

**Canterbury City Council**

**Dover District Council**

**Folkestone & Hythe District Council**

**Thanet District Council**

**Measured Term Contract**

**for**

**Pitched Roofing & Associated Works**

**Technical Specification**

  **APRIL 2019**

**Specification for Pitched Roofing**

**CONTENTS**

[1.0 GENERAL 3](#_Toc5884032)

[1.1 Workmanship and Materials 3](#_Toc5884033)

[1.2 British Standards 3](#_Toc5884034)

[1.3 Warranties 3](#_Toc5884035)

[1.4 Private and Rear Additions 3](#_Toc5884036)

[1.5 Boundaries 4](#_Toc5884037)

[1.6 Site Clean Up 4](#_Toc5884038)

[1.7 Chimney Removal (Optional) 4](#_Toc5884039)

[2.0 ROOF INSTALLATION INCLUDING SCAFFOLDING 4](#_Toc5884040)

[3.0 SPECIFICATION FOR PITCHED ROOFS 8](#_Toc5884041)

[ANNEX A - SPECIFICATION FOR ASBESTOS SURVEYS, ANALYSIS & REPORTING 11](#_Toc5884042)

[ANNEX B - SPECIFICATION FOR ASBESTOS REMOVAL WORKS 18](#_Toc5884043)

[ANNEX C – SCHEDULE OF BRITISH STANDARDS, ETC 24](#_Toc5884044)

# GENERAL

## Workmanship and Materials

1. All workmanship and materials to be used in the Contract are to be the best of their respective kinds and where a BS, Specification or Code of Practice is applicable, whether specifically noted or not this shall be taken to denote the minimum acceptable standard of material or workmanship.
2. All workmanship and materials shall comply with the requirements of the latest appropriate Standard and shall be used, fixed or applied as appropriate strictly in accordance with the manufacturers’ recommendations, directions or instructions. Wherever possible all materials to be incorporated in the Works shall be such that it is compatible with and shall aesthetically match existing material with which it is to replace or repair.
3. Any materials named are indicative and demonstrate the ability to meet the standards and specification of the contract; however alternative suppliers may be used provided they are approved and meet or exceed the minimum requirements as well as being cost effective.
4. All existing lines and levels are to be maintained at all times and new work shall be carried through to the same lines and levels unless otherwise directed by the Contract Administrator.

##  British Standards

1. Where any reference is made in the Specification to a British Standard (BS) or Code of Practice (CP) this is deemed to include any subsequent revision, amendment, re-enactment and/or replacement thereof, such that the Contractor shall fully comply with all the latest BS, CP and the like current at the date of execution of the Work to be undertaken. Where any product is specified to comply with a British Standard, it may be substituted at the Contract Administrator’s sole discretion by a product complying with a grade or category within a European Community Standard or other international standard recognised in the UK specifying equivalent requirements and assurances in respect of material, safety, reliability, fitness for purpose and, where relevant, appearance. Where the term Standard is used this shall be construed to mean individually or collectively, as appropriate, any British or European Community Standard and/or Code of Practice etc.
2. The Contract Administrator's decision on the use and continued approval of alternative materials goods and equipment is final. All such alternative goods, materials and equipment that are approved for use in the works shall be provided at no extra cost to the contract.

## Warranties

1. Roofs will be installed with the following insurance backed warranties:
2. Fibre cement slate – minimum 30 years
3. Natural slate – minimum 30 years
4. Concrete tiles – minimum 30 years

## Private and Rear Additions

1. The Contractor is to take particular note of rear additions that have been built by adjoining owners and allow protecting these throughout out the duration of the works. No part of the scaffolding is to be in contact with the fabric of the adjoining properties.

## Boundaries

1. Ownership of boundaries to be ascertained prior to commencement of works and modifications agreed with Contact Administrator and owner / occupiers adjoining council owned houses.

## Site Clean Up

1. The Contractor is to allow for a full site clean-up on any debris, unused material etc. Also the Contractor is to allow for the removal of any protective measures and clean down and windows, conservatories etc. that have been previously protected

## Chimney Removal (Optional)

1. Where required, chimney stacks are to be carefully removed to below the roof line and capped with sufficient ventilation maintained in accordance with Building Regulations.
2. The removal of part or all of a chimney stack will require Building Regulation approval and work will need to be done to ensure the remaining part of the stack is properly supported. The work must comply with the Building Regulations and an application to Building Control is required.

# ROOF INSTALLATION INCLUDING SCAFFOLDING

1. **General**
2. Before any work starts on site, and at intervals during the works, technical representatives from the roofing supplier / manufacturer may be available to meet with the Contractor and the Contract Administrator to offer advice and to ensure that good roofing installation practice is adhered to.

1. Wind loading calculations and fixing of the roof system are all to be in accordance with BS 5534, and the manufacturer’s recommendations and instructions.
2. The Contractor is to tooth-in the roof tiles over the party wall, where possible, to negate the need for a bonding to gutter. The tiles are to be the same gauge and profile as that of the adjoining existing roof. Where stepped roof junctions appear between roofs, lead flashings are to be used. The masonry party wall is to be built up where necessary, and any gaps remaining in the party wall are to be filled with a suitably sized fire stops up to the underside of the roof covering.
3. Allow to run existing overflow pipes through new soffits/fascia as necessary. Remove all redundant pipes and pipe work. All fascia / soffits / bargeboards are to be replaced in white PVCu and all Rain Water Pipes to be replaced in black PVCu.
4. Redundant boiler flues projecting through the roof are to be removed.
5. The Contractor should note that all tiles, clips, fixings and accessories shall be compatible with the roofing tiles and system used and all work to the roof must be carried out in accordance with the tile manufacturer’s system requirements.
6. All existing cables are to be neatly clipped to the underside of the soffit/fascia, allowing for any new, clips, brackets etc. if necessary.
7. The Contractor is to allow for renewal of the rubber collars to the Soil Vent Pipes that project through the roof.
8. Prior to any stripping of the roof it is essential that protective sheets are laid within the loft area to protect the area from dust and debris.
9. These can be carefully removed once the roof has been felted and battened.
10. Allow for cutting at party wall line/abutment between Council owned and private properties so as not to disturb fascia to the adjacent private property. Load and cart all debris from site to and pay all associated charges for disposal.
11. Remove all nails/fixings from existing rafters and prepare to receive new fascia and soffits. All open ends of soil stacks must be protected against debris (e.g. wire balloon gratings).
12. **Protection Over Entrance Doors**
13. The Contractor must provide additional protection over front entrance doors by way of an inclined canopy comprising of scaffolding standards with a marine ply board decking laid directly over the entrances. The top of the fan should be tied to the scaffold at the point it is tied to the permanent structure; and the bottom tube of the fan should be propped against the structure.
14. The scaffolder is to supply and fix a jinnie wheel (where necessary) suitable for use on re-roofing works, provided in a protected enclosure. The steel frame pulley system is to have a fibre hoisting rope passed through it, and is to be inspected on a daily basis. All ropes are to left secure overnight.
15. **Signage**
16. Contractor to allow for suitable signage and hazard warning signs to scaffolds and work areas.
17. **Lead Works**
18. To all valleys and chimney stacks code 4 lead is to be used and in accordance with BS 12588 and as the recommendation provided by the Lead Development Association. Point face with lead sealants. When lead is used for flashings and soakers, lead oxide carried in the water run-off is likely to stain the slates to prevent this apply 2ct of patination oil to all lead faces.

**2.5 Scaffolding**

1. Scaffolding shall comply with all relevant requirements and Codes of Practice under the Health and Safety at Works Act (current edition) and shall provide all the necessary protection for his workmen, tenants and public. Must adhere to TG20.2013 (or as superceded in future)
2. The Contractor shall allow to supply, erect, maintain and dismantle on completion of works, independent tied scaffolding to allow all works to be carried out (this must include for chimney scaffolds to allow for all works to chimney). Provide toe boards, barriers and protection over all entrances, and pathways to protect the public and occupiers at all times.
3. The Contractor shall allow to supply, erect, maintain and dismantle on completion of works, independent tied scaffolding to allow all works to be carried out including works to roofs, stacks, renewal of soffit/fascia boards and guttering.
4. Any alterations required to the lifts are to be included in the price.
5. The scaffold decking is to consist of 225mm boards’ minimum of 4 boards wide. The scaffolding is to be fully boarded at all times.
6. The scaffolds are to have toe boards secured in place at least 150mm above the platform, intermediate guard-rails gap max of 470mm above toe board, and full height guard-rails between 950mm and 1,200mm above the platform. These are to surround the perimeter of all the scaffolding.
7. No element of the scaffolding is to be placed on, or have contact with property that is privately owned without the occupier’s permission and written confirmation of the Contract Administrator.
8. The Contractor is to fix distinctive foam padding, to base of standard, 2m high, on any standard near the front entrance walkways, paths and entrance doors. Care must be taken not to obstruct bin stores.
9. Overhead protection over all doorways will be required, adequate perimeter protection of the scaffolding will be required to prevent unauthorised persons entering the areas.
10. The inclusion of a security alarm to scaffolding will depend upon the specific requirements of the individual properties. The Contract Administrator has allocated each property as *Level 1*
11. **Security Alarm – Level 1.** The scaffolding will be erected without the requirement of a working security alarm. However, the Contractor will be expected to erect dummy alarm boxes and CCTV cameras in suitably prominent positions to deter intruders from attempting to gain access to the scaffolding. In addition, appropriate signboards should be erected to act as a further deterrent to intruders and give the impression that the scaffold is fitted with an alarm linked to a manned telephone system with 24 hours a day coverage.
	1. **Aerials / Satellite Dishes**
12. The Contractor should allow for cutting and making new connections in the loft space and at the dish or aerial. Whist the works are being carried out aerials and dishes should be re-sited to a safe convenient location. The Contractor should allow for replacing any aerial, clamps, straps, cable etc. to carry out the works. On completion the aerials and dishes shall be re-fixed to the chimney stack or other suitable positions and temporary fixings removed.
13. Television sets should be checked before and after works have been completed for a picture and records given to the Contract Administrator.
14. Where signal is lost due to works and/or site protection the contractor will allow attending within 24 hours of receiving instruction to rectify fault.
	1. **Brick and Block Work**

1. Cement shall be normal setting ordinary Portland cement, or Sulphate Resisting Portland cement and comply with BS 12, BS 146 or BS 4027.
2. Lime shall be Class B Hydrated Lime and comply with BS 12, BS 146 or BS 4027.

1. Sand for building mortar to be natural sand crushed stone or crushed gravel.
2. Cement Mortar
	1. Cement mortar shall be composed of one part cement and three parts sand, and shall be used in brickwork built below ground level and in copings, chimneys, parapet walls or other brickwork located in severely exposed situations and in accordance with the respective brick manufacturers’ recommendations.
	2. Cement mortar used in other situations shall unless otherwise directed, be gauged mortar composed of one part masonry cement, one part lime and six parts sand and in accordance with the respective brick manufacturers recommendations.
	3. All mortar shall be used fresh and made only in quantities sufficient to meet the immediate demand. No mortar which has partially set shall be 'revived' or re-used.
	4. Pointing to new work shall match that of adjacent work, or shall be flush or bucket handle pointing as directed by the Contract Administrator.
	5. **Facing and Engineering Bricks**
3. Bricks shall be clay of a size and type to match existing and shall be obtained from an approved supplier.
4. Where facing and engineering bricks have been taken down as part of repair works, sound bricks may be cleaned and reused, subject to approval of the Contract Administrator.
5. New facing and engineering bricks to match existing
6. Rake out all brickwork joints to chimney stacks to course below flashings to a depth of 12.5mm and carefully wire brush surfaces to obtain a clean appearance.
7. Re-point all existing raked-out joints with cement lime mortar (1:1:6).
	1. **Pots, Terminals or Caps**
8. Any damaged or defective pots, terminals, cowls or caps etc. are to be replaced on a like for like basis. Cap off unused pots with clay mushroom cowls.

# SPECIFICATION FOR PITCHED ROOFS

1. **General**
2. Carefully strip existing roof covering to include tiles, battens and felt.
3. Remove any lead flashings, soakers and clear away.
4. All materials to be disposed by chutes to skips and under no circumstances are to be thrown off scaffold or roofs.

1. **Insulation**
2. Current insulation of all roofs is to be checked and where appropriate topped up to meet current standards.
3. Energy Tags to be installed within the loft space after insulation works completed. Photographic evidence to be taken of the Energy Tag, clearly showing the detail contained and the address, and issued to EKH (electronically)

1. **Underlay for Pitched roof**
2. Underlay to be triple-ply construction, with a waterproof and vapour-permeable core laminated and protected between two layers of non-woven spun-bonded polypropylene. To be completely waterproof and UV and heat stabilised to reduce degradation to a minimum. To be root proof and tear resistant Underlay is not to use cfcs or adhesives. To be laid in accordance with BS 5534 pt 1:1997.
3. **Battens**
4. Sawn softwood, treated with preservative to be 25mm x 50mm laid to gauge suitable for the tiles. Suitable tilting fillet to be supplied and fixed in position.
5. Battens are to be secured to rafters using 65mm long x 3.35mm diameter galvanised smooth round nails.
6. Joints in battens to be cut square and skew driven on each side of joint.
7. No more than one batten in four are to be joined over one rafter.

1. **Ventilators for Pitched roof**
2. Fascia Ventilators to be used that are unobtrusive and provide a method of providing ventilation at the eaves. They are to provide ventilation to the roof space equivalent to 25000mm2/m in accordance with Building Regulations approved document F 1995 and BS 5250.
3. They are to be used in conjunction with Rafter Ventilators to provide a continuous ventilation path from the roof void to the outside without impairing the weatherproof function of the structure, as required by BS 5250. They are to have effective resistance to both driving rain and large insects, to be unobtrusive when fitted, hidden by gutter and roof covering. To be compatible with all roof tile clips and eaves comb fillers.

1. **Dry Ventilated ridge for Pitched roof**
2. To provide mechanical fixing to ridges to BS 5534:2003 and high level roof ventilation Installed in continuous sections to provide a continuous ventilation area equivalent of 5000mm2/m in accordance with Building Regulations and BS 5250:2002
3. **Roof Tiles General**
4. The Contractor is supply and allow for each tile to be fixed in accordance with the manufacturers recommendations and should be installed to comply with BS5534 : Part 1 and BS8000 : Part 6 : 2013. The Contractor shall obtain fixing specification from the manufacturer and demonstrate adherence.
5. In additional, all tiles at the perimeter of the roof must be clipped along with a band of tile 4 wide adjacent to the perimeters clipped in an alternate diagonal pattern.
6. Nail tile using 38mm x 2.65mm aluminium along clout rails.
7. Clip tiles using tile clips (9530) fixed to battens with 60mm long x 3.35mm diameter aluminium alloy clout nails.
8. Tiles to be any size, colour and approved manufacturer to match existing.
9. **Concrete Tiles – Interlocking Profiled**
	1. Remove the complete concrete tiled roof covering as identified by the CA and clear away from site. Include for removing existing fixings and leaving ready to receive a new concrete tile roof covering.
	2. All roof covering works are to be carried out in accordance with the manufactures fixing instructions and BS EN 490: 2011 Concrete roofing tiles and fittings.
		1. Tiles to be any size, colour and approved manufacturer to match existing.
10. **Concrete Tile – Plain**
11. Remove the complete plain concrete tiled roof covering as identified by the CA and clear away from site. Include for removing existing fixings and leaving ready to receive a new plain concrete tile roof covering.
12. All roof covering works are to be carried out in accordance with the manufactures instructions and BS EN490: 2011 Concrete roofing tiles and fittings.
13. Tiles to be any size, colour and approved manufacturer to match existing.
14. **Clay Tile – Plain**
	1. Remove the complete plain clay tiled roof covering as identified by the CA and clear away from site. Include for removing existing fixings and leaving ready to receive a new plain clay tile roof covering.
	2. All roof covering works are to be carried out in accordance with the manufactures instructions and BS EN1304: Clay roofing tiles and fittings.
	3. Tiles to be any size, colour and approved manufacturer to match existing.
15. **Natural Slate**
	1. Remove the complete slate roof covering as identified by the CA and clear away from site. Include for removing existing fixings and leaving ready to receive a new slate covering.
	2. All roof covering works are to be carried out in accordance with the manufacturer’s/suppliers instructions and BS 5534: Code of Practice for Slating and Tiling.
	3. Slates to be any size, colour and approved manufacturer to match existing.
16. **Artificial Slate**
	1. Remove the complete natural slate roof covering as identified by the CA and clear away from site. Include for removing existing fixings and leaving ready to receive new artificial slates.
	2. All roof covering works are to be carried out in accordance with the manufacturer’s instructions and BS 5534: Code of Practice for Slating and Tiling.
	3. Slates to be any size, colour and approved manufacturer to match existing.
17. **Cloak Verge (where appropriate)**
18. To aesthetically and physically blend with the roof tile and be mechanically fixed to provide a durable and long term weatherproof and maintenance free finish to the verge.
19. Designed for use with Double Roman, Manufactured to BS EN 490 for Concrete roofing tiles and fittings with BSI Kitemark licence and to include an embedded PVC-u channel.
20. The fixing nails manufactured from durable aluminium and stainless steel, the spacer units from nylon.
21. Cloak verge tiles to be fully compatible with the Dry Ridge Systems & Eaves Ventilation Systems.
22. Secret fixing method to mechanically fix all verge tiles to resist wind uplift as required by BS 5534: Part 1. Half Tiles may be used to provide design and setting out flexibility.

**4.0 SCHEDULE OF PRODUCTS**

4.0.1 Any materials named are indicative and demonstrate the ability to meet the standards and specification of the contract; however alternative suppliers may be used provided they are approved and meet or exceed the minimum requirements as well as being cost effective.

**5.0 REPAIRS and EXTRA OVER REPAIRS**

5.0.1 Any associated repairs and or additional works required in connection with pitched roofing must be carried in strict accordance with all current British Standards, Codes of Practise, etc. using good quality materials and workmanship

 Reference to be made to the M3NHF Schedule of Rates ‘Specification of Workmanship and Materials’

# ANNEX A - SPECIFICATION FOR ASBESTOS SURVEYS, ANALYSIS & REPORTING

1. **GENERAL**
2. EKH shall appoint its own specialist consultant for the Asbestos Surveys and Sample Analysis prior to works commencing under the Contract. **However the Contract allows for Asbestos Surveys and Sample Analysis to be undertaken by instruction to enable the effective replacement of roofing material.**
3. Where instructed the Consultant will be expected to work independently, to manage access to each property, communicate effectively with residents and assist EKH in developing and aligning survey reports, recommendations and templates with the EKH Asbestos Policy & Procedure.

1. Pricing for this service will be as set out in the Pricing Schedule.
2. Asbestos surveys, testing and reporting must be in accordance with East Kent Housing’s Asbestos Policy & Procedures. The specification includes:
* Intrusive Demolition / Refurbishment Surveys for ACMs preceding programmes of planned maintenance works in accordance with HSG 264. This will include a Management Survey to the property in addition to the R&D survey.
	1. EKH will appoint its own specialist Contractor for the removal of ACMs who will be independent to the Survey Consultant. **However in exceptional circumstances the Contract allows for the removal of ACMs by agreement with the Contract Administrator.** Pricing for this service will be as set out in the Pricing Schedule.
* Asbestos data is available for each of the 4 Council areas and is currently held on a web based portal owned and managed by a 3rd party consultant. Secure access to be arranged on award of Contract.
	1. As a minimum all reports must be provided electronically by the contractor to EKH in PDF format or other formats at EKH request (e.g. bespoke Excel data loaders).
1. **REFERENCES AND RELATED LEGISLATION**
2. The Consultant shall indemnify and keep indemnified EKH against all and any penalties and liabilities of every kind for breach of any such Act, Regulation, Bye-Law, published guidance or approved Code of Practice. For the avoidance of doubt, the Consultant shall not be entitled to payment for any work carried out in the provision of these Services if such work is carried out in breach of any Act, Regulation, Bye-Law published guidance or approved Code of Practice.
3. The work must be carried out in accordance with the requirements of:
4. HSG 264 Asbestos the Survey Guide.
5. Health and Safety at Work Act 1974.
6. The Control of Asbestos Regulations 2012.
7. The Construction (Design and Management) Regulations 2015.
8. The Management of Health and Safety at Work Act 1999.
9. Workplace (Health Safety & Welfare) Regulations, 1992.
10. The Environmental Protection Act 1990.
11. The Control of Pollution (Amendment) Act 1989.
12. The Hazardous Waste Regulations 2005.
13. The Personal Protective Equipment at Work Regulations 2002 and all Regulations made under the above Acts and all subsequent amendments of the above Regulations to date.
14. HSG 210 Asbestos Essentials task manual.
15. Code of Practice entitled “Work with Asbestos Insulation Asbestos Coating and Asbestos Insulating Board” (third edition).
16. HSG 248 The Analysts Guide for Sampling, Analysis and Clearance Procedures;
17. HSG 247 Asbestos the licensed Consultants guide.
18. BS EN ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories.
19. HSG 227 Comprehensive Guide to Managing Asbestos in Buildings.
20. ACOP L143 Managing and Working with Asbestos, 2013.
21. EH51 Respiratory Equipment for use in Removing Asbestos.
22. HSG 189/2 Working with Asbestos Cement.
23. HSG33 Health & Safety in Roof Work.
24. Code of Practice entitled “Work with asbestos insulation asbestos coating and asbestos insulating board” (Second edition).
25. BS EN ISO/IEC 17020:2012 Conformity Assessment. Requirements for the operation of various bodies performing British Standards Institution inspections.
26. The Control of Substances Hazardous to Health Regulations, 2002.
27. The Contractor must be aware of any changes to legislation that may impact on any aspect of the Asbestos Surveying and analysis programme. The Contractor must inform the Contract Administrator of those changes as expediently as possible to ensure that any Risk Assessments and or Method Statements along with the EKH Policy and Procedures are amended to reflect those changes prior to any surveys commencing on site.
28. **AFFECTED PROPERTY**
	1. With the exception of any Void refurbishment works, the majority of properties will be occupied whilst the surveys are being undertaken and it shall be the Contractor’s responsibility to make effective and appropriate arrangements with residents for access.

3.2 The Contractor shall utilise as a minimum, a three stage appointment system on the Contractor’s headed note-paper, wording and format to be agreed with EKH prior to the commencement of the Programme, requesting access.

1. **CONTRACT ADMINISTRATOR**
	1. The Contractor shall at all times comply with the instructions of the Contract Administrator.
	2. The Contract Administrator may attend site at any time with the Contractor whilst any Services are being carried out.

4.3 The Contractor shall at all times allow such persons as may be nominated from time to time by the Contract Administrator access to:

1. Records and documents in the possession of the Consultant in connection with delivery of the Services.
2. Inspect the condition of any premises, plant or equipment used by the Consultant for the performance of the Services.
3. Any Employee for the purposes of interviewing them in connection with the carrying out of all or any part of the Services.
4. Materials, stores and spare parts used by the Consultant to provide the Services, in order to ensure that such items comply with manufacturers' specifications.
5. **SURVEYING**

5.1 All safeguards outlined in HSG 264, HSG 248 and ACOPL 143 that are necessary for the safe sampling of asbestos must be maintained. Exposure must be reduced to the lowest level reasonably practicable by suitable systems of work. These must include but not be limited to:

1. Working methods which minimise breakage, abrasion, matching or cutting of asbestos materials.
2. Clear indication of areas being worked in.
3. Dust suppression by the use of wetting the work area.

5.2 On completion of asbestos sample removal, individual sample points must be unobtrusively

sealed and the entire area must be thoroughly decontaminated using high efficiency type H vacuum cleaners approved for use in asbestos removal. Brushes must not be used.

5.3 All asbestos samples must be double bagged with suitable polythene containers, sealed with duct tape and marked with asbestos warning stickers. If not transferring the waste directly to an appointed laboratory, it should be transferred to a suitably safe place with a lockable steel lid which will be kept locked at all times it is unattended. Appropriate reassurance testing should be carried out where applicable to ensure areas are not contaminated in any way.

5.4 The asbestos will be sampled by suitably trained and competent persons over the age of 18 years who have been instructed in correct working procedures and who are wearing a suitable respirator and protective clothing.

5.5 The airborne concentration of asbestos during asbestos survey must be less than 0.01 fibres/ml.

5.6 Protective Clothing shall be clean, disposable and of a material which does not retain asbestos fibres. Disposable overalls will be fitted with a hood, boots without laces, and respiratory equipment. Clothing and footwear must completely enclose the body, head and feet in such a manner as to prevent contamination.

5.7 Where available, clean overalls with a type H vacuum with a brush attachment. Peel off disposable overalls so that they are inside out, place them in a suitable asbestos waste container, finally remove the respirator and place into the asbestos waste container.

5.8 All non-contaminated loose equipment and material must be removed from the work area.

5.9 Any fixed equipment which cannot be removed from the work area must be covered and sealed with polythene no less than 500 gauge.

5.10 Protect nearby surfaces from contamination using polythene of no less than 500 gauge, timber and tape. Polythene sheeting must be adequately supported throughout.

5.11 Warning and prohibition notices must be displayed outside all areas and access to work areas restricted.

**5.12 Respiratory Equipment:** The strap of the respiratory equipment must be positioned underneath the protective overall hood. Protective clothing must be worn only in the working and areas. Respirator protection must be the high efficiency positive pressure type in accordance with the Regulations set out at paragraph 5.2. The equipment must fit the wearer correctly and must not be shared with other wearers unless adequately cleansed and disinfected beforehand.

**6.0 SURVEY TYPES**

**6.1 Management Survey**

6.2 The management survey is the standard survey. Its purpose is to locate, as far as reasonably practicable, the presence and extent of any suspect ACMs in the building which could be damaged or disturbed during normal occupancy, including foreseeable maintenance and installation, and to assess their condition.

6.3 Management surveys will often involve minor intrusive work and some disturbance. The extent of intrusion will vary between premises and depend on what is reasonably practicable for individual properties, i.e. it will depend on factors such as the type of building, the nature of construction, accessibility etc.

6.4 A management survey should include an assessment of the condition of the various ACMs and their ability to release fibres into the air if they are disturbed in some way. The material assessment will give a good initial guide to the priority for managing ACMs as it will identify the materials which will most readily release airborne fibres if they are disturbed.

6.5 The survey will usually involve sampling and analysis to confirm the presence or absence of ACMs. However a management survey can also involve presuming the presence or absence of asbestos. A management survey can be completed using a combination of sampling ACMs and presuming ACMs or, indeed, just presuming. Any materials presumed to contain asbestos must also have their condition assessed (i.e. a material assessment).

6.6 Management surveys can involve a combination of sampling to confirm asbestos is present or presuming asbestos to be present. By presuming the presence of asbestos, the need for sampling and analysis can be deferred until a later time (e.g. before any work is carried out).

6.7 However this approach has implications for the management arrangements. Any work carried out on ‘presumed’ materials would need to involve appropriate contractors and work methods in compliance with irrespective of whether the material was actually an ACM or not. Alternatively, before any work starts, sampling and analysis can be undertaken to confirm or refute the presence of asbestos.

6.8 When sampling is carried out as part of a management survey, samples from each type of suspect ACM should be collected and analysed. If the material sampled is found to contain asbestos, other similar materials used in the same way in the building can be strongly presumed to contain asbestos. Less homogeneous materials (e.g. different surfaces/coating, evidence of repair etc.) will require a greater number of samples. The sample number should be sufficient to establish whether asbestos is present or not in the particular material. Sampling may take place simultaneously with the survey, or as in the case of some larger surveys, can be carried out later as a separate exercise.

6.9 All areas should be accessed and inspected as far as is reasonably practicable. Areas should include under floor coverings, above false ceilings, and inside risers, service ducts, lift shafts etc. Surveying may also involve some minor intrusive work, such as accessing behind fascia and panels and other surfaces or superficial materials. The extent of intrusion will depend on the degree of disturbance that is or will be necessary for foreseeable maintenance and related activities, including the installation of new equipment/cabling. Surveyors should come prepared to access such areas (i.e. with the correct equipment etc.).

6.10 Management surveys are only likely to involve the use of simple tools such as screwdrivers and chisels. Any areas not accessed must be presumed to contain asbestos. The areas not accessed and presumed to contain asbestos must be clearly stated in the survey report and will have to be managed on this basis, i.e. maintenance or other disturbance work should not be carried out in these areas until further checks are made.

6.11 All ACMs should be identified as far as is reasonably practicable. The areas inspected should include: under floor coverings, above false ceilings (ceiling voids), lofts, inside risers, service ducts and lift shafts, basements, cellars, underground rooms, under crofts (this list is not exhaustive).

6.12 Management surveys should cover routine and simple maintenance work. However it has to be recognised that where ‘more extensive’ maintenance or repair work is involved, there may not be sufficient information in the management survey and a localised refurbishment survey will be needed. A refurbishment survey will be required for all work which disturbs the fabric of the building in areas where the management survey has not been intrusive. The decision on the need for a refurbishment survey should be made by the duty holder (probably with help from others).

**7.0 Refurbishment and Demolition surveys**

7.1 A refurbishment and demolition survey is needed before any refurbishment or demolition work is carried out. This type of survey is used to locate and describe, as far as reasonably practicable, all ACMs in the area where the refurbishment work will take place or in the whole building if demolition is planned.

7.2 The survey will be fully intrusive and involve destructive inspection, as necessary, to gain access to all areas, including those that may be difficult to reach. A refurbishment and demolition survey may also be required in other circumstances, e.g. when more intrusive maintenance and repair work will be carried out or for plant removal or dismantling.

7.3 There is a specific requirement in (regulation 7) for all ACMs to be removed as far as reasonably practicable before major refurbishment or final demolition. Removing ACMs is also appropriate in other smaller refurbishment.

7.4 Situations which involve structural or layout changes to buildings (e.g. removal of partitions, walls, units etc.) under CDM, the survey information should be used to help in the tendering process for the removal of ACMs from the building before work starts. In this type of survey, where the asbestos is identified so that it can be removed (rather than to ‘manage it’) the survey does not normally assess the condition of the asbestos, other than to indicate areas of damage or where additional asbestos debris may be present.

7.5 However, where the asbestos removal may not take place for some time, the ACMs’ condition will need to be assessed and the materials managed.

7.6 Refurbishment and demolition surveys are intended to locate all the asbestos in the building (or the relevant part), as far as reasonably practicable. It is a disruptive and fully intrusive survey which may need to penetrate all parts of the building structure. Aggressive inspection techniques will be needed to lift carpets and tiles, break through walls, ceilings, cladding and partitions, and open up floors. In these situations, controls should be put in place to prevent the spread of debris, which may include asbestos.

7.7 Refurbishment and demolition surveys should only be conducted in unoccupied areas to minimise risks to the public or employees on the premises. Ideally, the building should not be in service and all furnishings removed. For minor refurbishment, this would only apply to the room involved or even part of the room where the work is small and the room large. In these situations, there should be effective isolation of the survey area (e.g. full floor to ceiling partition), and furnishings should be removed as far as possible or protected using sheeting.

7.8 The ‘surveyed’ area must be shown to be fit for reoccupation before people move back in. This will require a thorough visual inspection and, if appropriate (e.g. where there has been significant destruction), reassurance air sampling with disturbance.

7.9 It is EKH’s policy in accordance with CAR regulation 7 to remove all ACMs as far as practicable before major refurbishment or demolition.

**8.0 SURVEYING SERVICES SPECIFICATION**

8.1 Every individual property undergoing intrusive work will be subject to a separate Refurbishment Survey. The Contractor will consult with EKH and/or use available Asbestos Register to execute survey(s) at the required address(s) within the works programmes.

8.2 The Contractor must acquaint and satisfy himself with all conditions likely to affect the execution of nay works, including the types, construction and location of the dwellings and buildings, as no claim by the Contractor for additional payment will be allowed on the grounds of any misunderstanding or ignorance due to lack of knowledge of local conditions, Regulations or requirements on which the Order(s) are to be executed.

8.3 The Contractor will inform the Contract Administrator when the surveys have been completed before close of business of the next working day and the following timescales will apply:

8.4 For Planned works: a maximum of 2 working days will be allowed to complete inspection, sampling and provide initial report of identification of ACM. Then 2 working days will be allowed for the CA’s instruction and upon receipt a further 5 working days will be allowed for a full report and Asbestos register updated.

8.5 For Communal works: a maximum of 2 working days will be allowed to complete inspection, sampling and provide initial report of identification of ACM. Then 2 working days will be allowed for the CA’s instruction and upon receipt a further 5 working days will be allowed for a full report and Asbestos register updated.

8.6 Voids - The risk of exposure to ACMs will be assessed as part of the Voids process. Where repairs are due to take place the Councils Voids Coordinator will review the Management Survey and ensure suitable demolition / refurbishment surveys are conducted and included when assessing risk. Should any further intrusive Demolition Survey be required; or subsequent removal works that require the statutory 14- day notice period to be issued to the HSE, an Extension of Time will be granted to the target void completion times set.

8.7 Surveys in Sheltered Accommodation for older people - The Contractor is to note that any Asbestos Services required to sheltered accommodation may be the subject of special timing and methods of working in an effort to minimise disturbance to Residents insofar as possible. In any event, no work outside the normal hours of working will be allowed.

**9.0 REPORTING**

**9.1 Survey Reports**

9.2 Following completion of the Site Survey, a report is to be compiled detailing any ACM’s identified, their location, condition, extent together with recommendations for any Management Actions required. Reports will comply with the recommendations set out in HSG 264, follow the agreed template formatand shall include a report summary and recommendation, no access areas / elements, individual ACM data sheets, colour photographs, floor plans showing presumed or identified ACMs, laboratory analysis results and a detailed asbestos register.

Unless otherwise agreed with EKH, the report and updated Register shall be provided to the Contract Administrator within five working days from the date of access to the property for survey.

**10.0 The Asbestos Register**

10.1 Asbestos information will be provided to the Contractor by:

* A manual and or electronic report per property or common area.
* An export from EKH’s current register, or.
* By giving the Contractor access to EKH’s current register.

10.2 Asbestos information will be provided to the Contract Administrator by:

* All relevant files (CSV, excel etc.) or an appropriate interface provided to the Northgate Public services Housing System (when available) or by email.
* Key asbestos information e.g. location, type, condition (from within the Asbestos Register).
* All photographs to be provided electronically by property / communal area following indexing protocols to be agreed with the Contract Administrator.
* Comprehensive asbestos survey report in PDF format

**11.0 Day to Day Issues**

11.1 In the event the Contractor finds any sharps, contamination, human waste, vermin etc. in the property, the Contract Administrator will be notified and no further surveys are to be undertaken without the further instructions of the Contract Administrator.

11.2 Should the Contractor discover any damage to the external fabric or internal components in the property, a brief report of their findings along with supporting digital photographs will be submitted to the Contract Administrator.

**12.0 OTHER RELATED SURVEY REQUIREMENTS**

12.1 The Contractor will:

1. Provide SEM (‘Scanning Electron Microscopy’) testing services for potential fibre contamination investigation/ advice scenarios;
2. CDM related roles: Principal Consultant and/or Principal Designer responsibilities including review of proposed asbestos related Risk Assessment and Method Statement (**‘RAMS’**) control measures proposed for differing risk categories of asbestos work (licensed, notifiable non-licensed and, non-licensed);
3. Quality assurance arrangements / requirements: The Contractor will submit their appointed asbestos survey specialist’s periodic UKAS assessment reports to the Contract Administrator. In addition, EKH may commission a sample of ‘blind’ survey report audits by another competent and suitably qualified asbestos survey specialist.
4. The Contractor will support EKH in dealing with any Asbestos related investigations, enquires and reports.

# ANNEX B - SPECIFICATION FOR ASBESTOS REMOVAL WORKS

**1.0 GENERAL**

1. The Contract allows for the removal or encapsulation of Asbestos Containing Materials (‘**ACM**’s) as required from asbestos surveys; all in accordance with this specification and the EKH’s Asbestos Management Policy & Procedures**. Removal of ACM under this contract will be in exceptional circumstances only**
2. Pricing for the service will be as set out in the Pricing Schedule.
3. The specification comprises the removal or encapsulation of Asbestos Containing Materials (‘**ACM**’s) in common areas, occupied or void properties as identified and required from asbestos surveys and as instructed by the Contract Administrator. The Contractor will only use licensed removal contractors to undertake removal and disposal of ACMs
4. All removal works are to be in accordance with HSG 247: The licensed contractor’s guide, ACOP L143; Managing and Working with Asbestos and incorporate a four stage air clearance test and/or reassurance air testing where necessary in accordance with HSG 248: The Analyst’s Guide for Sampling and Clearance Procedures and ACOP L143.

1. The Contractor will be expected to work independently, to manage access to the properties and communications with residents
2. The Contractor will be under instruction by the Contract Administrator.
3. There may be occasions where the Removal Contractor has to work collaboratively with an alternative Main Contractor in either occupied or void premises at the request of the Contract Administrator
4. The Removal Contractor must be aware of any changes to legislation that may impact on any aspect of Asbestos Removal and associated works. The Removal Contractor must inform the Contract Administrator of those changes as expediently as possible to ensure that any Risk Assessments and or Method Statements along with the EKH Policy and Procedures are amended to reflect those changes prior to any works commencing on site.

**2.0 REQUIREMENTS FOR REMOVAL OF ACMs**

1. The Removal Contractor must be able to demonstrate his understanding and willingness to comply with all aspects of the Asbestos Regulations, Approved Codes of Practice and Guidance notes relating to the limitation of exposure to asbestos fibres, the control and security of works, record keeping, notification and managed waste disposal.
2. The Removal Contractor is to carefully remove existing ACMs under controlled conditions as indicated from the asbestos survey. Remove from site using a licensed carrier and dispose of at a licensed disposal site.
3. Irrespective of whether the removal is licensable or not, the Contractor must carry out the works in accordance with the requirements of:
4. HSG 264 Asbestos the Survey Guide
5. Health and Safety at Work Act 1974
6. The Control of Asbestos Regulations 2012
7. The Construction (Design and Management) Regulations 2015
8. The Management of Health and Safety at Work Act 1999
9. The Workplace (Health, Safety and Welfare) Regulations, 1992
10. The Environmental Protection Act 1990
11. The Control of Pollution (Amendment) Act 1989
12. The Hazardous Waste Regulations 2005
13. The Personal Protective Equipment at Work Regulations 2002 and all Regulations made under the above Acts and all subsequent amendments of the above Regulations to date
14. HSG 210 Asbestos Essentials task manual
15. Code of Practice entitled “Work with Asbestos Insulation Asbestos Coating and Asbestos Insulating Board” (third edition)
16. HSG 248 The Analysts Guide for Sampling, Analysis & Clearance Procedures;
17. HSG 247 Asbestos the licensed contractors guide
18. ACOP L143 Work With Materials Containing Asbestos
19. Personal Protective Equipment at work Regulations, 2002
20. Code of Practice entitled “Work with asbestos insulation asbestos coating and asbestos insulating board” (Second edition)
21. HSE50 Asbestos licence assessment, amendment and revocation guide (ALAARG) HSE 2012
22. BS 8520-3:2009 Equipment used in the controlled removal of asbestos-containing materials
23. Notification form FOD ASB5 (HSE).
24. Notification of non-licensed work with asbestos ASB NNLW1 (HSE).
25. BS EN ISO 13982-1:2004+A1:2010 Protective clothing.
26. Medical Guidance Note MS31(rev1) Medical surveillance for workers carrying out licensed work with asbestos.
27. ACOP L101 Safe work in confined spaces. Confined Spaces Regulations 1997. Approved Code of Practice, Regulations and guidance (Second edition).
28. The Hazardous Waste (England and Wales) Regulations 2005 SI 2005.
29. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations, 2009.
30. The Personal Protective Equipment Regulations, 1992.
31. HSG 248 The analysts’ guide for sampling, analysis and clearance procedures.
32. BS EN ISO/IEC 17020:2012 Conformity assessment. Requirements for the operation of various types of bodies performing inspection British Standards Institution.
33. HSG 53 Respiratory Protective Equipment At Work.
34. HSG 65 Successful Health & Safety Management.
35. The Hazardous Waste (England & Wales) (amendment) Regulations 2009.
36. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004, and ADR 2011.
37. BS EN ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories.

**3.0 SITE PREPARATION**

1. All non-contaminated loose equipment and material must be removed from the work area.
2. Any fixed equipment which cannot be removed from the work area must be covered and sealed with polythene no less than 500 gauge.
3. Protect nearby surfaces from contamination (using polythene no less than 500 gauge, timber and tape). Polythene sheeting must be adequately supported throughout.
4. Warning and prohibition notices must be displayed outside all areas and access to work areas restricted both in properties and common areas.

**4.0 GENERAL REQUIREMENTS**

1. ACM’s will be removed by persons over the age of 18 years who have been instructed in correct working procedures and who are wearing the specified respirator and protective clothing. All notifications to the HSE for notifiable removals to be made by the Contractor and copied to the Contract Administrator
2. All safeguards outlined in HSG 247 that are necessary for the safe removal of asbestos must be maintained. Exposure must be reduced to the lowest level reasonably practicable by suitable systems of work. These must include but not be limited to:
3. Working methods which minimise breakage, abrasion, matching or cutting of asbestos materials.
4. Clear indication of areas being worked in.
5. Dust suppression by the use of wetting the work area.
6. On completion of asbestos removal the entire area must be thoroughly decontaminated using high efficiency type H vacuum cleaners approved for use in asbestos removal. Brushes must not be used.
7. All asbestos waste must be double bagged with 1,000 gauge polythene sheeting, sealed with duct tape and marked with asbestos warning stickers. If not transferring the waste directly to an appointed licensed land fill site it should be transferred to a suitable steel skip with a lockable steel lid which will be kept locked at all times it is unattended. Appropriate reassurance air testing should be carried where applicable to ensure areas are not contaminated in any way.
8. The airborne concentration of asbestos during asbestos removal must be less than 0.010 fibres/ml. the airborne concentration asbestos.

**5.0 ENCAPSULATION**

1. During the implementation phase of the contract, the Removal Contractor (Contractor) will agree produce an appropriate work plan for all routine / repetitive encapsulation and removal tasks.
2. This work plan is to include in each case agreed relevant criteria, Risk Assessments, Method Statements, terms of reference (TOR), control measures, and general method of working which are then to be employed as ‘overarching’ pre-agreed work plans.
3. The Contactor is to provide, electronically, the following information to the Contract Administrator in respect of each ACM removal task (including encapsulation, repair or equivalent provision) performed within **5 working days**:
* Formal HSE notification: category as appropriate (either full 14 day notice for fully licensable work, or notifiable non-licensed work [NNLW]).
* Plan or work including Method Statement (MS) and Risk Assessment (RA) particular to that task.
* All asbestos material consignment notes arising upon completion.
* Certification in respect of full four stage clearance procedure, or air-reassurance testing / reoccupation certification equivalent dependent upon the category or work undertaken.
* Confirmation of all ACMs individually encapsulated or removed in sufficient detail to enable the Contract Administration Team to update the asbestos register.
* Encapsulation’ of asbestos containing materials is anticipated will generally comprise either the provision of a proprietary liquid / brush applied coating, or a physical / mechanical over-covering.
1. The decision to encapsulate an ACM rather than to remove it will include an options appraisal. Where encapsulation is a viable option, the Contractor will assist the Contract Administrator by considering:
* Likely fibre release and exposure levels arising during application of the preferred encapsulation technique.
* Current / future accessibility of the ACM, the potential for future damage (from impact, or abrasion or future movement).
* The current condition of the material.
* The ease / viability of retaining or replacing the ACM with a substitute material with equivalent fire, acoustic and thermal insulation characteristics.
* Likelihood of subsequent water penetration.
1. Where encapsulation is agreed the Contractor is to collate and provide to the Contract Administrator a comprehensive record of the work proposed and then undertaken which must be sufficient to also update the Employers asbestos register and to re-calculate the ACMs risk assessment score.
2. The record provided will include a photograph of the encapsulated material before and after work is completed. Where agreed specifically with the Contract Administrator the Contractor will provide and apply an appropriate & approved asbestos warning label (as well as detailing the encapsulation product employed and the date of application).
3. The control measures to be employed in respect of any encapsulation work are anticipated generally replicate those applied to ACM removal tasks, however detailed Risk Assessment (RA), plan of work and associated Method Statements (including control measures specifically proposed) are to be prepared and submitted by the Contractor in all cases for evaluation and approval by the Contract Administrator.
4. Wherever it is anticipated that any asbestos containing material will remain in-situ and with a surface exposed, the Contractor must notify the Contract Administrator immediately.
5. The Contractor will not dismantle / remove any associated enclosure without prior agreement / instruction from the Contract Administrator regarding the detailed method of encapsulation to be adopted.
6. The potential use of PVA as a sealant will only be regarded as a short term / temporary technique and will represent a potential continued risk until a permanent solution is agreed and implemented.
7. The Contractor must provide details to the Contract Administrator regarding the ACM present together with the long-term encapsulation technique employed i.e. elastomeric coating, high build membrane protection, or equivalent approved coating. The Contract Administrator will then evaluate the proposal and confirm instruction prior to removal of any associated enclosure.
8. It is EKH’s policy in accordance with CAR regulation 7 to remove all ACMs as far as practicable before major refurbishment or demolition.

**6.0 HSE WORKS NOTIFICATIONS:**

1. The Contractor will be responsible for identifying and submitting to the relevant enforcing authority (Health and Safety Executive, local authorities, and ORR) under the criteria set out within Regulation 9 of the Control of Asbestos Regulations 2012 (CAR 2012), and related guidance documentation (ACOPL143, etc):
* A notification waiver / cover note in the case of emergency where work needs to commence immediately.
* A full 14 day notification (form FOD ASB5).
* Notifiable non-licensed work notification (on-line form ASB NNLW1).
1. The Removal Contractor is required and will submit electronic copies to the Contract Administrator to substantiate that the appropriate form of notification has be issued, within the appropriate period of notice, and to the appropriate regulatory authority.
2. In situations where the Removal Contractor proposes undertaking ‘soft strip’ tasks / work in advance of the primary asbestos removal / encapsulation, the start date relevant to the notification, will be the date the ‘soft strip’ tasks commence. The decontamination unit (DU) is also to be on site and ready to use (fully operational) in advance of commencing the ‘soft strip’ elements of work.

**7.0 KEEPING RECORDS AND SITE DOCUMENTATION REQUIREMENTS:**

1. The Contractor’s appointed site manager / supervisor is to be responsible for compiling, maintaining and updating an appropriate document file on site at all times throughout the duration of the work.
2. This file is to contain copies of all current information recording and including the following (this is not an exhaustive list and must be to the satisfaction of the Contract Administrator and ultimately the HSE):
* The instruction / order from the Employer
* The asbestos survey
* The specification / schedule of work proposed
* The Plan of Work (and programme of work)
* The Method Statement (MS) [including control measures for all ACM related elements]
* The Risk Assessment (RA)
* The HSE Licence for Work (under regulation 8 of the CAR 2012)
* The FOD ASB 5 notification
* The ASB NNLW1 notification
* The ‘Waiver Document’ (only to be employed by agreement with the Employer and in cases of emergency)
* Named persons on site
* Any bulk ACM testing certificates
* Any air testing certification undertaken
* The training certificates relevant to those working on site
* The plant/test certificates relevant to the proposed work on site
* The medical certificates relevant to those operatives/ foremen/ Removal Contractor staff working on site
* The Removal Contractors public liability and employer’s insurance certificate (current)
* The Removal Contractor’s Waste Carriers Registration (or their appointed agent)
* COSHH sheets regarding all products used/ present on site
* All plant, enclosure, and respirator examination/ daily check documentation
* Quantitative face fit test certification for all operatives/ foremen/ Removal Contractor staff on site.
* All the Waste Consignment Notes arising.

**8.0 DISPOSAL OF ASBESTOS WASTE**

1. All asbestos waste must be disposed of in accordance with The Hazardous Waste Regulations 2005 (as amended).
2. The asbestos removal contactor will be responsible for ensuring that the carriers’ collection certificate is completed in accordance with the Regulations. The Contractor will provide (electronic) copies of all documentation relating to asbestos removal and disposal to the Contract Administrator on a regular basis (no longer than 1 month after completion of works).

**9.0 INFORMATION TECHNOLOGY & THE ASBESTOS REGISTER**

1. All updates and certifications on all significant changes to properties including but not limited to asbestos works will be returned to EKH for imputing onto the Asbestos Register.
2. The Removal Contractor will undertake removal work based on either Management or R&D surveys reports, carry out work in safe manner with all work and associated advisory notes e.g. consignment notes etc. reported to EKH in an electronic format e.g. pdf format etc.
3. Any consignment note, documentation etc is also sent to the Contract Administrator, as per section 7 Keeping records and Site Documentation Requirements.

# ANNEX C – SCHEDULE OF BRITISH STANDARDS, ETC

All works must be fully compliant with the British Standards, etc. within the Specification. The contractor must clearly reference where the equivalent European Union standard has been used in relation to the specific British Standards, etc. below

* **BS 5534** Slating and tiling for pitched roofs and vertical cladding. Code of practice
* **BS12588** Lead and lead alloys. Rolled lead sheet for building purposes
* **BS 12** Specification for Portland cement
* **BS 146** Specification for blast furnace cements with strength properties outside the scope of BS EN 197-1
* **BS 4027** Specification for sulphate-resisting Portland cement
* **BS5250** Code of practice for control of condensation in buildings
* **BS 8000 Part 6** Workmanship on building sites. Code of practice for slating and tiling of roofs and walls
* **BS EN 490: 2011** Concrete roofing tiles and fittings for roof covering and wall cladding. Product specifications
* **BS EN 1304** Clay roofing tiles and fittings. Product definitions and specifications
* **TG20:2013** NASC Good Practice Guide for Tube and Fitting Scaffolding