: 500 ml, 1000 ml, 2300 ml, 3780 ml, 16 litre

Colours: CRT White, Digital Grey lite, Digital Grey, (Ultra grey: Use Digital Grey)

 Digital grey if followed by Screen Goo Ultra Silver3D See W21/160C,

Colour: Subject to determining final specification to suit projector and conditions: See W21/180,

Application:

HPLV Spray: See W21/210-230,

Roller: See W21/410-435,

HPLV Sprayed onto fabric: See W21/510-530

160B TOP COAT OF FRONT PROJECTION SCREEN HIGH CONTRAST COATING:

All as W21/160 and:

Top coat: 2 top coats

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Screen Goo Topcoat

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (USA) disclosure list ingredients: Propylene Glycol, Texanol, Mica, Amorphous Silica,

VOC levels: Topcoat: 149 gm/litre

Size: 500 ml, 1000 ml, 2300 ml, 3780 ml, 16 litre

Colours: CRT White, Digital Grey lite, Digital Grey, (Ultra grey: Use Digital Grey)

Colour: Subject to determining final specification to suit projector and conditions: See W21/180,

For brightness in low background lighting levels: CRT White,

For contrast in higher background light levels: Digital Grey, Light Grey, Grey, Ultra Grey (limited container sizes),

Application:

HPLV Spray: See W21/240-250,

Roller: See W21/440-455.

HPLV Sprayed onto fabric: See W21/540,

Approved Applicator: Spraying: Only use a professional HVLP spray painter See Appendix W21 APP A&I

160C TOP COAT FOR FRONT PROJECTION SCREEN HIGH CONTRAST LOW AMBIENT LIGHT COATING:

All as W21/160 and:

Purpose: use in high ambient light conditions and polarized 3D projection applications

Limitation: narrow viewing angle (half-gain angle is +/- 10 degrees) coating which preserves light polarity.

It is a spray-only coating and is designed to be used with Digital Grey basecoat

Top coat: 2 top coats,

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Screen Goo Ultra Silver 3D Topcoat

Many not be available in the UK, if so order direct from Canada.

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (USA) disclosure list ingredients: Propylene Glycol, Texanol, P(BA/MMA),

VOC levels: Topcoat: 149 gm/litre

Container sizes: 500 ml, 1000 ml, 2.3 litres, 3.87 litres, 16 litres

Colour: Ultra Silver 3D,

Application:

HPLV Spray: See W21/240-250,

HPLV Sprayed onto fabric: See W21/540,

Approved Applicator: Spraying: Only use a professional HVLP spray painter See Appendix W21 APP A&I

161 REAR PROJECTION TRANSPARENT SCREEN PAINT:

Screen Paint: water-based, acrylic-emulsion,

Viscosity (poise) range: 200 -675

Function: to accurately reflect and disperse the complex coloured light patterns produced by video projectors.

Dispersion: proprietary durable premium acrylic dispersion,

Pigments:

pigments accurately reflect the full spectrum of colour produced by video projectors,

pigment treatment techniques maximize the reflective properties of the pigments.

Performance characteristics:

very low light absorption,

high reflectivity

Minimum light loss to ensure colour fidelity,

high concentrations of pigment.

Colour accuracy

Wide viewing angles

High colour contrast

A sense of image depth, or feeling of looking into the picture

Application: Rear Projection: translucent, diffusive, colour correct coat,

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Screen Goo Rear Projection

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (USA) disclosure list ingredients: Propylene Glycol, Texanol

UK Agent: NexNix Ltd. Middle Barn, Whitestone Farm, Main Road, Birdham, Nr. Chichester, West Sussex, PO20 7HU

T 08452 60 30 90 Intl: 0044 1243 512634

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UK On line shop:

W [www.goosystems.co.uk](http://www.goosystems.co.uk)

Coverage rates: (1 thin coat)

Container HPLV Sprayed

500 ml 0.93 m2.

1000 ml 1.86 m2.

2.3 litre 4.28 m2.

Product Reference: Screen Goo Rear Projection

Colour: CRT White

Size: 500, 1000, 2300 ml

Application: HPLV Spray: See W21/240-250,

Approved Applicator: Spraying: Only use a professional HVLP spray painter See Appendix W21 APP A&I.

162 SLOW DRYING AGENT:

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Screen Goo Flow Release,

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (Canada) disclosure list ingredients: Propylene Glycol, Texanol

Size: 60 ml.

Application: See W21/441.

170 NON-REFLECTIVE TAPE TO EDGE STRIP AROUND SCREEN:

Purpose: add high contrast and kills light over spill at edges,

Material: Self-adhesive Flok tape, with crushed pile

Colour: Black,

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052

Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

UK Agent: NexNix Ltd. Middle Barn, Whitestone Farm, Main Road, Birdham, Nr. Chichester, West Sussex, PO20 7HU

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**E** sales@nexnix.co.uk **W** [www.nexnix.co.uk](http://www.nexnix.co.uk)

Product Reference: Flok tape

Width: 2” 3”

Length: 5, 6, 7, 7.6, 5, 6, 7, 7.6, 8.5, 9.5 m

Maximum Diagonal: 69”, 83”, 92”, 106” 69”, 83”, 92”, 106”, 119”, 113”

Screen size: See Installation: W21/190

Max Screen Size:

60” x 33.75”, 72” x 42.5”, 80” x 45”, 92” x 52”;

60” x 33.75”, 72” x 42.5”, 80” x 45”, 92” x 52”;103.5” x 58”, 115.5” x 65”

Application: See W21/460.

171 FRAME AROUND SCREEN FOR NON-REFLECTIVE PAINT SYSTEM:

Frame:

Porous surfaces

Fibre reinforced Gypsum board

Others subject to Goo Systems approval

Wood based:

MDF

Particleboard

Plywood

Others subject to Goo Systems approval

Manufacturer and Product Reference: Contractor to propose for CA’s review.

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Size: \_\_\_\_ x \_\_\_ mm

Frame width: 2”/3”/Other,

Fixings and Fastenings: [\_\_\_\_\_\_\_\_],

Priming: See HPLV Spray to W21/210, W21/511 or Rolled to W21/410,

Non-reflective coating: W21/175,

Application: See W21/455.

175 NON-REFLECTIVE PAINT SYSTEM TO EDGE STRIP OR SURFACE MOUNTED FRAME AROUND SCREEN:

Material: specially formulated non-reflective, light absorbing coating,

Purpose: creation of black border around screen, offers high contrast and stop light bleeding at edge,

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052 Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

Product Reference: Ultra Black Screen Border

Material Safety Data Sheet: <http://www.goosystems.co.uk/FAQs.php#msds>

Whims (Canada) disclosure list ingredients: Propylene Glycol, Texanol, carbon black,

Colour: Black

Size: 250, 500, 1000 ml

Edge strip:

Width: 2”/3”/other

Screen size: \_\_\_\_\_ x \_\_\_\_\_ mm.

Diagonal: \_\_\_\_\_ mm.

Coverage rate: \_\_\_\_\_\_

Application:

 Rolled: See W21/450,

 Rolled on surface mounted frame: See W21/171 & W21/455,

 HPLV Sprayed: See W21/260, W21/265, W21/560 or W21/565.

180 ON-LINE CALCULATOR PAINT SELECTION SYSTEM:

W <http://www.goosystems.com/index.php?cont=which>

Use the on-line selector to make final selection of paint scheme colours,

Have the following information to hand:

Projection: Rear/Front

Select your aspect ratio: 4:3/16:9
Screen dimensions: \_\_\_\_ Height x \_\_\_\_ Width mm.
Screen Diagonal: \_\_\_\_\_ mm.

Application Method: Rolled/HPLV Sprayed
Projector: (See W21/110),

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

Make: \_\_\_\_\_\_

Model: \_\_\_\_\_\_

Type: LCD/DLP/LcoP

Resolution: HD/\_\_\_

Brightness: \_\_\_\_\_\_ lumens

Contrast Ratio: \_\_\_\_\_\_\_

Application: Home viewing/public presentation
Preferences: Film like/TV like
Mounting: Ceiling/Table top mount
Ambient Light: Bright/Medium/Subdued/Dark

**WORKMANSHIP**

**SPRAYING INSTRUCTIONS FRONT PROJECTION**

210 SURFACE PREPARATION: BOARDS:

Projection board: See W21/130/131/132/133

Frame: See W21/171,

Screen Goo can be applied to any smooth paintable surface.

Surface to be coated: smooth, clean and grease-free.

The smoother the surface the better the finished product will be.

Any blemishes at this point may show through to the final top coat

Preparation: if not smooth then sand down and dry then moist wipe off and allow to dry before priming

Porous surfaces: seal with a primer prior to applying Screen Goo Basecoat.

Coloured surfaces: prime prior to applying Screen Goo Basecoat,

Type: latex primer

Colour: White

Gloss level: Flat (matt)

Manufacturer and Product Reference: Contractor to propose for Architect’s review.

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

220 HPLV SPRAY EQUIPMENT:

Type: HVLP spray system

Recommended HPLV spray gun:

<http://www.overstock.com/Home-Garden/GRIP-High-Pressure-Air-Spray-Paint-Gun/725681/product.html>

To maximise paint usage a gravity fed gun is also recommended.

Gun tip diameter: 1.5 to 2 mm.

Set the HPLV Spray gun to achieve a very fine mist,

Most guns will have three “HPLV Spray head” settings:

elliptical for vertical

elliptical for horizontal

circle/cone not recommended

For a more even coverage use the elliptical settings as appropriate.

Recommended HPLV Spray gun settings:

SATA (HPLV spray manufacturer)

**SATA UK Ltd.** 2 Enterprise Court, 15 Studlands Park Avenue, Newmarket, Suffolk, CB8 7EP.

T 0845 603 70 85 F 0845 603 70 86

E infouk@sata.com

Before starting make sure that the equipment is free of rust, moisture and oil.

Clean: avoid solvent based coatings and cleaning agent contamination in spray gun and equipment.

Applicators: See Appendix W21 APP A&I APPLICATORS & INSTALLERS.

221 FRONT PROJECTION SCREEN HPLV SPRAYING:

Adopt the following points to achieve the best results for Front Projection:

Take your time, plan to complete the job in about 2 days.

Use multiple, very light coats,

Apply as many coats as possible,

First coat side to side, second coat top to bottom, then repeat,

Monitor the paint in the sprayer, as if it runs out it may “splatter” spoiling the finish

Let each coat dry thoroughly; do not touch the screen to see if it’s dry, any marks left will be difficult to paint out,

225 RISKS:

Solvent based coatings and cleaning agent contamination of spray equipment.

Do not touch the screen to see if it’s dry, any marks left will be difficult to paint out.

Monitor the paint in the sprayer, as if it runs out it may “splatter” spoiling the finish

230 HPLV SPRAYED BASE COATS TO FRONT PROJECTION BOARDS:

Base coat: See W21/160 and 160A

Number of coats: 2

Coverage rates: (per 2 thin coats)

HPLV Sprayed 3.72 m2/litre

Container HPLV Sprayed

500 ml 1.86 m2

1000 ml 3.72 m2

2.3 litre 8.55 m2

3.78 litres 14.05 m2

16 litres 59.46 m2

When spraying Goo it is advisable to thin the paint with water as follows in order to stop it drying before it hits the surface.

Thinning: 5-10% by volume prior to spraying for Front Projection Base coats

Water: filtered or distilled, not mains water,

Spray Settings:

Set the air/paint mixture in the following manner:

Turn off the atomizing pressure.

Set the paint tank pressure so that when the trigger is fully depressed the paint stream will travel about two feet.

Set the atomizing pressure at a approximately 10 x the PSI of the paint tank pressure or enough to completely atomize the coating.

Spraying:

Spraying distance: 6” – 8” (150 – 200 mm.)

Keep gun at a constant distance away from the surface to be coated.

Release the trigger at the end of each stroke.

Then, depress the trigger and overlap the previous pass by about 1/3.

Continue in this fashion for a fully and evenly consistent coverage.

Drying time between coats: 30-45 minutes

Second and final basecoat: repeat the procedure above.

240 HPLV SPRAYED TOP COATS FOR FRONT PROJECTION BOARDS:

Top coat: See W21/160 and 160B

Number of coats: 2

Coverage rates: (per 2 thin coats)

HPLV Sprayed 3.72 m2/litre

Container HPLV Sprayed

500 ml 1.86 m2

1000 ml 3.72 m2

2.3 litre 8.55 m2

3.78 litres 14.05 m2

16 litres 59.46 m2

Follow the same procedure as for the basecoat, except:

Thinning: not required, for Front Projection Top coats

Drying time between topcoats: 45-60 minutes

241 HPLV SPRAYED HIGH CONTRAST LOW AMBIENT LIGHT TOP COATS FOR FRONT PROJECTION BOARDS:

Top coat: See W21/160 and 160C

Number of coats: 2

Coverage rates: (per 2 thin coats)

HPLV Sprayed 3.72 m2/litre

Container HPLV Sprayed

500 ml 1.86 m2

1000 ml 3.72 m2

2.3 litre 8.55 m2

3.78 litres 14.05 m2

16 litres 59.46 m2

Follow the same procedure as for the basecoat, except:

Thinning: not required, for Front Projection Top coats

Drying time between topcoats: 45-60 minutes

245 FRAMING See W21/610-630.

250 **DRYING, CURING, COMPLETION, TESTING, TROUBLESHOOTING: See W21/710-730.**

**SPRAYING INSTRUCTIONS BACK PROJECTION**

310 SURFACE PREPARATION:

Back Projection Sheet: See W21/140

Surface to be coated: smooth, clean and grease-free.

Preparation: Clean surface with mild soapy water and dry thoroughly,

Wipe dry before liquids evaporate.

311 BACK PROJECTION HPLV SPRAYING:

Adopt the following points to achieve the best results:

Back projection needs to be applied in one coat,

HPLV Spray horizontally then vertically to achieve an even coverage, do not allow the paint to dry in-between direction changes, using a very fine mist will avoid running,

Do not re-apply once dry as this will result in ‘hotspots’ and blemishes on the screen,

Allow screen to dry at least 2 hours before touching or moving,

320 HPLV SPRAY EQUIPMENT: See W21/220

325 RISKS: See W21/225

340 HPLV SPRAYED COATING FOR BACK PROJECTION:

Top coat: See W21/161,

Number of coats: 1

Coverage rates: (1 thin coat)

Container HPLV Sprayed

500 ml 0.93 m2.

1000 ml 1.86 m2.

2.3 litre 4.28 m2.

When spraying Goo it is advisable to thin the paint with water as follows in order to stop it drying before it hits the surface

Thinning: 10% by volume for back projection

Water: filtered or distilled, not mains water,

Set the air/paint mixture in the following manner:

Turn off the atomizing pressure.

Set the paint tank pressure so that when the trigger is fully depressed the paint stream will travel about two feet.

Set the atomizing pressure at a approximately 10 x the PSI of the paint tank pressure or enough to completely atomize the coating.

Spraying distance: 6” – 8” (150 – 200 mm.)

Keep gun at a constant distance away from the surface to be coated.

Release the trigger at the end of each stroke.

Then, depress the trigger and overlap the previous pass by about 1/3.

Continue in this fashion for a fully and evenly consistent coverage.

Drying time: 2 hours.

345 FRAMING See W21/610-630.

350 **DRYING, CURING, COMPLETION, TESTING, TROUBLESHOOTING: See W21/710-730.**

**ROLLING INSTRUCTIONS FRONT PROJECTION**

410 SURFACE PREPARATION STEP 1A:

Projection board: See W21/130/131/132/133,

Frame: See W21/171,

Screen Goo can be applied to any smooth paintable surface.

Surface to be coated: smooth, clean and grease-free.

The smoother the surface the better the finished product will be.

Preparation: if not smooth then sand down and dry then moist wipe off and allow to dry before priming

Porous surfaces: seal with a primer prior to applying Screen Goo Basecoat.

Coloured surfaces: prime prior to applying Screen Goo Basecoat,

Type: latex primer

Colour: CRT White

Gloss level: Flat (matt)

Manufacturer and Product Reference: Contractor to propose for Architect’s review.

Manufacturer: [\_\_\_\_\_\_\_\_],

Product Reference: [\_\_\_\_\_\_\_\_],

420 DETERMINATION OF SCREEN SIZE: STEP 1B

Mount the projector in its permanent location before determining the actual screen dimensions.

Project an image onto the screen surface and adjust image geometry.

The width of the image at the top of the screen should be the same as the width at the bottom

Likewise the sides of the image should have the same height.

Finally check that the image is level and square in the corners adjust mounting if required.

Now mask off the area of the screen to be coated with a high quality painters tape.

If required create a border around your screen allowing an extra inch around all sides so that the coated surface will be slightly larger than your projected image.

430 FIRST BASE COAT STEP 2A:

Expect rolling this product to be trickier than rolling normal latex paint.

Pay attention to application method and roller handling.

Place about 200ml of Basecoat in the paint tray for first coat.

Load the roller very lightly, adding little pressure.

Pressure: apply little pressure in collecting and laying paint to avoid saturating the depth of the roller with paint that will not get used on surfaces.

Dab some paint on one side of the roller, rotate roller and dab some more, repeat until roller is covered with enough paint on the roller to complete approximately two vertical columns with a bit left over.

Roll the coatings using vertical strokes covering the full height of the screen.

Offer little pressure when rolling.

Changes of direction must only occur outside the screen area on the painters tape,

Ensure the coating density is just sufficient to cover the underlying surface.

After the first stroke, apply the second full height stroke, with a slight overlap.

Place approximately the same amount of paint on the roller again, and lay down an adjacent two to three rows of coating.

Go back to the start of the screen and complete a full finishing stroke over the original first stroke, in a straight run, from top to bottom of the screen.

Go from over the top edge, to off the bottom of the screen.

This is to prevent marks caused by stopping the roller on the viewing surface.

Continue the screen coating by moving across the screen, bit by bit, two rows at a time.

Apply finishing strokes very lightly, making sure the open end of the roller (which receives less pressure) is on the just coated side, so that the overlapping layer will have a somewhat feathered edge.

Orientate the wire support side of the roller mechanism to the least recently coated side of the screen.

The wire support side of the roller mechanism naturally presses harder on the surface of the screen.

**NB. Risks:**

**Finishing strokes: no more than 2-3 minutes after the original paint strokes in any given area.**

**Attempting finishing strokes after this time period has elapsed will cause the appearance of vertical streaks.**

**This is the result of a difference in texture caused by re-rolling coating which has begun to dry!**

Ensure the finishing strokes have a slight overlap, run from top to bottom of the screen travelling past the perimeter edges.

431 TOOLS:

Ensure tray and roller are completely free from old dry paint, especially avoid solvent based paints.

Collect any remaining paint from tray to roller, or tray to paint tin.

Seal roller in a polyethylene bag with airtight seal (rubber band, etc.) to save paint and allow its reuse on subsequent coats.

Wash trays in method to suit local waste regulations: UK: this is a Hazardous Waste, deal with accordingly.

Wash rollers and brushes accordingly.

435 SECOND BASE COAT STEP 2B:

Sanding: Some users report improved results with a light sanding of the Basecoat;

The manufacturer sees no disadvantage to this, but only the Basecoat layers and only after allowing for a minimum 24 hour drying period prior to sanding.

If no sanding is to occur, allow the Basecoat to dry thoroughly (typically 1-2 hrs.) and then repeat the first base coat stage 2A procedures for the second layer of Basecoat.

440 TOP COAT STEP 3:

Allow the Basecoat to dry, carefully repeat the Base coat stages 2A and 2B procedures to apply two coats of Topcoat.

**NB. Risks:**

**Finishing strokes: no more than 2-3 minutes after the original paint strokes in a given area.**

**Attempting finishing strokes after this time period has elapsed will cause the appearance of vertical streaks.**

**This is the result of a difference in texture caused by re-rolling coating which has begun to dry!**

Do not sand or abrade topcoat under any circumstances.

441 LARGER SCREENS & DRY ENVIRONMENTS:

Larger screens may benefit from small amount of an extra slow drying agent mixed into the coatings,

Agent: See W21/162

This will slow the drying.

Effect: Flow Release will dramatically slow:

drying process enough to minimize potential problems in application in very dry environments

drying time (double it, or more) and allow for a much more perfect surfaces on large screens.

Mix:

One or two drops per 200 ml. added to the paint post and stirred well in before adding to paint tray.

Add incrementally more if your first stroke starts to dry before the second is applied.

Please ask for manufacturer’s advice if you are intending to execute a substantially large screen.

It may take 3-6 hours to have a layer dry with this product in use, but the “lay” of the coatings on the surface will be noticeably more correct and you will have more time to work the surface.

445 FRAMING See W21/610-630.

450 **DRYING, CURING, COMPLETION, TESTING, TROUBLESHOOTING: See W21/710-730.**

**SPRAYING INSTRUCTIONS FRONT PROJECTION ON FABRIC**

510 SURFACE PREPARATION: FABRIC:

Stretcher Framing: See W21/145,

Front Projection Fabric: See W21/150,

Screen Goo can be HPLV Spray applied to surface with no further priming or preparation.

511 SURFACE PREPARATION: SURFACE MOUNTED FRAME TO FABRIC:

Frame: See W21/171,

Priming: See HPLV Spray to W21/210 or Rolled to W21/410.

520 HPLV SPRAY EQUIPMENT: See W21/220 and 225

530 HPLV SPRAYED BASECOATS FOR FRONT PROJECTION FABRIC:

Base coat: See W21/160 and 160A

Colour: Subject to determining final specification to suit projector and conditions: See W21/180,

Number of coats: 2

Coverage rates: (per 2 thin coats)

HPLV Sprayed 3.72 m2/litre

Container HPLV Sprayed

500 ml 1.86 m2

1000 ml 3.72 m2

2.3 litre 8.55 m2

3.78 litres 14.05 m2

16 litres 59.46 m2

Thinning: 5-10% by volume

Water: filtered or distilled, not mains water,

Set the air/paint mixture in the following manner:

Turn off the atomizing pressure.

Set the paint tank pressure so that when the trigger is fully depressed the paint stream will travel about two feet.

Set the atomizing pressure at a approximately 10 x the PSI of the paint tank pressure or enough to completely atomize the coating.

Spraying distance: 6” – 8” (150 – 200 mm.)

Keep gun at a constant distance away from the surface to be coated.

Release the trigger at the end of each stroke.

Then, depress the trigger and overlap the previous pass by about 1/3.

Continue in this fashion for a fully and evenly consistent coverage.

Drying time between coats: 30-45 minutes

Second and final basecoat: repeat the procedure above.

540 HPLV SPRAYED TOPCOATS FOR FRONT PROJECTION FABRIC:

Top coat: See W21/160 and 160B

Colour: Subject to determining final specification to suit projector and conditions: See W21/180,

Number of coats: 2

Coverage rates: (per 2 thin coats)

HPLV Sprayed 3.72 m2/litre

Container HPLV Sprayed

500 ml 1.86 m2

1000 ml 3.72 m2

2.3 litre 8.55 m2

3.78 litres 14.05 m2

16 litres 59.46 m2

Thinning: not required.

Follow the same procedure as for the basecoat, except:

Drying time between topcoats: 45-60 minutes

545 FRAMING See W21/610-630.

550 **DRYING, CURING, COMPLETION, TESTING, TROUBLESHOOTING: See W21/710-730.**

**COMPLETION**

**610 NON-REFLECTIVE PAINTED FRAME: STEP 4A**

Apply painted frame directly to wall outside/over edge of screen area.

Non-reflective paint: See W21/175

Frame width: 2”/3”/other inches

Product Reference: **Ultra Black Screen Border,**

Preparation: Ensure the topcoat surface is thoroughly dry before applying masking tape (minimum 24 hrs).

Masking: use good quality painter’s tape, mask out an frame area around the perimeter of the viewing area

Applicator: foam brush.

Application: Use the foam applicator to apply the frame paint.

Drying time: 4-6 hours

Removing masking: After drying time, slowly and carefully remove the painter’s tape covering the border.

**620 NON-REFLECTIVE PAINTED SURFACE MOUNTED TIMBER FRAME: STEP 4B**

Apply painted frame to perimeter of screen viewing area,

Surface mounted frame: See W21/171,

Coating: See W21/175,

Product Reference: **Ultra Black Screen Border**

Preparation: Ensure the topcoat surface is thoroughly dry before applying masking tape (minimum 24 hrs).

Masking: use good quality painter’s tape, mask out an frame area around the perimeter of the viewing area

Applicator: foam brush.

Application: Use the foam applicator to apply the frame paint.

Drying time: 4-6 hours

Removing masking: After drying time, slowly and carefully remove the painter’s tape covering the border.

**630 NON-REFLECTIVE TAPE FRAME: STEP 4C**

Apply self adhesive strip frame directly to wall around perimeter of screen viewing area,

Strip: See W21/170,

Frame width: 2”/3”

Material: light absorbing crushed pile velvet flock,

Colour: black,

Purpose: creation of black border around screen, add high contrast and soak up and light overspill at edge,

Application:

Removing painting masking: After drying time, slowly and carefully remove the painter’s tape covering the border.

Mark out setting out line.

Preparation: Ensure the topcoat surface is thoroughly dry before applying masking tape (minimum 24 hrs).

Remove peel-off adhesive masking sheet, apply strip in accordance with manufacturers instructions.

**DRYING, CURING & CHECKING**

**710 DRYING AND CURING TIMES:**

Protect from rapid drying in warm or windy sites to minimise light scatter from textured surface.

Texture: slight eggshell while freshly applied

Accelerated drying between coats: with blow dryer for 5 minutes then stand for 10 minutes to heal

Effect of drying: tone lightens and reflectivity increases

**Use: possible immediately after surface is dry, 4-6 hours**/screen can be used immediately.

Appearance when applied: Milky Translucent which will fade within a 3 days

**Appearance: will look good after one day,**

Long term drying and curing: performance will continue to improve for 3-6 months during which time the image quality improves.

Curing and Drying process: water percolates out of micro-porous surface, acrylic mixtures fully cures and clarifies.

720 TROUBLESHOOTING:

Faint vertical lines or streaks may be visible where your roller patterns overlap.

These are not unusual and in almost all cases they will clear up on their own as the coating cures.

If you can still see these lines 4-6 weeks after application, seek manufacturer’s advice.

Manufacturer: Goo Systems Global Distribution, 4 Harvey Street, Kingston ONTARIO, Canada, K7K 5B9

Sales: Canada (315) 541-4052 Technical Support (702) 979 7138

Sales: E sales@goosystemsglobal.com

Technical Support: E support@goosystemsglobal.com

Information E info@goosystemsglobal.com

W [www.goosystemsglobal.com](http://www.goosystemsglobal.com)

A rolled Goo screen will have a slightly bumpy or “orange peel” texture to it, this is entirely normal.

Do not attempt to sand or otherwise smooth the surface as this will compromise the performance of the screen.

END END OF W21\_WS\_Projection

Clause(s) on previous pages

NB: NOTES ON EDITING SPECIFICATIONS:

Use as guidance, a stand-alone appendix or merge into work section.

Delete all of the Information on this and other pages of guidance notes, excluding the page break above, down to the end of **NBS** compatibility URLs (website addresses), when adding this work section or clauses to a project specification or purchase order.

Edit the clauses by selecting the clauses required, deleting any not required, by editing the [blue text which often describes options available] within square brackets to suit the project; or edit the specification to suit the procurement method.

Remove all square brackets using search for [ and replace with nothing and search for ] and replace with nothing.

Replace blue text with black text by selecting all and choosing auto or black colour text.

There are clauses in Red text in the Specification these are examples of project specific versions of the generic clauses that are included for guidance and are likely to be deleted or edited if they are useful to the project.

Remove any grey tone by selecting all text, and select Format > Borders and Shading > Shading > No fill > Okay.

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REV REVISION TABLE

|  |  |  |  |
| --- | --- | --- | --- |
| Revision No | Description | Author | Date |
| A00 | For Preliminary IssueFirst notes issued to Toby | BRM |  |
| A01 | Substantially complete work section issued to Goo, Toby and Nexnix | BRM | 24/08/06 |
| A02 | Feedback from Kevin at Goo, VOC data, red text corrections, HPLV applicator lists, added rev table,Feedback from Toby on consultancy. | BRM | 30/08/06 |
| A03 | Reference Documents clauses 5-10, Guidance Notes and 3 Appendix removed to separate files. | BRM | 08/04/07-11/04/07 |
| A04 | File name changedTerms and Conditions etc. addedMinor format changes | BRM | 30/12/07 |
| B00 | Reviewed, post on Website | BRM | 30/12/07 |
| A05 | Removed pictures, deleted SWS from work section titleFile name: W21\_SWS\_Projection.doc | BRM | 20/10/08 |
| B01 | GreenSpec and NGS replaced by NGS Ltd & GBEReplace NGS logo with GBE logoUpdated Greenspec to GBE URLPost on GBE website | BRM | 16/11/15 |
| B02 | Replace GBE logo and T&C | BRM | 03/04/16 |
| B02 | Updated Company and contact detailsRed font indicates a replacement needs to be foundPrice information removed | BRM | 04/04/16 |

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1.3 GBS GBE NGS and ASWS specification approach is based on >30 years and >£2415m PROJECT specification commissions, information gathered from seminars, workshops, published information. Etc.

1.4 The specification clauses in this document (the 'Information') are based on information assimilated from published or unpublished verbal and written information from manufacturers, etc.

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**Addenda**

**NBS compatibility**

National Building Specification (NBS) is the industry standard specification library.

NGS’s Green Building Specification (GBS) and Robust Specifications (GBS RS) are designed to complement NBS.

NGS clauses are written specifically to address issues of environmental sustainability.

NBS adopts and develops the Construction Project Information Committee’s (CPIC) classification system Common Arrangement of Work Sections (CAWS) 1998 edition.

GBS adopts and develops the CPIC and NBS versions of CAWS to enable integration into NBS-based specifications.

GBS adopts NBS clause numbering to provide for easy clause assimilation.

CPIC: http://www.cpic.org.uk

CAWS: <http://www.cpic.org.uk/en/publications/common-arrangement-listing.cfm>

NBS: [www.thenbs.com/](http://www.thenbs.com/)

GBE website: [www.greenbuildingencyclopaedia.uk](http://www.greenbuildingencyclopaedia.uk)

GBE shop: [www.greenbuildingencyclopaedia.uk/shop/](http://www.greenbuildingencyclopaedia.uk/shop/)