



Roof flashings



BY ALIDE ELKINK,
FREELANCE TECHNICAL
WRITER, WELLINGTON

Flashings play a vital role in keeping water out of buildings. Follow this useful guide to check the requirements for roof flashings in Acceptable Solution E2/AS1.

THE TYPE of roof flashings required depends on what part of the roof is being flashed and what the roofing material is.

Apron flashings

Horizontal apron flashings must:

- extend over profiled metal roofing (see Figure 1) for:
 - 130 mm (excluding the soft edge) in low (L), medium (M) and high (H) wind zones where the roof pitch is 10° or more – E2/AS1 Table 7, Situation 1
 - 200 mm (excluding the soft edge) in L, M and H wind zones where the roof pitch is less than or equal to 10° – E2/AS1 Table 7, Situation 2
 - 200 mm (excluding the soft edge) for all roof pitches in Very High (VH) and Extra High (EH) wind zones – E2/AS1 Table 7, Situation 3
- extend over clay and concrete tiles for 150 mm minimum and have the lead flashing dressed into the pans – E2/AS1 Figure 26(b).

Raked metal apron flashings must have tapered stop-ends to the lower end of the flashing to divert water away from the back of the upstand and into the gutter and have a 5° minimum cross-fall (see *Roof-to-wall junction* in *Build 160*).

Metal tiles

Metal tiles must be installed with a 40 mm minimum upstand and a minimum overflashing cover of 35 mm – E2/AS1 Figure 35(b). ➤

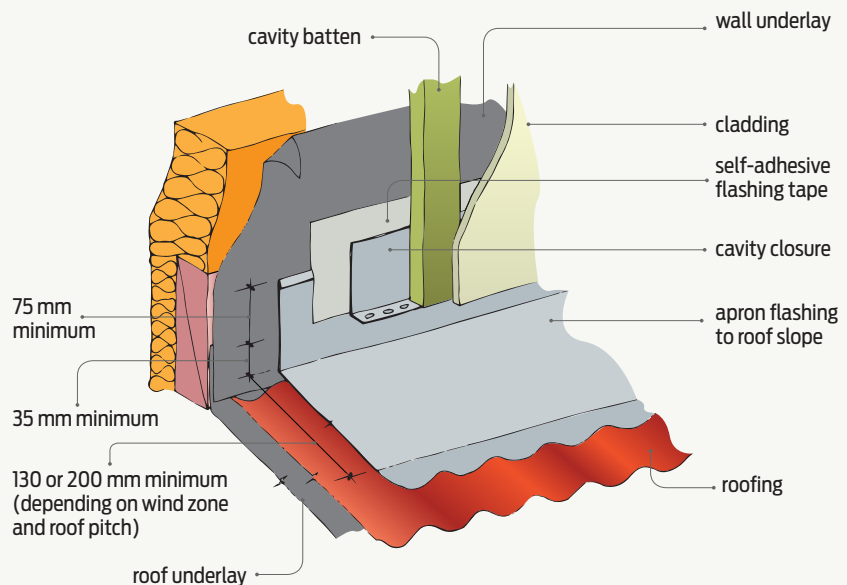


Figure 1 Apron flashing at roof/wall junction – horizontal flashing.

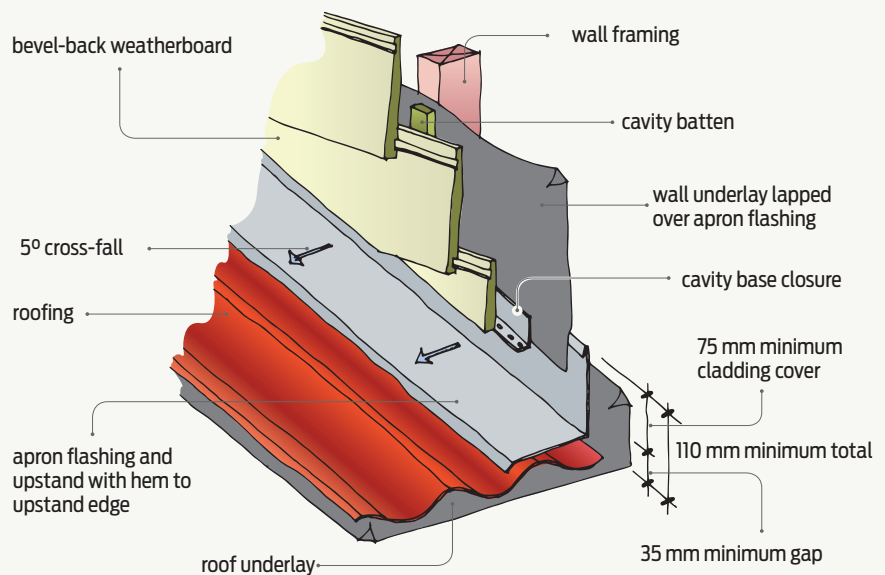


Figure 2 Apron flashing at roof/wall junction – parallel flashing.

Parallel to roof slope

Apron flashings that are installed parallel to the roof slope must:

- for profiled metal roofing (see Figure 2), extend over at least two crests – E2/AS1 Table 7 and Figures 47 and 48
- extend over clay and concrete tiles for 150 mm minimum and have the lead flashing dressed into the pans – E2/AS1 Figure 26(a)
- for metal tiles, have a 40 mm minimum upstand and a minimum overflashing cover of 35 mm – E2/AS1 Figure 35(a).

Hems and hooks

A hem or hook is required to flashing upstands in L, M, H and VH wind zones in addition to the dimension set out in E2/AS1.

Alternatively, the upstand dimension may be increased by 25 mm.

In EH wind zones, flashing upstands must have both a hem or hook and a 25 mm increase to the upstand dimension.

Cap flashings

Under E2/AS1, cap flashings must be installed over parapets or enclosed balustrades. They may be either metal cap flashings or butyl or EPDM membrane under flashings.

Metal capping flashings are detailed in E2/AS1: Figures 9 and 10 (see Figure 3). They must have:

- a minimum cross-fall across the top of 5°
- drip edges to both sides – use a bird's beak drip edge on the deck side of a balustrade
- expansion joints at maximum spacings of:
 - 12 m for light-coloured steel and stainless steel
 - 8 m for dark-coloured steel, copper and aluminium.

Metal cap flashings should overlap wall claddings by:

- 50 mm in L, M and H wind zones
- 70 mm in VH wind zones
- 90 mm in EH wind zones.

This measurement excludes the bird's beak.

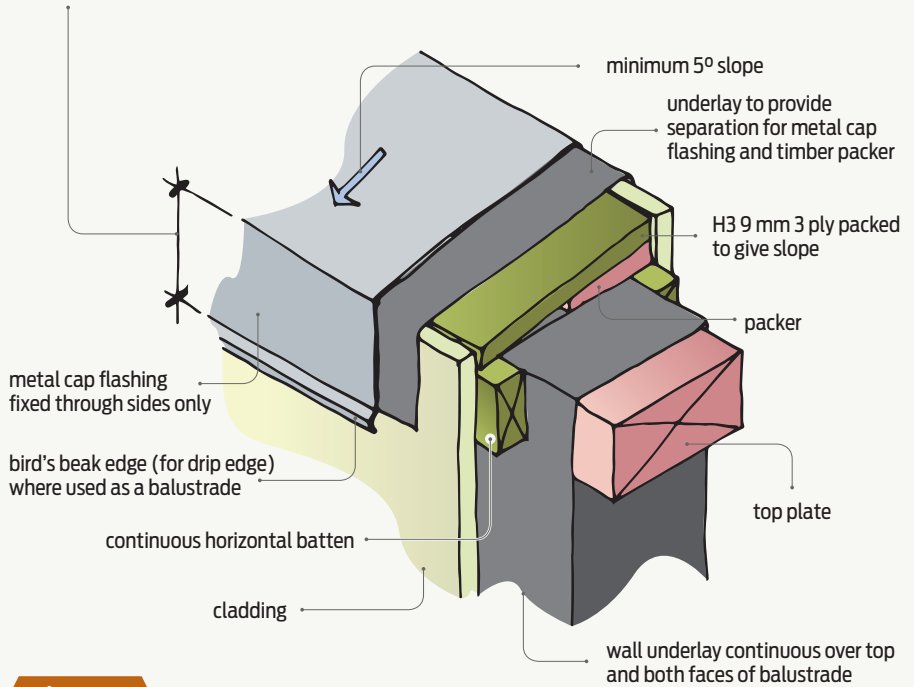


Figure 3 Metal cap flashing.

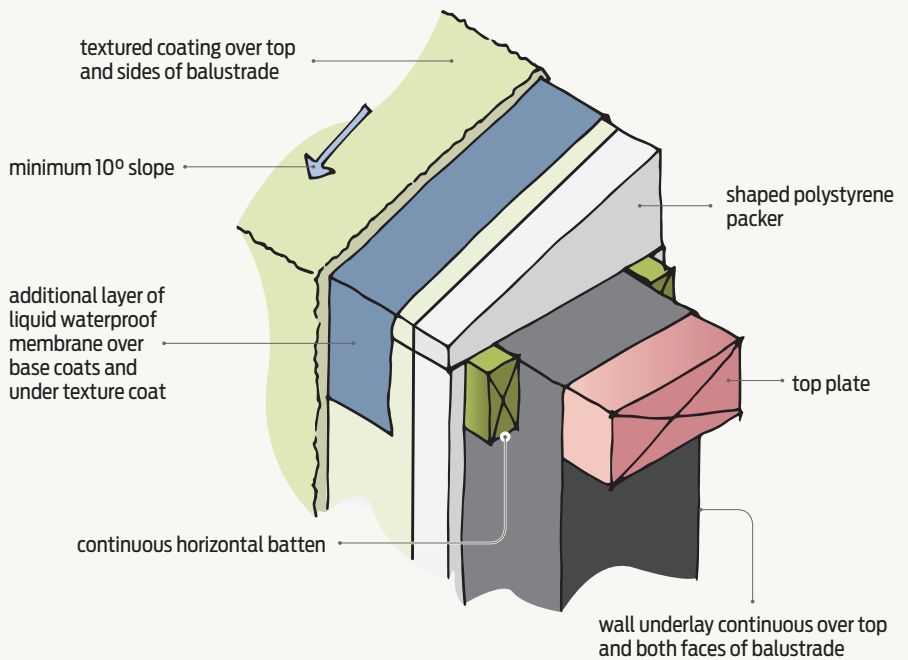


Figure 4 Membrane under flashing to parapet/balcony wall.

Membrane under flashings (see Figure 4) must have a minimum cross-fall of 10° when used as an underflashing with a textured top coat – E2/AS1 6.5. (Note: BRANZ recommends 15° minimum).

Both metal and membrane cap flashings must:

- not have any penetrations
- overlap wall claddings on both sides by:
 - 50 mm for L, M and H wind zones – E2/AS1 Table 7, Situation 1
 - 70 mm for VH wind zones – E2/AS1 Table 7, Situation 2
 - 90 mm for EH wind zones – E2/AS1 Table 7, Situation 3.

Saddle flashings

Fabricated saddle flashings are required:

- at the junction between a framed balcony wall and an adjacent wall
- where parapets at different heights may intersect (see Figure 5)
- at junctions of walls and joists for cantilevered timber decks.

Details for saddle flashings are provided in E2/AS1 Figures 11 (which gives the internal corner flashing requirements below the saddle), 12 and 16.

Barge flashings

E2/AS1 barge flashings (see Figure 6) must have a minimum overlap over the barge or fascia board of:

- 50 mm for L, M and H wind zones where the roof pitch is 10° or more – E2/AS1 Table 7, Situation 1 and Figure 47
- 70 mm for L, M and H wind zones where the roof pitch is less than or equal to 10° and all roof pitches for VH wind zones – E2/AS1 Table 7, Situation 2 and Figure 47 ➤

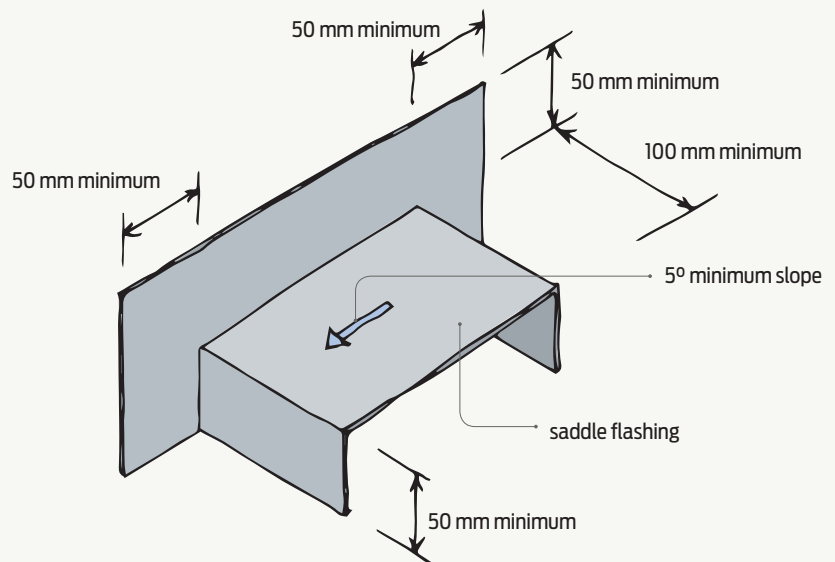


Figure 5 Fabricated saddle flashing to framed balcony/wall junction or at intersection between different height parapets.

Barge flashings should be:

- 50 mm for L, M and H wind zones when roof pitch $\geq 10^\circ$
- 70 mm for all roof pitches in VH wind zones and L, M, H wind zones where roof pitch $< 10^\circ$
- 90 mm for all roof pitches in EH wind zones.

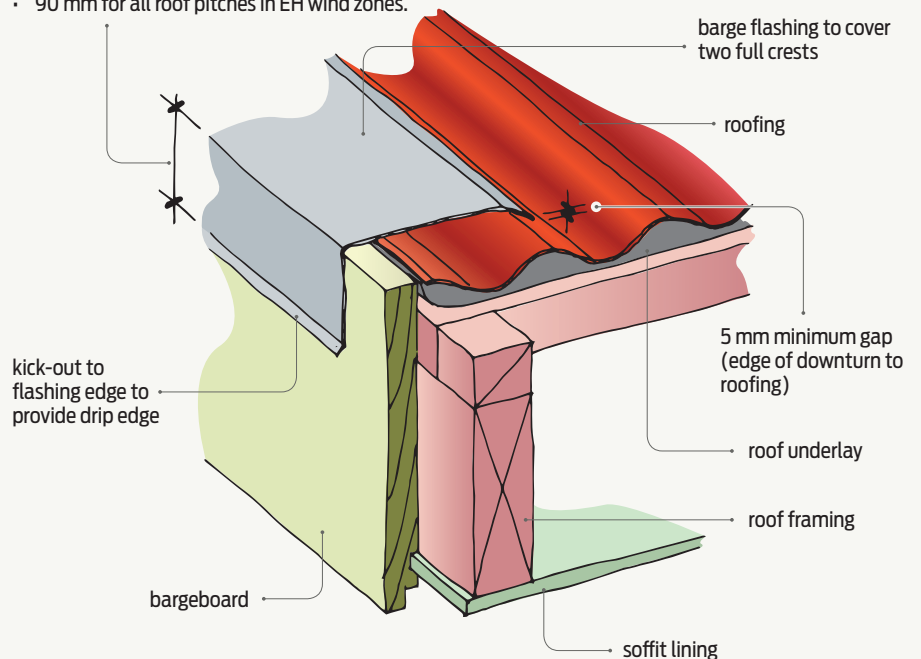


Figure 6 Barge flashing.

- 90 mm for all roof pitches for EH wind zones – E2/AS1 Table 7, Situation 3 and Figure 47.

Barge flashing cover over roofing is the same as for apron flashings installed parallel to the roof slope.

Eaves flashings

E2/AS1 requires eaves flashing (see Figure 7) to be installed with long-run profiled metal roofing in VH or EH wind zones where the roof slope is 10° or less and the soffit width is 100 mm or less from the cladding.

The flashing must extend 125 mm back up under the roofing and have a 35 mm overlap to the back upstand of the gutter – E2/AS1 Figure 45(a).

Ridge and hip roof flashings

Ridge and hip flashings (see Figure 8) for profiled metal roofing must provide a minimum cover as for apron flashings. They must have:

- soft edges dressed to a corrugated profile – E2/AS1 Figure 41
- the edges turned down and notched to accurately match a trapezoidal profile, leaving a 5 mm gap between the flashing and the cladding – E2/AS1 Figure 42.

All troughs ending under a ridge or hip flashing of profiled metal roofing must be turned up.

Metal tile roofs must be installed with preformed ridge caps of 35 mm over 40 mm minimum metal tile upstands – as detailed in E2/AS1 Figure 34.

Clay and concrete tiles must have a ridge tile as shown in E2/AS1 Figure 23, bedded in mortar with weepholes at the pan of each tile. ◀

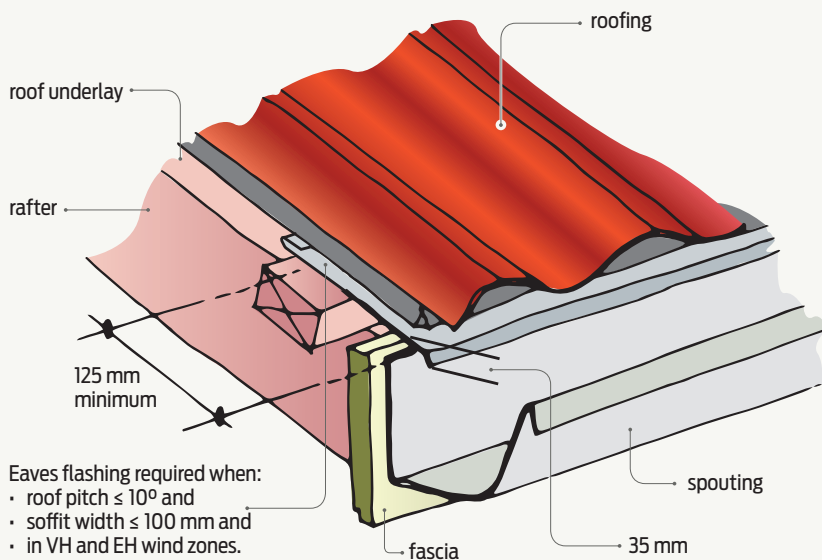


Figure 7 Eaves flashing.

Ridge/hip flashing should be:

- 130 mm minimum for L, M and H wind zones where roof pitch is $\geq 10^\circ$
- 200 mm minimum for L, M and H wind zones where roof pitch is $< 10^\circ$ and all roof pitches in VH and EH wind zones.

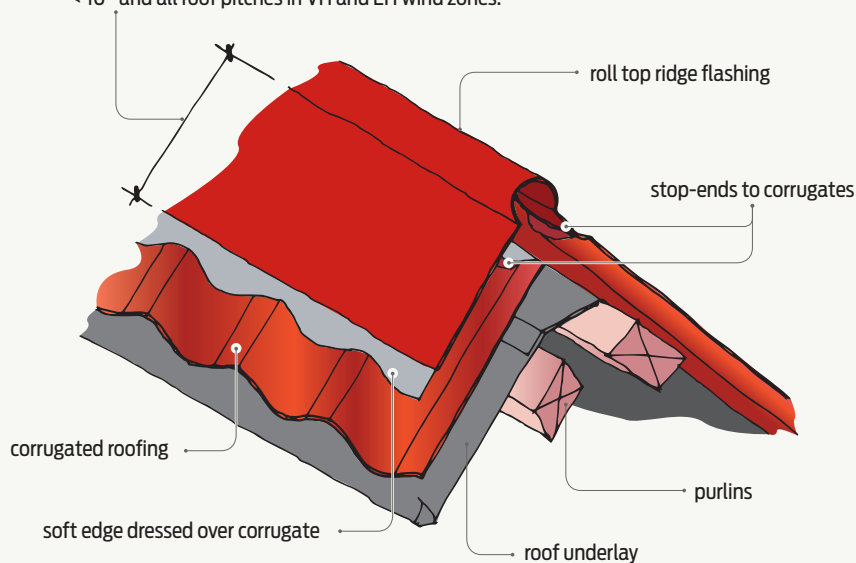


Figure 8 Ridge/hip flashing (non-vented).