

**Multi Storey Car Park
Improvement Works
Specifications**

SPECIFICATIONS

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C24 REPAIRING/ RENOVATING/ CONSERVING CONCRETE

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

100 GENERAL

The Contractor to ensure that works are only to be carried out in suitable climatic conditions and that all suitable preparation is completed as required to complete the works.

The repair works are based on:

- The condition of structure is as 'Report No. 6457/1 Testing Report – Tiverton Multi-Storey Car Park' dated 6/11/2017 by Stripe Consulting, Bridge Farm, Meath Green Lane, Horley, Surrey, RH6 8JA.

- The schedule of works, specification and drawings are based on the report 'Tiverton Multi-Storey Car Park Refurbishment Works' dated 03/11/2017 by Stripe Consulting, Bridge Farm, Meath Green Lane, Horley, Surrey, RH6 8JA.

During the works, the Contractor is to complete a visual inspection and advise the Contract Administrator of any other areas requiring repair not included.

The Contractor is to allow for the design, coordination, installation and removal of any temporary works to BS5975 and access arrangements that are required to carry out the works.

155 CONCRETE REPAIRS

Carry out localized concrete repairs.

Primary function: sealing against water and other adverse agents or structural bonding to be confirmed by Structural Engineer.

- Preparation: Repair to be to BS EN 1504 including breaking out all delaminated loose concrete, forming a 10mm deep shoulder termination joint with a disc cutter, cleaning any encountered steel.

- Protective coating to reinforcement: Apply primer (Sika MonoTop 610 or similar approved) to steel immediately after cleaning and to the repair as a whole.

- Repair mortar: Replace with suitable lightweight cementitious concrete repair mortar with properties compatible with the existing concrete (Sika MonoTop 615 or similar approved).

- Finish: Apply paint to match existing colour.

Product reference: All in accordance with manufacturer's recommendations/ specification/ data sheet and part of an Agrément certified repair system.

165 ASPHALT REPAIRS

Cut out defective/ split asphalt approximately 110mm either side of each defect, to the depth of the interface with the underlying concrete and remove.

Asses the condition and stability of the underlying substrate (carry out repair of any structural defect if necessary).

All in accordance with manufacturers recommendations/ specification/ data sheet.

175 SEALANT REPAIRS

Remove sealant around column/ wall joint and dispose of same.

Allow to supply and install, including all preparation required (thorough cleaning and removal of all debris etc.), a replacement seal utilising appropriate materials on a like for like basis.

All in accordance with manufacturers recommendations/ specification/ data sheet.

EXECUTION

605 EXECUTION GENERALLY

Standard: To BS EN 1504-10.

Operatives' skill and experience: Appropriate for the types of preparation and application.

Evidence: Submit on request.

625 REMOVAL OF FITTINGS/ ATTACHMENTS

Extent: The area of repair and any fittings/ attachments that could impede or be damaged by access.

Removal methods: Minimise damage to concrete/ reinforcement and to fittings/ attachments that are to be retained for reuse.

Re-fix after completion of the repair works as required.

630 CLEANING CONCRETE SURFACES PRIOR TO REPAIRS

Extent: To prepare surface prior to repair. Minimize disruption to concrete surfaces and materials. Leave no harmful residual cleaning agents.

640 EXTENT OF CONCRETE REMOVAL FOR REINFORCEMENT TREATMENT/ REPLACEMENT

Generally: The minimum necessary to allow treatment/ replacement, and to achieve thorough compaction of replacement material.

Edges of retained concrete: No undercutting or feather edges. Maintain edge angle within 90-135° or, where replacement material is spray applied, 110-135°.

Cutting: Prevent damage to reinforcement.

Removal of carbonated/ contaminated concrete: Submit proposals.

Gap to expose full profile of bar: Submit proposals.

Length of continuous uncorroded reinforcement to be exposed (minimum): 50 mm or, where reinforcement is to be replaced, 50 mm beyond the end of lap or joint.

670 GROUTING CRACKS/ VOIDS

Substrates: Clean. Keep free of detritus.

Pressure: Minimum necessary to fill cracks completely. Leave no voids and prevent disruption to structure.

675 CURING CONCRETE/ MORTAR

Requirement: Keep surface layers of concrete/ mortar moist throughout curing period, including perimeters and abutments, by either restricting evaporation or continuously wetting surfaces of concrete/ mortar.

- Surfaces covered by formwork: Retain formwork in position and, where necessary to satisfy curing period, cover surfaces immediately after striking.
- Top surfaces: If covering is removed for finishing operations, replace it immediately afterwards

COMPLETION

710 RECORD OF LOCATION/ EXTENT OF REPAIRS

Repair record forms:

- Content: Unique repair reference number for cross-referencing to record drawings; details of repair including dimensions and explanatory sketches; agreements and special requirements.
- Copies: One.
- Source of record forms: Contractor's standard.

Record drawings: Required on marked up contract drawings.

C40 CLEANING

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

GENERAL/ PREPARATION

142 REMOVAL OF FITTINGS

Timing: Before commencement of cleaning work.

Disturbance to surfaces: Minimize.

160 PROTECTION

Surfaces not designated for cleaning: Prevent damage, including marking and staining.

Openings: Prevent ingress of water, cleaning agents and detritus.

- Vents and grilles: Seek instructions before sealing up.

Temporary mechanical fastenings:

- In masonry: Locate in joints.

- In other surfaces: Seek instructions.

175 CONTROL AND DISPOSAL OF WASH WATER AND DETRITUS

Disposal: Safely. Obtain approvals from relevant Authority.

Control of wash water: Collect and divert to prevent ingress and damage to building fabric and adjacent areas.

Above and below ground drainage systems: Keep free from detritus and maintain normal operation.

180 COLD WEATHER

Cleaning procedures using water: Do not use when air temperature is at or below 5°C. Protect damp surfaces from frost.

Chemical cleaning agents: Do not use when surface temperatures are below those recommended by manufacturer.

190 CLEANING GENERALLY

Operatives: Appropriately trained and experienced for each type of cleaning work.

Control of cleaning: Confine cleaning processes and materials to designated areas.

Prevent wind drift.

Detritus: Remove regularly. Dispose of safely.

Modifications to cleaning methods and materials: Seek instructions.

PRODUCTS/ EQUIPMENT

300 COMPATIBILITY OF CHEMICAL PRODUCTS

Products: Compatible and produced by the same manufacturer.

312 SURFACE BIOCIDES

Types: Registered by the Health and Safety Executive (HSE) and listed on the HSE website under non-agricultural pesticides.

Compatibility with surface: Free from staining or other harmful effects.

342 PRESSURISED WATER CLEANING EQUIPMENT
Manufacturer: Contractor's choice.
- Product reference: Submit proposals.
Operational pressure: 1,750-7,000 kPa (250-1,000 psi).
Nozzles: Subject to site trials.

360 CHEMICAL AGENTS FOR GRAFFITI REMOVAL
Manufacturer: Contractor's Choice.
- Product reference: Submit Proposals.

365 CHEMICAL AGENTS FOR ALGAE REMOVAL
Manufacturer: Contractor's Choice.
- Product reference: Submit Proposals.

APPLICATION

412 REMOVAL OF LOOSELY ADHERED DEPOSITS
Timing: Before commencement of other cleaning methods.
Surfaces: Prevent damage, including abrasion.

422 BIOCIDES APPLICATION
Preparation: Dampen dry growths and remove loose growths.
Surfaces: Prevent damage, including abrasion.
Biocide treatment: Appropriate solutions to kill growths and inhibit further growths.
- Dead growths: Remove.

432 TOOLING
Tooling of surfaces: Not permitted.

472 PRESSURISED WATER CLEANING
Surfaces: Prevent damage, including abrasion.
Equipment settings (including nozzle type and distance from surface): Adjust regularly to achieve optimum cleaning performance for each surface.

500 CHEMICAL CLEANING
Surfaces: Prevent damage, including discolouration, bleaching and efflorescence.
Product variables (including concentrations, dwell times and number of applications): Adjust for each surface to achieve optimum cleaning performance.
Application: To wetted surfaces.
- Drying out: Prevent unless recommended otherwise by cleaning product manufacturer.
Removal of chemicals and neutralization: As recommended by product manufacturer, including rinsing with clean water.
- Additional treatment: Where water rinsing is insufficient to neutralize surface, apply compatible neutralizing agent.
- Surfaces and joints: Minimize absorption of chemicals. Prevent damage, including abrasion.

C41 REPAIRING/ RENOVATING/ CONSERVING BRICKWORK

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

05 PREPARATION

Should the Contractor's method of removing the damaged brick use an angle grinder to cut away the mortar rather than a drill – any consequential damage to surrounding bricks will result in additional brick replacement by the Contractor.

10 BRICKS

The replacement brick must match the existing wall.

Facing bricks reclaimed from demolitions will be approved for re-use only if they are free from fungus, have no cracks, or damaged corners or arrisses, and are free from old mortar.

12 SAMPLES

Obtain samples of facing bricks proposed to be used for approval prior to commencing repairs.

25 MORTAR POINTING

The mortar must match the existing wall.

The mortar pointing is to match the weathered point to the existing wall.

Ensure that the mortar for the repair is the same strength or weaker than the existing.

30 SURFACE REPAIR

Comply with the general requirements of BS 6270 and use the particular method of repair specified in the Part and Section of BS 6270 stated below for the surface repair of: mortar joints (Part 1, Section 3, paragraph 13) and brickwork (Part 1, Section 3, paragraph 14.3).

35 BRICK TIES

Ensure that the inner and outer skins of brickwork and/ or bed joint reinforcement properly bonds repair into existing wall; carry out remedial work as necessary using a suitable method of non-ferrous ties.

37 BIOCIDES FOR ALGAE AND LICHEN

Refer to C40 Cleaning and apply a biocide following Health and Safety Executive guidelines and COSHH Regulations.

40 ACCURACY

Keep courses level and perpend vertical and in line with existing courses; plumb all wall faces, angles and features. Adjust joint thicknesses to match the existing.

45 SETTING OUT

Set out repairs carefully to achieve satisfactory junctions with existing brickwork/ elements.

- 50 BOND
Bond repairs are to match the existing bond. Additional ties/ reinforcement are to be inserted to ensure patched brickwork is securely integrated.
- 52 BACKING BRICKWORK/ BLOCKWORK
To faced walls is to be in the same bond as the facework if applicable.
- 56 FROGS
Lay single frogged bricks frog uppermost and double frogged bricks with the deeper frog uppermost
- 60 REPAIRS
Extent of all brickwork repairs as per the Schedule of Works and Drawings and any further repairs to be agreed before starting any cutting out or repointing
- 65 STITCHING
Carefully cut out bricks and remove all mortar from all faces of the hole. Do not damage the arrises of the retained brickwork – install reinforcement/ ties – fill hole with facing brickwork to match existing and point to match in with the existing wall.

C42 REPAIRING/ RENOVATING/ CONSERVING CONCRETE

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

GENERAL

165 PROTECTIVE COATINGS

Additional treatment to concrete substrate: Submit proposals for corrosion inhibitor.
Coating material: Proprietary; anti-carbonation.

PRODUCTS

345 ANTI-CARBONATION COATING:

Manufacturer: Ronacrete Ltd.

- Web: www.ronacrete.co.uk.

- Email: cpd@ronacrete.co.uk.

- Product reference: RonaBond Anti-carbonation Coating WB.

Colour: White.

EXECUTION

630 CLEANING CONCRETE SURFACES

Extent: To reveal surface condition and aid investigation work. Minimize disruption to concrete surfaces and materials. Leave no harmful residual cleaning agents.

Methods: Submit proposals.

C90 ALTERATIONS – SPOT ITEMS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

GENERAL

110 PIGEON DETERRENT

The Contractor is supply and fix “Bird Free” gel in ready to use dishes on the steel roof structure to the pitched slate roofs on the top decks where indicated on the drawings.

Manufacturer: Killgerm Chemicals Ltd.

Address: Wakefield Road, Ossett, West Yorkshire, WF5 9AJ.

Web.: www.killgerm.com

Email: sales@killgerm.com

Tel.: 01924 268 420.

Product: “Bird Free” in plastic dishes 65mm dia. x 8mm high.

Product code: GROUP-BIRDFREE.

Fixing: Silicone adhesive (such as Avisil or Silirub) after removing the covers.

Preparation: For effective installation all surfaces within area must be thoroughly cleaned and free from organic and faecal matter to include removal of nesting.

Efficacy will be enhanced by treating cleaned areas with a fine mist spray of biocide e.g. PX-Ornikill. The Contractor is to take the precautions described in the manufacturer's data sheet.

Install in test area: Medium pressure/ night roosts at 20cm centre to centre. Therefore, a 15 pack will cover approximately 3m run.

Supplier: Insight Security, Units 1 & 2, Cliffe Industrial Estate South Street, Lewes East Sussex BN8 6JL.

Email: info@insight-security.com.

Tel.: 01273 475 500.

J31 LIQUID APPLIED WATERPROOFING ROOF COATINGS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

100 GENERAL

The Contractor is to replace the top deck/ roof and external ramp coating to the following standard:

- Proven, partially reinforced waterproofing membrane. Where locally reinforced the waterproofing membrane should be elastomeric with high tensile strength, long-term resistance to regular and unforeseen movement, cracking and flexural fatigue. The locally reinforced membrane has been tested for cyclic crack bridging up to 2mm at -10°C. The unreinforced system is both flexible and totally waterproof.
- Tough and durable: The system is to incorporate an aggregate-filled wearing course and heavy-duty seal coat designed for the highest trafficked, highest space change rate car parks.
- High levels of anti-skid: With low slip potential in both wet and dry conditions, safety is maximized.
- Totally cold liquid-applied technology: With no risk from hot works, installation can be completed whilst the car park remains open to the public.
- Rapid curing system – even at low temperatures: Works can be completed all year round, and critical areas can be completed overnight and opened to traffic the following day.
- Fully warranted.
- CE-marked.
- Full system where locally reinforced - British Board of Agrément: Certificate: 13/5051.
- Locally reinforced membrane - ETA: Certificate: ETA-04/0019.
- Full system where unreinforced Rili-SIB: OS8/ OS13-certified.

TYPES OF COATING:

105 LIQUID APPLIED CAR PARK WATERPROOFING SYSTEM: EXTERNAL CAR PARK DECKS

Manufacturer: Triflex (UK) Ltd., Whitebridge Way, Stone, Staffordshire. ST15 8JS.

Web: www.triflex.co.uk; Email: info@triflex.co.uk; T: +44 (0)1785 819 119.

Product reference: DECKFLOOR - Car Park Deck Waterproofing and Surfacing System or similar and equal approved.

Full specification as "Triflex DeckFloor Project Specification: Phoenix Lane MSCP, Tiverton" reference TR101243/Rev B in separate document, in summary:

- Primer: Use Triflex Cryl Primer 287 two-component, polymethylmethacrylate primer for use on porous substrates such as concrete, cementitious screeds and masonry as existing surface is to be removed.

Waterproofing wearing layer/ finish:

- Type: Triflex DeckFloor RS with Triflex Quartz 0.7 – 1.2mm and Triflex Cryl Finish 209.
- Colour: To be confirmed from standard colours available: Anthracite grey – 7016, Stone grey – 7030, Blue grey – 7031, Pebble grey – 7032, Light grey – 7035, Dusty grey – 7037, Traffic grey – 7043, Traffic yellow – 1023, Traffic orange – 2009, Traffic red – 3020, Traffic blue – 5017, Traffic purple – 4006 and Traffic green – 6024.

- 110 LIQUID APPLIED CAR PARK WATERPROOFING SYSTEM: EXTERNAL CAR PARK RAMPS
Manufacturer: Triflex (UK) Ltd., Whitebridge Way, Stone, Staffordshire. ST15 8JS.
Web: www.triflex.co.uk; Email: info@triflex.co.uk; T: +44 (0)1785 819 119.
- Product reference: DECKFLOOR RAMP - Car Park Ramp Waterproofing and Surfacing System or similar and equal approved.
Full specification as "Triflex DeckFloor Project Specification: Phoenix Lane MSCP, Tiverton" reference TR101243/Rev B in separate document, in summary:
- Primer: Use Triflex Cryl Primer 287 two-component, polymethylmethacrylate primer for use on porous substrates such as concrete, cementitious screeds and masonry as existing surface is to be removed.
Waterproofing wearing layer/ finish:
- Type: Triflex DeckFloor RS (Black) with Triflex Emery 1.0 – 3.0mm and Triflex Cryl Finish 202.
- Colour: Similar to approximate RAL 7043 Traffic Grey. To be agreed.
- 115 LIQUID APPLIED CAR PARK WATERPROOFING SYSTEM: EXTERNAL CAR PARK "ROUGH" RAMPS
Manufacturer: Triflex (UK) Ltd., Whitebridge Way, Stone, Staffordshire. ST15 8JS.
Web: www.triflex.co.uk; Email: info@triflex.co.uk; T: +44 (0)1785 819 119.
- Product reference: DECKFLOOR RAMP - Car Park Ramp Waterproofing and Surfacing System or similar and equal approved.
Full specification as "Triflex DeckFloor Project Specification: Phoenix Lane MSCP, Tiverton" reference TR101243/Rev B in separate document, in summary:
- Primer: Use Triflex Cryl Primer 287 two-component, polymethylmethacrylate primer for use on porous substrates such as concrete, cementitious screeds and masonry as existing surface is to be removed.
Waterproofing wearing layer/ finish:
- Type: Triflex Friction Plastic HD (Triflex Preco Cryl Reibepplastik HD) apply diagonal, heavy duty traction strips to ramps and other areas as required, to deter skateboarders.
- Colour: Similar to approximate RAL 7043 Traffic Grey. To be agreed.

EXECUTION GENERALLY

- 410 ADVERSE WEATHER
Do not apply coatings:
- In wet conditions or at temperatures below 5°C, unless otherwise permitted by coating manufacturer.
- In high winds (speeds > 7 m/s), unless adequate temporary windbreaks are erected adjacent to working area.
Unfinished areas of roof: Keep dry.

EXISTING SUBSTRATES

510 REMOVING EXISTING COVERINGS

Mechanical stripping: Permitted.
Exposed substrate: Do not damage.

515 EXISTING FLASHINGS

General: Raise to facilitate cleaning of surfaces to receive coatings.
Timing: Leave raised during coating application and lower only after full curing.
Damaged lengths: Replace with new.

570 EXISTING NON-STRUCTURAL CRACKS/ GAPS

General: Rake out, clean and make good with sealants or repair systems recommended by coating manufacturer.

COMPLETION

910 INSPECTION

Coating surfaces: Check when cured for discontinuities.
- Defective areas: Apply another coating.

940 COMPLETION

Roof areas: Clean.
- Outlets: Clear.
- Flashings: Dressed into place.
Work necessary to provide a weathertight finish: Complete.
Storage of materials on finished surface: Not permitted.
Completed coatings: Protect against damage.

L30 STAIRS/ LADDERS/ WALKWAYS/ HANDRAILS/ BALUSTRADES

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

COMPONENTS

- 590 SLIP RESISTANT STAIR NOSING
Manufacturer: Watco UK Ltd.
- Web: www.watco.co.uk.
- Email: sales@watco.co.uk.
- Product reference: Firm-Step® GRP Step Covers
Grade: Course.
Profile: 70 x 30 mm.
Width: To suit existing width, circa 1,000 mm.
Colour: Yellow.
Fixing: Use Watco Adhesive Mastic and drilled for screw fixing.

INSTALLATION

- 670 INSTALLATION OF TREAD INSERTS/ NOSINGS:
Treads: Fully cured, sound and level.
Fixing:
- Location/ position: In accordance with BS 8300.
- Fixings: Epoxy adhesive and stainless steel screws.
Centres: As manufacturer's recommendations.

M40 STONE/ CONCRETE/ QUARRY/ CERAMIC TILING/ MOSAIC

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

PREPARATION

310 EXISTING BACKGROUNDS/ BASES GENERALLY

Efflorescence, laitance, dirt and other loose material: Remove.

Deposits of oil, grease and other materials incompatible with the bedding: Remove.

Tile, paint and other nonporous surfaces: Remove.

Wet backgrounds: Dry before fixing strip movement joint and resurfacing.

320 EXISTING CONCRETE/ SCREEDS

Loose or hollow portions: Cut out.

Making good: Use a polymer modified mortar recommended by manufacturer of strip movement joint and resurfacing system. The concrete shoulders must be smooth and level across the expansion gap.

MOVEMENT JOINTS/ GROUTING/ COMPLETION

825 STRIP MOVEMENT JOINTS: FLOOR

Manufacturer: RADFLEX Contract Services Ltd., 35 Wilks Avenue, Questor, Dartford, Kent, DA1 1JS.

Web: www.radflex.co.uk; Email: expjoint@radflex.co.uk; T: +44(0)132 2276363.

Strip movement joint for concrete decks as a surface mounted mechanical expansion joint provides that provides an effective waterproof seal.

- Product reference: RADFLEX S150 movement joint including Radflex 125 DLM circa 300mm wide, nosings, extrusion, polymer modified haunches 150mm wide by 5mm deep only if level difference requires and it to be site measured by Contractor, adhesives, fixings and sealants.

- Colour: Black.

The S150 system features the double laminated Radflex 125 waterproof membrane bonded to the concrete, which links the waterproofing on each side of the joint gap. The membrane is then protected by a rubber extrusion and metal reinforced rubber nosings anchored through the Radflex 125 into the concrete deck with chemical fixings.

The butyl rubber compound formulation of Radflex 125 is tough, weatherproof and flexible for a permanent waterproof layer beneath the joint. It is used in conjunction with Radflex epoxy adhesives designed for a long-lasting seal between the Radflex membrane and the substrate. Our extrusion and nosings are based on specially formulated EPDM rubber compound which has exceptional weathering properties and good flexibility over a wide temperature range. The combined elements ensure a continuous watertight finish throughout the structure.

M60 PAINTING/ CLEAR FINISHING

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

COATING SYSTEM

195 SPECIAL COATING: ANTI-CLIMB PAINT

Manufacturer: New Venture Products, Unit 8, The Glenmore Centre, Grove Business Park, Wantage, Oxfordshire, OX12 9GN. Web: www.newventureproducts.co.uk Tel.: 01235 427 000.

- Product reference: Anti-Climb Paint – GREY.

Method of application: Stiff Brush, Trowel or by hand wearing protective gloves.

Finish: Semi-gloss.

Appearance: Glossy gel.

Volume solids: 46%.

Specific gravity: 1.1.

Coverage: The practical spreading rate for anti-climb paint 1m² per litre for maximum effectiveness.

Accessories: Supply and fix clear warning notices where the anti-climb paint is used, these need to be easy to see from any angle of approach and repeated every 2 -3 linear metres.

GENERALLY

215 HANDLING AND STORAGE

Coating materials: Deliver in sealed containers, labelled clearly with brand name, type of material and manufacturer's batch number.

220 COMPATIBILITY

Ensure coating material is recommended by the manufacturers for the particular surface and conditions of exposure.

240 SURFACES NOT TO BE COATED

Galvanised steel roof structure below 2.2m AFGL.

250 SURFACES TO BE CLEANED BUT NOT COATED

Existing surfaces previously coated with anti-climb paint below 2.2m AFGL.

PREPARATION

400 PREPARATION GENERALLY

Standard: In accordance with BS 6150.

Refer to any pre-existing CDM Health and Safety File.

Refer to CDM Construction Phase Plan where applicable.

Suspected existing hazardous materials: Prepare risk assessments and method statements covering operations, disposal of waste, containment and reoccupation, and obtain approval before commencing work.

Preparation materials: Types recommended by their manufacturers and the coating manufacturer for the situation and surfaces being prepared.

Substrates: Sufficiently dry in depth to suit coating.

Dirt, grease and oil: Remove. Give notice if contamination of surfaces/ substrates has occurred.

Dust, particles and residues from preparation: Remove and dispose of safely.

511 GALVANIZED, SHERARDIZED AND ELECTROPLATED STEEL

White rust: Remove.

Pretreatment: Apply one of the following:

- Mordant solution to blacken whole surface.
- Etching primer recommended by coating system manufacturer.

APPLICATION

711 COATING GENERALLY

Application standard: In accordance with BS 6150, clause 9.

Surfaces: Clean and dry at time of application.

Thinning and intermixing of coatings: Not permitted.

Finish:

- Even, smooth and of uniform colour.
- Free from brush marks, sags, runs and other defects.
- Cut in neatly.

N15 INTERNAL FIRE AND SAFETY SIGNAGE SYSTEMS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

GENERAL

110 FIRE AND SAFETY SIGNAGE SYSTEMS FOR ESCAPE ROUTES

System manufacturer: Contractor's choice.

- System reference: Submit proposals.

Locations and layout: As Drawings and Schedule of Works.

- Language: English.

Material: Stove enamelled plate.

- Other properties: Fixing holes and Photoluminescent.

SYSTEM PERFORMANCE

210 GENERAL REQUIREMENTS

Signage and way guiding system design:

- For fire escape and evacuation signage: In accordance with: BS 5499-4 or BS ISO 16069.

- For way guiding systems: In accordance with BS ISO 16069.

- For safety signs other than escape route signage: In accordance with: BS 5499-10.

220 SIGN DESIGN AND FORMAT

Format: In accordance with BS EN ISO 7010 and HSE L64 Safety signs and signals.

Geometric shapes, colours and layout: In accordance with BS ISO 3864-1.

Design principles for graphical symbols: In accordance with BS ISO 3864-3.

Colorimetric and photometric properties of safety sign materials: In accordance with BS ISO 3864-4.

260 PHOTOLUMINESCENT PROPERTIES FOR ESCAPE ROUTE SIGNAGE

Luminance decay classification to BS ISO 17398: Category to be confirmed.

270 FIRE REACTION

Non-flammable surface:

- Standard: Non-combustible.

280 DESIGN LIFE:

Duration: 10 years.

- Subject to reasonable wear and tear.

Condition of use: Subject to regular maintenance.

PRODUCTS

350 STOVE ENAMELLED METAL PLATE FOR ESCAPE ROUTE SIGNS AND FIRE SIGNAGE

Manufacturer: Contractor's choice.

- Product reference: Submit proposals.

Base material: Manufacturer's standard/ mild steel.

Component thickness: Minimum 2 mm.

Finish: Manufacturer's standard.

Perimeters: Radiused corners.

Supports/ Fixings: Screw fixed – fixing to be anti-tamper type. Employer is to confirm preference for two-pin or torx pin heads.

EXECUTION:

610 FIXING SIGNS GENERALLY:

Installation: Secure, plumb and level.

Fasteners and adhesives: As section Z20.

Strength of fasteners: Sufficient to support live and dead loads.

Fixings showing on surface of sign: Must not detract from the message being displayed.

N25 PERMANENT ACCESS & SAFETY EQUIPMENT (ANTI CLIMB)

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

115 ROLLER BARRIER ANTI CLIMB BARRIER

Location: Low eaves to slate pitched roofs on car park upper decks.

Manufacturer: Insight Security, Units 1 & 2, Cliffe Industrial Estate South Street, Lewes East Sussex BN8 6JL.

Email: info@insight-security.com.

Tel.: 01273 475 500.

Location: Extent is indicated on the proposed roof plan drawings as appropriate where the difference in level between the deck and eaves enables trespass on to the roof.

System reference: Roller Barrier – non aggressive anti climb barrier.

Anchorage device: Use a standard bracket (Universal Fixing Bracket, Straight Twist Fixing Bracket, Alleyway Fixing Bracket) and fixing bolts or, if required, specially made galvanized brackets attached to the existing galvanized steel roof structure.

Intermediate support spacing: 2-metre intervals.

Accessories/ Other requirements: Roller barrier cups (allowing for 10 cups/ m), shafts and joiners and terminator washers, bolts and warning anti-climb signs – all to be as per manufacturers recommendations.

Installation: As per manufacturer recommendations.

Structural anchors: Type recommended by the system manufacturer to suit the structure/ fabric into which they will be fixed.

GENERAL REQUIREMENTS

150 SAFETY

General: The equipment as installed must have no irregularities/ projections capable of inflicting personal injury.

160 FIXING ANCHOR INSTALLATION

Site drilling or cutting into structure/ fabric: Permitted only in approved locations.

Existing structure: The Contractor is to be responsible for the design and connection of the product to the existing structure of the roof/ building.

Distance between all fixing devices and edges of supporting material: Not less than recommended by fixing manufacturer.

170 MARKING OF ANCHOR DEVICES

Provision: Provide on or near each anchor device a label or other clear marking giving:

Manufacturer's name and telephone number;

Serial number and year of manufacture of device.

180 CONTRACTOR DESIGNED PORTION

The fixing bracket of the anti-climb barrier to the roof eaves.

Q10 KERBS/ EDGINGS/ CHANNELS/ PAVING ACCESSORIES

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

TYPES OF KERBS/ EDGINGS AND CHANNELS

170 REPLACEMENT GRATING TO CHANNEL

Manufacturer: ACO Technologies plc.

- Web: www.aco.co.uk.
- Email: technical@aco.co.uk.
- Product reference: Black composite Heelguard™ grating (25010).

Accessories/ Other requirements:

- Drainlock™ security key (23416);
- Drainlock™ security locking assembly (23415); and

Or similar and equal approved:

CE marked and fully certified to Load Class C 250 BS EN 1433:2002

Channel: Length as drawing.

All gratings to be lockable.

180 DRAINAGE CHANNEL SYSTEM:

Manufacturer: ACO Technologies plc.

- Web: www.aco.co.uk.
- Email: technical@aco.co.uk.
- Product reference: ACO CivicDrain® 0.0 channel with black composite Heelguard™ grating (25010).

Accessories/ Other requirements:

- Drainlock™ security key (23416);
- Drainlock™ security locking assembly (23415); and
- Multifunctional end cap (23404)].

Or similar and equal approved:

CE marked and fully certified to Load Class C 250 BS EN 1433:2002

Channel: Length as drawing.

All gratings to be lockable.

Accessories: 97235 outlet spigot and 105251 end plate.

ROADS/PAVING ACCESSORIES/ MARKING/ DEMARCATION:

395 ROAD MARKING (THERMOPLASTIC)

Standard: Road Safety Markings Association standard specification document for road marking and road studs (StanSpec).

Manufacturer: Contractor's choice such as Watco, Triflex or Adbruf.

- Product reference: Thermoplastic – submit proposals.

Colour: Parking bays: white; disabled parking bays: yellow; pedestrian zones: red.

Retroreflectivity to BS EN 1436: [Class R2].

Contractor is responsible to ensure that the road markings are compatible with the Triflex system.

400 ROAD MARKING (MEDIUM DUTY)

Manufacturer: Contractor's choice.

- Product reference: Exterior tough, rapid, anti-slip and reflective paint (solvent based and chlorinated rubber paint) – submit proposals.

Colour: Parking bays: white; disabled parking bays: yellow; pedestrian zones: red.

Surfaces to receive markings: Clean and dry, loose material removed.

Application: Uniform, with no streaks or ragged edges.

Contractor is responsible to ensure that the road markings are compatible with the Triflex system.

Q41 BARRIERS/ GUARDRAILS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

TRAFFIC MANAGEMENT

210 VEHICLE FLOW PLATES:

Manufacturer/ Supplier: Barriers Direct.

Address: J9 Limited, Blackmoor Barn, Haverhill Road, Little Wratting, Suffolk CB9 7UD.

Web: www.barriersdirect.co.uk

Tel.: 0800 0288010 or 01279 933019

Product: Traffic Control Plates – One way - AUTOPA.

- Heavy duty steel box 300mm x 200mm x 200mm deep.
- Flap and top of heavy duty steel plate.
- 12.5mm thick.
- Heavy duty hinge diameter 19mm.
- Total weight 15kg.
- Steel galvanized to BS EN ISO 1461 (1999).
- Top plate and flap are to be painted yellow.

Installation:

Excavate hole 600mm x 500mm x 200mm deep. Allow for drainage immediately below the base. Ensure cement does not ingress in to the box, and that top plate is level with the ground or marginally above (10mm maximum). Lay concrete around the unit to level with surrounding ground. Leave to properly cure before using.

215 SPEED BUMPS

Manufacturer/ Supplier: Barriers Direct.

Address: J9 Limited, Blackmoor Barn, Haverhill Road, Little Wratting, Suffolk CB9 7UD.

Web: www.barriersdirect.co.uk

Tel.: 0800 0288010 or 01279 933019

Product: Speed Reduction Ramp (5mph) Rubber.

Or similar and equal approved.

Installation:

- The width of the carriageway and the number of blocks required should first be ascertained by the Contractor.
- The directional tubular rods should be adjusted for size accordingly and laid down in place. If required, adjustments should be made to take into account camber of the road surface.
- The blocks can then be laid down end-to-end on the tubular rods and drilled through to the road surface.
- Fit the bolts into the sections, insert into the drill holes and secure tightly.

Technical Information:

Centre Section: 70mm height; 250mm width; 405mm length; 6.5Kg weight.

End Section: 70mm height; 210mm width; 405mm length; 5.5Kg weight.

Material: Rubber.

Centre Section Colour: alternating black and yellow.

End Section Colour: yellow only.

Reinforcing Tube Diameter: 27mm (2.7mm Wall); steel material; galvanised finish.

Installed as manufacturer's recommendations.

INSTALLATION

420 ALIGNMENT

Erection: Fences/ barriers to present a flowing alignment. Tops of posts to follow ground profile.

Tolerance: ± 30 mm of prescribed alignment and, within any 10 m length, ± 15 mm from the straight or required radius.

430 ERECTION GENERALLY

Protection: Coat all internal and external surfaces of aluminium and steel posts below and up to 150 mm above ground level, with two coats of bituminous paint to BS 6949 type 2, unless other applied surface finish is specified.

Prevention of electrolytic corrosion: Isolate dissimilar metals.

Steel components: Do not drill, cut or weld after galvanizing.

490 DAMAGE REPAIR TO GALVANIZED SURFACES

Areas of repair: Minor damage, including fixings and fittings.

- Total area of repair not to exceed 0.5% of total surface area.
- Each area not to exceed 1000 mm².

R10 RAINWATER DRAINAGE SYSTEMS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

SYSTEM PERFORMANCE

- 221 COLLECTION AND DISTRIBUTION OF RAINWATER
General: Complete, and without leakage or noise nuisance.

PRODUCTS

- 365 PROPRIETARY RAINWATER OUTLETS
Manufacturer: [Contractor's choice].
- Product reference: [Submit proposals].
Roof construction: [Concrete].
- Roof insulation thickness: [None].
Type of grate/ Fittings: [Flange and clamping collar for roof membrane].
Outlet: Type and direction to suit pipework with suitable adaptors and connections.
Accessories: [Underdeck clamps].
- 420 PVC-U PIPEWORK
Standard: To BS EN 12200-1, Kitemark certified.
Manufacturer: Contractor's choice.
- Product reference: Submit proposals.
Recycled content: None permitted.
Section: Round.
Nominal size: To match existing/ DN110.
Colour: Black.
Brackets: See clause 425.
Accessories: Joints, bends, outlets, access points, reducers, connectors and adaptors as required.
- 420A HDPE PIPEWORK (ALTERNATIVE)
Standard: To BS EN 1519-1.
Manufacturer: Contractor's choice.
- Product reference: Submit proposals.
Nominal size: To match existing/ DN110.
Brackets: See clause 425.
Accessories: Joints, bends, outlets, access points, reducers, connectors and adaptors as required.
- 425 PIPEWORK FITTINGS
Brackets: Galvanised anchor brackets, guide brackets and mounting plates.
- Fixings: Resin anchor bolts.
Size: Submit proposals.

430 DRAINAGE GULLY

Manufacturer: ACO Technologies plc.

- Web: www.aco.co.uk.

- Email: technical@aco.co.uk.

- Product reference: [Fixed Height gully, vertical outlet, 1.4301 grade stainless steel, height to suit existing structure].

Grating: Circular, flush and slip resistant.

Accessories: As required for installation.

435 DRAINAGE SEALS

Manufacturer: Contractor's choice.

Product: Submit proposals suitable for the pipe connection – either flexible coupling or replacement ring seals. If the seals are integral to the connector, then the joint is to be replaced.

Colour: Black.

Type: Push fit and mechanical collar.

EXECUTION

605 INSTALLATION GENERALLY

Electrolytic corrosion: Avoid contact between dissimilar metals where corrosion may occur.

Pipes: Do not bend.

Allowance for thermal and building movement: Provide and maintain clearance as fixing and jointing proceeds.

Protection:

- Fit purpose made temporary caps to prevent ingress of debris.

- Fit access covers, cleaning eyes and blanking plates as the work proceeds.

635 FIXING PIPEWORK

Pipework: Fix securely, plumb and/ or true to line.

Branches and low gradient sections: Fix with uniform and adequate falls to drain efficiently.

Externally socketed pipes and fittings: Fix with sockets facing upstream.

Additional supports: Provide as necessary to support junctions and changes in direction.

Vertical pipes:

- Provide a loadbearing support at least at every storey level.

- Tighten fixings as work proceeds so that every storey is self-supporting.

- All joints to have a gasket push fit seal.

- Masking plates: Fix at penetrations if visible in the finished work where pipework is replaced.

Expansion joint pipe sockets: Fix rigidly to buildings. Elsewhere, provide brackets and fixings that allow pipes to slide.

640 FIXING VERTICAL PIPEWORK

Bracket fixings: Bolted into concrete.

Distance between bracket fixing centres (maximum): 900 mm.

650 JOINTING PIPEWORK AND GUTTERS

General: Joint with materials and fittings that will make effective and durable connections.

Jointing differing pipework and gutter systems: Use adaptors intended for the purpose.

Cut ends of pipes and gutters: Clean and square. Remove burrs and swarf. Chamfer pipe ends before inserting into ring seal sockets.

Jointing or mating surfaces: Clean and, where necessary, lubricate immediately before assembly.

Junctions: Form with fittings intended for the purpose.

Jointing material: Strike off flush. Do not allow it to project into bore of pipes and fittings.

Surplus flux, solvent jointing materials and cement: Remove.

W90 COMMUNICATIONS/ SECURITY/ CONTROL SYSTEMS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

CCTV

100 CCTV SYSTEM

Design, supply and installation of the CCTV System: MetCalfe Allen, Unit 7 Saunders Way, Kingsmill, Cullompton, Devon, EX15 1BS. T 01884 38222 E admin@metcalfeallen.co.uk contact Jerry Allen quotation reference CCTV/JA/1088 dated 7/1/2019 or similar and equal approved.

105 4K NETWORK VIDEO RECORDER AND MONITOR

Supply and install 1nr Dahua NVR616-128- 4K S2-80Tb 128-channel 4K NVR (with 80Tb hard drive capacity and capable of recording 10 images per second per camera) in the CCTV Control Room in the position shown on the attached plan drawings. One wall-mounted 55" 4K flat-screen monitor will be supplied and connected to the 4K NVR (via an HDMI cable) for the viewing of live and recorded images. All images will be recorded to the 4K NVR's internal hard drives, and the 4K NVR is controlled with a USB mouse.

With normal usage all images will be stored for in excess of four weeks before being overwritten; the oldest image on the drive being replaced by the newest.

Any incident that needs to be permanently archived can be saved to an inexpensive USB memory stick and subsequently viewed on any computer using the embedded player.

110 HD IP ANPR BULLET CAMERAS X 2 (IN ORANGE ON THE DRAWINGS)

One Dahua ITC237-PU1B-IR 1080p HD IP, vandal-resistant, ANPR camera with 5 - 50mm varifocal lens and integral infra-red illuminators will be installed in each of the positions indicated (in orange) on the first attached plan drawing. Each ANPR camera is specifically designed & configured to target the capture of number plate information, but also combines this with a standard image.

Each camera will be cabled to the 4K NVR via a network of cables & switches, and each will be set up to provide a fixed view in the region of 90° as approximated on the attached plan drawing. The integral infra-red illuminators will operate in total darkness up to a distance of approximately 50m.

115 FIXED 4K CAMERAS X 20 (IN BLUE ON THE DRAWINGS)

One Dahua IPC-HDW4831EM-ASE-0280 4K (3840px x 2160px resolution), vandal-resistant "Starvis" (ultra-low light) turret camera, with fixed 2.8mm lens and integral infra-red illuminators will be installed to cover each of the stairwell doors (both inside & out), and the entrance by Shopmobility in the positions indicated in blue on the attached plan drawings.

Each camera will be cabled to the 4K NVR via a network of cables & switches, and each will be set up to provide a fixed view in the region of 90° as approximated on the attached plan drawings. The integral infra-red illuminators will operate in total darkness up to a distance of approximately 50m.

- 120 FIXED HD IP CAMERAS X 39 (IN PINK ON THE DRAWINGS)
One Dahua IPC-HDW4231EM-ASE-0280 HD IP (1920px x 1080px resolution), vandal-resistant "Starlight" (low light) turret camera with fixed 2.8mm lens and integral infra-red illuminators will be installed in the positions indicated in pink on the attached plan drawings, to provide comprehensive general coverage of the MSCP.
Each camera will be cabled to the 4K NVR via a network of cables & switches, and each will be set up to provide a fixed view in the region of 90° as approximated on the attached plan drawing. The integral infra-red illuminators will operate in total darkness up to a distance of approximately 50m.
- 125 NETWORK, POE SWITCHES AND ANCILLIARY EQUIPMENT
All of the proposed CCTV cameras and the 4K NVR via will be connected to dedicated IP Network, comprising a number of PoE (Power over Ethernet) switches (located in the Electrical/Maintenance Cupboards) interconnected by Cat 6 cabling. The proposed new cameras will be connected to, and obtain their power from, the PoE switches via Cat 5e cable.
- 130 CONTAINMENT
All of the proposed cabling will be mechanically protected using 20 and 25mm black uPVC conduit along with associated boxes and saddles where concealed. For exposed/ surface fixed, the use of galvanised steel conduit is required.
- 135 MAINS POWER
To be provided by the Contractor:
IN THE CCTV CONTROL ROOM
Four 13amp socket outlets (an existing provision will provide a saving variation) will be required in the CCTV Control Room to provide mains power to the 4K NVR, 4K monitor, and associated network switches etc.
IN THE 9X ELECTRICAL/MAINTENANCE CUPBOARDS
One two-gang 13amp mains socket outlet will be required in each of the Electrical/ Maintenance Cupboards (by the circular staircases Levels 1 to 8), and in the Lift "loft" (Level 9), to provide power for local fixed camera and associated network equipment.
- 140 NETWORK CONNECTIVITY/ REMOTE VIEWING
To be provided by the Contractor:
If the 4K NVR is connected to a broadband router (network point or direct connection, to be provided by the Contractor), off-site viewing (and remote diagnostics) over broadband will be possible on any authorised remote PC or smart phone/ tablet. None of the subscription costs involved in providing broadband at the MSCP are included in this System Design Proposal.
- 145 CCTV SIGNS
To be provided by the Contractor:
CCTV signs are to be included and to be similar to signs used by MDDC elsewhere for the Town Centre CCTV System if required.

- 150 STANDBY POWER/ BACKUP
To be provided by the Contractor:
The proposed CCTV system relies upon a permanent electricity supply for operation, so provision is to be made for standby batteries or UPS equipment to be fitted.
- 155 SYSTEM HANDOVER, ACCEPTANCE, SSAIB CERTIFICATION AND WARRANTY
Following completion and handover, an Acceptance Document will be signed by both the installation engineer and the Employer, detailing that the installation has been completed in accordance with the System Design Proposal and/ or any As Fitted document.
The CCTV system detailed in this System Design Proposal will be installed in accordance with the standard accepted by the Security Systems & Alarms Inspectorate Board (SSAIB) and Certificate of Compliance will be provided by the Contractor.
All equipment supplied should include a one year parts, and 3 month labour, warranty in addition to the defect liability, collateral warranty etc. required by the contract.
- 160 MAINTENANCE
The Contractor is to include 12 months maintenance by a certified/ accredited company and that regular preventative maintenance visits are made to ensure continued optimum operational performance. ICO Guidelines recommend a minimum of one visit per annum and this is carried out at the start of any maintenance period.

ANTI-LOITERING DEVICES

- 170 MOSQUITO ALARMS
Manufacturer: Compound Security Systems
Address: CSS Ltd, 10 Criccieth Grove, Merthr Tydfil, South Wales, CF48 1JY
Web: www.compoundsecurity.co.uk
Tel.: 01685 350 418
Product: Mosquito Kit 2 – MK4 and Cage and PSU (power supply unit) UK (Anti-Loitering Device).
Accessories: Mosquito PIR and Mosquito Timer UK.
Or similar and equal approved.

X10 LIFT SYSTEMS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

110 LIFT MODERNISATION

Lift modernization works are to be carried as Schedule of Works Section D.

Sub-contractor:

Manufacturer: Stannah Lifts, Anton Mill, Andover, Hampshire, SP10 2NX.

Web: www.stannahlifts.co.uk

Tel.: +44(0)1264 343777

Or similar and equal approved.

All works must comply with the UK Supply of Machinery (Safety) Regulations 2008; current British Standards including BS EN 81-80; Health & Safety at Work Act; and the Equalities Act 2010.

Z20 FIXINGS AND ADHESIVES

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

PRODUCTS

310 FASTENERS GENERALLY

Materials: To have:

- Bimetallic corrosion resistance appropriate to items being fixed.
- Atmospheric corrosion resistance appropriate to fixing location.

Appearance: Submit samples on request.

320 PACKINGS

Materials: Non-compressible, corrosion proof.

Area of packings: Sufficient to transfer loads.

330 NAILED TIMBER FASTENERS

Nails:

- Steel: To BS 1202-1 or BS EN 10230-1.
- Copper: To BS EN 1202-2.
- Aluminium: To BS 1202-3.

340 MASONRY FIXINGS

Light duty: Plugs and screws.

Heavy duty: Expansion anchors or chemical anchors.

350 PLUGS

Type: Proprietary types to suit substrate, loads to be supported and conditions expected in use.

360 ANCHORS

Types:

- Expansion: For use in substrate strong enough to resist forces generated by expansion of anchor.

- Adhesive or chemical:

For use in substrate where expansion of anchor would fracture substrate.

For use in irregular substrate where expansion anchors cannot transfer load on anchor.

- Cavity: For use where the anchor is retained by toggles of the plug locking onto the inside face of the cavity.

370 WOOD SCREWS

Type:

- Wood screws (traditional pattern).

Standard: To BS 1210.

- Wood screws.

Pattern: Parallel, fully threaded shank or twin thread types.

Washers and screw cups: Where required are to be of same material as screw.

380 MISCELLANEOUS SCREWS

Type: To suit the fixing requirement of the components and substrate.

- Pattern: Self-tapping, metallic drive screws, or power driven screws.

Washers and screw cups: Where required to be of same material as screw.

390 ADHESIVES GENERALLY

Standards:

- Hot-setting phenolic and amino-plastic: To BS 1203.

- Thermosetting wood adhesives: To BS EN 12765.

- Thermoplastic adhesives: To BS EN 204.

410 POWDER ACTUATED FIXING SYSTEMS

Types of fastener, accessories and consumables: As recommended by tool manufacturer.

EXECUTION

610 FIXING GENERALLY

Integrity of supported components: Select types, sizes, quantities and spacing of fixings, fasteners and packings to retain supported components without distortion or loss of support.

Components, substrates, fixings and fasteners of dissimilar metals: Isolate with washers/ sleeves to avoid bimetallic corrosion.

Appearance: Fixings to be in straight lines at regular centres.

620 FIXING THROUGH FINISHES

Penetration of fasteners and plugs into substrate: To achieve a secure fixing.

630 FIXING PACKINGS

Function: To take up tolerances and prevent distortion of materials and components.

Limits: Do not use packings beyond thicknesses recommended by fixings and fasteners manufacturer.

Locations: Not within zones to be filled with sealant.

640 FIXING CRAMPS

Cramp positions: Maximum 150 mm from each end of frame sections and at 600 mm maximum centres.

Fasteners: Fix cramps to frames with screws of same material as cramps.

Fixings in masonry work: Fully bed in mortar.

650 NAILED TIMBER FIXING

Penetration: Drive fully in without splitting or crushing timber.

Surfaces visible in completed work: Punch nail heads below wrot surfaces.

Nailed timber joints: Two nails per joint (minimum), opposed skew driven.

660 SCREW FIXING

Finished level of countersunk screw heads:

- Exposed: Flush with timber surface.

- Concealed (holes filled or stopped): Sink minimum 2 mm below surface.

- 670 PELLETED COUNTERSUNK SCREW FIXING
Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
Pellets: Cut from matching timber, match grain and glue in to full depth of hole.
Finished level of pellets: Flush with surface.
- 680 PLUGGED COUNTERSUNK SCREW FIXING
Finished level of countersunk screw heads: Minimum 6 mm below timber surface.
Plugs: Glue in to full depth of hole.
Finished level of plugs: Projecting above surface.
- 690 USING POWDER ACTUATED FIXING SYSTEMS
Powder actuated fixing tools: To BS 4078-2 and Kitemark certified.
Operatives: Trained and certified as competent by tool manufacturer.
- 700 APPLYING ADHESIVES
Surfaces: Clean. Adjust regularity and texture to suit bonding and gap filling characteristics of adhesive.
Support and clamping during setting: Provide as necessary. Do not mark surfaces of or distort components being fixed.
Finished adhesive joints: Fully bonded. Free of surplus adhesive.

Z22 SEALANTS

To be read with the Preliminaries & Conditions of Contract, Schedule of Works and Drawings.

PRODUCTS

310 JOINTS

Primer, backing strip, bond breaker: Types recommended by sealant manufacturer.

EXECUTION

610 SUITABILITY OF JOINTS

Pre-sealing checks:

- Joint dimensions: Within limits specified for the sealant.
- Substrate quality: Surfaces regular, undamaged and stable.

620 PREPARING JOINTS

Surfaces to which sealant must adhere:

- Remove temporary coatings, tapes, loosely adhering material, dust, oil, grease, surface water and contaminants that may affect bond.
- Clean using materials and methods recommended by sealant manufacturer.

Vulnerable surfaces adjacent to joints: Mask to prevent staining or smearing with primer or sealant.

Backing strip and/ or bond breaker installation: Insert into joint to correct depth, without stretching or twisting, leaving no gaps.

Protection: Keep joints clean and protect from damage until sealant is applied.

630 APPLYING SEALANTS

Substrate: Dry (unless recommended otherwise) and unaffected by frost, ice or snow.

Environmental conditions: Do not dry or raise temperature of joints by heating.

Sealant application: Fill joints completely and neatly, ensuring firm adhesion to substrates.

Sealant profiles:

- Butt and lap joints: Slightly concave.
- Fillet joints: Flat or slightly convex.

Protection: Protect finished joints from contamination or damage until sealant has cured.