



## Waterborne Adhesives and Coatings

Stringent federal regulations limiting the concentration of Volatile Organic Compounds (VOCs) in bituminous and non-bituminous roof coatings recently came into place. These regulations typically set maximum allowable amounts of VOCs that a product may contain.

On September 9, 2009 Environment Canada published "VOC Concentration Limits for Architectural Coatings Regulations". Within the regulations, it calls for a maximum VOC concentration of 350 g/L for bituminous roof primer and 300 g/L for any other bituminous roof coating.

The prohibition on manufacture and import of any primers/coatings that exceed these limits came into effect on September 9, 2012. The same items cannot be sold in Canada (with levels above the maximum specified) after September 2014.

The regulation also specifies that non-bituminous roof coatings, for application to roofs to prevent penetration of the substrate by water or to reflect heat and ultraviolet radiation should not exceed 250 g/L as of September 9, 2010 (sales of same exceeding this limit can only continue to September 9, 2012).

Many roofing products such as adhesives, primers and coatings contain VOC emitting solvents. The solvents are applied to dissolve polymers or bitumen to make the product easier to apply. The solvent evaporates into the atmosphere, leaving the polymer behind on the roofing assembly.

Waterborne adhesives, primers and coatings, are an alternative to solvent-based materials, and are one way of meeting VOC emission requirements.

Waterborne products typically meet all VOC regulations existing in the U.S. They are versatile products that can be used in a variety of roofing applications and are relatively easy to work with.

The use of waterborne products is limited in northern climates such as Canada because of the ambient air temperatures for good portions of the year. Since water freezes at a much higher temperature than other solvents, waterborne products cannot be applied when the ambient temperature is near freezing (0° C).

In addition, many waterborne products will be damaged if stored in freezing conditions prior to installation. Generally, these products must be stored at temperatures in excess of 10° C. Waterborne products also take longer to dry and adhere in colder temperatures, so manufacturers will often recommend that they be applied between 15 and 25° C.

These limitations must be kept in mind when planning for the effective use of waterborne products in the Canadian roofing assembly. Handling, application methods and installation specifications are all detailed by each product manufacturer and should be followed carefully.

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