



Benefits of Elvaloy KEE

Historically PVC membranes have been formulated using liquid plasticizers that make the product more flexible. Over time these plasticizers can migrate out of the membrane, leaving it brittle. In an effort to find a more stable plasticizer that also offers increased durability and performance, as well as better long-term performance, the chemists at DuPont developed a ketone ethylene ester (KEE) plasticizer they have branded Elvaloy®. KEE, or Elvaloy, has a high molecular weight making it extremely stable and durable even under the harshest conditions.

THE ELVALOY ADVANTAGE

PVC membranes enhanced with Elvaloy KEE offer building owners a number of distinct advantages over PVC membranes with traditional liquid plasticizers. The largest benefits include:

■ Resistance to migration.

Low-grade liquid plasticizers of the past were problematic, migrating and evaporating from the membrane over time and leaving it brittle and inflexible. Elvaloy KEE is a solid plasticizer with a high molecular weight—it does not migrate from the membrane, keeping it weldable and pliable throughout a roof system's entire service life.

■ Protection from the elements.

For proven durability against severe weather conditions, there's nothing like PVC membrane enhanced with Elvaloy KEE. It remains flexible in the most extreme weather conditions and its remarkable toughness provides increased resistance to abrasion and tearing. KEE-enhanced PVC also provides enhanced protection against UV degradation.

■ High performance, even under duress.

Elvaloy KEE is a durable plasticizer that enhances a roof's resistance to harmful chemicals and pollutants. It can handle the heavy-duty challenges of acid rain, harsh chemicals, industrial pollutants, oil, fats, and even jet fuel. These harsh chemicals can extract liquid plasticizers out of standard PVC membranes, leading to premature degradation. Elvaloy-enhanced PVC membranes are more resistant to the effects of harsh chemicals, making them the ideal choice for rooftops exposed to the harshest environments.

■ Easy repairs.

Because it remains more flexible over time than traditional PVC plasticizers, Elvaloy KEE-enhanced roofing membranes are able to be re-welded with ease years after installation if repairs need to be made.

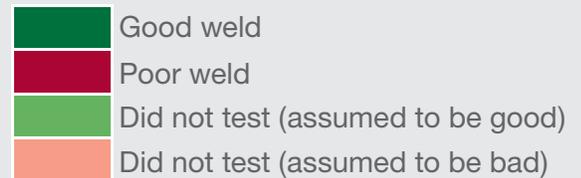
THE OPTIMAL FORMULATION

Too much of a good thing can actually be bad. While Elvaloy KEE provides excellent benefits to PVC membrane, there is an optimal amount that should be incorporated into the sheet to provide maximum benefit at an acceptable cost. Weldability and weld strength are two sheet characteristics that can be adversely affected by adding too much Elvaloy KEE.

In a study performed on PVC membrane enhanced with Elvaloy KEE it was determined that there is a direct correlation between the window of weldability of PVC and the amount of Elvaloy KEE within the sheet. As Elvaloy content increases within PVC

membrane the window to produce a good, solid weld decreases. Cost is also affected as the price of PVC membrane dramatically increases when excessive amounts of KEE polymer are incorporated into the formulation.

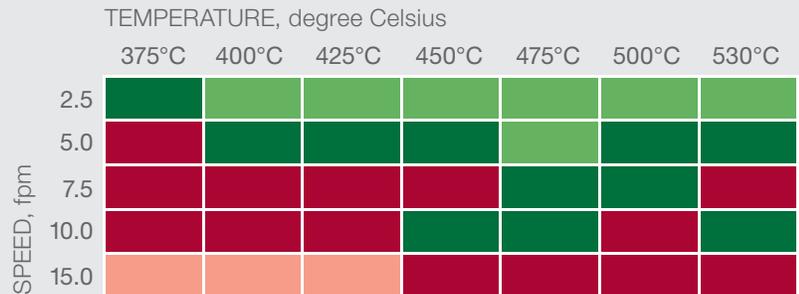
Sure-Flex KEE membrane is formulated to provide the optimum amount of Elvaloy. This proven formulation provides optimum labor savings and a wide window of weldability. By providing a good weld at faster speeds, Sure-Flex KEE can help save labor costs as well as provide peace of mind.



CARLISLE'S COMMITMENT TO INNOVATION

For over five decades Carlisle has been committed to delivering technological innovations that improve rooftop performance and increase roof system longevity. That's why Carlisle is pleased to offer its Sure-Flex KEE compounded with Elvaloy. This performance-enhancing, flexible plasticizer keeps the membrane more flexible, makes it easier to weld, and allows it to be more serviceable for a longer period of time.

KEE = 50% of the Polymeric Content



KEE = 25% of the Polymeric Content

