

Cool/Humid Climates

Cool/Humid Climates Need Extra Attention in New 2010 TRI/WSRCA
Installation Guide Just Released

by Richard K. Olson, technical director, Tile Roofing Institute

(Editor's Note: Richard K. Olson is technical director for the Tile Roofing Institute (TRI). The association represents industry professionals involved in the manufacturing and installation of concrete and clay tile roofs in the U.S. and Canada, and works with national, state, and local building officials to develop installation techniques, codes, and standards for better roofing systems. Olson can be reached at rolson@tileroofing.org. Visit www.tileroofing.org to learn more about how the Institute may benefit your business.)

As an industry we have continued to examine data from field applications not only here in the United States, but from our counterparts in other countries. One of the interesting issues that we have been following for the past five years is roof installations in those climatic regions with significant interaction with the "dew point." These areas provide interesting challenges to the long-term lifecycles of most roofing systems.

In our 2010 manual we have added new recommendations to those areas in the country where the roofing envelope will experience such climatic conditions. We have identified these areas to include the Pacific Northwest, being the area north of San Francisco to Vancouver, British Columbia. In these areas we have been able to identify, from long-term weathering data, that, in fact, there will be extended periods of 12 hours per day that will remain at a relative dew point. In addition, some of these areas will, for certain periods of time in the fall and early spring, see up to 24 hours of such conditions. For most of us, we identify this as regions that experience dense fog. Living in the Northwest I am able to see firsthand the effects of

this condition. I am located in a valley between the moist coastal air and the cooler mountain temperatures that provides a dense fog where we will experience extended periods of fog lasting 24 hours that can go on for days and even weeks.

In these conditions the heat differential of the living space/attic temperature and the outside temperature at dew point creates for constant moisture to exist in the roofing envelope as the water condenses out of the outside air as it constricts. In these areas where the temperature differential from day to night is often less than 10° for six months of the year, we are finding increased moisture-related symptoms of aging roof systems. This can be in several areas of the roof, but is most noticeable in the fascia areas where the lowest point of the roof system will provide the drainage of the roof. Also, we have seen an increase in the growth of moss/algae that are being fed by the natural watering from the condensation in the roof system. This appears to be evident on all roofing materials, and not just tile.

This phenomenon is not unique to the United States, but is occurring throughout the world in other regions that have the same climatic challenge. Our research has determined that if we can design greater airflow ventilation into the roofing envelope, we can reduce the temperature differential and significantly reduce the formation of condensation. Our 2010 industry recommendation will be to require those concrete and clay tiles with batten lugs to be installed with some form of a raised batten system.

This can be either a counter batten system that utilizes a vertical batten, with a horizontal batten attached, or the use of some form of a shim or riser under a traditional horizontal batten to increase the height and subsequent airflow underneath the tile system. In the case of high profiled tile, there is the ability to get the increase airspace without the raised battens.

On a steep slope roof (above 3:12) there is a natural airflow under a concrete or clay roof tile, or certain other roofing materials called above sheathing ventilation (ASV). The benefits of ASV will increase as we increase the height and volume of airspace under the roof covering. Our research has shown that we can significantly reduce the amount of condensation by increasing the airflow under the tile by allowing the condensation to evaporate back into the surrounding air. We feel this will improve the longevity of the underlayment systems and roof sheathing and will help reduce the potential of additional moisture that could accumulate in the attic areas in these specific climatic regions.

As an industry we are working with the local building officials to further identify the specific jurisdictions in question, since they are based on actual weathering data and what the local building official will declare. Over the next year we will try to develop a formal technical bulletin that will help identify the specific areas by city or county as we gather more detailed information.

Our new code approved *2010 TRI/WSRCA Installation Guide for Moderate Climate Regions* is now available from any of our TRI producing members or from WSRCA. It can be downloaded as an electronic file or ordered as a hard copy from our website at www.tileroofing.org.

Our 2010 contractor training programs have been revised to include the new revised manual and our recertification program will also include the new changes as well. For more information on our certification training classes, please visit our website to see the upcoming schedules.

•••