

## ROOF TILING

### TRADE SPECIFICATION

#### GENERAL

- a) **BDW Trading Limited**  
Barratt Homes and David Wilson Homes are all trading names of BDW Trading Limited “the Company”.

- b) **Clearing**  
The Contractor is responsible for clearing up and safe removal of waste materials arising from execution of the Works, as part of this Trade Specification.

The Contractors attention is particularly drawn to the sections below which, state where waste materials must be removed as work progresses, ensuring that all waste materials have been removed following the completion of the works and taken to waste segregation area for sorting by subcontractor.

Failure to comply with this requirement resulting in the Company’s labour performing this task will result in contra charges being levied against the Contractor.

- c) **Contract Conditions**  
The Contractors attention is drawn to the Company’s Conditions of Contract and General Terms.

- d) **Defective Workmanship**  
All defects, resulting from poor workmanship by the Contractor or, by the Contractor not carrying out the Works in accordance with this Trade Specification and the Governing Documents listed below, are to be remedied by the Contractor at no extra cost to the Company.

Failure by the Contractor to carry out this contractual obligation, resulting in an alternative Contractor being instructed to carry out such remedial work, will incur the Contractor with the cost thereof.

- e) **Governing Documents**  
The documents below must be used for reference in compliance with the Company’s standard working drawings and construction best practice guide. The Contractor is to ensure that all current versions are followed.

- NHBC Technical Standard 7.2 Roofing.
- NHBC Regulations (Feb 1989) Section Rf – clauses Rf1 – Rf29 (and further clauses referred to in these clauses)
- BS: 8000 Part 6 – British Standard – Good working Practice, Slating & Tiling.
- BS: 5534 – British Standard – Slating & Tiling
- BS: 5250 – British Standard – Control of Condensation in Roof Spaces.

- Building Regulation Part F – Mechanical & Soil Vent Extraction.
- Leadwork – Shall comply with LSA (Lead Sheet Association) details.
- HSE HSG 150 AND HSE Construction Information Sheet – Number 54 - Revision 1.
- HSG 33, Health & Safety in Roof Work, HSE
- Manufacturer's Site Specific Fixing Specification – Slating & Tiling

Information relating to Governing Documents shall be prone to updates. Any changes to the Governing Document must take precedence over information found in this trade specification. It is the Contractor's responsibility to ensure they are fully compliant with any updates. Manufacturers reserve the right to update product and change product or trade specification upon review of changes to the Governing Documents.

f) **Distribution**

Contractors should be aware that the Company operates a national supply chain agreement with:

Manthorpe Roof Ventilation Products:

**Ian Firth Hardware**

Lady Ann House  
Shaw Cross Business Park  
Dewsbury  
West Yorkshire  
WF12 7RD

Key Contact: Paul Claydon

Tel: 07771 873508

E-mail: [paulc@ianfirth.co.uk](mailto:paulc@ianfirth.co.uk)



g) **Group Suppliers**

The Contractor should be aware that the Company operates National Commodity Agreements with a number of nominated suppliers, as listed in the enquiry letter. It is the Contractors responsibility to ensure that these agreements are adhered to. Failure to do so may lead to the Company making a claim from the Contractor for any loss of rebate. Roof and Ventilation Tiles:

**Forticrete Tiles Ltd**

Boss Avenue  
Off Grovebury Road  
Leighton Buzzard  
Bedfordshire  
LU7 4SD

**Russell Roof Tiles**

Nicolson Way  
Wellington Road  
Burton-on-Trent  
Staffordshire  
DE14 2AW

**Monier Redland Limited**

Spectrum House Beehive  
Ring Road Gatwick  
Crawley  
West Sussex  
RH6 0LG

Slate Roof Tiles

**SIG Roofing Supplies**

Unit 5, Harding Way  
St. Ives  
Cambridge  
PE27 3YJ

Roof Ventilation Products:

**Manthorpe Building Products Ltd**

Brittain Drive  
Codnor Gate Business Park  
Ripley  
Derbyshire  
DE5 3ND

Key Contact: Gareth Wright  
Tel:01773514200  
Fax: 01773514262  
E-mail: [gareth.wright@manthorpe.co.uk](mailto:gareth.wright@manthorpe.co.uk)  
Web: [www.manthorpe.co.uk](http://www.manthorpe.co.uk)

h) **Health & Safety**

All operatives are to be inducted on site in accordance with Barratt Health and Safety Policy.

It is the responsibility of the contractor to provide their own PPE Equipment which must be worn at all times while on site. All necessary PPE based on your assessment of risk or where required by statutory provision or site rules to be supplied by contractor.

All operatives are to be in possession of a valid CSCS Card.

All roofing work shall be carried out in accordance with HSE Document HSG 33 with particular attention to the safe use of disc cutters. From 1st October 2012 wet cutting is mandatory when using a disc cutter for cutting roof tiles into valleys, hips, and abutments. Document ref NFRC Health & Guidance Sheet controlling silica when disc cutting roof tiles.

No 240v tools are allowed on site.

Disc Cutters must only be operated by trained and qualified competent persons.

The Contractor must limit the operative's exposure to silica dust during the tile cutting process by ensuring that all operatives wear a FFP3 disposable mask or half face respirator with a P3 filter. All operatives involved in the work must be face fit tested and records made available to site management.

i) **Materials**

It is the Contractors responsibility for checking materials delivered directly to site for any damage, colour variation and correct quantities prior to unloading. Should significant quantities of damaged materials be identified, these must be reported to the supplier before accepting the consignment. When laying it is important that tiles from a minimum three different pallets are mixed to ensure a consistent and uniform colour appearance is achieved.

The Contractor is responsible for unloading, protecting and safe storing of all of their own materials to avoid damage and surface contamination.

The Contractor must also ensure that all materials are satisfactory for use and have not been subject to deterioration and conform to the relevant BSS, if applicable or Agrément Certificates, NHBC and Local Authority requirements. Failure resulting from the Contractor using unsuitable or damaged materials will result in the Contractor being liable for any costs in rectifying the same.

Any materials offered as "similar" to those products specified will require the Contractor to obtain written approval from the Company before use.

j) **Manufacturers Products**

The Contractor must make themselves aware of the Manufacturer's product specification, site and house type specific fixing specification at the tendering stage as no claim for want of knowledge will be entertained. All technical issues must be resolved before work commences on site.

Only those accessories to the main Roof Tile manufacturer are to be used. UNDER NO CIRCUMSTANCES are alternative manufacturer's ventilation tile products to be used unless specifically noted in this Trade Specification or notified by the Company in writing.

k) **Site Conditions**

The Contractor is to examine the drawings, visit the site in order to ascertain position of site office, compound, electricity and water supplies.

Accessibility may vary depending on the location, weather conditions and such like. These factors must be taken into consideration at tender stage as no claims will be entertained for additional costs due to adverse site conditions.

l) **Sub-Contractor**

The Contractor must not further sub-contract any part of the Works to another Contractor without the prior knowledge and written approval of the Company.

It is essential that the Contractor liaises with all other trades associated with the Works to ensure the sub-structure is installed correctly and appropriately prior to work being carried out, including but not limited to:

**Bricklayer**

The Roof Tile Contractor is to liaise with the Bricklayer to ensure that the height and construction of all brickwork and blockwork is correct at eaves, verge, ridge and party walls to ensure subsequent roof tiling can be carried out on an even sub-structure.

**Carpenter**

The Roof Tile Contractor is to liaise with the Carpenter to ensure that fascia boards are set at correct height for the roof tile to be used taking into account the requirement for over fascia ventilators where specified. The Carpenter is to install a timber fillet in readiness for the Roof Tiler to install the rafter support tray. Check soffits are installed correctly to accept soffit ventilation where specified.

The Roof Tile Contractor is to ensure that bargeboards, gable ladders are suitably installed at verges where required to facilitate correct installation of verge systems.

Install valley and other support boards and noggins where required at valleys, side abutments etc. to facilitate correct roof installation of valley and side abutment systems.

The Roof Tile Contractor is to ensure that all timber sub-structure will allow the roof work to be carried out on an even sub-structure.

**Dryliner/Insulation installer**

The Roof Tile Contractor is to confirm that insulation and vapour control layers have been installed correctly as per specification, and consistent with ventilation provision to be installed by the Roof Tile Contractor.

**Plumber (or lead worker)**

The Roof Tile Contractor is to ensure that lead flashings and soakers are appropriate for the roof tiles being used e.g. at vent tiles, side abutments, secret gutter with cover flashings, step or continuous cover flashings with single lapped interlocking tiles, and soakers with double lapped plain tiles and natural slates.

For lead valleys ensure correct width of lead, thickness (code) and overlaps are used for the truss rafter pitch, roof plan drainage area into the valley location. Ensure the correct fixing of lead slate for vent pipe, flashing etc.

Further advice can be sought from the Lead Sheet Association or tile manufacturer for their preferred method of construction.

## 1. QUOTATION

1.1 A fully inclusive lump sum (labour and materials) fixed price quotation is required for ROOF and VERTICAL TILING in accordance with the enclosed drawings, external materials schedule, scope of work and enquiry documents.

1.2 Your quotation for the Works is deemed to include all necessary,

- (i) labour,
- (ii) supply of materials to site,
- (iii) protecting materials on site,
- (iv) distributing and fixing roof and vertical tiles,
- (v) roof underlay/felt,
- (vi) battening,
- (vii) fibreglass valleys,
- (viii) eaves closure units or comb fillers,
- (ix) eaves ventilation systems (over fascia vent / soffit ventilation / underlay support or eaves felt support tray),
- (x) dry systems and ventilation terminals,
- (xi) undercloak of suitable material at verges,
- (xii) nails, clips, screws and two-part adhesive for bonding tiles,
- (xiii) supply and laying of roof tile mortar required for bedding and pointing (coloured as required),
- (xiv) removal of cutting dust from laid tiles.
- (xv) fire stopping with ARC fire stopping products.

1.3 All Works must be completed in accordance with the above listed Governing Documents, current codes of practice, manufacturers recommendations and site specific fixing specification as required to complete the Works.

1.4 The Contractor shall allow within the quotation attendance on-site and co-operation with other trades as directed by the Site Manager.

1.5 Where plain tiling or slating is specified, the Contractor is to allow for fixing of Code 4 lead soakers, supplied by the Plumber.

- 1.6 The Contractors attention is also drawn to the Company's Timber Sourcing Policy noting compliance with ethically and sustainably sourced timber.
- 1.7 Work to comply generally with all the above and specifically with section Rf clauses Rf1 - Rf29 NHBC Regulations (Feb 1989) (and further regulations referred to in these clauses). All Contractors are to allow within their quotation the tile manufacturers site specific fixing specification.
- 1.8 All temporary fixings to be de-nailed prior to being removed from scaffold.
- 1.9 The Company will supply FOC:
  - (i) Use of scaffolding whilst erected
  - (ii) Shared welfare facilities
  - (iii) 110 v power in compound area (if available) - No 240v tools to be used.
  - (iv) Use of forklift (if available) to distribute roof tiles to the point of use.
- 1.10 Should any scaffolding require adapting for means of access, or to carry out any works, it must only be adapted by a qualified Scaffolder.

## **2. UNDERLAY**

- 2.1 All Underlay shall be approved BBA accredited vapour permeable (LR) type to BS EN 13859-1 and compliant with BS 5534 underlay wind uplift resistance requirements for the house type, site location and batten gauge to be used.
- 2.2 The Contractor is to ensure that protect A1 T3 type HR roof underlay is used for all Timber Frame construction units.
- 2.3 The Contractor is to ensure that the 'zonal classification' label, provided by the underlay manufacturer, meets the requirements for the location of the roof being installed; this is to ensure that the underlay does not balloon under wind conditions and make contact with the roof tiles.
- 2.4 Underlay to be laid having minimum horizontal lap of 150mm and vertical laps of 100mm in accordance with BS 5534 to the entire roof area and the following requirements:
  - (i) Where the underlay is installed at dry fixed vented ridge, the underlay must be positioned equally away from the apex of the roof, on both sides to provide a 5mm continuous gap. Under no circumstances must the underlay be laid first over the ridge and then cut with a Stanley knife, or similar, the underlay must be deliberately laid short of the apex of the ridge in accordance with the vented ridge manufacturer's instructions to provide the required air gap.
  - (ii) Where underlay is installed at dry fixed unventilated ridge, underlay must be draped over both sides of the roof apex by 150mm.
  - (iii) Laps should be secured by a naturally occurring batten course or manufacturer approved glue strips/tapes; additional battens are not recommended.

- 2.5 Underlay must drape by 10 mm between the truss rafters to avoid blockages and ensure water is allowed to freely track down to the eaves / gutter. This is important to prevent ponding of water behind the tiling battens, minimise water tracking to batten nail holes and to ensure free drainage of any water in the batten space to the eaves gutter.
- 2.6 Where the underlay is exposed at eaves level it must be UV resistant or type 5U fixed as a 1m strip (e.g. where felt is dressed into gutters) and supported by a Manthorpe G1280 felt support tray or Manthorpe G1281 refurbishment felt support tray **NO OTHER MANUFACTURERS PRODUCTS ARE TO BE USED**. These must be neatly mitre cut at the hip and valley details.
- 2.7 Where the underlay meets abutment walls on roof pitches greater than 15 degrees, the underlay must be carried up the face of the wall by 150mm.
- 2.8 Where the underlay is to be installed on hipped roofs, a secondary length of underlay to a minimum of 600mm wide is to be installed centrally over the main underlay down the line of the hip.
- 2.9 Where the underlay is to be installed at GRP or Lead Sheet substitute valleys, a secondary length of underlay to a minimum of 600mm wide is to be installed centrally under the main underlay down the line of the valley. This must be held in place by valley battens with the main roof underlay being dressed over the valley battens or otherwise, in accordance with the tile manufacturers' recommendations.
- 2.10 Where the underlay is to be installed at traditional Lead valleys, underlay should not be installed below the valley.
- 2.11 Tears and punctures in the underlay must be repaired immediately in accordance with the product manufacturer's recommendations.

### **3. BATTENS**

- 3.1 Softwood timber battens must comply with the following requirements:
  - (i) Fully factory graded and treated in accordance with BS: 5534 with third party certification of compliance.
  - (ii) Stamped with timber species identification codes. PNSY, WPCA, WPCE, or WPNE.
  - (iii) Accompanied documentation showing supplier, timber species, origin, grading standard, size, type of preservative treatment and preservative used.
  - (iv) Treated Battens must be covered by a 60 year material guarantee.
  - (v) The Contractor must purchase all timber via suppliers with FSC or PEFC Chain of Custody certified accreditation.
- 3.2 The use of ungraded battens is not permitted.



- 3.3 Tiling batten sizes are dependent on roof covering type and span between the truss rafters. For truss rafter spans up to 600mm, including vertical tiling, the following applies:
- (i) For all single lapped interlocking roof tiles and double lapped natural or synthetic slates – batten size shall be 50mm x 25mm.
  - (ii) For double lapped plain tiles – batten size shall be 38mm x 25mm.
  - (iii) For vertical tiling in shingle – batten size shall be 38mm x 25mm.
  - (iv) For vertical tiling in slate – batten size shall be 50mm x 38mm.
- 3.4 The precise fixing specification for the tiling battens will vary depending on the site location, exposure and building details. With this information, tiling battens must be fixed in accordance with the tile manufacturers recommendations and British Standards BS1212:Part 3, BS5534, BS EN 1995-1 Part 1 including Amendments and National Annexes and BS EN 1991-1 Parts 1, 3, & 4 including Amendments and National Annexes.
- 3.5 The 'gauge' or spacing of the tiling battens must be in accordance with the tile manufacturer's specification, for the tile specified for the roof and fixed centrally into the truss rafter.
- 3.6 Tiling battens must be set out in straight lines of equal gauge up the roof, parallel with the ridge.
- 3.7 The first batten at the eaves must be fixed so that the roof tile projects not less than 50mm into the centre of the gutter.
- 3.8 Tiling battens must be a minimum length of 1.2 m long, supported and nailed to at least three truss rafters.
- 3.9 Vertical tiling batten joints must be cut neatly at right angles supported over a rafter/truss and splay nailed both sides into the support timber. Joint frequency must adhere to the following:
- (i) Not more than three consecutive batten joints in twelve courses up the same rafter for batten gauges up to 200mm.
  - (ii) Not more than one batten joint in any four consecutive courses up the same rafter for batten gauges over 200mm.
- 3.10 Any saw cut, batten ends, embedded in mortar, must be liberally treated with wood preservative.
- 3.11 Batten ends running into a valleys or hips must be properly supported and either nailed or screw fixed onto additional timber supports (noggins) running up both sides of the hip or valley line, provided by the Carpenter, to ensure that battens are not left unsupported and are not floating between rafter centres. This requirement must be discussed with the Carpenter during the liaison meeting with other trades prior to commencing roof tiling work.
- 3.12 The Roof Tiler must only walk directly up tiling batten lines that are directly supported underneath by a rafter. **NEVER WALK ON BATTENS MID SPAN BETWEEN TWO RAFTERS.**

- 3.13 When installing the 1st batten under roof light window, under window "Z" dimension to be 100mm for pan tiles, 50mm Slate, 100mm for Plain Tile before flashing kit is installed.

#### **4. NAILS**

- 4.1 Nails for fixing underlay and tiling battens are to be galvanised annular ring shanked or wire cut nails as noted in the tile manufacturers site specific fixing specification and must provide a minimum 30mm penetration into the truss rafter.
- 4.2 Nails for fixing slates or tiles are to be as noted in the tile manufacturer's site specific fixing specification or slate nails to BS1202: Part 3.

#### **5. FASCIA BOARDS**

- 5.1 The Contractor is liaise with the Carpenter to ensure that fascia boards are fixed at the correct height in accordance with manufacturer's recommendations to stop tiles lifting or falling along the eaves course.
- 5.2 Failure to ensure the eaves course of roof tiles lay at the same angle as the tiles above can compromise weather tightness of the roof at the junction where the pitch change occurs. If this cannot be avoided a Lead or Lead-replacement flashing must be installed at the junction where the tile pitch changes in accordance with LSA/Tile manufacturer details.

#### **6. VALLEYS**

- 6.1 All valley troughs are to be installed in accordance with NHBC Technical Standards 7.2, British Standard BS8000:Part 6, BS5534 and the roof tiles manufacturer's instructions.
- 6.2 Valleys are to be formed using suitable GRP valley trough providing the pitches either side are equal or have a maximum 5 degrees differential. Consult with the tile manufacturer for further advice on valley pitch differentials if greater than 5 degrees since some dry valleys can accommodate greater pitch differentials.
- 6.3 Where GRP valleys are inappropriate for use e.g. the differential in pitch either side of the valley exceeds the manufacturers' recommendations or where the roof area draining on plan angle into the valley exceeds 25m<sup>2</sup> or the stated maximum from the tile manufacturer the GRP Valley must be replaced with Lead or substitute lead valleys designed in accordance with LSA /manufacturer's details.
- 6.4 Liaison with the Carpenter is required to ensure that all valleys, constructed in GRP, Lead or Lead substitute, are to be laid over supporting layboards.
- 6.5 The valley opening width for pitches of 17.5 degrees to 22.5 degrees and where the collected rainwater area of the roof is not greater than 25m<sup>2</sup> shall be 125mm. This must be increased to 200mm where the collected rainwater area of the roof is greater than 25m<sup>2</sup>.

#### **7. VENTILATION – LOW LEVEL**

- 7.1 All ventilation must be fixed and specified in accordance with BS: 5250, NHBC Technical Standard 7.2 and manufacturers recommendations.

7.2 Eaves or low level ventilation shall be provided as follows:

- (i) Soffit or over fascia ventilation with integral insect screen providing ventilation equivalent in area to a continuous air gap of 10mm along both parallel eaves on the longest eaves of the dwelling where the insulation is installed over a horizontal ceiling.
- (ii) For roofs with pitches of 15 degrees or less and where the insulation is installed over a horizontal ceiling the continuous air gap shall be increased from 10mm to 25mm along both longest eaves of the roof.
- (iii) Where the insulation follows the slope of the roof (i.e. insulation installed at truss rafter level, room-in-the-roof construction), a 25mm continuous air gap shall be provided along both longest eaves of the roof. A clear air path of 50mm shall be maintained between the insulation and the underside of the roofing membrane.

7.3 Where insulation is installed over horizontal ceilings, ventilation trays positioned over the truss rafters and below the underlay must be installed and provide a minimum 25mm continuous air gap. Manthorpe G502 Double Width Rafter Roll shall be used to provide sufficient rigidity and height to allow 50mm of unhindered free passage of air into the loft space. NO OTHER MANUFACTURERS PRODUCTS ARE TO BE USED.

7.4 Where insulation follows the slope of the roof and is installed between truss rafters. Ventilation tiles of sufficient ventilation capacity must be installed to provide 5mm air passage below and 25mm air passage above the obstruction. These ventilation tiles must be installed in each and every truss rafter bay both sides of valleys and above roof windows and other roof obstructions.

7.5 Where fire-break walls parallel to the eaves exist, ventilation tiles of appropriate capacity to achieve equivalent of continuous 10mm opening (where insulation laid over a horizontal ceiling) or 25mm opening (where insulation is installed between truss rafters) shall be installed above the fire-break walls.

7.6 Where a profiled tile of sufficient leading edge profile depth is used, eaves closer units, supplied by the roof tile manufacturer or, Manthorpe G1275 eaves comb filler are to be installed to prevent rodents, insects and birds entering the batten cavity.

## **8. VENTILATION – HIGH LEVEL**

8.1 High level roof ventilation terminals can be installed either using a dry-fixed ventilated ridge system, or using ventilation tiles. Both must be installed in accordance with NHBC Technical Standards 7.2, current relevant British Standard and the roof tiles manufacturer's instructions.

Ventilation tiles are typically only used at high level where a ventilated ridge system cannot be installed due to the nature of the ridge and/or roof construction, such as hipped or pyramidal roofs, ridges constructed with mortar-bedded ridge tiles, and below fire-break walls parallel to eaves.

Irrespective of which of the two systems is used the following rules must be adhered to.

- 8.2 High level ventilation, equivalent to a continuous 5mm opening, either dry-fixed ventilated ridge system or ventilation tiles, shall be sourced from the main tile manufacturer used in addition to eaves ventilation where,
- (i) the roof pitch is greater than 35 degrees or,
  - (ii) the span of the roof is greater than 10m for roofs where the insulation is laid over a horizontal ceiling,
  - (iii) the insulation follows the truss rafter line (i.e. room-in-the-roof construction),
- 8.3 On lean-to or mono-pitch roofs, high level ventilation equivalent to a continuous 5mm opening is to be provided by the use of a proprietary ventilator or for lean-to roofs the use of Manthorpe G1105 flash vent may be used.
- 8.4 On roofs with fire-break walls parallel to eaves, ventilation tiles must be installed below the fire-break wall.
- 8.5 On small bay roofs and porches 5mm ventilation to be provided to the satisfaction of NHBC.
- 8.6 On hipped and pyramidal roofs where the ridge length is less than 2m and where the insulation is to be installed either over a horizontal ceiling creating a cold roof void, additional air ventilation tiles must be spaced and installed at no more than two tile courses below the ridge line to give the equivalent 5mm high level ventilation along the hip-line. Or, where the insulation is installed between truss rafters with an air gap between the insulation and underlay, ventilation tiles of a suitable capacity must be installed at no more than two tile courses below the ridge line in each and every rafter bay on both sides of the hip-line to give the equivalent of 5 mm high level ventilation all in accordance with the manufacturer's instructions.

## **9. TILES / SLATES**

- 9.1 Prior to the commencement of tiling works, the Contractor must ensure that all waste materials have been removed from the batten cavity. This is to ensure that any water underneath the tile is allowed to freely track down the underlay to the eaves / gutter.
- 9.2 All tiles are to be manufactured to:
- (i) Clay Tiles and Fittings to BS EN 1304.
  - (ii) Concrete Tiles and Fittings to BS EN 490 & BS EN 491.
  - (iii) Fibre Cement Slates and Fittings to BS EN492.
  - (iv) Natural slates to BS EN 12326 and comply with NHBC Durability Classification Appendix 7.2F.
  - (v) Shingles must be of Western Red Cedar, suitably treated and be Grade 1 to the Canadian Standard Association.

- 9.3 All tiles and slates shall be as specified by the Company, supplied and fixed in accordance with the manufacturer's instructions and Site Specific Fixing Specification – a copy of which must be forwarded to the Company for our records.
- 9.4 In addition to the manufacturers fixing instructions, the following minimum fixing instructions are also to apply:
- (i) Tiles are to be fixed with a minimum overlap of 75mm and to a maximum pitch of 54 degrees.
  - (ii) For all pitched roofs with rafter pitches from 45 to 54 degrees all tiles are to be to be nailed twice where two holes are provided by the manufacturer and comply with the requirements of BS 5534 or every tile nailed once in all other cases, to battens on suitable felt underlay, even if this is in excess of manufacturers site specific fixing instructions.
  - (iii) Any tiles fixed vertically or with a pitch over 54 degrees are also to have each tile nailed twice where two holes are provided by manufacturer, or every tile nailed once and tail clipped in all other cases.
- 9.5 All unconnected low level roofs, above 35 degrees in pitch, are to be covered in plain tiles and fixed in accordance with the tile manufacturer's instructions, unless specified on the working drawing to be of preformed construction in GRP or similar.
- 9.6 Chimney Haunches (shoulders) are to be constructed in tiles to match the main roof tile unless a different tile has been used on low level roofs which will take precedence.
- 10. CUTTING TILES**
- 10.1 Prior to cutting, the Contractor is to refer to the tile manufacturer's fixing requirements to ensure the cut tile can be adequately fixed following cutting.
- 10.2 Dedicated cutting areas must be established at the planning stage with the Site Manager before work commences. The area should be the most suitable for the work which may dictate that more than one dedicated cutting area is required on the scaffold platform. The Site Manager may instruct that the designated cutting area be at ground level to eliminate the risk of damage to the scaffold platform.
- 10.3 Tiles **MUST NOT** be cut on Scaffold boards or tiling batten. If using a dedicated cutting area on the scaffold platform it is vital that the integrity of the scaffold is not compromised by the cutting operation. A suitable piece of sacrificial material must be placed between the tile and scaffold boards to prevent any damage to the scaffold platform. The Contractor is responsible for any damage arising to the scaffold platform from this operation.
- 10.4 Disc cutters must only be operated by trained and competent persons.

- 10.5 Small cut sections of roof tile running into the valleys, hips and abutments must be avoided wherever possible. Where small cut sections (less than half tile width) are unavoidable they must be mechanically fixed with a minimum of two mechanical fixings, or adhesively bonded to the adjoining full-width tile, or replaced in accordance with the main tile manufacturer's instructions.
- 10.6 Cementitious cutting dust must be first brushed and then washed down off the roof before it has a chance to set on the surface of the roof tiles.
- 10.7 Precautions should be taken to avoid cementitious slurry from being sprayed up against finished walls and masonry during the cutting process.

## **11. FIRE STOPPING**

- 11.1 All separating / party walls to have fire stopping and cavity barriers installed in accordance with Group Standard Details. Including the below:
- 11.2 Above Party Wall and Roof Membrane - 'ARC Tile Batten Barrier'
- (i) The ARC Tile Batten Barrier to be continuous above the membrane and spandrel. The ARC Tile Batten Barrier is to be compressed underneath the tile batten.
  - (ii) The ARC Tile Batten Barrier to be scored with a knife along the top and bottom of the tile batten so that the product fills the void between roof batten.
  - (iii) The ARC Tile Batten Barrier is not required to fill the profile of the roof tile.
  - (iv) Required for Masonry, Large Format Blockwork and Timber Frame Construction.
- 11.3 In boxed Eaves - 'ARC Soffit Slab'
- (i) Fascia and soffit at boxed eaves to include installation of ARC Soffit Slab cut to match both the roof pitch brick height as required.
  - (ii) A tight fit must be achieved on all sides.
  - (iii) Required for Masonry and Large Format Blockwork Construction. To be completed by timber frame erector for timber frame units.
- 11.4 Above single leaf spandrel, below membrane - 'ARC U Barrier'
- (i) Push fit on to the top of the spandrel panel
  - (ii) Lengths of ARC U-Barrier should be tightly butted together
  - (iii) Required for Masonry and Large Format Blockwork Construction. To be completed by timber frame erector for timber frame units.

### 11.5 'ARC T-Barrier Pitched Roof'

- (i) Push fit into the top of the party wall cavity, held in place by compression fit
- (ii) Required for Masonry Construction only. Not required for Large Format Blockwork, or Timber Frame. U-Barrier to continue to Party Wall DPC Barrier
- (iii) Where twin leaf blockwork is used to form the party wall in the roof space, the 'ARC T-Barrier Pitched Roof' is to be utilised in place of the U-barrier.

## 12. LEADWORK

- 12.1 All fully supported leadwork must conform to BS 6915:2001 and Lead Sheet Association (LSA) details.
- 12.2 All leadwork must conform to BS: EN 12588:2007 and be installed in accordance with LSA recommendations, and NHBC Technical Standard 7.2
- 12.3 The Installation of flashing kits for roof light windows must be so that the foam extends beyond the flashing. Trim foam under tile if this is causing the tile to kick up.

## 13. MORTAR

- 13.1 Mortar is deemed to have no tensile strength for fixing tiles and therefore, is only to be used for pointing of verges, hips and ridge tiles where noted in the enquiry letter.
- 13.2 All roof tile mortar, sand, cement and pigment colour is to be supplied by the Contractor and conforms to BS 5534.
- 13.3 Roofing mortar must not be from adaptive mixes (silo mixes with additional cement content) and must not be from factory-produced retarded mortars.
- 13.4 Pre-bagged roofing mortars should be used throughout to ensure consistency of mixture. Site mixed mortar may be used as a suitable alternative; this must be well mixed with one part Portland Cement to two parts soft sand and one part sharp sand to achieve workability. The proportion of sharp sand must not be less than  $\frac{1}{3}$  of the total sand content.
- 13.5 Roofing mortar to all bedding and jointing must be completed in one operation, struck off to give a smooth face and coloured in accordance with the following:

Grey Tiles – Black Mortar.

Red Tiles – Red Mortar.

Brown Tiles – Brown Mortar.

## 14. HIPS

- 14.1 All hips are to be third round unless otherwise stated.

- 14.2 All mortar bedded hips must be mechanically fixed to the roof structure and bedded with a nominal joint thickness of 10mm.
- 14.3 Hip tiles must not be cut to less than 250mm in length. If the nail-hole position is cut off a new hole must be drilled to ensure that the tile can be mechanically fixed.
- 14.4 Bedding must be completed in one operation to ensure mortar bonding along the length of the hip in accordance with the tile manufacturers' fixing instructions and finished off at the bottom of the hip line with a decorative hip iron.
- 14.5 Bedded dentil slips must be used where the mortar bed is in excess of 25mm thick to prevent large mortar joints.
- 14.6 All dry fixed hips must be supplied by the same tile manufacturer as those provided for the main roof tile, installed in accordance with the manufacturers fixing instructions and finished at the bottom of the hip line with a block end hip tile.

## **15. VERGES**

- 15.1 All perimeter tiles must be fixed in accordance with tile manufacturer's site specific fixing specifications and have a minimum of two mechanical fixings. Commonly this will require nailing and clipping, using only the tile manufacturer's dedicated verge clips, sized accordingly to the manufacturer's tile, to ensure that all clips are in direct contact with the top surface of the verge tile. Or where a dry verge system is specified, the dry verge unit is used to provide the equivalent of a clip fixing.
- 15.2 Where mortar bedded 'wet verge' tiles are specified in the enquiry letter:
- (i) Tiles are to be laid on a bed of mortar 100mm wide, using roof tile mortar or suitable bedding sealant, in one operation to ensure mortar bonding along the length of the verge.
  - (ii) Laid on 150mm x 6mm thick cement based board undercloak and project 50mm beyond the gable wall or bargeboard.
  - (iii) The underlay must be positioned under the undercloak prior to fixing ensuring that it is fixed to battens extending over the gable ladder.
- 15.3 Where 'dry verges' are specified in the enquiry letter or to dwellings over two storeys high:
- (i) All dry verge units are to be supplied by the main tile manufacturer and fixed in accordance with the manufacturer's instructions. Particular attention must be drawn to the position of the batten end location to ensure flush fitting of the units.
  - (ii) Where dry verge is constructed flush to the gable wall, the Contractor is to ensure the units can be fitted flush without deviation along the length of the verge.
  - (iii) All dry verges are to be finished at the apex with a block end ridge or a third round or angle ridge cap to match the dry verge system used.



- (iv) All perimeter tiles must be fully nailed with the installed dry verge units providing the equivalent of a tail (or clip) fixing.

15.4 Cut plain tiles are not acceptable. Purpose made plain tile-and-a-half or half tile must be used. Additionally, cut single lapped interlocking tiles must not be used unless unavoidable in which case cut tiles less than half the normal cover width must either be adhesively bonded to adjacent full tile using a suitable sealant or mechanically fixed to adjacent tile using a minimum of two fixings.

15.5 Natural slate verges must be formed with full slates and either slate-and-a-half or half slates that are a minimum 150mm wide.

## **16. DEDICATED VENT TERMINALS**

16.1 All vent terminals are to be installed in accordance with NHBC Technical Standards 7.2, current relevant British Standard and the roof tiles manufacturer's instructions.

16.2 The Contractor is to allow for ridge terminals as indicated on the working drawings and for cutting, notching and making good at valleys, roof lights, soil pipes, chimney stacks, etc.

16.3 The Contractor is to allow for all soil, gas, and air vent (mechanical or roof space ventilation) terminals as indicated on the working drawings.

16.4 Where vent terminals are required to be fitted to single lap interlocking tiles, soil, gas and air vent tiles (mechanical or roof space ventilation) must be sourced from the main tile manufacturer and designed to fit with their own tiles and slates.

16.5 Where vent terminals are required to be fitted to double lapped slates, the Contractor is to allow for supplying and fixing Manthorpe Slate Ventilators, GILSV30-25 In-Line Slate Vent or GRSV30-25 Hooded Slate Vent (colour to be determined by the Company).

16.6 Soil, gas and Air vent tiles must be fitted in accordance with Manufacturer's Installation Instructions, with particular attention to the position, and spacing of underlay seals and gaskets.

16.7 When installing ventilation terminals through the underlay, all cuts must be repaired immediately and underlay seals installed in accordance with the product manufacturers recommendations.

## **17. RIDGE TILES**

17.1 All ridge tiles and hip tiles shall be mechanically fixed to the roof structure in accordance with NHBC Technical Standard 7.2, BS 5534 and the tile manufacturer's instructions. This includes ALL roofs to main house, garages and any low level bays or projections.

17.2 Where mortar bedded ridge tiles are specified in the enquiry letter, these are to be half round unless otherwise stated. Mortar bed depth over the tile and between joints should be no more than 10mm to prevent excessive shrinkage causing loose mortar to drop out. Bedded dentil slips must be used where the mortar bed is in excess of 25mm thick to prevent large mortar joints.



- 17.3 Where dry ridge tiles are specified in the enquiry letter, the Contractor is to only use the ridge and fixed ventilated products provided by the main tile manufacturer and must be fixed in accordance with the manufacturer's instructions.
- 17.4 Ridge tiles must not be cut to less than 250mm in length. If the nail-hole position is cut off a new hole must be drilled to ensure that the tile can be mechanically fixed.
- 17.5 Under no circumstances are bonnet tiles to be used for ridges on low roofs (i.e. single storey). In these situations, plain tiles (to match main roofs) must be accurately cut and neatly bedded with a suitable lead flashing. Baby or mini ridges to be installed, which correspond to material finishes layout, to be clarified at tender submission.

## 18. DORMER ROOFS & ROOF LIGHTS

- 18.1 All battens running up the sides of the dormer roof and roof light must be properly supported and either nailed or screw fixed onto additional timber supports (noggins) running up both sides of the dormer roof and roof light.
- 18.2 All tiles running up the sides of the dormer roof and roof light are to be either nailed and clipped or clipped and adhesive bonded to the adjacent nailed tile using the tile manufacturers recommended adhesive to comply with the requirements of BS 5534.
- 18.3 Code 4 lead soaker provided by the Plumber to the dormer roof and roof light to run over the first course of tiles immediately below the dormer roof or roof light minimum 300mm girth to suit tiling gauge. Lead soaker to be fixed in position to full length of grp apron flashing.
- 18.4 Underlay to be tucked under soaker to provide minimum 75mm overlap.
- 18.5 Pan tiles should be chamfered off (approx. 20mm) to ensure lead installation.

## 19. SOLAR PV / SOLAR THERMAL

- 19.1 Fixtures and fittings must not be substituted. Only those fixtures and fittings supplied by the tile manufacturer are to be used to fix solar panels to the roof. These are designed and tested by the manufacturer to resist wind forces and transmit these back to the building structure.
- 19.2 Roof mounted systems are to be weather resistant and must not compromise the performance of the existing roof or building envelope by allowing water to enter or damage the fabric of the building.

## 20. APPROVED MATERIALS

- 20.1 The following products from the Manthorpe Building Products Ltd range are to be used in compliance with the clauses above:

Section	Item	Description	Product Code
2. Underlay	Underlay Support	Felt Support Tray	G1280



		Refurbishment Felt Support Tray	G1281
7. Ventilation – Low Level	Eaves Ventilation	Continuous Roll Panel Eaves Ventilator 6m	G502
	Eaves Closure	Eaves Comb Filler	G1275
8. Ventilation High Level	Lean-to Roof	Abutment Flash Ventilator	G1105
16. Dedicated Vent Terminals	Slate Vents	In-Line Slate Vent	GILSV30-25
		Hooded Slate Vent	GRSV30-25

## ROOF TILING

### TRADE SPECIFICATION AGREEMENT

This Specification Agreement relates specifically to the Company's development at

.....



I confirm that I have read and understood the foregoing Specification and that my prices include for all items contained therein and will "remain fixed" for a period of:..... as outlined in the Enquiry letter.

**SIGNED:** .....

**FOR AND ON BEHALF OF:**

.....

**DATE:** .....

N.B. The Contractor is to sign this Agreement and return it with his Quotation. Any prices received without this Agreement will be excluded from consideration.

- |          |                           |                           |
|----------|---------------------------|---------------------------|
| Revised: | Rev A – 6 September 2001  | Rev U – 1 July 2017       |
|          | Rev B – 30 April 2002     | Rev V – 1 January 2018    |
|          | Rev C – 1 December 2003   | Rev W – 1 July 2018       |
|          | Rev D – 30 April 2004     | Rev X – 20 September 2019 |
|          | Rev E – 1 June 2005       |                           |
|          | Rev F – 30 December 2005  |                           |
|          | Rev G – 6 January 2006    |                           |
|          | Rev H – 22 December 2006  |                           |
|          | Rev I – 25 April 2007     |                           |
|          | Rev J – 3 January 2008    |                           |
|          | Rev K – 30 September 2008 |                           |
|          | Rev L – 1 August 2010     |                           |
|          | Rev M – 1 November 2010   |                           |
|          | Rev N – 12 August 2011    |                           |
|          | Rev O – 17 February 2012  |                           |
|          | Rev P – 25 May 2012       |                           |
|          | Rev Q – 1 February 2013   |                           |
|          | Rev R – 1 February 2015   |                           |
|          | Rev S – 1 February 2016   |                           |
|          | Rev T – 1 July 2016       |                           |