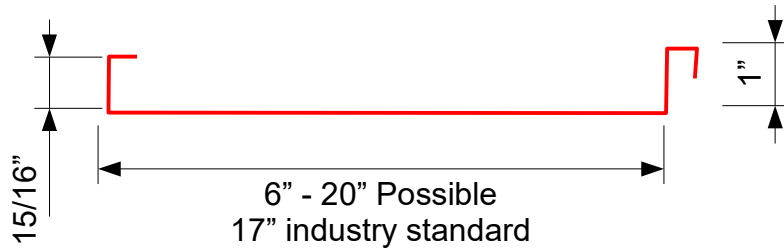
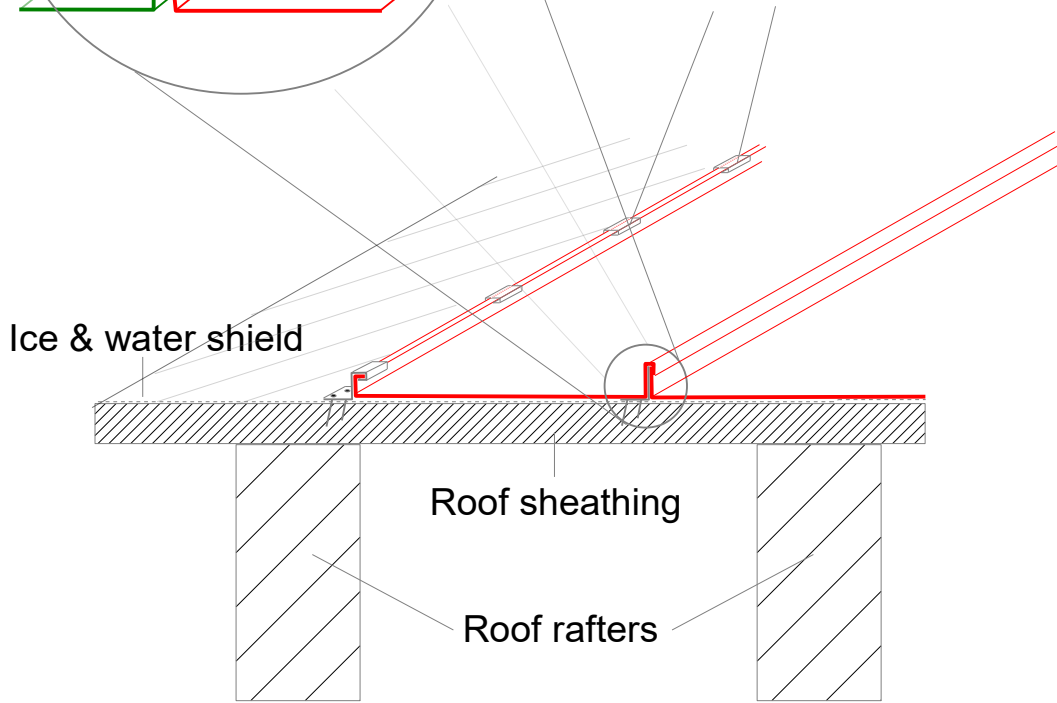


Double locked standing seam detail.

All details are seamed, no exposed fasteners.  
Sufficient space for expansion & contraction.

Roofing clips placing depends on location  
and application - 12" - 20" OC



# Spengler

INDUSTRIES

# Installing traditional standing seam roofing

800 – 900 years old, double locked standing seam copper roofs are still present and still going strong in many parts of Europe, where our company president received his trade training.

Our fine metal roofing knowledge, material fabrication and installation recommendation is based on this almost a thousand years long traditional methods of metal roofing, where warranties will reach into centuries without disclaimers.

## Panel individual lengths

There are the following single panel length limits when applying double locked standing seam systems, listed to different metals, for roofing. Wall cladding panels should be 5 – 8% shorter than roofing panels:

- 28 feet in aluminum and zinc,
- 30 feet in copper,
- 33 feet in steel,
- 38 feet in lower 300 – 400 stainless steels,
- 42 feet in 316L and titanium,

## Fastening the panels

- We recommend using stainless steel clips and stainless steel ring shank nails for fastening any kind of metal roofing. When using painted steel or painted aluminum materials for roofing or wall cladding and cost is a big factor, using galvanized clips and galvanized ring shank nails are acceptable to reduce costs.
- Ring shank nails should be adequately long according to the sheathing and the applied ice and water shield's overall thickness. If, for example, using 3/4" sheathing and two layers of high heat ice and water shield, utilizing 1-1/2" long nails would be recommended. On the other hand, when using 5/8" sheathing and one layer of ice and water shield, a one inch long ring shank nail would be preferred over any longer one; so there is only the tip of the nail protruding through the backside of the sheathing, not more.
- Always use as many nails as there are holes in the fastening clips provided from the clips manufacturer. Some longer, expansion clips have three holes prepared; use three nails in those clips.

## Spacing the clips

Calculating the locations and spacing of the clips along the panels require knowledge of:

- the local wind uplift requirements,
- the local snow load requirements,
- the panel width,
- the subsurface strength (sheathing health-condition and thickness)
- roof or wall facing (North, South, East and West)
- roof slope (degree of roof fall)
- in certain cases also the applied insulation, roof ventilation and the expected humidity transfer (swimming pool below) can affect the clip spacing decision.
- generally the clips should be NOT FURTHER apart than 16 inches and do not need to be closer than 12 inches. In some cases these measurements can be different. (applying standing seam panels as a ceiling, for example, could require a less than 12" distance, or using standing seam panels inside the building for decoration could allow for more than 16" apart clips installation.

## Using fixed or sliding (expansion) clips

- Any panel that is longer than 10 feet needs to be fastened with fixed and expansion clips combined,
- Minimum of 4 fixed clips on any panel lengths, beside the expansion clips, have to be applied to generate a strong “fix” area around 2 – 4 feet long in the panel,
- location of the fixed clips on longer than 10 feet panels depends on the roof slope. The higher the roof slope the higher (toward the upper end) on the panel these fixed clips have to be installed to take the gravity affecting the expansion direction into consideration,
- on longer than 10 feet wall cladding panels, all four of these fixed clips have to be installed starting on the top, then 12” apart progressing down,
- when there is a ridge, hip or a head wall the four fixed clips should be at the upper end of the panels regardless of the roof slope; except when the ridge vent system construction allows the panels to be installed with adequate spacing to allow the panels' upper end to expand and contract, the fixed area can be placed according to the roof slope.

