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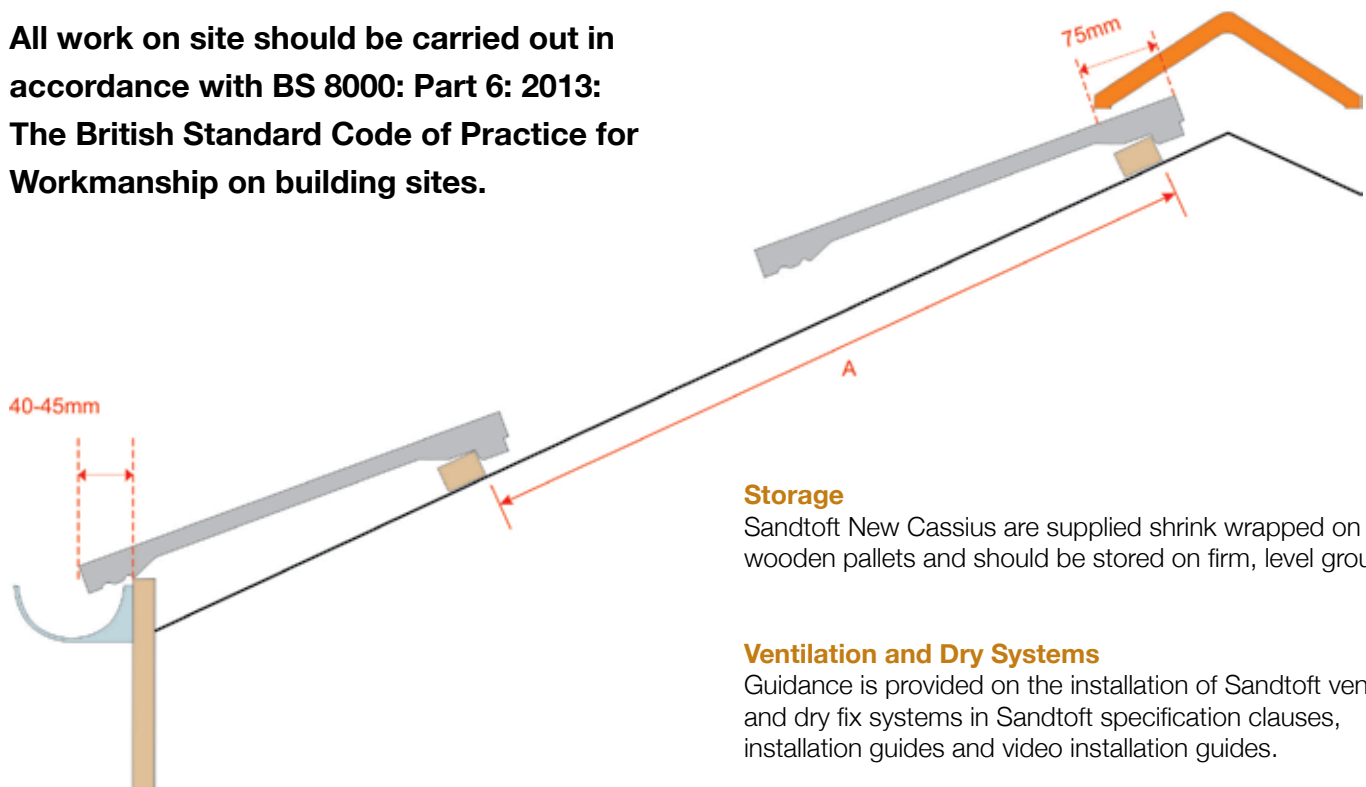
John is also Chairman of the Roof Tile Association (RTA) Technical Committee and a member of various experts groups who write and revise British and European Roofing tile Standards. He is also a regular contributor to trade roofing magazines.

Installation Guide

New Cassius

The following installation instructions are recommended minimum requirements for Sandtoft New Cassius. The designer and fixer should ensure that tiles are installed in accordance with BS 5534: 2014; The British Standard Code of Practice for Slating and tiling. Also, local conditions and current good practice should be considered.

All work on site should be carried out in accordance with BS 8000: Part 6: 2013: The British Standard Code of Practice for Workmanship on building sites.



Storage

Sandtoft New Cassius are supplied shrink wrapped on wooden pallets and should be stored on firm, level ground.

Ventilation and Dry Systems

Guidance is provided on the installation of Sandtoft ventilation and dry fix systems in Sandtoft specification clauses, installation guides and video installation guides.

Underlay and Tile Battens

Guidance on the installation of underlay and tile battens is given in Sandtoft specification clauses and also Underlay and Battens installation guides.

To determine actual tile gauge:

number of courses = $A + \text{max tile gauge}$

round up to nearest whole number (B),

then, actual tile gauge = $A + B$

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Tile gauge

Set the battens out at a maximum spacing of 343mm to ensure a minimum 75mm headlap. Because New Cassius has an 'open' gauge it is quite easy to avoid having a cut course at eaves or ridge by reducing the gauge if necessary. New Cassius can be set out at batten gauges from 298mm to 343mm.

Setting out up the roof (gauge)

Set the first batten at eaves to allow the tails of the eaves course tiles to overhang the fascia by 40 to 45mm, ie; just short of the centre of the gutter.

Set the last batten at the ridge so that the ridge tiles will overlap the top course of tiles by at least 75mm. See drawing below.

LF dry verge system

Carry the underlay 40mm over the edge and turn down the wall. Terminate the tile battens 40mm beyond outer edge of wall or bargeboard.

Position a tile on the eaves course at the left/right hand verge with the correct overhang over the eaves and verge. Locate the eaves closure unit under this tile and then screw to the wall or bargeboard through suitable holes in the eaves closure bracket.

Fit a batten bracket to the end of each tile batten (see table in the LF dry verge installation guide for correct orientation).

Locate the first verge unit over the eaves closure and batten bracket and click into position (see table in the LF dry verge installation guide for correct batten bracket slot). Continue to fit verge units on each course up to the ridge.

Once the batten brackets have been fixed to the battens the verge units can be installed as the tiling progresses or all at once after the tiles have been laid.

Install a ridge closure comb at the ridge to prevent access into the roof space by birds or rodents.

Start/terminate the ridge with a block end ridge tiles to cover the ends of the verge units.
(See the LF dry verge installation guide & video installation guide for further information).

Bedded verge

Terminate the underlay midway across outer leaf of brickwork or masonry. Bed a 6mm thick fibre cement undercloak on to the wall above the underlay and below the battens, projecting about 30 to 60mm beyond the outer wall face. Do not allow the undercloak to tilt inwards, towards the roof. Either lay the undercloak level or with a slight tilt outwards.

Carry the tiling battens over the undercloak and finish them with treated ends 25mm to 50mm from the outer edge of the undercloak. If using verge clips fix each clip to a tile batten with its outer edge aligned with the outer edge of the undercloak.

Lay a 100mm wide bed of underlay onto the undercloak. Bed the verge tiles onto the mortar. Nail every verge tile and secure the tails of the tiles in the verge clips.

Neatly point up the joint as the mortar starts to 'go off'.

Ridge - Generally

Ideally, tiling should finish with a full course at the ridge. New Cassius has an 'open' gauge therefore it is easy avoid having a cut course by reducing the gauge if necessary.

Ensure all top course tiles are nailed (and clipped if required in manufacturer's fixing recommendations).

Dry ridge

Terminate the underlay 30mm from the ridge apex. Fix a timber batten along the ridge apex, securing with ridge batten straps provided. The timber height will depend upon the pitch of the roof - use tile battens to make up to the appropriate height of ridge batten, ensuring that the drive screws penetrate by at least 25mm. Lay the top courses of tiles ensuring each tile is nailed (and clipped if required in manufacturer's fixing recommendations).

There are two dry ridge systems available to suit New Cassius, as follows:

RollRidge: Lay the ridge roll along the centre line of the apex and tack to the ridge batten. Remove the paper backing from each side of the ridge roll and press the edges of the ridge roll onto the tiles. To preserve an air path take care not to flatten the corrugations. Fit and secure the ridge tiles over the ridge roll with ridge unions using the stainless steel screws, sealing washers and plates provided.

Profile Ridge: Place and connect together the ventilation units on the top tile courses on each side of the ridge. Fit and secure the ridge tiles onto the ventilation units with ridge unions using the stainless steel screws, sealing washers and plates provided.

Fit block end ridge tiles or plastic ridge end caps at gables.
(See the Sandtoft Profile ridge and RollRidge installation guides & video installation guides for further information).

Bedded ridge

Lay a continuous bed of mortar along the top course of tiles at each side of the ridge. Joints between each ridge and at

the gable end should be 'solid bedded' by placing a tile slip to 'straddle' across the tops of the top courses of tiles to support the mortar. Place a full bed of mortar onto the tile slip. To prevent cracking, reduce the amount of mortar by inserting additional tile slips into mortar.

Place each ridge onto the mortar bed and tap down to give no more than a 10mm deep mortar bed between the ridge and the tiles. A string line can be used to ensure the ridge line is straight and true.

Neatly point up the joint as the mortar starts to 'go off'.

To comply with BS 5534 all ridge tiles must be mechanically fixed. This can be achieved by fitting security ridge tiles (ie ridges with holes) and securing into an additional ridge batten using stainless steel screws and sealing washers. The height of the ridge batten will depend upon the pitch of the roof - use tile battens to make up the height of hip batten to allow at least 25mm penetration of the ridge-fixing screws.

Hips - Generally

Cut the general tiles closely to the hip timber and at the same relative angle. All tiles at the hip should be nailed (and clipped if required in manufacturer's fixing recommendations). Ensure small cut pieces are secured by drilling or notching the cut tiles to facilitate nailing. Fix additional battens if necessary. Hip clips are also available to secure cut tiles.

Dry hip

Fix an additional timber batten along the hip, securing with hip batten straps provided. The timber height will depend upon the pitch of the roof - use tile battens to make up to the appropriate height of hip batten.

Lay tiles as described earlier. Lay the hip roll along centre line of hip and tack to hip batten. Remove paper backing from each side of the hip roll and then press and dress edge of hip roll neatly onto tiles.

Cut the first length of the hip tray to fit the corner at the eaves. Nail the hip tray to the hip batten with its under-lap section facing towards roof apex. Continue fixing subsequent hip trays, each overlapping the previous one.

Place a dry hip starter ridge directly over the hip tray, close against the eaves tiles, and secure to the hip timber using a drive screw. Fit a hip union under the open end of the dry hip starter ridge and then locate the next hip ridge over the union. Secure using a drive screw with sealing washer and plate. Continue fixing subsequent hip ridges to the ridge apex. (See the Sandtoft Roll hip installation guide & video installation guide for further information).

Bedded hip

Nail or screw a hip iron to the lower end of the hip timber. This will prevent the hip ridge tiles from sliding down the hip as they are bedded.

Cut the first hip ridge to the shape of the eaves at the corner. Lay a continuous bed of mortar along the tiles at each side of the hip. Joints between each hip ridge and at the eaves end should be 'solid bedded' by placing a tile slip to 'straddle' across the tiles at either side of the hip to support the mortar. Place a full bed of mortar onto the tile slip. To prevent cracking, reduce the amount of mortar by inserting additional tile slips into mortar.

Place each hip ridge onto the mortar bed and tap down to give no more than a 10mm deep mortar bed between the hip ridge and the tiles. A string line can be used to ensure the hip line is straight and true.

Neatly point up the joint as the mortar starts to 'go off'.

To comply with BS 5534 all hip ridge tiles must be mechanically fixed. This can be achieved by fitting security hip ridge tiles (ie hip ridges with holes) and securing into the hip timber using stainless steel screws and sealing washers. The height of the hip timber can be built up if necessary, using tile battens, to allow at least 25mm penetration of the hip ridge fixing screws.

Ridge/hip junctions

Where the hip meets the ridge a KoraFlex saddle is required to weather the junction. (See the Sandtoft Roll hip video installation guide for details).

Cut the ridge and hip ridge tiles to finish closely together with no more than a 10mm joint at the butt joint. The end hip ridge should finish level with the top of the ridge line.

Valleys

Fit support timbers to the rafter sides so that the top surface of the valley boards are set level with the tops of the rafters. Overlay the valley boards with 6mm continuous plywood, butt jointed over rafters. Lay a continuous strip of underlay centred on the valley.

Install each Mortarless Valley trough by setting it centrally over the valley boards and secure by nailing through its outer flanges into the valley boards at 500mm centres. Where overlapping additional lengths, the overlap should be 150mm for roof pitches over 39 degrees, 200mm for pitches 30 to 39 degrees, 300mm for pitches 22.5 to 29 degrees and 350mm for pitches below 22.5 degrees.

Install the general roof underlay to overlap the valley troughs, trimmed to finish between the two outer water bars each side of the central upstand.

Cut the tile battens to terminate on the outer flanges of the valley trough and nail to secure the batten ends into the valley boards but not through the valley trough.

Neatly cut the tiles into the valley at a rake to finish close (max 15mm gap) to the valley upstand. Mechanically fix all cut tiles. Use Sandtoft top and tail clips where necessary to ensure minimum two-point fixing of all cut valley tiles.

At the top of the valley, where it meets another valley or ridge, etc, install a KoraFlex saddle to weather the junction. At the eaves, trim the fascia board and set the valley trough to provide a 50mm overhang into the gutter. Alternatively, install a suitable KoraFlex soaker between the valley trough and gutter, welted at the outer edges and fully supported on a board.

Top edge abutments

Generally

Where the tiling meets a wall (abutment) at the top edge turn the underlay 50mm vertically up the wall. If ventilating the roof space then terminate the underlay 30mm from the wall. Fix the top course tile batten close to the wall, allowing for a minimum 5mm air gap and the nibs of the tiles.

Chase out, or otherwise make a cut 25mm deep in the wall to receive the KoraFlex flashing. The distance from the tiles to where the KoraFlex turns into the wall (ie the upstand), should be at least 75mm.

The KoraFlex should dress over the top course of tiles by at least 150mm (200mm for low roof pitches and/or exposed conditions). Each piece of KoraFlex should overlap the next piece by at least 100mm.

Top abutment ventilator

After laying the top course of tiles, position the ventilator over the tiles and mark where the ventilator can be secured through the tile fixing holes. Then remove the ventilator and secure the tiles by nailing and clipping, but omitting the nails marked for use by the ventilator screws. Then replace the ventilator and secure using the screws provided through the tile fixing holes.

Install the KoraFlex flashing and dress neatly over the top abutment ventilator, trimming the flashing if necessary to leave the ventilation unit exposed at the front edge (see the Sandtoft top abutment ventilator installation guide and video installation guide for further information).

Side abutments generally

Weather side abutments using a secret gutter. In addition, to prevent the possibility of the secret gutter becoming blocked by debris over time, a cover flashing should also be fitted.

Side abutment secret gutter

Fix timber bearers, flush with the tops of the rafters, to support the secret gutter and battens ends. Finish the underlay to turn up against the wall by at least 75mm. Cut the tile battens, making sure they are fully supported on the rafter or bearer.

Fix a counterbatten over the bearer or rafter, allowing sufficient space to the wall for the secret gutter. Install the continuous secret gutter with its upstand against the wall and its outside edge nailed to the battens or counterbatten – pre-drill the fixing holes to avoid splitting the gutter. Allow a minimum 150mm overlap between each secret gutter.

Finish the tiling within 15mm of wall, maintaining broken bond using tiles and half tiles and fixing all tiles.

Install a KoraFlex step and cover flashing (Product Ref: 245093+colour code), overlapping the secret gutter upstand by not less than 65mm and dressed over the tiling by not less than 150mm.

At the eaves install a KoraFlex soaker between the secret gutter and the gutter, welted at the outer edge and fully supported on a board.

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